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**THE SCHOOL INCLUSION OF STUDENTS WITH SPECIAL
NEEDS. Bullying and school adjustment in students with
neurodevelopmental disorders and other special education
needs within primary and lower secondary mainstream
education**

TESIS DOCTORAL

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Bullying and school adjustment in students with neurodevelopmental disorders and other special education needs within primary and lower secondary mainstream education



VNIVERSITAT DE VALÈNCIA

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CERTIFICAN

Que la Tesis Doctoral presentada por Doña Martina Berchiatti, con el título “*THE SCHOOL INCLUSION OF STUDENTS WITH SPECIAL NEEDS. Bullying and school adjustment in students with neurodevelopmental disorders and other special education needs within primary and lower secondary mainstream education*” ha sido realizada bajo su dirección. Tras haberla examinado hacen constar su autorización para que se realicen los trámites conducentes a su defensa.

Y para que así conste a los efectos oportunos, firman el presente certificado en Valencia a 28 de diciembre de 2022.

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This doctoral thesis is the result of a research work begun in 2019, but, even earlier, of a personal and professional path of interest and sensitivity towards the issues of inclusion and care for relationships within the school environment. It represents the natural consequence of years of teaching in complex contexts and experiences of volunteering with subjects at risk of exclusion or segregation.

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PREFACE

This Doctoral Thesis is based on the following six studies:

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- **Berchiatti, M.**, Ferrer, A., Badenes-Ribera, L., & Longobardi, C. (2022a). School Adjustments in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Peer Relationships, the Quality of the Student-Teacher Relationship, and Children's Academic and Behavioral Competencies. *Journal of Applied School Psychology*, 38(3), 241-261. <https://doi.org/10.1080/15377903.2021.1941471>. **(IF (2021): 0.48, Q2 SJR). (Study 3).**
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- **Berchiatti, M.**, Ferrer, A., Galiana, L., Badenes-Ribera, L., & Longobardi, C. (2022b). Bullying in Students with Special Education Needs and Learning Difficulties: The Role of the Student–Teacher Relationship Quality and Students' Social Status in the Peer Group. *Child and Youth Care Forum*, 51, 515–537. <https://doi.org/10.1007/s10566-021-09640-2>. **(IF (2021): 2.203, Q3 JCR). (Study 6).**

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RESUMEN AMPLIO

Introducción

El acoso está presente desde que existen las sociedades humanas. En particular, en las últimas décadas, el acoso escolar ha recibido atención en contextos institucionales, académicos y educativos, siendo reconocido como un problema generalizado que, de hecho, representa la forma de violencia más común dentro del contexto escolar en la actualidad (e.g., Han, 2021). Así, se estima que uno de cada cuatro, e incluso uno de cada dos niños y adolescentes en todo el mundo, son víctimas de acoso escolar (UNESCO, 2018; UNICEF, 2017); comprometiendo de forma muy seria los derechos fundamentales de los niños, incluido el derecho a la educación (Naciones Unidas, 1989), ya que tiene consecuencias negativas en el bienestar físico, psicológico, relacional y general de las víctimas, los agresores y los espectadores (e.g., Wolke y Lereya, 2015).

El fenómeno del acoso escolar es un proceso grupal (Salmivalli et al., 1996) no en vano el logro de objetivos de estatus social es una de las motivaciones que lo impulsan (e.g., Pouwels et al., 2018). De acuerdo con la Teoría de los Sistemas Ecológicos de Bronfenhrenner (1979), el clima escolar está involucrado en la promoción o inhibición de comportamientos negativos y agresivos (e.g., Leff et al., 2003). Las relaciones sociales positivas con iguales y profesorado pueden servir como factores protectores frente a la victimización (e.g., Iñiguez-Berrozpe et al., 2021), mientras que los problemas de inclusión social y adaptación escolar del alumnado se relacionan con el acoso escolar tanto desde el punto de vista de la victimización (e.g., Cañas et al., 2020) como desde la perpetración (López et al., 2018).

De acuerdo con el Marco de Acoso Basado en el Estigma (Earnshaw et al., 2018), los niños y adolescentes pertenecientes a minorías (e.g., étnicas, sexuales o con condiciones de salud tanto físicas como mentales) corren un mayor riesgo de sufrir acoso, se convierten en objetivo del acoso, por tener características que difieren del grupo (Malecki et al., 2020). Entre estos, los estudiantes con discapacidades y otras necesidades específicas de apoyo educativo (NEAE) están sobrerrepresentados por lo que se refiere a sufrir intimidación (e.g., Malecki et al., 2020).

Los niños y adolescentes con discapacidades y otras NEAE son particularmente vulnerables a sufrir acoso escolar porque pueden ser percibidos como “diferentes” por sus pares y presentar una menor integración en su grupo de referencia. De hecho, este alumnado tiende a ser menos aceptado, más rechazado y desatendido que sus iguales, generalmente tienen un estatus social dentro del grupo de pares más bajo que el de sus compañeros y están más aislados socialmente (e.g., Bossaert et al., 2015; Farmer et al., 2019; Schwab y Rossmann, 2020). Por ejemplo, se ha visto que alrededor del 20% de los estudiantes muestran actitudes negativas hacia los compañeros con problemas de tartamudez (Langevin, 2009). Así pues, y a pesar de su inclusión en la educación general, el alumnado con discapacidad y otras NEAE puede experimentar

exclusión social o aislamiento y tener dificultades en la integración y la relación con sus iguales (ver Farmer et al., 2019), lo que se ha relacionado con el acoso escolar (e.g., Longobardi et al., 2018).

Además, en general, los estudiantes con discapacidad u otras NEAE tienden a tener una relación alumno-docente más pobre que sus pares (Prino et al., 2016); suelen presentar problemas de cercanía y conflicto en su relación con los docentes (Freire et al., 2019). Por ejemplo, el alumnado con problemas de comportamiento tiende a tener relaciones profesor-alumno menos positivas (e.g., Baker et al., 2008); el alumnado con TDAH generalmente se siente menos cerca de sus docentes que sus compañeros sin TDAH y, al mismo tiempo, los docentes experimentan menos cercanía emocional, menos cooperación y más conflictos con niños con TDAH que con otros estudiantes, caracterizándose su relación por un mayor nivel de conflictividad y menor cercanía (Prino et al., 2016); los docentes de estudiantes con tartamudez reconocen que no se sienten cómodos o relajados al interactuar con ellos (Abdalla y St. Louis, 2012) y los niños con Dificultades en el Aprendizaje (DA) presentan mayores niveles de dependencia (Pasta et al., 2013) y de insatisfacción en sus relaciones con los docentes (Murray y Greenberg, 2001) que sus compañeros de clase. Estudios previos han mostrado una asociación entre la calidad de la relación alumno-docente y los roles del acoso escolar; por lo general, los niños sufren menos acoso escolar cuando su relación con el docente es positiva (Camodeca y Coppola, 2019; Thornberg et al., 2022). Un reciente metaanálisis de Krause y Smith (2022) muestra que los niños y jóvenes involucrados en el acoso entre pares, ya sea perpetrándolo o recibéndolo, tienden a tener relaciones con los docentes que se caracterizan por altos niveles de conflicto; si bien esta relación estuvo moderada por el grado escolar, siendo más fuerte para los niños más pequeños (desde etapa infantil a sexto grado) en comparación con los niños mayores (Grado 7–Grado 12).

También, los estudiantes con discapacidad u otras NEAE suelen presentar problemas internalizantes y externalizantes, como síntomas emocionales e hiperactividad (Boyes et al., 2020; Murray y Greenberg, 2001). Por ejemplo, se ha visto que el alumnado con problemas de tartamudez presenta altos niveles de hiperactividad (Druker et al., 2019); más ansiedad que sus compañeros sin problemas de tartamudez al punto de cumplir un 24% de ellos con los criterios diagnósticos del trastorno de ansiedad social (Iverach et al., 2016). Como destacan Menesini y Salmivalli en su revisión (2017), los estudiantes con problemas internalizantes y/o externalizantes tienen más probabilidades de ser victimizados, si además enfrentan dificultades interpersonales (Card, 2003; Cook et al., 2010). Según el metaanálisis de Casper y Card (2017), las formas de victimización indirecta se correlacionan principalmente con síntomas de internalización, mientras que las formas de victimización directa se asocian principalmente con síntomas de externalización.

Todo ello hace que el alumnado con discapacidad u otras NEAE sea más vulnerable a verse implicado en conductas de acoso escolar como perpetradores y como víctimas (Dasioti y Kolaitis, 2018; Rose et al., 2011; Rose y Gage, 2017). Así, los estudiantes con discapacidades tienen más probabilidades de ser víctimas de acoso escolar (32%) y de ser sancionados por conductas de acoso escolar (41%) en comparación con sus

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compañeros sin discapacidades (Gage et al., 2021). Investigaciones previas han encontrado que la tartamudez es una característica que hace que los escolares sean altamente susceptibles a la intimidación (Hughes, 2014; Logan et al, 2008). Se ha visto que los estudiantes con tartamudez tienen un riesgo significativamente mayor de experimentar un comportamiento de intimidación (61 %) que los estudiantes sin problemas de tartamudez (22 %; Blood y Blood, 2007). También en niños con NEAE como con dificultades de aprendizaje (DA), la presencia de problemas internalizantes y externalizantes, como síntomas emocionales e hiperactividad, parece estar asociada con la probabilidad de sufrir acoso escolar (Boyes et al., 2020; Dasioti y Kolaitis, 2018).

Previo a relacionar los objetivos de este trabajo, se realizará una breve aproximación al concepto de educación inclusiva, siendo que es determinante este tipo de organización escolar para la incidencia y el análisis del acoso escolar en la actualidad, así como un breve repaso a la estructura del sistema educativo italiano, siendo que es el alumnado escolarizado en dicho sistema el que forma parte de los estudios presentados.

Educación Inclusiva

Tradicionalmente, las personas con discapacidad han sido excluidas de todas las comunidades sociales o han sido segregadas en contextos educativos especiales y han permanecido separadas del resto de la sociedad. La Convención de las Naciones Unidas sobre los Derechos de las Personas con Discapacidad de 2006 garantiza el derecho a la educación inclusiva. En concreto, en el artículo 24 de esta Convención cuya finalidad es hacer efectivo el derecho de las personas con discapacidad a la educación sin discriminación y sobre la base de la igualdad de oportunidades, se insta a los países a garantizar un sistema de educación inclusivo a todos los niveles, así como la enseñanza a lo largo de la vida.

En este contexto, la educación inclusiva implica que a los estudiantes con discapacidades y otras NEAE se les enseñe con sus compañeros en un aula regular durante la mayor parte del día escolar. Por lo tanto, el término de “educación inclusiva” no incluye unidades especiales o aulas especiales (segregación), sino ubicar a los niños con discapacidades u otras NEAE en entornos regulares siempre que puedan adaptarse (integración) en el aula ordinaria. La educación inclusiva parte del supuesto de que todos los niños tienen derecho a estar en el mismo espacio educativo (UNESCO, 2020).

Actualmente, la mayoría de los estados miembros de la Unión Europea han adoptado o se están moviendo hacia un Modelo de Educación Inclusiva. Siguiendo un informe reciente de la Unión Europea (*European Agency for Special Needs and Inclusive Education* [EASNIE], 2018), en países como Italia, Noruega o Escocia, las tasas de educación inclusiva para estudiantes con discapacidad están por encima del 90%, España se sitúa por encima del 76% sin precisar la cifra concreta dicho informe. Sin embargo, los países con una tradición de sistemas escolares selectivos, como por ejemplo la comunidad flamenca de Bélgica, tienden a tener un

sistema separado de escuelas para estudiantes con discapacidad, mientras que países como Alemania o los Países Bajos se están alejando de esta tradición. Por su parte, en países como Francia o el Reino Unido, tener clases especiales dentro de las escuelas ordinarias es una práctica frecuente. También en casos como el de Dinamarca y Finlandia en que alrededor del 50% de los niños y adolescentes con necesidades educativas especiales parecen recibir educación en clases especiales.

Sistema escolar italiano

El sistema escolar italiano ha sido definido como un sistema escolar genuinamente inclusivo porque todos los niños y adolescentes están incluidos en la educación general (Ianes et al., 2020). Como país con el porcentaje más bajo de estudiantes segregados en escuelas especiales, Italia muestra un potencial significativo para el desarrollo de la inclusión en las escuelas (Čačija et al., 2019). Se diferencia de los sistemas escolares de otros países europeos y de todo el mundo en términos de tradición, ley, actitudes y prácticas hacia la inclusión de estudiantes con discapacidades y otras NEE (p. ej., Čačija et al., 2019; Di Nuovo, 2012; Sharma et al., 2018).

La legislación escolar italiana reconoce tres categorías principales de estudiantes con necesidades especiales, los cuales representan casi el 9% en Italia (ISTAT, 2020): estudiantes con discapacidades, estudiantes con otras NEE y estudiantes con trastornos específicos del aprendizaje. En la actualidad, la legislación española reconoce una gran categoría denominada “alumnado con necesidad específica de apoyo educativo” que recoge al alumnado con necesidades educativas especiales (con necesidades derivadas de condiciones de discapacidad y trastornos graves de conducta), dificultades específicas de aprendizaje, TDAH, altas capacidades intelectuales, incorporación tardía al sistema educativo y con condiciones personales o de historia escolar que generan desventajas para afrontar las demandas escolares.

En cuanto a los estudiantes con discapacidad en Italia, los mecanismos de derecho y las disposiciones están definidos por las leyes nacionales. Según la Ley 104/1992, la identificación se basa principalmente en declaraciones médicas. A las clases a las que también asiste un estudiante con discapacidades se les asignan algunas horas de asistencia de profesorado especialista de educación especial. La cantidad de horas de tales especialistas depende de la gravedad de la discapacidad diagnosticada (Ianes et al., 2020). Este tipo de especialistas trabaja con el apoyo de otros especialistas en salud externos (e.g., neuropsiquiatría, psicólogo, etc.) y con maestros/as tutores de aula, brindando apoyo para lograr las metas educativas y de aprendizaje. La ley italiana exige que el/la maestro/a especialista de educación especial lo sea de toda la clase y que el maestro tutor de aula sea responsable del proceso educativo de todos los estudiantes (Barzaghi, 2011). Este principio trata de prevenir el binomio único profesor de educación especial/alumno con discapacidad, así como evitar la segregación y el estancamiento en la relación educativa al considerar al profesor de educación especial como un “recurso de clase” (Ianes et al., 2020) y fomentar un proceso de toma de responsabilidad de los docentes tutores/as de grupo (Zanobini, 2013).

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En cuanto a otras necesidades educativas especiales, en el sistema escolar italiano, los “alumnos con otras NEE” se definen como aquellos que, de forma temporal o permanente, tienen algunas dificultades debido a razones socioeconómicas, lingüísticas o culturales, o debido a trastornos específicos del desarrollo (Cf. MIUR, 2012). De este modo, el término NEE representa una clasificación amplia que incluye a estudiantes con dificultades atribuibles a condiciones específicas (por ejemplo, inmigrante, hijo adoptivo), y también con dificultades emocionales y de comportamiento, como TDAH y trastornos específicos del aprendizaje (cf. MIUR, 2012). En definitiva, el término Necesidades Educativas Especiales sería equivalente al de Necesidades Específicas de Apoyo Educativo empleado en la actualidad en España.

En el caso de alumnado con trastornos específicos del aprendizaje, el Modelo Médico-Individual es la base del procedimiento de habilitación, basado en un diagnóstico psicológico. A su vez, para los estudiantes con otras NEE, no se necesita un diagnóstico formal: la ley italiana hace que sea responsabilidad del equipo docente decidir si el estudiante tiene necesidades que requieren la activación de medidas de diferenciación formalizadas en un plan de aprendizaje individual. Sin embargo, tanto en los casos de alumnos con otras NEE como de alumnos con trastornos específicos del aprendizaje, no se asignan recursos humanos adicionales y es responsabilidad del equipo docente curricular proporcionar en cada caso medidas de aprendizaje de diferenciación, formalizadas en un plan de aprendizaje individual (lanes et al., 2020).

En el sistema escolar italiano, los niños ingresan a la educación formal y obligatoria a los 6 años. La escolarización integral tiene una duración de 8 años, dividida en dos ciclos: cinco años de educación primaria y tres años de educación secundaria inferior. Los niños generalmente permanecen con los mismos compañeros de clase y, a menudo, con los mismos maestros durante todo el ciclo. En la escuela primaria, de uno a tres profesores principales suelen estar a cargo de la clase, mientras que en la educación secundaria inferior hay más profesores involucrados. La escuela secundaria inferior finaliza con un examen nacional a los 14 años, después del cual los estudiantes eligen entre una variedad de programas educativos de secundaria superior, clasificados en términos generales en trayectorias académicas, técnicas y vocacionales. La educación es obligatoria hasta los 16 años (Contini, 2013).

El sistema escolar italiano es principalmente público: en las escuelas primarias y secundarias inferiores, las instituciones privadas albergan solo alrededor del 7% y el 4% de los estudiantes, respectivamente (MIUR, 2011). La elección de escuela es libre y no hay restricciones de admisión relacionadas con la capacidad. La mayoría de los estudiantes asisten a la escuela pública de su vecindario. Debido a la segregación urbana, las escuelas ubicadas en áreas desfavorecidas reclutan principalmente a estudiantes de los entornos familiares más desfavorecidos, por lo que la composición étnica y socioeconómica varía considerablemente entre las escuelas. Los centros educativos están regidos por juntas escolares y muchas escuelas establecen reglamentos internos para definir la heterogeneidad con respecto a las características de los estudiantes

(capacidad, género, condición de inmigrante, discapacidad) como el criterio principal para la formación de clases (Contini, 2013).

Los docentes se asignan de acuerdo con un sistema centralizado basado en la antigüedad, sin que las escuelas individuales desempeñen un papel activo en la atracción, selección y retención de docentes. Al examinar la movilidad voluntaria del profesorado italiano, Barbieri et al. (2010) encontraron que los docentes con mayor antigüedad intentan evitar las escuelas a las que asisten poblaciones de estudiantes desfavorecidos. Por lo tanto, es más probable que los docentes con más experiencia trabajen en escuelas con una composición estudiantil más favorable en términos de capacidad y de origen social y étnico (Contini, 2013).

Objetivos

La educación inclusiva, a priori, tiene beneficios tanto para los estudiantes con discapacidades y otras NEE como para los estudiantes con desarrollo típico (EASNIE, 2018; Ianes et al., 2020), además de ayudar a prevenir el acoso escolar tanto en términos de victimización como de perpetración (Rose et al., 2011). Así, las escuelas regulares con orientación inclusiva son reconocidas como el medio más efectivo para reducir los estereotipos negativos y combatir las actitudes discriminatorias, debiendo crear comunidades acogedoras, que aumenten la aceptación y participación de los estudiantes, que mejoren la adquisición de habilidades sociales y logren el desarrollo social para todos (EASNIE, 2018; Ianes et al., 2020; Rose et al., 2011; UNESCO, 1994).

Sin embargo, también dentro de contextos de educación inclusiva pueden ocurrir episodios de acoso escolar en estudiantes con discapacidad y otras NEE, especialmente cuando tienen problemas en la adaptación escolar y en las relaciones dentro del aula (Rose et al., 2011).

A pesar de que el acoso escolar se ha explorado ampliamente en el contexto escolar entre la población mayoritaria, los estudios centrados en el acoso escolar en estudiantes con discapacidad y otras NEE aún son escasos. Las investigaciones que examinan el ajuste escolar y el acoso escolar en diferentes tipos de trastornos del neurodesarrollo y otras NEE siguen siendo escasas. Además, la investigación realizada en el sistema escolar totalmente inclusivo italiano es escasa.

El **objetivo principal de la presente Tesis Doctoral** fue explorar el ajuste escolar y el acoso escolar en alumnado con diferentes trastornos del neurodesarrollo y otras NEE en un contexto de educación inclusiva con el fin de proporcionar una visión amplia de la calidad de las relaciones de estos estudiantes con sus docentes, su estatus social dentro del grupo pares, su comportamiento, su rendimiento académico, así como sobre la victimización y perpetración de conductas de acoso escolar. Conocer en profundidad la asociación entre la calidad del ajuste escolar y la ocurrencia de acoso escolar en estudiantes con trastornos del neurodesarrollo y otras NEE puede ser de utilidad para investigadores y profesionales de la educación con el fin de mejorar la inclusión, prevenir y confrontar episodios de acoso escolar. Con este fin, llevamos a cabo

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una recopilación de datos cuantitativos en las escuelas primarias y secundarias inferiores de Italia mediante una encuesta cumplimentada por profesorado y alumnado.

La encuesta tuvo como objetivo medir la calidad del ajuste escolar y la presencia de acoso y/o victimización en la población general y en niños y adolescentes con trastornos del neurodesarrollo y otras NEE. En particular, analizamos las relaciones sociales con profesores y compañeros y la presencia de acoso escolar en alumnado con disfemia o tartamudez, alumnado con trastorno por déficit de atención con hiperactividad (TDAH), alumnado con trastornos específicos o dificultades del aprendizaje (DA), alumnado con otras necesidades educativas especiales (NEE) y en alumnado con desarrollo típico.

En concreto, los **objetivos de los seis estudios que componen esta Tesis Doctoral** fueron los siguientes:

El **objetivo principal del primer estudio** fue analizar la relación entre la presencia de tartamudez y el estatus social de los estudiantes dentro de su grupo de iguales; las percepciones de los docentes sobre la calidad de sus relaciones con los estudiantes; la percepción de los docentes sobre el comportamiento de los estudiantes y el rendimiento académico. Específicamente, se examinó si existían diferencias entre alumnado con y sin tartamudez en el estatus social dentro del grupo de pares, las percepciones de los docentes sobre la calidad de sus relaciones con sus alumnos, las percepciones de los docentes sobre el comportamiento de los estudiantes y el rendimiento académico.

El **objetivo principal del segundo estudio** fue evaluar el efecto de la presencia de tartamudez en el alumnado sobre la percepción de los estudiantes de la calidad de su relación con el docente y el estatus social de los estudiantes dentro de su grupo de pares, y cómo estas variables (calidad de las relaciones entre estudiantes y maestros y el estatus social de los estudiantes dentro de su grupo de pares), a su vez, podían explicar la victimización y perpetración de conductas de acoso escolar (verbal, físico y social).

El **objetivo principal del tercer estudio** fue analizar la relación entre la presencia de TDAH en el alumnado y la percepción del docente de la calidad de su relación con éste, las relaciones entre los pares, la percepción del docente sobre el comportamiento de los estudiantes y el rendimiento académico. Más concretamente, se analizó si existían diferencias entre alumnado con TDAH y alumnado de desarrollo típico en el estatus social dentro del grupo de pares, en las percepciones de los maestros sobre la calidad de sus relaciones con los alumnos, en la percepción del docente sobre el comportamiento y en el rendimiento académico.

El **objetivo principal del cuarto estudio** fue examinar el efecto de la presencia de TDAH en los estudiantes sobre la percepción del estudiante de la calidad de su relación con el docente y su estatus social dentro del grupo de pares, así como sobre la victimización y perpetración de conductas de acosos escolar (verbal, físico y social). En concreto, se hipotetizó un modelo de mediación en el que la presencia de TDAH predecía la percepción de calidad de la relación estudiante-docente y el estatus social del estudiante dentro del grupo de pares; y a su vez, estas variables (calidad de la relación estudiante-docente y el estatus social de los

estudiantes dentro del grupo de pares) predecían las conductas de victimización y perpetración del acoso escolar (verbal, físico y social).

El **objetivo principal del quinto estudio** fue examinar la relación entre la presencia de NEE y DA y el estatus social del alumnado dentro del grupo de pares; la percepción del docente sobre la calidad de su relación con los estudiantes; la percepción del docente sobre el comportamiento de los estudiantes y el rendimiento académico. Más específicamente, se exploró si existían diferencias entre los alumnos con DA, NEE y el alumnado de desarrollo típico en el estatus social dentro del grupo de pares, en las percepciones de los maestros sobre la calidad de sus relaciones con los alumnos, en la percepción del docente sobre el comportamiento de los estudiantes y en el rendimiento académico.

Finalmente, el **objetivo principal del sexto estudio** fue evaluar la relación entre la calidad de las relaciones alumno-maestro y el estatus social dentro del grupo de pares y el acoso escolar, probando si existía una relación directa entre la victimización y perpetración de conductas de acoso (verbal, físico y social) y la calidad de la relación entre estudiantes y maestros y el estatus social de los estudiantes en el grupo de pares; y si existía una relación directa entre la victimización y perpetración de conductas de acoso (verbal, físico y social) y la presencia de DA y NEE en los estudiantes, mediada por la calidad de la relación estudiantes-docentes y el estatus social de los estudiantes dentro del grupo de pares.

Método

Participantes

En esta esta Tesis Doctoral participaron 991 estudiantes (56.6% hombres) de entre 8 y 17 años ($M = 11.29$, $DT = 1.48$) y 95 docentes (92.6% mujeres, 84.4% empleados permanentes) de entre 25 y 65 años ($M = 46.02$, $DT = 7.64$) y una experiencia docente media de 18.58 años ($DT = 9.48$, $Mín = 2$, $Máx = 42$) reclutados de 19 escuelas primarias y secundarias inferiores en el noroeste de Italia. Las escuelas fueron seleccionadas mediante muestreo por conveniencia.

Entre el total de estudiantes que participaron en la investigación ($n = 991$), hubo 62 estudiantes con tartamudez, 27 estudiantes con TDAH, 55 estudiantes con DA, 46 estudiantes con NEE y 801 estudiantes de desarrollo típico que configuraban el grupo control. En el caso de alumnado con trastornos del neurodesarrollo y NEE se recogía también la encuesta del alumnado de desarrollo típico perteneciente a las mismas aulas y escuelas. Dentro de cada escuela se seleccionaron aquellas clases en las que había al menos un estudiante con un trastorno del neurodesarrollo (es decir, con tartamudez, TDAH o DA) u otras NEE.

A continuación, se describe cómo se distribuyeron los participantes en los seis estudios que componen esta Tesis Doctoral.

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Los **estudios 1 y 2** se realizaron con una muestra de 536 estudiantes (50.2% hombres) de entre 8 y 17 años ($M = 11.42$; $DT = 1.55$) reclutados de seis escuelas primarias (40.5%) y secundarias (59.5%) en el noroeste de Italia. Tanto los estudiantes con tartamudez como los estudiantes sin tartamudez fueron reclutados de la misma escuela. Dentro de la escuela, se seleccionaron 36 clases en las que había al menos un niño con tartamudez.

El grupo de estudiantes con tartamudez estuvo formado por 62 niños (58.1% varones, 66.1% familia tradicional formada por un padre y una madre) con una edad media de 11.72 años ($DT = 1.72$), mientras que el grupo de estudiantes sin tartamudez estuvo formado por 474 niños (49.2% varones, 79.2% familia tradicional) con una edad media de 11.39 años ($DT = 1.53$). No hubo diferencias estadísticamente significativas entre ambos grupos en términos de edad ($t(503) = -1.53$, $p = .128$, d de Cohen = -0.21 , IC 95% [-0.47 , 0.06]) o género ($\chi^2(1) = 1.17$, coeficiente Phi = -0.06 , $p = .187$).

También se analizaron los datos de 36 docentes (92.2% mujeres, 84.5% empleados permanentes) con una edad media de 46.63 años ($DT = 8.71$) y una experiencia docente media de 19.23 años ($DT = 9.77$).

Los **estudios 3 y 4** se desarrollaron con una muestra compuesta por 135 estudiantes (74.8.2% hombres) de entre 9 y 15 años ($M = 11.37$; $DT = 1.25$) reclutados en seis escuelas primarias italianas (40.7%) y secundarias (59.3%). Tanto los niños con TDAH como los niños sin TDAH fueron reclutados de las mismas escuelas. Dentro de las escuelas, se seleccionaron 19 clases donde había al menos un niño con TDAH por clase.

El grupo de estudiantes con TDAH estuvo formado por 27 niños (80% hombres) con una edad media de 11.48 años ($DT = 1.30$) mientras que el grupo de desarrollo típico estuvo compuesto por 108 niños (72.1% hombres) con una edad media de 11.35 ($DT = 1.24$). No hubo diferencias estadísticamente significativas entre ambos grupos en términos de edad ($t(121) = -0.47$, $p = .637$, d de Cohen = -0.10 , IC del 95% [-0.54 , 0.34]) y género ($\chi^2[1] = 0.80$, coeficiente Phi = -0.08 , $p = .372$).

También se examinaron los datos de 19 docentes (89.4% mujeres, 84.2% empleados permanentes) con una edad media de 44.77 años ($DT = 4.96$) y una duración media de la experiencia docente de 14.81 años ($DT = 7.58$).

Finalmente, los **estudios 5 y 6** se realizaron con una muestra de 320 estudiantes (59.7% hombres) de entre 8 y 14 años ($M = 11.04$; $DT = 1.42$) reclutados en siete escuelas primarias y secundarias italianas. De ellos, el 68.4% fueron estudiantes con desarrollo típico ($n = 219$), el 17.2% fueron estudiantes con DA ($n = 55$) y el 14.4% fueron estudiantes con NEE ($n = 46$).

La edad promedio del alumnado de desarrollo típico fue de 10.75 ($DT = 1.40$), para los estudiantes con DA fue de 11.68 ($DT = 1.25$) y para los estudiantes con NEE fue de 11.66 ($DT = 1.28$). Hubo diferencias estadísticamente significativas en la edad media de los estudiantes ($F(2, 311) = 15.34$, $p < .001$; $\eta^2 = .08$). Las edades medias de los estudiantes con NEE y los estudiantes con DA fueron superiores a la edad media de los

estudiantes con desarrollo típico ($p < .001$ en ambos casos). No hubo diferencia estadísticamente significativa entre la edad media de los estudiantes con DA y la de los estudiantes con NEE.

El porcentaje de hombres para los alumnos con desarrollo típico fue del 58.5%, para los estudiantes con DA fue del 56.4% y para los estudiantes con NEE fue del 69.6%. No hubo diferencias estadísticamente significativas entre los tres grupos de estudiantes en la distribución por género ($\chi^2(2) = 2.26$, V de Cramer = .08; $p = .323$).

También se analizaron los datos de 40 docentes (95.9% mujeres, 88.8% empleados permanentes) con una edad media de 46.06 años ($DT = 7.59$) y una experiencia docente media de 19.78 años ($DT = 9.57$).

Variables e instrumentos de medida

Características sociodemográficas

Se pidió tanto a docentes como a alumnado que informaran sobre su edad actual (en años), género y grado escolar. Además, se pidió a los docentes que informaran sobre el número de años que llevaban ejerciendo en enseñanza (experiencia como docente), la cantidad de horas por semana que dedicaban a dar clase y el estatus familiar del alumnado.

Presencia de trastornos del neurodesarrollo o NEE en estudiantes

Se pidió a los docentes que informaran sobre la presencia en sus estudiantes de trastornos del neurodesarrollo (tartamudez, TDAH, DA) o NEE. Las respuestas de los docentes se basaron en los diagnósticos realizados por los terapeutas en los centros médicos, o en la activación de medidas de diferenciación formalizadas en un plan de aprendizaje individual. Todo el alumnado con trastornos del neurodesarrollo estaba inscrito en servicios de terapia formal o lo había estado en el pasado. No se obtuvo información sobre el tipo específico de terapia o tratamiento recibido.

Instrumento de Relaciones con los Adolescentes

El *Adolescent Peer Relations Instrument* (APRI; Parada, 2000) es un instrumento de autoinforme compuesto de 36 ítems con escala de respuesta tipo Likert (1 = nunca a 6 = todos los días) que mide tres tipos de conductas de perpetración de acoso escolar (físico, verbal y social) y tres de victimización (física, verbal y social).

Escala de Percepción del Alumno sobre la Relación Afectiva con el Docente

La *Student Perception of Affective Relationship with Teacher Scale* (SPARTS; Koomen y Jellesma, 2015) es una escala de autoinforme de 25 ítems con escala de respuesta tipo Likert (1 = no, eso no es cierto hasta 5 = sí, eso es verdadero), diseñada para estudiantes de 9 a 14 años, que mide la percepción de conflicto (10 ítems), cercanía (8 ítems) y expectativas negativas (7 ítems) con respecto a un maestro específico. Se pidió a los

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estudiantes que se refirieran a su "docente predominante" (docente con el que pasaban la mayor cantidad de horas por semana).

Técnica de nominación por pares (versión italiana)

Es un cuestionario de nominación de pares que permite trazar una representación gráfica de las relaciones interpersonales presentes en un grupo de clase. Consta de 6 preguntas en las que los alumnos tienen que nominar a tres de sus compañeros: (i) "¿A quién querrías como compañero de mesa?" (ii) "¿A quién querrías como compañero de trabajo escolar?" (iii) "¿A quién querrías como compañero de excursión?" (iv) "¿A quién NO querrías como compañero de mesa?" (v) "¿A quién NO querrías como compañero de tareas escolares?" y (vi) "¿A quién NO querrías como compañero de excursión?". Para cada niño, la suma de las nominaciones positivas recibidas de los compañeros representó su puntuación de agrado (L); y la suma de las nominaciones negativas recibidas por cada niño representó su puntuación de desagrado (D). Las puntuaciones L y D se estandarizaron dentro de cada clase (Lz y Dz) y se usaron para calcular una puntuación de preferencia social (SP) ($Lz - Dz$) y de impacto social (SI) ($Lz + Dz$). Posteriormente, los estudiantes fueron categorizados en uno de los cinco grupos de estatus de pares (Coie et al., 1982): (a) populares; (b) despreciado; (c) rechazado; y (d) controvertido. Los estudiantes que no encajaban en ninguna de las categorías anteriores se consideraban promedio.

La Escala de Relación Estudiante-Profesor

La Escala de Relación Estudiante-Profesor (STRS; Pianta, 2001; versión italiana: Fraire et al., 2013; Settanni et al., 2015) evalúa "los sentimientos de un docente sobre su relación con un estudiante, el comportamiento interactivo del estudiante con el maestro y las creencias de un maestro sobre los sentimientos del estudiante hacia el maestro" (Pianta, 2001, p. 1). Consta de 28 ítems con escala de respuesta tipo Likert de 5 puntos (1= definitivamente no se aplica a 5 =definitivamente se aplica). El instrumento original de Pianta ha sido adaptado y validado en el contexto italiano (Fraire et al., 2013). Este estudio utilizó el *STRS Short Form* validado para el contexto italiano (Settanni et al., 2015) que consta de 14 ítems y 2 factores: Cercanía (6 ítems) y Conflicto (8 ítems).

El Cuestionario de Fortalezas y Dificultades

El Cuestionario de Fortalezas y Dificultades (SDQ; Goodman, 1997; Tobia et al., 2011) es un instrumento de cribado conductual bien validado, desarrollado sobre la base de los conceptos nosológicos que sustentan el Manual Diagnóstico y Estadístico de los Trastornos Mentales (DSM-IV; APA, 1994) e ICD-10 (Organización Mundial de la Salud, 1993), clasificaciones de psicopatología infantil, así como análisis factoriales. El SDQ consta de 25 ítems con una escala de respuesta tipo Likert (0 = no es cierto, 1 = parcialmente cierto, 2 = absolutamente cierto) distribuidos en 5 subescalas: Problemas de conducta, Hiperactividad, Síntomas emocionales, Problemas con los compañeros y Comportamiento prosocial.

Rendimiento académico

Se pidió a los docentes que reportaran la calificación promedio de su alumnado en todas las materias escolares. Cada materia escolar se calificó en una escala de 1 a 10. Luego, por parsimonia, la calificación se organizó en dos áreas: asignatura de Humanidades (es decir, lengua italiana, Historia, Geografía, lengua inglesa, arte, Música y Religión) y asignatura de Ciencias (es decir, Matemáticas, Ciencias y Tecnología). Téngase en cuenta que en las clases de la escuela primaria italiana hay dos profesores: uno para las asignaturas de humanidades y otro para las asignaturas de ciencias. Además, la decisión de combinar asignaturas de humanidades y ciencias se basó en investigaciones anteriores que exploraron el desarrollo de la lectoescritura y la aritmética en estudiantes con trastornos del habla y el lenguaje (McLeod et al., 2019).

Procedimiento

Antes de recopilar los datos, en una fase previa (1) se obtuvo el permiso de las direcciones de las escuelas para que sus docentes participaran en el estudio, el consentimiento los docentes y el consentimiento de los padres en que se informaba de la naturaleza y el objetivo del estudio (aprobado por la Junta de Revisión Institucional de la Universidad de Turín, Italia) de conformidad con el código ético de la Asociación Italiana de Psicología. Los formularios indicaban que se garantizaría la confidencialidad de los datos y que la participación era voluntaria.

La siguiente fase (2) involucró al docente predominante para cada clase que incluía al menos un estudiante con trastornos del neurodesarrollo u otra condición de NEE, es decir, el docente que pasaba la mayor parte de las horas por semana en el aula. Cada docente cumplimentó un cuestionario sobre los alumnos de su clase para los que había obtenido el consentimiento parental: al menos un alumno con trastornos del neurodesarrollo u otras NEE y el resto de los alumnos con desarrollo típico. Los docentes cumplimentaron el cuestionario (es decir, información sociodemográfica, presencia de trastornos del neurodesarrollo u otras NEE en cada alumno, STRS, SDQ y rendimiento académico en las asignaturas) en su tiempo libre durante la jornada escolar.

En la siguiente fase (3), el alumnado completó cuestionarios anónimos (es decir, información sociodemográfica, APRI, SPARTS y técnica de nominación de pares) durante sus horas de clase. Antes de completar la encuesta, se les pidió que dieran su consentimiento por escrito para participar en el estudio. Con respecto al uso de las nominaciones de los compañeros, con el fin de minimizar sus posibles influencias en los estudiantes, se les dijo que sus respuestas eran privadas y que no debían hablar de ellas con otros compañeros de clase. No se proporcionaron incentivos por la participación.

Análisis de los datos

Los datos se ingresaron dos veces y se verificó su exactitud. En los seis estudios se realizaron análisis preliminares exploratorios. Los valores de curtosis y asimetría se calcularon para comprobar la normalidad de los datos. En los estudios 1, 2, 3, 4 y 5 los valores de asimetría univariada y curtosis de las variables analizadas cumplieron los criterios convencionales de normalidad (-3 a 3 para asimetría y -10 a 10 para curtosis, Kline, 2015). Sin embargo, en el estudio 6 los valores de asimetría univariante y curtosis para victimización física y social y perpetración verbal y física no cumplieron con estos criterios convencionales de normalidad. En consecuencia, estas variables se transformaron utilizando la transformación de raíz cuadrada (Rodríguez-Ayán y Ruiz, 2008). Dado que los valores perdidos fueron $<1\%$ en cada una de las variables, no se consideró que causaran sesgo alguno en las estimaciones (Graham, 2009) y no se realizaron ajustes en las puntuaciones de las variables medidas. Todos los análisis se realizaron con SPSS versión 26.0 para Windows y todas las pruebas estadísticas se interpretaron asumiendo un nivel de significación del 5% ($\alpha = .05$), utilizando pruebas de 2 colas.

Ajuste escolar de los estudiantes con tartamudez, con TDAH, DA y otras NEE

Los estudios 1, 3 y 5 tuvieron como objetivo explorar el ajuste escolar del alumnado. Específicamente, el estudio 1 exploró el ajuste escolar en estudiantes con tartamudez, el estudio 3 en estudiantes con TDAH y el estudio 5 en estudiantes con DA y otras condiciones de NEE. En todos ellos, el análisis de datos se realizó en dos fases.

En primer lugar, se calcularon estadísticos descriptivos sobre las variables sociodemográficas y de estudio, tanto en la muestra global como por grupos (estudiantes con tartamudez, TDAH, DA, otras NEE y estudiantes con desarrollo típico). Luego, para investigar si existían diferencias entre estudiantes con tartamudez, TDAH, DA, u otras NEE y alumnado de desarrollo típico en las variables sociodemográficas, se realizaron pruebas t de Student para muestras independientes para las variables continuas y pruebas de chi-cuadrado para las variables categóricas. Como medida del tamaño del efecto se utilizó el índice d de Cohen para variables continuas y el coeficiente phi para variables categóricas (Cohen, 1988).

Para investigar las relaciones bivariadas entre las medidas del estudio, se calcularon los coeficientes de correlación de Pearson sobre las variables del estudio por grupos (estudiantes con tartamudez, TDAH, DA, u otras NEE y alumnado de desarrollo típico). Luego, para investigar si existen diferencias entre estudiantes con tartamudez, TDAH, DA, otras NEE y alumnado de desarrollo típico en cuanto a su estatus social en el grupo de pares, se realizó una prueba de chi-cuadrado y se utilizó el coeficiente V de Cramer como una medida del tamaño del efecto. Cohen (1988) estableció una interpretación convencional de los tamaños del efecto en la que $r < .10$ se considera un efecto pequeño, $r = .30$ es un efecto de tamaño medio y $r = .50$ es un efecto grande. Estas pautas se utilizaron para interpretar los resultados a lo largo de estos artículos.

En una segunda fase, para determinar si la presencia de trastornos del neurodesarrollo y otras NEE en los estudiantes afecta a las variables investigadas, se realizaron varios análisis multivariados de varianza (MANOVA) de una vía en las dimensiones del STRS, dimensiones del SDQ y sobre el rendimiento académico en el estudio 1 (estudiantes con tartamudez) y el estudio 3 (estudiantes con TDAH). En el estudio 5 (estudiantes con DA y otras NEE), se realizó un análisis multivariado de covarianza (MANCOVA) para examinar el efecto de la presencia de DA y otras NEE en los estudiantes y su estatus social en el grupo de pares en las puntuaciones de las dimensiones STRS, las puntuaciones de las dimensiones del SDQ y el rendimiento académico. La edad del alumnado se añadió como covariable para controlar la influencia que pudiera tener en las puntuaciones STRS, SDQ y rendimiento académico, ya que el ANOVA de una vía mostró diferencias estadísticamente significativas entre alumnado con DA y otras NEE y alumnado de desarrollo típico. Para la interpretación de los resultados se utilizó el criterio más robusto, el criterio de Pillai (Tabachnick y Fidell, 2007) y como medida del tamaño del efecto se estimó eta cuadrada parcial (η^2). Posteriormente, si la prueba F global mostraba diferencias de medias, se utilizó un ANOVA univariante post hoc para determinar qué medias eran estadísticamente diferentes de las demás. Según Cohen (1988), una pauta para interpretar un valor de eta cuadrado (η^2) es que $\eta^2 = .01$ indica un efecto pequeño, $\eta^2 = .06$ indica un efecto moderado y $\eta^2 = .14$ indica un efecto grande.

Acoso escolar en estudiantes con tartamudez, con TDAH, DA y otras NEE

Los estudios 2, 4 y 6 tuvieron como objetivo explorar el acoso escolar. Específicamente, el estudio 2 examinó el acoso escolar en estudiantes que tartamudean, el estudio 4 analizó el acoso escolar en estudiantes con TDAH y el estudio 6 exploró el acoso escolar en estudiantes con DA y otras condiciones NEE. En todos ellos, el análisis de datos también se realizó en dos fases.

En primer lugar, se calcularon estadísticos descriptivos para variables sociodemográficas y de estudio tanto en la muestra total como por grupo (estudiantes con tartamudez, TDAH, DA, u otras NEE y alumnado de desarrollo típico).

Luego, en los **estudios 2 y 4** se realizaron pruebas t de Student para muestras independientes con el fin de investigar si había diferencias en las variables continuas analizadas entre los estudiantes con tartamudez y los estudiantes de desarrollo típico en el estudio 2, y entre los estudiantes con TDAH y los estudiantes con desarrollo típico en el estudio 4. Además, en el estudio 2 y el estudio 4 se realizaron pruebas de chi-cuadrado para las variables categóricas (género). En los estudios 2 y 4 se utilizó la d de Cohen como medida del tamaño del efecto para variables continuas (Cohen, 1988), y el coeficiente phi para variables categóricas en el estudio 4. Además, se calcularon los coeficientes de correlación de Pearson para obtener una visión global de las relaciones entre las variables del modelo para ambos grupos (estudiantes con tartamudez, TDAH, DA, u otras NEE y estudiantes con desarrollo típico).

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En el **estudio 6**, se utilizó una prueba ANOVA de una vía entre grupos sobre la edad de los estudiantes. Además, se realizaron diversos análisis multivariados de covarianza (MANCOVA) sobre las dimensiones de SPARTS, APRI y el estatus social del alumnado para examinar el efecto de la presencia de DA, otras NEE y desarrollo típico en los estudiantes. En estos análisis multivariados se añadió como covariable la edad del estudiante para controlar la influencia que pudiera tener sobre las variables analizadas. Se utilizó el criterio de Pillai (Tabachnick y Fidell, 2007) para interpretar los resultados del análisis multivariante y se utilizó el índice eta cuadrada parcial (η^2) como medida del tamaño del efecto. Posteriormente, si la prueba F global mostró diferencias de medias entre los grupos de estudiantes, se utilizó una prueba ANCOVA univariante post hoc para determinar qué medias eran estadísticamente diferentes.

En la segunda fase, **en los estudios 2, 4 y 6** se hipotetizaron, estimaron y evaluaron los modelos de ecuaciones mediante el programa estadístico Mplus en su versión 7.4 (estudio 2 y estudio 6), y en su versión 8 (estudio 4). La bondad de ajuste de los modelos se evaluó mediante diversos índices de ajuste (Kline, 2015; Tanaka, 1993): (1) El estadístico χ^2 , que es una prueba de la diferencia entre la matriz de covarianza observada y la predicha por el modelo especificado; (2) el índice de ajuste comparativo (CFI), que asume una distribución de chi-cuadrado no central con criterios de corte de .90 o más (idealmente más de .95; Hu y Bentler, 1999) como indicador de ajuste adecuado; y (3) el error cuadrático medio de aproximación (RMSEA) y su intervalo de confianza del 90%. Valores superiores a .90 para el CFI o inferiores a .08 en el RMSEA se consideran un ajuste razonable (Kline, 2015), aunque valores de .95 para el CFI y de .06 para el RMSEA se consideran un ajuste adecuado del modelo (Hu y Bentler, 1999).

En el **estudio 2**, dos modelos incluyeron una secuencia en la que la presencia de tartamudez afectaba las relaciones de los estudiantes con los profesores y el estatus social de los estudiantes con problemas de tartamudez en el grupo de pares, y a su vez, estas variables explicaban la victimización y perpetración del acoso escolar. El primer modelo (mediación parcial) probó los efectos directos de la presencia de tartamudez en los estudiantes sobre las dimensiones del acoso escolar; el segundo modelo (mediación completa) solo hipotetizó un efecto indirecto de la presencia de tartamudez en los estudiantes sobre las dimensiones del acoso escolar mediado por la calidad de las relaciones con los profesores y el estatus social de los estudiantes dentro del grupo de pares, pero no se hipotetizó un efecto directo. Después de comparar el ajuste de los modelos, se probó un tercer modelo adicional, en el que solo se conservaron los efectos estadísticamente significativos en el modelo de mejor ajuste. Para la evaluación comparativa del ajuste de los modelos se utilizó la prueba de diferencia de chi-cuadrado que contrasta las diferencias de ajuste entre modelos anidados (Byrne, 2012) y también criterios subjetivos sobre las diferencias entre los CFI de los modelos probados (Cheung y Rensvold, 2002; Little, 1997).

En el **estudio 4**, el modelo incluyó una secuencia en la que la presencia de TDAH afectaba las relaciones de los estudiantes con los profesores y el estatus social de los estudiantes con TDAH dentro del grupo de iguales,

y estas variables, a su vez, explicaban la victimización y perpetración del acoso escolar. El modelo planteó la hipótesis de un efecto indirecto de la presencia de TDAH en los estudiantes sobre las dimensiones del acoso escolar mediado por la calidad de las relaciones con los profesores y el estatus social de los estudiantes dentro del grupo pares.

En el **estudio 6**, el modelo incluyó una secuencia en la que la presencia de DA/otras NEE en los estudiantes afectaba las relaciones de los estudiantes con los profesores y el estatus social de los estudiantes dentro del grupo de pares y estas variables, a su vez, explicaban la victimización y perpetración del acoso escolar. Para incluir los tres grupos en el modelo (estudiantes con DA, estudiantes con otras NEE y estudiantes con desarrollo típico), se crearon dos variables ficticias: otras NEE = 1 y el resto de los participantes = 0; y DT = 1 y el resto de participantes = 0. Se utilizó como grupo de referencia a estudiantes con DA. Además, se incluyó la edad de los estudiantes como covariable.

Resultados

Se describen los principales resultados encontrados en los seis estudios que forman parte de esta Tesis Doctoral agrupados en función del objetivo principal del estudio.

Ajuste escolar de los estudiantes con tartamudez, TDAH, DA y otras NEE

Los **estudios 1, 3 y 5** de la presente Tesis Doctoral tuvieron como principal objetivo explorar el ajuste escolar de los alumnos con tartamudez (estudio 1), TDAH (estudio 3), DA u otras NEE (estudio 5) en comparación con sus compañeros de desarrollo típico, en términos de su estatus social dentro del grupo pares, la percepción del profesor de la calidad de su relación con el alumno, percepción del profesor del comportamiento de los alumnos y el rendimiento académico en las materias de humanidades y de ciencias.

En el **estudio 1** se encontró una asociación entre la presencia de tartamudez en los estudiantes y su estatus social dentro del grupo de pares. Específicamente, los alumnos con tartamudez fueron menos populares y más rechazados dentro del grupo de pares en comparación con los estudiantes con desarrollo típico.

Además, hubo un efecto de interacción entre la presencia de tartamudez en los estudiantes y su estatus social dentro grupo sobre la percepción del profesor de la calidad de su relación con los estudiantes. En los estudiantes con problemas de tartamudez, su estatus social dentro del grupo de pares no estuvo relacionado con la percepción del profesor de su relación con ellos como conflictiva a diferencia de los alumnos con desarrollo típico donde sí se observó esta relación. En concreto, entre el alumnado con desarrollo típico, la percepción del profesor de la calidad de su relación con los estudiantes como conflictiva fue mayor en los alumnos rechazados que en los populares, en los alumnos rechazados que en los desatendidos, y en los alumnos polémicos que en los populares, mientras que no se observaron diferencias entre el resto de categorías del estatus social de los estudiantes dentro del grupo de iguales.

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Por otra parte, no hubo un efecto de interacción entre la presencia de tartamudez y estatus social dentro del grupo de pares sobre la percepción del profesor del comportamiento en términos de síntomas emocionales, problemas de conducta, hiperactividad, problemas con los compañeros y comportamiento prosocial; pero sí un efecto principal de la presencia de tartamudez en los estudiantes y también del estatus social de los estudiantes dentro del grupo de pares. Así, los estudiantes con tartamudez fueron percibidos por sus profesores con niveles más altos de síntomas emocionales e hiperactividad que los estudiantes sin tartamudez. Además, los estudiantes rechazados fueron percibidos por sus profesores con niveles más altos en hiperactividad que los estudiantes populares, y niveles más altos de problemas con los compañeros que los estudiantes populares, los estudiantes desatendidos y los estudiantes con estatus promedio. Finalmente, los estudiantes rechazados fueron percibidos por sus profesores con menores niveles de conducta prosocial que los estudiantes populares.

Tampoco se observó un efecto de interacción entre la presencia de tartamudez y su estatus social dentro grupo de pares sobre el rendimiento académico, pero sí un efecto de la presencia de tartamudez en los estudiantes y también de su estatus social dentro del grupo de iguales. En concreto, los estudiantes con desarrollo típico tuvieron mejor rendimiento académico en las materias de humanidades y ciencias que los estudiantes con tartamudez. Además, en cuanto al rendimiento académico en las materias de humanidades, los estudiantes populares mostraron calificaciones más altas que los estudiantes rechazados, mientras que no se encontraron diferencias en el rendimiento académico en la materia de humanidades entre el resto de los estudiantes de diferente estatus social. En cuanto al rendimiento académico en las materias de ciencias, los estudiantes populares y los estudiantes de estatus promedio tuvieron mejor rendimiento académico que los estudiantes rechazados, mientras que no se observaron diferencias en el rendimiento académico entre el resto de los estudiantes de diferente estatus social.

En el **estudio 3** se encontró una relación entre la presencia de TDAH en los estudiantes y su estatus social dentro del grupo de pares. En concreto, los estudiantes con TDAH fueron menos populares y más rechazados. Además, la percepción del profesor de la calidad de su relación con los estudiantes estuvo relacionada con la presencia de TDAH en los estudiantes; específicamente, con la percepción del profesor de la relación como conflictiva, pero no como cercana, indicando que los profesores perciben su relación con los estudiantes con TDAH como más conflictiva en comparación con los estudiantes sin TDAH. Sin embargo, no hubo diferencias en la percepción del profesor de su relación con los estudiantes como cercana entre los estudiantes con TDAH y los estudiantes sin TDAH.

En cuanto a las percepciones del profesor del comportamiento de los estudiantes en términos de síntomas emocionales, problemas de conducta, hiperactividad, problemas con los compañeros y comportamiento prosocial se observó una relación entre ésta y la presencia de TDAH. En concreto, la presencia de TDAH en los estudiantes estuvo relacionada con la percepción del profesor de síntomas emocionales, problemas de conducta, hiperactividad y problemas con los compañeros, pero no con la conducta prosocial. Así, los

estudiantes con TDAH fueron percibidos por sus profesores con más niveles de síntomas emocionales, problemas de conducta, hiperactividad y problemas con los compañeros, en comparación con los estudiantes sin TDAH. Sin embargo, no hubo diferencias entre los estudiantes con TDAH y los estudiantes sin TDAH en la percepción del profesor de su conducta prosocial en ninguno de los grupos.

Tampoco se observaron diferencias entre los estudiantes con TDAH y los estudiantes sin TDAH en el rendimiento académico en las materias humanidades y ciencias, mostrando ambos grupos de estudiantes un rendimiento académico similar en estas materias.

Finalmente, en el **estudio 5** se observó una relación entre la presencia de NEE (es decir, NEE y DA) en los estudiantes y su estatus social dentro del grupo de pares. En concreto, los estudiantes con NEE y DA fueron menos populares y más rechazados en el grupo de pares. En el resto de las categorías de estatus social dentro del grupo de pares, no hubo diferencias entre los tres grupos de estudiantes (i.e., estudiantes con desarrollo típico, estudiantes con NEE y estudiantes con DA).

Además, la percepción del profesor de la calidad de su relación con los estudiantes en términos de conflictiva y cercana, no estuvo relacionada con la presencia de algún tipo de NEE (i.e., NEE y DA) controlando por la edad de los estudiantes, por lo que no hubo diferencias en la percepción por parte del profesor de su relación con los estudiantes como cercana o conflictiva entre los estudiantes con algún tipo de NEE, los estudiantes con DA y los estudiantes con desarrollo normal. Si bien, la percepción del profesor de la calidad de su relación con los estudiantes como conflictiva sí estuvo relacionada con el estatus social de los estudiantes dentro del grupo de pares. La percepción de la relación como conflictiva fue mayor para los estudiantes rechazados en comparación con los estudiantes populares y los estudiantes desatendidos, mientras que no surgieron diferencias entre el resto de los estudiantes con diferentes estatus sociales. No hubo un efecto de interacción entre la presencia de algún tipo de NEE y el estatus social de los estudiantes dentro del grupo de pares.

La percepción del profesor del comportamiento de los estudiantes en términos de síntomas emocionales, problemas de conducta, hiperactividad, problemas con los compañeros y comportamiento prosocial, controlando por la edad de los estudiantes, estuvo asociada con la presencia de NEE y DA en los estudiantes y también con el estatus social de los estudiantes dentro del grupo de pares; no habiendo un efecto de interacción entre ambas variables. En concreto, la presencia de NEE y DA en los estudiantes se relacionó con la percepción por parte del profesor de síntomas emocionales e hiperactividad en los estudiantes. Así, los estudiantes con DA fueron percibidos por sus profesores con niveles más altos de síntomas emocionales en comparación con el alumnado de desarrollo típico; pero no hubo diferencias en la percepción del profesorado de síntomas emocionales entre los estudiantes que tienen NEE y aquellos con desarrollo típico. Además, los estudiantes con NEE y los estudiantes con DA fueron percibidos por sus profesores con más niveles de hiperactividad que los estudiantes con desarrollo típico, no habiendo diferencias en la percepción por parte del profesor de niveles de hiperactividad entre los estudiantes que tienen NEE y los que tienen DA.

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Respecto del estatus social de los estudiantes dentro del grupo de pares, éste se relacionó con la percepción del profesor de todos los comportamientos de los estudiantes analizados. Específicamente, los estudiantes rechazados y los estudiantes con un estatus promedio fueron percibidos por sus profesores con niveles más altos de síntomas emocionales, problemas de conducta y sintomatología de hiperactividad, en comparación con los estudiantes populares. Asimismo, los estudiantes rechazados fueron percibidos por sus profesores con niveles más altos en hiperactividad que los estudiantes con un estado promedio. Además, los estudiantes rechazados fueron percibidos por sus profesores con niveles más altos en problemas con los compañeros que los estudiantes populares, los estudiantes desatendidos y los estudiantes con un estatus promedio. Finalmente, los estudiantes populares y los estudiantes desatendidos fueron percibidos por sus profesores con niveles más altos en conducta prosocial que los estudiantes rechazados, mientras que no se observaron diferencias entre el resto de los estudiantes con diferentes estatus sociales con respecto a cualquiera de las dos variables.

Tampoco se observó un efecto de interacción entre la presencia de algún tipo de NEE en los estudiantes y su estatus social en el grupo de pares sobre el rendimiento académico en las materias de humanidades y ciencias, controlando por la edad de los estudiantes, pero sí un efecto de la presencia de NEE y DA en los estudiantes y también un efecto del estatus social de los estudiantes en el grupo de pares. En concreto, los estudiantes con desarrollo típico mostraron un mejor rendimiento académico en las materias de humanidades y ciencias que los estudiantes con NEE. Además, los estudiantes con DA mostraron un mejor rendimiento académico en las materias de humanidades que los estudiantes con NEE. No hubo diferencias en el rendimiento académico en las materias de ciencias entre estudiantes con NEE y estudiantes con DA. Por otra parte, los estudiantes populares mostraron un rendimiento académico mayor en las materias de humanidades y ciencias que los estudiantes rechazados y los estudiantes con estatus promedio, mientras que entre el resto de los estudiantes de diferente estatus social no hubo diferencias en el rendimiento académico en las materias de humanidad y ciencias

Acoso escolar en alumnos con tartamudez, TDAH, DA u otras NEE

Los **estudios 2, 4, y 6** tuvieron como principal objetivo analizar las relaciones entre la presencia de tartamudez, TDAH, DA u otras NEE en los estudiantes y la percepción del alumno de la calidad de su relación con el profesor, el estatus social dentro del grupo de pares y la victimización/perpetración del acoso escolar.

En el **estudio 2** se observó que los estudiantes con tartamudez experimentaron tasas más altas de victimización en conductas de acoso escolar que sus compañeros sin problemas de tartamudez. Además, la presencia de tartamudez tuvo un efecto negativo y directo sobre la preferencia social, y un efecto positivo indirecto sobre la victimización en conductas de acoso escolar (verbal, físico y social), lo que sugiere que la preferencia social de los compañeros tiene un efecto mediador, esto es, juega un papel entre la presencia de

la tartamudez y la victimización por acoso escolar. Estos resultados destacan que la tartamudez podría predecir una baja preferencia social, lo que a su vez podría predecir la victimización por acoso escolar.

En el **estudio 4** se encontró que los estudiantes con TDAH experimentaron tasas más altas de victimización y perpetración de acoso escolar que sus compañeros con desarrollo típico. Además, para los estudiantes con TDAH, hubo dos resultados principales, con respecto al papel de su percepción de la calidad de la relación con el profesor y el estatus social de los estudiantes dentro del grupo pares como mediadores entre el TDAH y el acoso escolar.

En primer lugar, la presencia de TDAH tuvo un efecto positivo y directo en la percepción de los estudiantes de su relación con los profesores como conflictiva y un efecto positivo e indirecto tanto en victimización como en perpetración de conductas de acoso escolar (verbal, físico y social), lo que sugiere que la percepción de los estudiantes con TDAH de su relación con el profesor como conflictiva tiene un papel mediador entre la presencia de TDAH y la victimización y perpetración del acoso escolar. Estos resultados destacan que el TDAH en los estudiantes predice el conflicto percibido con los maestros, lo que a su vez predice tanto la victimización como la perpetración del acoso escolar.

En segundo lugar, la presencia de TDAH tuvo un efecto negativo y directo sobre la preferencia social, y un efecto positivo e indirecto sobre la victimización en acoso escolar (verbal, físico y social), lo que sugiere que la preferencia social de los compañeros en alumnos con TDAH tiene un papel mediador entre la presencia de TDAH y la victimización por acoso escolar. En este sentido, la presencia de TDAH en los estudiantes predijo una baja preferencia social, lo que a su vez predijo la victimización por acoso escolar.

Finalmente, en el **estudio 6** se observó que los estudiantes con DA y otras NEE experimentaron tasas más altas de victimización y perpetración de acoso escolar que sus compañeros con desarrollo típico. Además, la presencia de DA u otras condiciones de NEE tuvo un efecto negativo y directo sobre la preferencia social, y un efecto negativo e indirecto sobre la victimización en acoso escolar (verbal, físico y social), lo que sugiere que la preferencia social de los pares tiene un papel mediador entre la presencia de DA u otras NEE y la victimización por acoso escolar. Esto es, la presencia de DA y otras NEE en los estudiantes predijo una baja preferencia social, lo que a su vez predijo una victimización por acoso escolar.

Discusión y Conclusión

Los hallazgos de esta Tesis Doctoral destacan que los estudiantes con trastornos del neurodesarrollo (estudiantes con tartamudez, TDAH y DA) y otras condiciones NEE tienen más riesgo de tener problemas en el ajuste escolar y verse involucrados en conductas de acoso escolar, en comparación con sus compañeros de desarrollo típico. Además, existen diferencias según las categorías de trastornos del neurodesarrollo u otras NEE a las que pertenece el alumnado.

Ajuste escolar de los estudiantes con tartamudez, TDAH, DA u otras NEE

Como en estudios previos, los estudiantes con tartamudez, TDAH, DA y otras NEE mostraron dificultades en su relación con sus pares, sugiriendo que la presencia de trastornos del neurodesarrollo y otras condiciones de NEE afecta al estatus social con relación al grupo pares: los estudiantes con tartamudez, TDAH, DA y otras NEE fueron más impopulares y rechazados en comparación con sus compañeros con desarrollo típico (e.g., Briley et al., 2018; Gardner y Gerdes, 2015; Martin, et al., 2017).

Con referencia a la percepción del docente sobre su relación con el estudiante, no se encontraron diferencias en la dimensión cercanía entre los estudiantes con tartamudez, TDAH, DA, y otras NEE en comparación con sus compañeros de desarrollo típico, mostrando patrones similares, lo que sugiere que la percepción de cercanía del profesor no se ve afectada por el estatus social del alumnado en el grupo de compañeros.

A su vez, en la dimensión conflicto con los docentes, los estudiantes con tartamudez, TDAH, DA y otras NEE mostraron patrones diferentes al compararlos con sus compañeros de desarrollo típico. En particular, para los estudiantes con desarrollo típico, la percepción del conflicto por parte del docente se vio afectada por el estatus social del estudiante en su grupo de pares, con un mayor nivel de conflicto percibido con los estudiantes rechazados y controvertidos, en comparación con los estudiantes populares y desatendidos. En cambio, en los estudiantes con tartamudez, DA y otras NEE, el estatus social del estudiante en el grupo de pares no afectó a la percepción del profesor de la relación como conflictiva, con niveles similares de percepción de conflicto al margen del estatus social en el grupo de iguales. Estos hallazgos son consistentes con la literatura, confirmando que, en la población escolar ordinaria, existe una interacción entre la relación con los docentes y el estatus social en el grupo de pares (e.g., Gülay Ogelman, 2020). Además, como en estudios previos (e.g., Prino et al., 2016; Zendarski et al., 2020), en los estudiantes con TDAH la percepción del profesor sobre la relación con los alumnos mostró mayores niveles de conflicto que en los estudiantes con desarrollo típico, sugiriendo que los estudiantes con TDAH parecen estar particularmente en riesgo de tener una relación negativa con el docente. Reducir los niveles de conflicto con los docentes puede promover resultados positivos a largo plazo y ayudar a mediar sus sentimientos hacia la escuela (Rushton et al., 2020).

En cuanto a la percepción de los docentes del comportamiento de los estudiantes, los resultados mostraron un efecto de la presencia de trastornos del neurodesarrollo (problemas de tartamudez, TDAH, y DA) y otras condiciones de NEE en los estudiantes. Los docentes percibieron mayores niveles de hiperactividad en estudiantes con tartamudez, TDAH, DA y otras NEE; mayores síntomas emocionales en estudiantes con tartamudez, TDAH y DA; así como mayores niveles de problemas con los compañeros en estudiantes con TDAH en comparación con sus compañeros de desarrollo típico, lo que sugiere una relación entre los problemas emocionales y de comportamiento con respecto a los trastornos del neurodesarrollo y otras condiciones de NEE.

Un resultado interesante de esta Tesis Doctoral es que en todos los trastornos del neurodesarrollo examinados y otras condiciones de NEE, el estatus social de los estudiantes en el grupo de pares no afectó a la percepción que los docentes tienen sobre su comportamiento, mientras que en los estudiantes con desarrollo típico sí se observa un efecto del estatus social del estudiante en la percepción que tienen los docentes de su comportamiento, con los estudiantes rechazados siendo percibidos por los docentes con mayores niveles de hiperactividad, síntomas emocionales, problemas de conducta y problemas con los compañeros, y los estudiantes populares y desatendidos con mayores niveles de conductas prosociales. Estudios previos han mostrado que los estudiantes que reportan problemas de comportamiento tienen un mayor rechazo y menor aceptación por parte de sus compañeros (Krull et al., 2018). Además, en comparación con los estudiantes rechazados, los estudiantes populares tienen muchas fortalezas conductuales y emocionales, así como menos dificultades y problemas de conducta (Rytioja et al., 2019).

Con referencia al rendimiento académico, en los estudiantes de desarrollo típico, el estatus social en el grupo de pares tuvo un efecto en sus logros escolares, siendo los estudiantes populares y promedio quienes obtuvieron un mejor rendimiento académico en las materias de humanidades y ciencias en comparación con los estudiantes rechazados. Por su parte, entre los estudiantes con trastornos del neurodesarrollo y otras NEE, el estatus social entre pares no tuvo efecto sobre el rendimiento académico, mostrando, en general, un menor rendimiento académico que sus compañeros con desarrollo típico, lo que está en la línea de investigaciones previas que muestran que los estudiantes con trastornos del neurodesarrollo y otras NEE tienden a tener menores niveles de desempeño que los estudiantes con un desarrollo típico, posiblemente debido a dificultades en las funciones ejecutivas frías (e.g., Inacio et al., 2018; Ntourou et al., 2018). Sin embargo, a diferencia de estudios previos (e.g., Sánchez-Pérez y González-Salinas, 2017), no se encontraron diferencias en rendimiento académico entre los estudiantes con TDAH y sus compañeros con desarrollo típico, siendo un resultado interesante de esta Tesis Doctoral que podría atribuirse a la especificidad del entorno escolar italiano.

Acoso escolar en estudiantes con tartamudez, TDAH, DA u otras NEE

Como en estudios previos, los estudiantes con tartamudez, TDAH, DA y otras NEE experimentaron mayores tasas de victimización y/o perpetración de acoso escolar que los estudiantes con un desarrollo típico (e.g., Malecki et al., 2020; Rose y Gage, 2017; Taylor et al., 2020; Winters et al., 2020). Además, los estudiantes con NEE reportan índices más altos de victimización en acoso escolar (físico, verbal y social) y perpetración física que los estudiantes con DA. Dado que los estudiantes con NEE tienden a reportar también altos niveles de problemas de conducta (Dasioti y Kolaitis, 2018), y esto podría hacer que sus deficiencias sean más visibles que las dificultades de los estudiantes con DA, podríamos suponer que probablemente la presencia de problemas emocionales y de conducta podría predecir mayores niveles de conductas de acoso en estudiantes con NEE, como también sugieren otras investigaciones (Fink et al., 2015).

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Por otra parte, un resultado interesante de la presente Tesis Doctoral que se suma a la literatura existente es el papel mediador que ejerce la relación con los profesores y el estatus social de los estudiantes en el grupo de pares respecto al vínculo entre el acoso escolar y los trastornos del neurodesarrollo (problemas de tartamudez, TDAH y DA) y otras condiciones de NEE, ofreciendo una contribución única para investigar las relaciones entre la presencia de estos trastornos del neurodesarrollo y otras NEE, la calidad de sus relaciones con sus profesores, el estatus social de los estudiantes y la victimización y perpetración del acoso escolar.

Específicamente, la presencia de tartamudez tuvo un efecto negativo y directo sobre la preferencia social y un efecto negativo e indirecto sobre la victimización en acoso escolar (verbal, físico y social), lo que sugiere que la preferencia social de los compañeros tiene un efecto mediador entre la presencia de tartamudez en los estudiantes y la victimización en acoso escolar. Así, la presencia de problemas de tartamudez en los estudiantes podría predecir una baja preferencia social, lo que a su vez podría predecir la victimización en acoso escolar.

En los estudiantes con TDAH hubo dos resultados principales con respecto al papel de la relación estudiante-profesor y el estatus social entre pares como mediadores entre el TDAH y el acoso escolar. En primer lugar, la presencia de TDAH tuvo un efecto positivo y directo en la percepción de los estudiantes de su relación con los docentes como conflictiva, y un efecto positivo e indirecto tanto en la victimización como en la perpetración del acoso escolar (verbal, físico y social), lo que sugiere que el conflicto percibido con los docentes en el alumnado con TDAH tiene un papel mediador entre la presencia de TDAH y la victimización y perpetración del acoso escolar. Así, la presencia de TDAH en los estudiantes podía predecir la percepción que tiene de su relación con el docente como conflictiva, lo que a su vez podría predecir tanto la victimización como la perpetración del acoso escolar. En segundo lugar, la presencia de TDAH tuvo un efecto negativo y directo sobre la preferencia social, y un efecto positivo e indirecto sobre la victimización en acoso escolar (verbal, físico y social), lo que sugiere que la preferencia social de los compañeros en los estudiantes con TDAH tiene un papel mediador entre la presencia de TDAH en el estudiante y la victimización en acoso escolar. Así, la presencia de TDAH en los estudiantes podría predecir una baja preferencia social entre sus compañeros, lo que a su vez podría predecir la victimización en acoso escolar.

Finalmente, en los estudiantes con DA y otras NEE, el principal resultado es que la presencia de DA u otras condiciones de NEE tuvo un efecto negativo y directo sobre la preferencia social dentro del grupo de pares, y un efecto negativo e indirecto sobre la victimización en acoso escolar (verbal, físico y social), lo que sugiere que la preferencia social de los pares en los estudiantes con DA u otras NEE tiene un papel mediador entre dicha presencia y la victimización en acoso escolar. Así, la presencia de DA u otras NEE en los estudiantes podría predecir una baja preferencia social entre los compañeros, lo que a su vez podría predecir la victimización en acoso escolar.

Limitaciones y estudios futuros

Como cualquier trabajo de investigación, la presente Tesis Doctoral presenta limitaciones a considerar, algunas de ellas de carácter metodológico y otras sustantivas. En cuanto a las limitaciones de carácter metodológico, el método de muestreo y las características de la muestra no permiten la generalización de los resultados a estudiantes y docentes ubicados en diferentes áreas o ciudades, y matriculados en diferentes entornos escolares (e.g., no totalmente inclusivos) o de diferentes orígenes culturales. Los estudios transculturales que compararan diferentes grupos culturales y entornos escolares utilizando medidas y variables similares podrían mejorar la precisión y la generalización de estos hallazgos. Además, el tamaño de la muestra, específicamente la pequeña submuestra de estudiantes con trastornos del neurodesarrollo u otra condición de NEE podría haber afectado la potencia estadística o capacidad de detectar resultados estadísticamente significativos y, por lo tanto, el alcance de las conclusiones. También el carácter transversal del estudio no permite establecer relaciones causales entre las variables. Los estudios longitudinales que examinen las relaciones causales entre las variables y su direccionalidad podrían ayudarnos a comprender cómo se desarrollan las relaciones entre ellas a lo largo del tiempo.

Por otra parte, el carácter limitado de la medición de la presencia de trastornos del neurodesarrollo o NEE en los estudiantes, evaluada con un solo ítem (presencia o ausencia de trastornos del neurodesarrollo: tartamudez, TDAH, DA u otras NEE en los estudiantes), no permite diferenciar la incidencia de la severidad del trastorno en cada caso sobre el ajuste, rendimiento y relaciones en la escuela. La gravedad de los trastornos del neurodesarrollo u otras condiciones de NEE podría tener un efecto moderador sobre las relaciones analizadas en este estudio, lo que se debería tener en cuenta en futuros estudios. Finalmente, el “docente predominante” puede no ser la persona que tenga la relación más fuerte con un estudiante en particular, especialmente para aquellos estudiantes que experimentan acoso escolar y dificultades de adaptación escolar, incluso si el profesor pasa la mayor parte del tiempo escolar con los estudiantes. Los estudiantes con trastornos del neurodesarrollo u otras condiciones de NEE podrían buscar el apoyo de cualquier adulto en su entorno (e.g., profesor de música, profesor de arte, profesor de educación especial), lo que debería ser considerado y discutido en futuras investigaciones.

Respecto de las limitaciones sustantivas, no se examinaron algunos factores importantes como el nivel socioeconómico, los antecedentes migratorios de los estudiantes y la presencia de otras condiciones junto con trastornos del neurodesarrollo o NEE (e.g., ansiedad). En consecuencia, sería necesario contar con estudios que permitan superar algunos de estos inconvenientes para obtener una mayor comprensión de los roles de estos factores en el estatus social de los estudiantes en el grupo de pares, la calidad de la relación estudiante-profesor, la competencia emocional y conductual de los estudiantes, el rendimiento académico y la victimización y perpetración.

Implicaciones para la investigación y la práctica profesional

Los resultados de esta Tesis Doctoral pueden tener implicaciones tanto para los investigadores como para los profesionales de la educación. Para los investigadores, los hallazgos de este trabajo ofrecen un conocimiento profundo sobre la experiencia escolar de los estudiantes con trastornos del neurodesarrollo y NEE, mostrando su efecto sobre la adaptación y aceptación en un contexto escolar inclusivo, y agregando información al cuerpo de investigación centrado en el papel de las relaciones con profesores y pares en el desarrollo emocional, conductual, social y en los logros académicos.

Además, este trabajo destaca las diferencias y especificidades según grupos de estudiantes con trastornos del neurodesarrollo y otras NEE a la hora de experimentar el ajuste y el acoso escolar, perfilando también el papel mediador de la relación con los docentes y el estatus social entre pares. Con ello, se hace patente la necesidad de que los docentes y el resto de profesionales de la comunidad educativa aumenten su conocimiento y comprensión sobre tales dificultades, profundizando en la reflexión sobre el bienestar escolar del alumnado con tales condiciones para mejorar su inclusión social entre los compañeros de clase y así prevenir el desajuste escolar y los episodios potenciales de acoso escolar.

Martina Berchiatti

1. INTRODUCTION

1.1. Bullying in Western culture

Bullying has existed in human societies for as long as anyone can remember. Early speculations on aggressive and angry behaviors in individuals are dated back even to Ancient Greek and Latin literature (III century b.C. – II century a.D.). In their essays, philosophers, as the Stoics and Seneca, argued that instinctive reactions such as anger and aggression are part of human being's nature (Dodge, 1991). In the 17th century, Thomas Hobbes (1651/1969) theorized that, since children's violent reactions toward aversive events could manifest innately, external forces must be imposed to try to stop these angry reactions (Dodge, 1991). Almost in the same period, but from the opposite perspective, the empirical philosopher John Locke (1690/1913) affirmed that, when children born, they are like a *tabula rasa*, and their future behavioral development depends from the experiences they will have in the environment where they live (Dodge, 1991).

Bullying episodes are largely featured in Western literature: well-known novels, as *The adventures of Oliver Twist* (Dickens, 1839/1966), *Lord of the Flies* (Golding, 1954) and, in the Italian context, *Rosso Malpelo* (Verga, 1878/1999) have described aggressions towards individuals from different perspectives. More recently, cinema has represented stories of bullying through movies such as the well-known *Back to the future* (Zemeckis, 1985), *Después de Lucía* (Franco, 2012) and *Wonder*, directed by Chbosky in 2017 and based on the children's novel by R. J. Palacio (2012), which follows a boy with Treacher Collins syndrome trying to adjust to school context. Likewise, TV programs have spotlighted bullying. In the popular animated sitcom *The Simpsons*, created by Matt Groening (1989-2020), one of the characters is Nelson, a school bully with a dysfunctional family, who often terrorizes less popular students with the help of two classmates. As well music has recently shown interest in developing awareness toward bullying: for instance, the video clip of the song *College Boy*, by French band Indochine (directed by Dolan in 2013) has shocked and created controversy in public opinion, featuring the staged crucifixion and shooting of a bullied schoolboy, with the aim to show how bystanders are complicit in bullying.

1.2. International attention to bullying

Despite the great importance that prevarication themes have obtained over the years in popular culture, bullying has received attention in institutional, academic and educational contexts, both internationally and nationally, only in relatively recent times. Earliest systematic studies about bullying emerged in the 1970s in Scandinavia, with the pioneering work of Swedish-Norwegian psychologist Dan Olweus (1978, 1993), who marked the opening of a stream of research focused on violence among school students. Roughly at the same time, public opinion and politics have started to be sensitive to the theme of violence among young people,

bringing the theme of violence at school to the attention of the educational and scientific community, and starting to remove the veil of silence around bullying.

As highlighted by Smith and colleagues (1999), it was probably a combination of research and media interest, sometimes combined with extremely critical event such as suicides of bullying victims, which lead to governmental responses and opportunities for early interventions against school violence (Smith et al., 1999). In 1983 in Norway, as a consequence of suicide of three boys who were victims of bullying by peers, the Minister of Education launched a campaign which aimed to arise awareness about school bullying (Olweus, 1993). At that time, the Olweus Bullying Prevention Program (OBPP) was developed within the Scandinavian cultural context, with the aims to prevent and reduce bullying and improve peer relationships at school (Olweus & Limber, 1983). Subsequently, Batsche and Knoff (1994) stated that bullying was a pervasive problem within the school system, highlighting the requirement of comprehensive interventions carried out by researchers and practitioners in order to face it. In addition, in 1996, the World Health Assembly recognized violence as a leading worldwide public health problem (WHA 49.25), inviting Member States to give urgent consideration and response to this problem.

Afterward, many countries all over the world have started promoting actions with the purpose to prevent and contrast bullying. In North America, public outcry about bullying increased in late 1990s, after dramatic facts of suicides or murders of teenagers as a consequence of bullying episodes (Cullen, 2009; Godfrey, 2005; Marr & Fields, 2011). In 2011, U.S. President and First Lady Obama, together with the Department of Education and the Department of Health and Human Service, organized the *White House Conference on Bullying Prevention*, inviting scholars to inform future research and practice on school bullying (ObamaWhiteHouse.org, 2011). In Italy, in 2007, after an episode of bullying and cyberbullying toward a student with down-syndrome occurred in a high school in Torino (LaRepubblica.it, 18/11/2006), the Department of Education (MIUR, Ministero dell'Istruzione, Università e Ricerca) decided to establish *Local Observatories for Bullying*, giving the schools a central role in recognizing, preventing and contrasting episodes of victimization.

Nowadays, peer bullying is still considered the most common form of violence within the school context (e.g., Han, 2021; Menesini & Salmivalli, 2017; U.S. Department of Education, 2019). Bullying might compromise children and adolescents' rights, including the right to education, as requested by the Convention on the Rights of the Child (The United Nations, 1989). In 2018, using existing school-based surveys from all around the world, UNICEF has developed a *Global indicator on bullying of school-aged children*, recognizing bullying as a key indicator of children's well-being and an important marker for comparing global social developmental (Richardson & Hiu, 2018), and highlighting the need of implement research in order to enhance theory and practice on school bullying.

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1.3. Etymology and meaning of term bullying

In the scientific literature, the first term used for referring to victimization behaviors was not bullying, but *mobbing*: this word came from ethology and was used by Konrad Lorenz (1966) to describe a flock of birds attacking a single bird (Monks & Coyne, 2011; Olweus, 1993). Hereafter, Heinemann (1973) started to use the Norwegian equivalent word *mobbing* referring to the violence of a group of persons against a deviant subject, to describe a situation in which the entire school class, or the majority of it, attacks a single student. However, the terms bully and bullying have been in usage for a long time in novels, to describe aggressive behavior in children and adolescents at school (as in Tom Brown's Schooldays; Hughes, 1857/1989). The origins of the term *bully* probably come from 16th century Dutch word *boele*, meaning first *lover* and *sweetheart*, then *fine fellow*, and finally *blusterer* (Encarta World English Dictionary, 1999). The current sense dates from the late 17th century (OED Online, 2020). It was Dan Olweus (1978), in his early book *Aggression in the schools*, who used for the first time the term *bullying* in scientific literature to indicate both the situations when a group of persons, or a single person, is responsible for the harassment of an individual, described as *weaker* by peers. Afterward, the English term *bullying* has become more prevalent in English-language scientific literature (Monks & Coyne, 2011).

Meanings of school bullying in different cultures

After the first studies (e.g., Olweus, 1978), the interest about research and prevention of school bullying has assumed an international dimension, spreading from Scandinavia to other western European countries, United States, Australia and New Zealand, and, with a somewhat independent research tradition, even in Japan. Despite some cultural differences, comparison of international studies have revealed that the broad features described with the term *bullying* are quite similar across different countries (Smith et al., 1999). Nevertheless, definitions of school bullying, and behaviors that reveal bullying, might change across countries and cultures, and research on bullying is still facing difficulties in finding terms in different languages to correspond to the English word *bullying*.

In the last decades, studies focused on bullying in different countries have showed that the word *bully* is not easy to translate (Genta et al., 1996; Morita, 1996; O'Connell et al., 1999; Rigby & Slee, 1991) and that different languages can use several different terms to indicate aggressive behaviors within the group of peers. In fact, although the terms *bully* and *mobbing* are familiar in the Scandinavian and Germanic languages, including English, they might be less familiar in the Latin languages (Smith et al., 2002). Further, while school bullying in Western cultures comprises a wider range of physical, verbal, and relational forms of aggression, school bullying in Eastern cultures manifests more often as exclusion or isolation of an individual victim. For instance, in Japan the term *ijime* is used to indicate a group excluding or isolating one student (Toda, 2016).

In an international study, Smith and colleagues (2002) have compared various terms used to refer to episodes of school violence in fourteen Indo-European and Asiatic country languages. The researchers investigated the attribution of meanings given to 67 native terms, covering a range of social situations between peers and related to bullying, exploring the conceptual structure of words in different languages, and how close other terms are to the English term *bullying* (see Table 1).

Table 1

Attribution of meanings given to 67 native terms in 14 different languages, covering a range of social situations between peers and related to bullying (Smith et al., 2002).

	Nonaggressive	Physical Aggression	Physical Bullying	Verbal:Direct+ Indirect	Social Exclusion
Austria					
A1: sekkieren	16	40	51	73	34
A2: ärgern	21	56	60	85	58
A3: gemein sein	23	65	78	94	90
A4: angreifen	3	74	83	11	7
China (romanized terms)					
C1: lingru	2	28	57	71	51
C2: qifu	3	13	94	85	68
C3: qiling	2	25	82	72	52
C4: qiru	2	22	79	80	53
C5: qiwu	2	23	67	89	58
C6: qiya	3	17	85	55	60
C7: wuru	2	24	39	84	45
England					
E1: bullying	4	34	94	91	62
E2: harassment	10	42	88	84	49
E3: teasing	15	43	35	83	51
E4: intimidation	7	42	78	82	46
E5: tormenting	14	59	76	84	64
E6: picking on	8	39	95	96	67
France					
F1: violence	3	56	83	60	26
Germany					
GE1: ärgern	7	85	61	65	46
GE2: angreifen	2	89	91	72	30
GE3: gemein sein	4	28	85	93	85
GE4: schikaniieren	6	20	58	80	55
Greece					
G1: kano to magha	8	40	84	70	65
G2: miono	10	70	74	85	78
G3: taloporo	13	76	92	85	75
Iceland					
I1: radasta	3	71	95	42	25
I2: hrekkja	9	40	75	88	60
I3: skilja ut undan	1	4	12	27	97
I4: strida	13	41	52	90	64
I5: taka fyrir	4	31	81	73	65
I6: einelti	4	11	86	81	75
Italy					
IT1: aggressività	10	91	96	68	63
IT2: fare il duro	12	68	80	74	72
IT3: prepotenza	10	71	92	86	90
IT4: violenza	10	93	96	63	59
IT5: approfittare	12	48	82	84	75
IT6: cattiveria	11	75	96	91	86
IT7: scorretto	15	85	94	93	89
Japan					
J1: ijime	4	9	50	87	39
J2: ijwaru	8	27	56	94	56
J3: iyagarase	8	30	56	97	43
J4: fuzake	27	26	38	56	19
J5: nakamahazushi	4	8	29	55	65
Norway					
N1: erting	18	29	28	67	36
N2: mobbing	6	17	46	70	39
N3: plaging	11	35	81	77	58
N4: krangling	9	88	45	22	18

(Continued)

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	Nonaggressive	Physical Aggression	Physical Bullying	Verbal:Direct+ Indirect	Social Exclusion
Portugal					
P1: abuso	3	10	71	55	30
P2: armar-se	1	18	72	56	75
P3: insulto	4	35	17	58	20
P4: provocação	3	60	69	78	44
P5: rejeição	1	8	38	54	81
P6: violência	1	18	74	24	16
Slovenia					
SL1: nadlegovanje	13	51	89	67	42
SL2: nasilništvo	6	88	96	48	33
SL3: trpinčenje	7	58	93	75	65
SL4: ustraševanje	4	45	79	49	31
SL5: zavražanje	7	43	54	66	92
SL6: zlorabljanje	4	40	84	59	49
Spain					
S1: maltrato	8	49	96	85	65
S2: metense con	15	66	63	86	40
S3: rechazo	6	28	42	81	96
S4: abuso	5	21	86	75	58
S5: egoísmo	6	21	54	66	94
Thailand					
T1: nisai mai dee	15	77	79	81	69
T2: klang	19	32	64	86	67
T3: tum raai	10	38	76	61	48

Note: The five clusters consist of the following cartoons: nonaggressive (8, 10, 16, 18), physical aggression (1, 4), physical bullying (2, 3, 5, 6, 7), verbal:direct+indirect (9, 11, 12, 13, 14, 17, 24, 25) and social exclusion (19, 20, 21, 22, 23).

Using a set of 25 stick-figure cartoons, they have found out that terms used in different languages to describe bullying episodes fell into six groups, depending on the meaning they have and the situations they refer to: bullying (of all kinds), verbal plus physical bullying, only verbal bullying, social exclusion, only physical aggression, and mainly physical aggression. The English term *bullying* has been found to score high on both physical and verbal kind of bullying, and moderately high value on social exclusion.

In turn, researchers highlighted an imperfect correspondence between popular and scientific definitions of other terms used to refer to bullying episodes within and across languages (Smith et al., 2002). This gap in meaning correspondence among words used in place of the term bullying is noteworthy, because it could provoke in individuals cognitive bias such as overestimation, underestimation, and generalization, leading to possible problems in term of research's validity, for instance in surveys aimed to explore the level of school violence among children and adolescents.

The perceptions of school bullying among students and adults

Further, there are also differences in the perceptions and definitions that students (children and adolescents) and adults (i.e., teachers, educators and parents) give about the same bullying events. Teachers tend to underestimate the frequency of bullying episodes in their schools (Bacchini & Valerio, 1997; Khanolainen et al., 2021) and usually pay more attention to physical forms of bullying, showing difficulties in discriminating verbal and indirect episodes of violence among students (Hazler et al., 2001). Also, especially in the dimensions of social exclusion, gender exclusion and verbal bullying, most of the teachers are often unaware of the conflicts and the negative behaviors occurring among students (Menesini et al., 2002).

On the other hand, students tend to define bullying as an aggression episode that occurs at least for one time, whereas for adults bullying is connoted by repetition of attacks (Madsen, 1996). Further, the majority of students report that teachers often insist on what they want (e.g., students abiding by the school rules), without addressing the issue of exclusion or resolving any conflicts (Khanolainen et al., 2021). Contrary to that, teachers report either never experiencing such an issue of bullying in their class, or always being able to address possible tensions and minimize exclusion (Khanolainen et al., 2021).

Despite difference among students and adults in bullying perception and representation tend to decrease with age (Khanolainen et al., 2021; Smith et al., 2002), such different perspectives about bullying may impact on how well teachers can deal with these issues in school (Menesini et al., 2002). Several studies have found that teachers show awareness of the problem of bullying, but also feel inadequate and ask for more information and training on this issue, in order to prevent and contrast violence episodes in their schools (Bacchini et al., 1999; Boulton, 1997; Nicolaides et al., 2002).

Despite of the exact matching of terms across and within languages and contexts seems to be an unrealizable ideal, researchers underline the importance to take into account how comparable are terms, perceptions and meanings, and, if they differ, on which dimensions or criteria, in order to reach the most accurate interpretation of national and cross-national findings, and to set a communal scientific definition of term bullying (Smith et al., 2002), which can help in defining intervention strategies (Menesini et al., 2002).

The definitions of the term *bullying*

Probably the most popular and well-known definition of bullying is the one given by Dan Olweus (1993, p.9), who has stated that “*A person is being bullied when he or she is exposed, repeatedly and over time, to negative action on the part of one or more other persons*”. Olweus’ definition establishes that a behavior has to follow three fundamental criteria to be considered bullying: *intention* of negative actions, *repetition*, and *imbalance* in relationship among the individuals involved in the event.

Across the years, several other definitions of bullying have been expressed. Table 2 shows some other examples of bullying definitions (Rose et al., 2011). For instance, Sullivan et al. (2004) refer to bullying as an act -or series of acts- that are negative, abusive, and often aggressive or manipulative, made by one -or more- people, against another person -or group of people- usually over a period of time, and based on an imbalance of power (Sullivan et al., 2004). Although definitions varied across studies, the three common elements mentioned above in the Olweus’ definition (1993; i.e., intention, repetition, and imbalance of power) emerge in different forms in quite all definitions of bullying.

Table 2

Different definitions of bullying (Rose et al., 2011).

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Citation	Definition
Dawkins (1996, p. 603)	Bullying is the intentional, unprovoked abuse of power by one or more children in order to inflict pain or cause distress to another child on repeated occasions.
Olweus (1993, p. 9)	A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students
Nansel et al. (2001, p. 2095)	A student is being bullied when another student, or a group of students, say or do nasty and unpleasant things to him or her. It is also bullying when a student is teased repeatedly in a way he or she doesn't like. Any form of verbal or physical hurtful behavior, such as name-calling, punching, repeated teasing, kicking, hitting, spreading malicious rumors, pestering, socially isolating can be considered bullying if the peer persists with it after it is apparent that the victim is traumatized by what is being said or done.
O'Moore and Hillery (1989, p. 431)	Bullying is longstanding violence, mental or physical, conducted by an individual or a group and directed against an individual who is not able to defend himself/herself, in the actual situation.

Following the Olweus' definition (1993) of bullying, the first criterion to define a violent act as bullying is that the *negative action*, that refers to aggressive behaviors, is *intentionally* inflicted, or attempted to inflict, with the purpose to provoke injury or discomfort to a person. The act of perpetration is made with intent to cause emotional or physical harm to the victim (Rose et al., 2011). Negative actions can be carried out by physical contact, by words, or in other ways, such as by making faces, or dirty gestures, or by refusing to comply with another person's wishes (Olweus, 1993).

Second, emphasizing the *repetition* over time, the Olweus' definition of bullying (1993) excludes occasionally and non-serious negative actions directed against an individual at one time. Victimization and/or perpetration are systematic, generally repeated over the course of days, months, or years (Rose et al., 2011). Other researchers agree on the characteristic of reiteration of such behaviors (e.g., Smith & Sharp, 1994). Farrington (1993) has defined bullying as *an act of repeated oppression intended to hurt or harm a less powerful person*. Conversely, Besag (1989) argued that repetition of negative actions is not necessary to consider a behavior as bullying, given that a one-off episode of victimization may be upsetting and may generate fear of its repetition in the subjects that have suffered from it.

Third, for an act to be considered bullying, there must be an *imbalance* of physical, social, or emotional power between the victim and the bully (Rose et al., 2011). Imbalance in strength or in power within the relationship makes the person exposed to bullying in difficulty to defend him/herself, and helpless against the harassment (Olweus, 1993). This conception of bullying is fairly similar to what Smith and Sharp (1994) described as *a systematic abuse of power*, and Farrington (1993) referred to, defining bullying as *an act intended to hurt or harm a less powerful person*.

Lately, Olweus (1995) introduced an additional fourth criterion, that should be considered in analyzing a bullying event, that is the *unequal level of effect*, in which the victim is left traumatized after suffering a negative action, whereas the bully maintains a lack of concern and compassion (Rose et al., 2011).

By analyzing the definitions of bullying given by researchers, it can be argued that different forms of such aggressive actions exist. First studies on bullying have been mainly focused on direct physical and verbal

forms of aggressions (Olweus, 1978). Lately, researchers have started to recognize the extent of indirect bullying. Björkqvist and colleagues (1992) distinguished between direct physical aggression (such as punching), direct verbal aggression (such as name calling), and indirect aggression (such as gossiping and spreading rumors, and social exclusion), characterized by a covert nature and the use of third parties (Björkqvist et al., 1992). Olweus (1993) has stated that bullying behaviors can be direct, with open attacks to a person, or indirect, less visible and expressed by social isolation and exclusion from a group. Similarly, other research has distinguished between physical and psychological bullying (Farrington, 1993), relational victimization (Crick et al., 1999), or social aggression (Galen & Underwood, 1997), which relate more to the consequences of the negative act and the intent to damage relationships within a group.

1.4. The prevalence of bullying behaviors

Although bullying has been analyzed in workplaces, in prisons, and even in army contexts, the majority of studies on the topic have been conducted in schools, focusing on violence among children and adolescents (for a review, see Salmivalli, 2010). The exact prevalence of bullying at school can be difficult to evaluate, as definitions and measures used across studies, and countries, vary tremendously (Espelage & Swearer, 2003; Smith et al., 2002). However, it is known that a sizable minority of primary and secondary school students is involved in peer-to-peer bullying, either as perpetrators or victims, or being together both bullied themselves and harassing others (e.g., Han, 2021; Menesini & Salmivalli, 2017; Salmivalli, 2010; U.S. Department of Education, 2019).

In the past decades, evidence from large-scale studies in U.S. schools suggested that bullying behavior is a quite common phenomenon, and for this reason research started to focus attention on it (Espelage & Swearer, 2003). In an early study focused on junior high and high school students, 88% of them reported having observed bullying and 77% reported being a victim of bullying during their school years (Hoover et al., 1992). Similarly, 25% of students in grades 4th through 6th admitted to have bullied other students in the 3 months preceding the study (Limber et al., 1997). Another study demonstrated the seriousness of bullying in schools: in a sample consisting of 15,686 students in grades 6th through 10th across the U.S. was found that a total of 29.9% of the sample reported frequent involvement in bullying, with 13% as a bully, 10.6% as a victim, and 6% as a bully-victim (Nansel et al., 2001). Similarly, the WHO's Health Behavior in School-Aged Children survey, performed in collaboration with the World Health Organization and involving 35 countries (HBSC, see Craig & Harel, 2004), has highlighted that as much as 10–15% of school-age children and adolescents around the world suffer from bullying at least two times a month, and the average prevalence of victims is 11%, whereas bullies represent another 11%.

Nowadays, bullying behaviors remain very frequent. According to data from the U.S. Department of Education (2019), approximately 4.9 million students, age 12 through 18, have been bullied at school in the

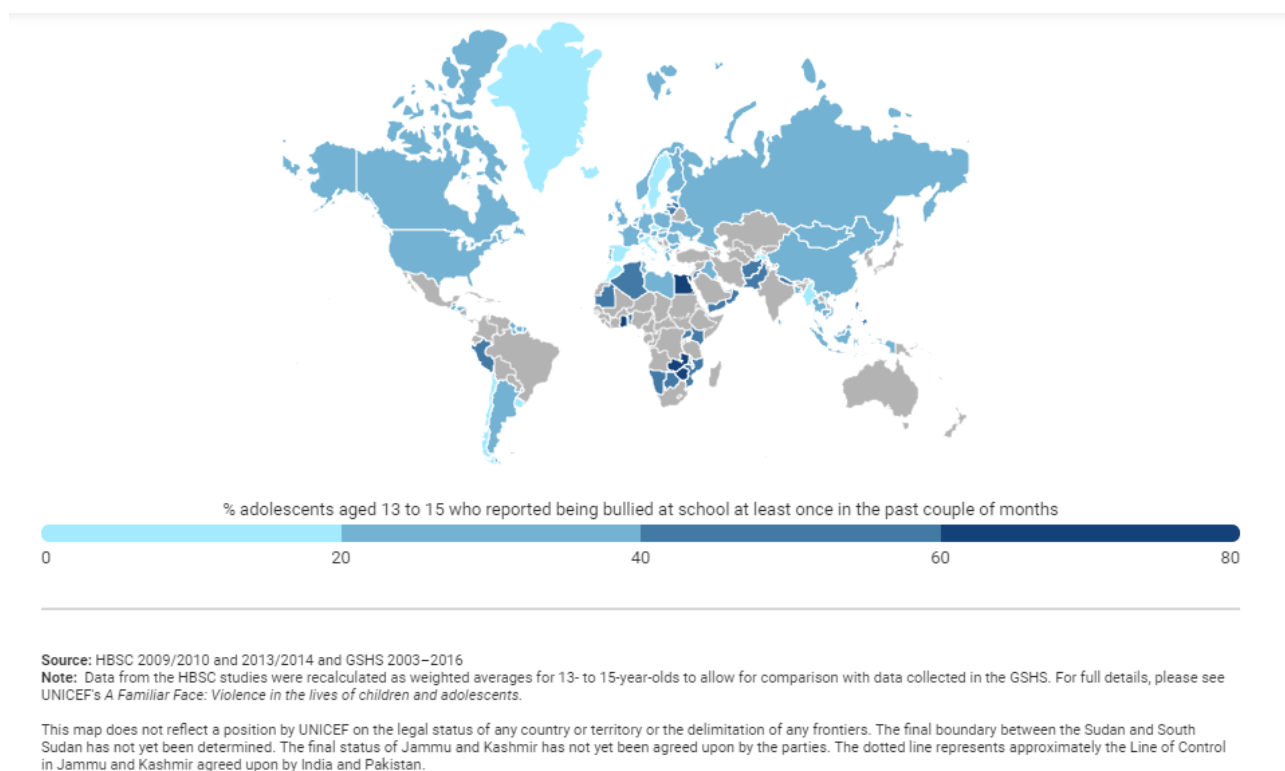
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past years. One in four school students in Europe, and nearly one in two students in sub-Saharan Africa report bullying victimization (UNESCO, 2018), and a study conducted by UNICEF (2017) has stated that more than 1 in 3 adolescents worldwide are bullied (see Figure 1). Further, among the different forms of bullying violence within schools, being made fun of by others and having lies spread about them are the most common forms in different countries, both in Western and in Eastern cultures (Han, 2021).

Figure 1

Bullying victimization of children and adolescents across counties in the world. Source: Unicef. (2017).

<https://data.unicef.org/resources/a-familiar-face/>



Although bullying behaviors are widespread across countries, rates of bullying victimization vary between regions. Using international self-report data (e.g., Health Behavior of School Children survey; HBSC), a recent report published by the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2018) has suggested that rates of bullying victimization are higher in regions such as the Middle East (41.1%), North Africa (42.7%), and sub-Saharan Africa (48.2%). In turn, reports of bullying victimization are comparatively lower in North America (31.7%), Europe (25%), Caribbean (25%), and Central America (22.8%).

In Italy, a report published by the Italian National Institute of Statistics (ISTAT, 2020) and focused on different types of violent and risky behaviors among young people in Italy (e.g. stalking, sexual abuse, alcohol abuse, bullying and cyber-bullying) illustrates data carried out across 2014 and 2015 on bullying. Results highlight

that about 50% of youth among 11 and 17 years old have been victims of bullying during the past year. Within this sample, 9.1% of youth were bullied on a weekly basis, and 19.8% of them were harassed more than once a month. Further, girls report a slightly higher percentage of victimization than boys, students with a background of immigration are 17% more bullied than their peers, and 88% of victims of cyber-bullying were also victims of bullying (ISTAT, 2015; 2020).

Prevalence of bullying according to gender

Aggressive behaviors have been considered for a long time to be more typical of male gender. For decades, males have been thought to be the more aggressive sex, and in hundreds of studies has been found that, within a group, boys can exhibit significantly higher levels of aggression than girls (for reviews see Coie & Dodge, 1998; Eagly & Steffen, 1986; Espelage & Swearer, 2003; Hyde, 1984). Among both children and adolescents, significantly more boys than girls report bullying others and being bullied physically (Feijóo et al., 2021; Monks et al., 2021; Scheithauer et al., 2006), and specifically males are rated overall as engaging in more fighting and overt aggression than females (Monks et al., 2021; Smith & Gross, 2006). A recent research conducted among students in the U.S. from primary to high school has found that male students are 116% more likely to be disciplined for bullying than female students. Specifically, in schools with larger enrollments, male students have higher risk to be disciplined for bullying, while schools with more male students have lower risk ratios to discipline male students for bullying. In turn, males are no more likely than females to be victims of bullying. Specifically, males are less likely to be victims of bullying in high schools and in schools with more male students, while are more likely to be victims of bullying in primary schools (Gage et al., 2021).

Significant sex differences have been found in the distribution of Participant Roles: boys are more frequently in the roles of Bully, Reinforcer and Assistant, while the most typical roles of the girls are Defender and Outsider (Salmivalli et al., 1996). Bystanders, in turn, are found to be relatively evenly distributed across both the genders (Jungert et al., 2020). In general, compared with females, males seem to have a higher probability of being involved in aggressive situations, being likely to be as well as perpetrators and targets of bullying (Nansel et al., 2001). A recent study conducted among high school students found that, even among older individuals, boys both experience and perpetrate significantly more physical bullying than girls (Stubbs-Richardson et al., 2018).

However, recently researchers have questioned whether males can be considered truly more aggressive than females (e.g., Stubbs-Richardson et al., 2018). In fact, many historical studies on aggression have excluded girls from the sample (Crick & Rose, 2001) and have defined aggression as overtly physical or verbal behaviors, but failing to consider more subtle, hidden forms of violence (Espelage & Swearer, 2003). Gender trends in aggressive behaviors might result from varying definitions of bullying used by researchers (i.e., whether the focus is on physical and/or verbal aggression; Bernstein & Watson, 1997). Studies focused on

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less overt types of aggression have highlighted the existence of female aggressiveness (Garandeau & Cillessen, 2006; Stubbs-Richardson et al., 2018).

Crick and Grotpeter (1995) suggested that, if aggression was defined as different types of aggressive acts, the relationship between gender and aggression would become less clear. Whether measures of bullying included also indirect forms of aggressive behavior, sex differences were not as noteworthy as in studies focusing primarily on direct aggression (Craig, 1998; Stubbs-Richardson et al., 2018). In a study among adolescents, Salmivalli and Kaukiainen (2004) has found that, while boys are, on average, both directly and indirectly more aggressive than girls, exists a group of highly aggressive adolescents, using predominantly indirect aggressions, whose members are all girls.

As such, several different covert types of aggression exist, including indirect aggression and relational aggression (Espelage & Swearer, 2003). Indirect aggression can be defined as "*social manipulation, attacking the target in circuitous ways*" (Oesterman et al., 1998. p. 1). Relational aggression refers to "*behaviors that are intended to significantly damage another child's friendships or feelings of inclusion by the peer group*" (Crick & Grotpeter, 1995, p. 711). Such behaviors include spreading rumors, gossiping, teasing, excluding peers from the social group, and withdrawing friendship or acceptance (Espelage & Swearer, 2003). Among these, gossip technically encompasses all evaluative comments or conversations about third parties; hence, it can be represented by admiring, as well as by pejorative statements (Fine & Rosnow, 1978). However, a shared property of all gossip is that the target of discussion is not present, and thereby does not directly take part in the conversation (Eder & Enke, 1991; Parker et al., 2006). Interestingly, research revealed that gossip is positively correlated with friendship in males, while in females physical appearance gossip is more prevalent and is related to a competitive threat within peer relationships (Watson, 2012).

Reporting peer assessments data from different studies analyzing girls and boys of various ages, from late childhood to late adolescence, Björkqvist et al. (1992) have found that females use significantly more indirect aggression than their male peers do. Also, in a study based on peer nominations among 3rd-to-6th grade students, girls were found to be significantly more relationally aggressive than boys (Crick & Grotpeter, 1995). Moreover, several studies investigating aggression across the early school years into adolescence have shown that relational aggressions are more prevalent among girls than boys, because boys typically engage in more overtly physical and verbal forms of violence (for a review, see Espelage & Swearer, 2003).

Studies also revealed that gender plays a significant role in the types of bullying victimization that students experience (Popp et al., 2014; Stubbs-Richardson et al., 2018). Girls are more likely to be victims of verbal aggression, insults, gossip, manipulation, and social isolation by their peers, whereas boys are more likely to be victims of physical aggression (Dukes et al., 2010; Finkelhor, 2008; Popp & Peguero, 2011; Stubbs-Richardson et al., 2018).

In addition, compared with boys, girls typically experience greater psychological distress as a result of being involved in indirect bullying, which may be caused by the heightened importance they place within the social group (Faris & Felmlee, 2011; Klein, 2012; Young et al., 2006). Conversely, among boys the use of indirect aggression contributes to social acceptance by peers, and in general males seem to tolerate indirect aggression better than females (Salmivalli et al., 2000). Further, with regard to responses to bullying episodes, girls tend to choose more prosocial responses than boys, whereas boys are just as likely to choose antisocial as prosocial responding (Stubbs-Richardson et al., 2018).

Girls and boys might be more frequently involved in direct or indirect form of bullying depending on the social acceptance of such behaviors in their context. According to Dukes et al. (2010), physical bullying may be a more accepted behavior among adolescent boys, while Underwood (2003) has suggested that there might be a link between girls' involvement in indirect aggression and their concern for adults' opinions of them. Further, recently Rosen and Nofziger (2019) have suggested that experience of bullying may contribute to the social construction and perpetration of notions about hegemonic masculinity and gender inequalities among adolescents.

Prevalence of bullying according to age

Although victim and bully has been often described as stable roles over the course of childhood and adolescence (for reviews, see Cook et al., 2010; Espelage & Swearer, 2003), research has demonstrated that bullying behaviors are characterized by a developmental trajectory (Cook et al., 2010; Loeber & Stouthamer-Loeber, 1998; Menesini & Salmivalli, 2017). According to this developmental perspective, victimization tends to be more widespread in earlier, as opposed to later, years of schooling (see Ladd et al., 2017).

Bullying seems to increase through years from childhood, with a peak during early adolescence, and progressively tends to decrease during the high school years (Gage et al., 2021; Hymel & Swearer, 2015; Menesini & Salmivali, 2017; Pellegrini & Bartini, 2001). The prevalence of peer victimization declines across formal school years, but also the frequency of aggression episodes does as well (Ladd et al., 2017). In addition, bullying behaviors evolve following the characteristics and the specificities of peer relationships and interactions typical of each age (Monks et al., 2021; Parker et al., 2006). With respect to the forms of bullying, with increasing the age occurs a shift from physical bullying to indirect and relational bullying (Björkqvist et al., 1992; Menesini & Salmivali, 2017; Rivers & Smith, 1994).

Interestingly, growing older, children become more able to recognize, understand and conceptualize bullying. Monks and Smith (2006) has found that, passing from childhood to adolescence, individuals can give more specific definitions of bullying. Children from 4 to 8 years old use only one dimension to define bullying behaviors, distinguishing between aggressive and non-aggressive acts. In turn, 14 years old students, such as

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adults, give a two-dimensional definition of bullying, distinguishing between physical and non-physical (i.e., social/relational or verbal) aggressions (Monks & Smith, 2006).

Also, exploring adolescents' view point, younger students (i.e., 11 years old) consider bullying events that happen in private settings as more severe, basing their perception on fear of what could happen when no one is around. In turn, older students (i.e., 13 years old) perceive repetitive bullying behaviors in public settings to be of greatest importance, giving more relevance to the social stigma and shame of being bullied in front of others. Older students tend also to consider traditional bullying as more severe, compared with bullying taking place on-line (i.e., cyber.bullying; Hellström & Lundberg, 2020).

In line with this developmental perspective, the preschool years appear to be critical years for learning how to regulate aggressive behaviors. Accordingly, most children who display elevated levels of aggression in preschool, typically show important reductions of those behaviors as they enter formal schooling. In turn, children who do not decrease as expected in aggression in middle/late childhood, appear to be at risk for antisocial and aggressive behavior in adolescence and adulthood (Tremblay et al., 2005). It is highly unusual, in fact, to identify aggressive children in middle childhood who do not have a history of aggressiveness since preschool years (see Parker et al., 2006).

Bullying in early childhood

Considering the developmental trajectory of individuals' socialization and relationships, from the age of three the amount of attention that children give to peers increases, as does the amount of time they spend with peers. As a result, conflicts between age-mates increase in frequency and intensity over this period. In comparison to older children, preschoolers' conflicts are more likely to involve struggles over objects and engage disputes over social control. However, conflict exchanges during the preschool years provide children with opportunities for social and cognitive development and learning on how to manage conflicts and to regulate aggression (see Parker et al., 2006).

Despite of relatively few studies have been conducted in the past among kindergarten children, there is an increasing recognition that actions associated with bullying behaviors occur among kindergarten children (Cameron & Kovac, 2017; Camodeca et al., 2015; Idsøe & Roland, 2017; Lund et al., 2015; Skoglund, 2020) and research indicate that bullying can represent a severe problem for three to six years old children (Alsaker & Nägele, 2008; Hanish et al., 2004; Monks et al., 2002, 2021). However, research has highlighted disagreement about the causes of such bullying episodes in kindergarten, that might be both linked to individual characteristics or social context (see Skoglund, 2020).

Kirves and Sajaniemi (2012), in a study conducted within kindergarten context, have found that bullying among children under school-age is a similar phenomenon in prevalence to that of school bullying. Specifically, they found that 12.6% of children from age three to six years are involved in bullying events, and

that the most common form of bullying is exclusion from peer relationships. In an earlier study, Kochenderfer and Ladd (1996) have found that direct verbal victimization is reported more often than indirect verbal and physical victimization. Also, Björkqvist et al. (1992) assumed that the use of indirect aggression increases as cognitive and social skills develop in individuals and reported that this type of copy strategy is not fully developed before children are 8-year-old. According to this, most researchers agree that physical aggression is a common type of harassment among younger children (Juvonen & Graham, 2001; Monks et al., 2021).

In exploring bullying in preschool, researchers have been often faced with methodological difficulties inherent to kindergarten contextual situations (Alsaker & Valkanover, 2001). Research on bully/victim problems in school has typically been based on peer and self-report completed by the students themselves. Such procedures, however, are not practical in preschool, because they require reading capacities and more concentration and endurance than can be expected in very young children. Alsaker and Valkanover (2001) suggest that the options for conducting victimization research in preschool settings could be asking the teachers, observing the children, and interviewing the children.

Moreover, in research on bullying in preschool, have often been adopted definitions coming from studies of bullying in school. However, using traditional definitions of bullying among younger children could make emerge a controversy over the labeling: it might be difficult to differentiate between early emergence of serious bullying behaviors, and normative developmental trends of aggressive behaviors (Hanish et al., 2004). A possible recommendation in evaluating bullying among young children is that the focus should be the frequencies of aggressive behaviors (Hanish et al., 2004; Slee & Rigby, 1994), that should occur at least once a week (Alsaker & Nägele, 2008; Perren & Alsaker, 2006). It is also recommended to take into account that kindergarten children might often equate bullying events with physical aggression in their definitions of bullying (Monks et al., 2003; Vaillancourt et al., 2008). In fact, parents and educators in kindergarten seem to interpret bullying as actions that cause children to feel violated (Skoglund, 2020), while children tend to perceive bullying primarily as being excluded from play, which is what they are most fearful about in kindergarten (Helgeland & Lund, 2016).

Analyzing bullying in kindergarten, Perren and Alsaker (2006) have found distinct behavior patterns for bullies and victims. Compared with children not involved in bullying episodes, victims tend to be more submissive, have fewer leadership skills, are more withdrawn, more isolated, less cooperative, less sociable, and frequently have no playmates. Conversely, bullies are less prosocial, but have more leadership skills than non-involved children and belong to larger social clusters, frequently affiliated with other bullies or bully-victims (Perren & Alsaker, 2006). Findings from the study of Perren and Alsaker (2006) emphasize the significance of peer relationships in bully/victim problems, indicating that social behaviors and popularity among peers may be considered as risk factors for being victimized or becoming a bully in preschool children.

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In turn, different results from other studies highlight the instability of victimization at preschool age. In their studies, Monks et al. (2002; 2021) have observed that peer victimization among children during preschool differs qualitatively from what is observed among older children. Specifically, young victims in kindergarten do not exhibit the characteristics of older victims from primary and secondary school (e.g., social rejection and physical weakness; Monks et al., 2002). Conversely, aggressive children in preschool age are found to be socially rejected, and defenders are the most popular children in the class, which may place them better to defend others without fear of reprisal, or they may gain their status from the act of defending others (Monks et al., 2002). In addition, peer victimization in early childhood appears to be more dyadic and less of a group process, than how it is considered among older students. In fact, although other children are present during many episodes of peer victimization, they are most commonly passive onlookers, rather than taking on participant roles as identified among students (Monks et al., 2021).

Alsaker and Valkanover (2001) have found that, within kindergarten context, older children have more often the role of bully, and younger children are more often victims. Verbal bullying and exclusion are the two preferred bullying types among girls, whereas boys use more physical and verbal bullying, than indirect bullying (Alsaker & Valkanover, 2001). Although females seem to be just as likely to be targeted for victimization as males, in general females and males appear to be equally at risk of bullying at this age (Kochenderfer & Ladd, 1996). Similarly, Alsaker and Valkanover (2001) have found a lack of gender difference in younger children: boys are only slightly overrepresented among the bullies, and they are not more likely to be victimized than girls. Indirect victimization is evenly used by girls and boys. More recently, Monks et al. (2021) have found that in kindergarten children are more likely to be victimized by, or to behave aggressively with children of the same sex to them, than with children of the other sex, possibly because of relatively sex-segregation typical of early childhood. As highlighted by Ladd et al. (2017), research on bullying in preschool age is particularly noteworthy, because it could help in early recognition of risk factors for future adjustment.

Bullying in middle and late childhood

In the period of middle to late childhood, roughly from 6 years to 11-12 years, children experience a great growth in interpersonal skills. In addition, entry into formal schooling, and involvement in extracurricular activities, expand the sphere of their peer contacts. Children during middle and late childhood are likely to face with an unprecedented variability in the characteristics of their peers (e.g., sex, ethnicity, and personality), which contribute to create hierarchies of power and popularity (McHale et al., 2003). In this period, relationships are based on similarities among playmates or friends. Stable social groups start to emerge, and social acceptance among peers have an impact on individuals' self-esteem (see Parker et al., 2006).

Most children who had elevated levels of physical aggression in preschool, typically show important reductions of those behaviors as they enter the period of middle childhood (Parker et al., 2006). In addition,

over this period there is a change in the nature of aggressions, such that direct physical aggression is gradually replaced by verbal aggression (i.e., insults, derogation, threats; Underwood, 2003). Results from recent research have shown that mid- to late-primary school periods bring marked falls in more explicit forms of bullying, including teasing and physical bullying (Fujikawa et al., 2021). Aggressive behaviors become less instrumental (i.e., directed toward possessing objects or occupying specific space) and more specifically hostile toward other individuals (Coie & Dodge, 1998). Social-cognitive developments contribute to increased indirect or relational aggression, which attempts to harm others through relationship processes such as gossip and exclusion (Crick & Grotpeter, 1995; Underwood, 2003). Conversely, children who continue to exhibit high levels of verbal or physical aggression during this period may face a high risk of peer rejection (Bierman, 2004; Parker et al., 2006).

However, despite a general decline in aggressive behaviors over the middle to late childhood, several researchers have highlighted that the risk of being bullied appears to move in the opposite developmental direction (e.g., Espelage et al., 2003; Kochenderfer-Ladd, 2003; Kochenderfer-Ladd & Wardrop, 2001; Parker et al., 2006; Snyder et al., 2003). Starting from middle childhood, bullying and victimization begin to be group processes, involving different participant roles (Monks et al., 2021) and driven by status goals (Salmivalli, 2010).

The prevalence of bullying in middle and late childhood varies in school population, depending on studies. In an early research, Olweus has analyzed a large sample in Norway and he has found that 11% of the children in primary school were bullied on a regular basis and 7% regularly bullied other children (Olweus, 1991). Similarly, Glew et al. (2005) have found that 22% of children from the U.S. were involved in bullying either as a victim, bully, or both (Glew et al., 2005). Also, recently Fujikawa et al. (2021) in a study across grades 3rd and 8th, have found 35% of students reporting frequent multiform bullying.

Regarding the forms of bullying that are more common in middle and late childhood, Wolke and colleagues (2000) have explored direct and relational bullying among more than 1500 primary school children aged 6–9 years in the U.K. For direct bullying, they have found that 4.3% were bullies, 39.8% victims, and 10.2% both bully and victims. In turn, the rates for relational bullying were 1.1% bullies, 37.9% victims, and 5.9% bully/victims (Wolke et al., 2000). In another study, involving 2766 children from 32 Dutch elementary schools by completing a questionnaire on bullying behavior, Fekkes and colleagues (2005) have found that more than 16% of the children aged 9–11 report being bullied on a regular basis, and 5.5% report regular active bullying during the current school term. More than 10% of the children are bullied at least once a week or more frequently. With regard to active bullying, almost 6% (an average of one child in every classroom) report bullying several times a month to almost daily, and 37% of children report having bullied another student at least once during the last term.

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Regarding gender variables, a recent research (Fujikawa et al., 2021) has found high rates of bullying across late primary school in both sexes. Also, Fekkes et al. (2005) reported that the frequency of being bullied among girls and boys in primary school is similar. During middle and late childhood, the majority of boys are mostly bullied by other boys, while a substantial number of girls are bullied by other girls (Fekkes et al., 2005). However, some gender differences emerge in types of bullying during this period, indicating that boys tend to choose direct forms of bullying, while girls prefer indirect types of aggressions. Boys are more often kicked, pushed or hit, whereas girls are more often ignored, excluded or have rumors spread about them (Fekkes et al., 2005). In addition, from late childhood, different patterns emerge in bullying development, due to gender. Boys tend to shift from having a higher exposure to bullying in mid-primary, to lower rates than girls by the end of primary school. Bullying, and specifically covert forms of aggression, persist for longer in girls' peer relationships. This could be due to the tendency among girls to use social, rather than physical, means of bullying, and perhaps reflects the importance in maintaining social status (Fujikawa et al., 2021).

Analyzing different programs against bullying, Smith & Ananiadou (2003) have found stronger positive effects of intervention on primary school students, compared to secondary school students. Researchers individuate both developmental characteristics of older children, as well as organizational features of secondary schools, as possible reasons for this difference (Smith & Ananiadou, 2003).

Bullying in adolescence

Entering adolescence, many social developments in peer relationships continue the trends begun in childhood, while others reverse earlier trends, or otherwise represent developmental discontinuities. The tendency toward spending substantial amounts of time with peers increases in adolescence, with less adult guidance and control than in childhood. Peer experiences play an essential role in adolescents' identity development. Through their involvement in friendships and group activities, adolescents are exposed to norms and values that differ from those in their families. Stability of adolescents' friendships increases with age, and friends equal or surpass parents as sources of support and advice to adolescents in many significant domains. Friendship in adolescence is characterized by an increased emphasis on intimacy and self-disclosure. Whether children tend to view friendships in overly exclusive terms, adolescents recognize an obligation to grant friends a certain degree of autonomy and independence. Peer groups become increasingly heterosexual with age, and group membership represents a salient feature of social life to adolescents. During this period, deviant or aggressive tendencies in friendship groups may be associated with risk of developing behavioral problems in vulnerable adolescents (see Parker et al., 2006).

Pronk and colleagues (2019) have suggested that adolescence is a critical developmental period for peer relationships, in which the social climate in peer groups becomes harsher, and bullying victims become more isolated. Specifically, they identified three reasons for the increase in bullying behaviors and the changes in the driving mechanisms behind peer defending during adolescence (Pronk et al., 2019). First, bullying

behaviors become more socially accepted among peers (Pellegrini & Long, 2002; Salmivalli & Voeten, 2004). Second, individuals become more likely to avoid involvement in witnessed victimization, than to defend their victimized peers (Pozzoli et al., 2012). And third, individuals' general attitudes and behaviors become more shaped by the prevailing peer group norms (Dishion & Tipsord, 2011; Steinberg & Morris, 2001). In turn, Smith and Gross (2006) have suggested that possible explanations for such a critical period for peer victimization might be identified in the transformations typical of puberty, in the changes in social dominance hierarchies, and in the shift to a less supportive school environment.

Research agrees on the fact that bullying behaviors increase as students make the transition from primary to secondary school (Parker et al., 2006). Analyzing bullying patterns in a two-year longitudinal study of students transitioning from primary to secondary school (5th-7th grade years) in the U.S., Pellegrini and Long (2002) have found the transition to secondary school as a particularly difficult moment for many students due to increasing episodes of bullying. Also, researchers agree that peer victimization tends to peak during grades 6th through 8th, and is more frequent among boys than girls (e.g., Parker et al., 2006).

Students in this period show stronger pro-bullying attitudes (Salmivalli & Voeten, 2004). Simultaneously, adolescents at the age of 14 who have helpful bystander behaviors towards victims show a lower prosocial motivation than younger children (Jungert et al., 2020). Carney and Merrell (2001) suggested that the peak in bullying and victimization is usually between ages 9 and 15, with younger students typically being victimized by older students, and older students being selected as targets based on weakness or slower development. Analyzing the results from 5th to 10th grades' students from schools in Germany, Scheithauer et al. (2006) have found that the variables "grade" add significantly to the prediction of self-reported bullying and victimization. Students from middle grades report the highest rates of bullying. In addition, self-reported rates of victimization are higher for younger students, regardless of form of victimization (Scheithauer et al., 2006).

Fujikawa and colleagues (2021) have found a strong continuity in bullying patterns between primary and secondary school. Among students who changed school, almost two thirds of those who were bullied, and almost two fifths of those frequently bullied in grade 6th, continued to face the corresponding levels of bullying in secondary school (Fujikawa et al., 2021). However, in the transition from primary to secondary school, changing school is also a protective factor against further bullying, especially for girls (Fujikawa et al., 2021). The authors suggested that the transition to secondary school may represent a second chance to re-establish more positive peer relationships for students who have experienced the severe forms of bullying in primary school grades. Given these findings, an important moment for prevention and intervention efforts against bullying should be identified in the transition from primary to secondary school (Espelage & Swearer, 2003; Fujikawa et al., 2021).

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However, after an increase during the years of transition from childhood to adolescence (Carney & Merrell, 2001), bullying behaviors tend to decrease. In an early study, Olweus (1993) reported that the percentage of adolescents reporting victimization gradually declined with age, and even for those who continue to experience bullying in junior-high and high school, physical aggression is less likely to occur. Researchers have observed that peer victimization starts to decrease after school transition, when the social dominance hierarchy is re-established (Pellegrini & Long, 2002). Specifically, after the peak around grade 8th, bullying behaviors tend to decrease (Parker et al., 2006) both in the prevalence and in the frequency of victimization episodes (Ladd et al., 2017).

Smith et al. (1999) have hypothesized that a possible explanation for bullying decline when students grow older might be a gradual acquisition of better social skills with age. This supports the idea that students tend to “grow out” of bullying, or that bullying is “just a phase” that individuals pass through developmentally (Smith & Gross, 2006). Also, Jungert and colleagues (2020) have found an increase in autonomously related prosocial motivation to defend victims of bullying in students older than 14 (Jungert, et al., 2020). Conversely, after the transition from primary to secondary school, the only form of bullying showing an increase is a new different type: cyberbullying (Fujikawa et al., 2021).

However, Smith et al. (1999) have highlighted that over time, there is a smaller proportion of older, stronger, potential, traditional bullies that continue to exist within the peer groups. Ladd and colleagues (2017) have analyzed patterns in the continuity of peer victimization in educational settings, from kindergarten to 12th grade, describing victimization experiences that transcend students’ entire school careers. They individuated five victimization trajectories, representing intraindividual differences in the frequency and continuity of students’ peer victimization. Two of these subtypes contain participants who are nearly opposites: students who are rarely victimized (i.e., non-victims), and students who are severely and chronically victimized (i.e., high-decreasing, or chronic victims). The third group is named “early victims”, characterized by a rapidly decreasing trajectory of victimization. Finally, there are two moderately victimized subtypes: one with a moderate-decreasing trajectory, the other with a moderate-emerging trajectory of victimization (Ladd et al., 2017).

Researchers have found that for a substantial number of students (24% of the sample) that belong to the high-decreasing or chronic subtype, moderate to severe peer victimization represents a stable or enduring part of their educational experience throughout formal schooling. Although the frequency of victimization for students in this subtype declines across grades, as is the norm, it nonetheless remains as high as (and most often higher than) the levels documented for students in all other subtypes. This finding seems to indicate the need of prevention and contrasting intervention against bullying victimization, specifically focused for this group of at-risk students. In turn, the moderate-emerging victim subtype (17.8%) confirms the tendency for victimization to peak during the transition to middle school. Students belonging to this

trajectory start school with moderate victimization levels, but their exposure to peer aggression do not decline, as is the norm for all other students, but increase across the late primary and middle school years, before diminishing to the level observed for chronic victims. Finally, both the early victims and the moderate-decreasing groups, although victimized at moderate to high levels as they began school, essentially “recover” as they move through the grades. By the time these students reach high school, their average victimization scores appear similar to non-victims subtype (Ladd et al., 2017).

1.5. Bullying explanation theories

Starting from the first studies in the '70s focused on bullying phenomenon (e.g., Olweus, 1978), researchers have investigated the possible origins and motivations behind such aggressive behaviors. In the following paragraphs, some theories about bullying explanations will be illustrated.

The classification of aggressive behaviors

According to the Model of Social Information Processing (Crick & Dodge, 1996), individuals' behavior in a particular social situation will directly reflect their mental processing of that situation (Dodge & Schwartz, 1997). Following this theory in explaining aggressive behaviors, typically aggressive children and adolescents could be engaged in aggressive behaviors because they might process information from the social environment differently than nonaggressive peers (Miller & Lynam, 2006). They could make mistakes in social information processing (Miller & Lynam, 2006), encoding environmental cues in a selective and inaccurate manner (Milich & Dodge, 1984), displaying hostile attributional bias in the interpretation of others' behaviors (De Castro et al., 2002), being more likely to choose aggressive behavioral responses, and holding positive beliefs regarding the outcomes of aggression (Dodge & Schwartz, 1997).

Depending on their functions, aggressive behaviors have been distinguished into two categories, namely *reactive* and *proactive aggression* (Dodge, 1991). Based on the Frustration-Aggression Model (Berkowitz, 1978), a *reactive aggression* is a hostile, angry reaction to perceived frustration, which is aimed to defend oneself or to inflict harm to the source of frustration (Dodge, 1991). More specifically, it is a response triggered by a provocation (Miller & Lynam, 2006) or a goal blocking and is accompanied by high autonomic arousal, displayed by showing anger (Vitaro & Brendgen, 2005).

On the other hand, according to Social Learning Theory (Bandura, 1978), a *proactive aggression* can be defined as an acquired instrumental behavior which is motivated by the desire to reach a specific goal (Miller & Lynam, 2006), and is controlled by external rewards (Dodge, 1991) that have the function of reinforcement contingencies (Vitaro & Brendgen, 2005). Synonyms for proactive aggression are "offensive," "predatory," and "instrumental" aggression (Vitaro & Brendgen, 2005). Typically, a proactive aggression can be used as an instrumental means, to secure goods from others, or to dominate others.

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Both reactively and proactively aggressive students might differ in Social Information Processing Model: students who use reactive aggression tend to show greater hostile attributional bias (Schwartz et al., 1998), while students who recur to proactive aggression have more positive outcome expectancies (Crick & Dodge, 1996).

Further, both aggressive behaviors lead to the risk of social rejection and exclusion (Dodge, 1991), and reactive–proactive aggressors report more physical victimization than other types of aggressors (Fung, 2021). However, individuals using proactive aggression take personal advantage by troubling others, while subjects showing reactive aggression are driven by angry and temporary emotions, and are usually troubled by others (Dodge, 1991). However, this qualitative distinction seems to not be strict, since all aggressive behaviors have aspects of proaction and reaction, and are part of a continuum where at the extremes there are the presence and the absence of anger (Dodge, 1991).

Within this taxonomy of aggressive behaviors, bullying has been traditionally considered a subtype of proactive, goal-directed aggression, which is typically unprovoked and deliberate (Dodge, 1991). More recently, research has highlighted that both proactive and reactive aggressive behaviors might be present in bullying behaviors and have a direct impact on it, as do other psychological aspects pertaining to the individuals involved, such as basic personality traits, self-esteem and moral values (Jara et al., 2017). However, it has been found that while aggressors tend to engage in more proactive aggressive behavior, reactive aggression is more frequent among victims (Jara et al., 2017).

Further, recently, sex differences have been found as moderators in the relationship between specific forms of peer victimization and subtypes of aggression (Fung, 2021), highlighting the role of gender in display of different bullying behaviors. Specifically, reactive aggression is predicted in boys by verbal victimization, while in girls by physical victimization and social exclusion. In turn, proactive aggression in boys is positively predicted by physical victimization and social exclusion, and negatively predicted by verbal victimization, while in girls is negatively predicted by social exclusion (Fung, 2021).

The Participant Role Approach

In order to explore and explain the bullying phenomenon, in the 90's Salmivalli and colleagues (1996) have introduced the concept of *school bullying as a group process* that is expressed within the well-known Theory of the Participant Role Approach (Salmivalli et al., 1996). Given that the peer group in a school class can be considered as a network, bullying is explained as a social phenomenon that organizes the group (Salmivalli et al., 1997), in which every participant has assigned a role (Salmivalli et al., 1996).

Typically, social roles in situations of bullying are six: *victim*, *bully*, *reinforcer* of the bully and *assistant* of the bully (who both provide support to bullies), *defender* of the victim (who helps or supports the victim), and

outsider (who remains uninvolved with bullying; Salmivalli et al., 1996). Both reinforcers and assistants are followers of the bullies. Reinforcers provide in an indirect way the bully, for instance by giving positive feedback, providing an audience, or laughing at the victim, while assistants help directly the ringleader bully by attacking the victim. In turn, defenders actively intervene in bullying situations, trying to stop it, or comforting the victim, while outsiders do not take sides with either the bully or the victim (Salmivalli et al., 1996).

According to this theory, the social status of students in a class is in some way connected to their roles in bullying (Salmivalli et al., 1996): children and adolescents who tend to behave in either similar or complementary participant bullying roles form networks with each other. Moreover, the individual's behavior in bullying situations is strongly connected to how the members of his/her network behave in such situations (Salmivalli et al., 1997). Bullies, assistants, and reinforcers usually belong to larger networks, while networks of defenders, outsiders and victims are generally smaller, and students outside the networks are most often victims (Salmivalli et al., 1997). In addition, victimization and rejection can negatively influence peer's perception among students (Salmivalli & Isaacs, 2005). Students are moderately well aware of their Participant Roles, although participation in active bullying tends to be underestimated, while behaviors as defenders and outsiders are generally emphasized (Salmivalli et al., 1996).

Interestingly, exploring with qualitative methods how students themselves interpret bullying, such negative behaviors can be often described as unproblematic, and in some way justified. Bullying behaviors are defined by peers as a game, or as harmless actions, while victims are described as negatively deviant subjects who cannot behave as they should, and because of this they may deserve to receive hostility by their peers (Teräsahjo & Salmivalli, 2003).

Nowadays, the Participant Role Approach is still followed in research aimed to explore new elements of bullying phenomenon. For instance, a recent study (Stein & Jimerson, 2020) has examined types of bullying involvement and participants' moral disengagement (i.e., the ability to disconnect their own moral understanding and behavior), founding that moral disengagement is related to students' role and degree of participation in bullying. Specifically, students who are bully-victims tend to score the highest levels of moral disengagement, followed by students who are pure victims, social victims, and outsiders (Stein & Jimerson, 2020).

Motivations and social status behind bullying and defending behaviors

Theoretical framework of motivation

According to Self-Determination Theory (Deci & Ryan, 2000), motivation is strictly related to innate psychological human needs for competence, autonomy, and relatedness needs, creating the conditions for

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individuals' psychological well-being. Individuals' motivation forms a self-volition continuum, from amotivation (i.e., a lack of motivation) to intrinsic motivation (Deci & Ryan, 2000).

Within this continuum, it is possible to identify four types of regulation that drive motivation: *external*, *introjected*, *identified*, and *integrated* regulation. *External regulation* involves tangible rewards or punishments. *Introjected regulation* (also called *controlled* motivation) refers to a form of partially internalized motivation, contingent on ego, pride, guilt, or shame. *Identified regulation* involves the acceptance and personal valuing of a behavior. Finally, *integrated regulation* (also called *autonomous* motivation) involves not only accepting the importance of the behaviors but also fully integrating that importance with various aspects of the self (Jungert et al., 2020). Comparing with external and introjected regulations, identified and integrated regulations predict stronger persistence and are linked with greater commitment and performance (Deci & Ryan, 2008) in doing homeworks (Hagger Sultan et al., 2016), in academic outcomes and learning (Taylor et al., 2014), and in parenting satisfaction (Jungert et al., 2015).

Motivation has been explored as a variable that might drive bullying (e.g., Garandean & Cillessen, 2006) and defending behaviors (e.g., Jungert et al., 2016).

Motivations behind bullying behaviors

As stated before, following the Self-Determination Theory (Deci & Ryan, 2000), individuals need to interact with others because of their human beings' nature, and deprivation of contacts can represent a trauma for them (e.g., Baumeister & Leary, 1995). As a consequence of this need to belong within a group, individuals have to face a strong fear of being excluded and a strong desire to be included (Garandean & Cillessen, 2006).

According to this view, when bullies carry out aggressive behaviors, they might rely together on these two feelings, the dread of exclusion and the yearning of inclusion in the group. This could explain why, even if most students think that bullying is a negative issue (Boulton et al., 1999), they might fail to support the victim when aggressions occur (Sutton & Smith, 1999). The discrepancy existing between anti-bullying attitudes and pro-bullying behaviors could be explained by the fear that individuals feel to become themselves targets of bullying, if they try to hinder aggressive students (Garandean & Cillessen, 2006). Analyzing bullying within the group context in which it occurs (see the above-mentioned Participant Role Approach, Salmivalli et al., 1996) can help to better understand the individuals' motivation to bully, as well as the lack of support provided to the victims, the persistence of bullying, and the adjustment of victims across diverse contexts (Salmivalli, 2010).

Specifically, status goals can be viewed as one of the driving motivations behind bullying behaviors (Sijtsema et al., 2009). Further, individuals' developmental trajectories of social status and social behavior across childhood and early adolescence predict their bullying participant role involvement in adolescence (Pouwels et al., 2018). Individual characteristics interact with environmental factors, such as classroom norms,

contributing to the development of bullying behaviors in a context (Salmivalli, 2010). As a result of this interaction, researchers have observed significant and meaningful relations between status goals and peer-reported behaviors (Ojanen et al., 2005). In other words, a link exists between individuals' social goals and their sociometric status in the classroom, and such relation is mediated by their aggressive behaviors, prosocial behavior, or social withdrawal (Ojanen et al., 2005).

According to this perspective, bullying can be considered as the result of the meeting between a socially skillful bully and a group that lacks true cohesiveness (Garandeau & Cillessen, 2006). A recent study has confirmed that, among adolescents, bullies and reinforcers having a stable popular trajectory are overrepresented, and that these popular bullies and reinforcers were already quite popular in middle childhood (Pouwels et al., 2018). Researchers have hypothesized that groups with low quality of friendships might be more likely than others to become instruments of aggression, as victimization provides them with a common goal and cohesion, through a process of normative social influence (Bukowski & Sippola 2001; Garandeau & Cillessen, 2006). However, cohesion in these groups might be only apparent, since exclusion and victimization of a subject create an internal conflict within the group (Adler & Adler; 1995; Garandeau & Cillessen, 2006). Probably, members of the group have nothing else to share in order to build their relationships, and having a common enemy seemed to be the only way to create a relationship between them. Groups with a tendency to exclude and harass peers are characterized by poor relationship quality among members, who did not like each other all that much. Their actions seem to be driven by a concern for perceived popularity (being seen as popular) rather than social preference (actually being liked; Garandeau & Cillessen, 2006).

However, testing the hypothesis of the cognitively competent, but morally insensitive bully, researchers have found that bullies are a more heterogeneous group, including individuals with an asymmetry between perspective taking and moral motivation, as well as children scoring consistently low or high on both measures, highlighting the importance of distinguishing between strategic social-cognitive and moral competencies and different subgroups of bullies (Gasser & Keller, 2009). In the following paragraphs, psychological characteristics of bullies will be illustrated more specifically.

The impact and influence that bullies have on the rest of the group might be supported by high levels in social status and power they have reached among their peers (Garandeau & Cillessen, 2006). High social status and power could facilitate aggression in the peer group, and their achievement might precede the rise of bullying behaviors (Cillessen & Mayeux, 2004). In other words, bullies do not only strive to dominate, they also frequently have high social status. Aggressive children are considered to be popular in primary school, and in early adolescence peer-directed hostile behaviors are robustly associated with social prominence or high status. Ethological research demonstrates that aggression is a way to establish a dominant position within a

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group, suggesting that bullying perpetration can be considered a strategic behavior that enables youths to gain and maintain a dominant position within their group (Juvonen & Graham, 2014).

Bullies may take advantage of their power to scheme the aggression (Garandeau & Cillessen, 2006). At the same time, bullies might recur to aggressive behaviors in order to maintain and preserve the high status they have reached, evidencing the cyclical processes within perpetration and victimization (Juvonen & Graham, 2014). Bullying involves a dynamic interaction between the perpetrator and the victim. The bully increases in power, and the victim loses power. As a result, it is difficult for the victim to respond or to cope with the problem (Menesini et al., 2012; Swearer & Hymel, 2015). Imbalance of power can be derived from physical strength, social status in the group, or from group size (e.g. a group targeting a single person). Power may also be achieved through knowing a person's vulnerabilities (e.g., appearance, learning problem, family situation, personal characteristics) and using this knowledge to harm him or her (Menesini & Salmivalli, 2017).

However, recent research has highlighted that being popular is not the same as being liked, as the association between social preference and popularity in adolescence is moderate (van den Berg et al., 2020). Specifically, they are related but distinct dimensions of social status in the peer group: social preference refers to being well liked and accepted, while popularity is being seen as popular and influential (van den Berg et al., 2020). In some situations, bullies might be just as rejected by classmates as their victims (Sijtsema et al., 2009), since the higher individuals are in social preference, the less likely they chose physically aggressive peers as friends (Shin, 2017). Long-term research has found that 8th grade bullies score more direct status goals than 4th grade bullies, possibly indicating that striving for the popularity component of status increases in early adolescence (Sijtsema et al., 2009).

Motivations behind defending behaviors

Similarly with bullying behaviors, recent research has quite robustly shown that also peer defending could be considered as a goal-directed and strategic behavior, albeit a prosocial one (Pronk et al., 2019). Defenders might exhibit, intentionally or not, prosocial behaviors, in order to obtain an improvement of their social status. Jungert et al. (2016) have highlighted that, to become a defender, it is important to have a high level of motivation to defend (Jungert et al., 2016). Such motivation for peer defending, in adolescence, seems to be related with the expectation of status improvement (Pöyhönen et al., 2012) and defending a victim could be associated with an increase in peer-group status (van der Ploeg et al., 2017) and in social preference and popularity (e.g., Lambe et al., 2019; Reijntjes et al., 2016). Similarly to bullying behaviors, connecting defending behaviors to social status and motivation seems to be a way to explain how subjects become defenders.

Describing a *conceptual framework of an individual's motivation to intervene in bullying situations*, Thornberg and colleagues (2012) have suggested that bystanders may decide whether to help or not help the victim in

a bullying episode depending on their evaluation of the situation, the social context, and their own agency. Specifically, five themes can be related to bystander motivation to intervene in a bullying situation: interpretation of harm, emotional reactions, social evaluating, moral evaluating, and intervention self-efficacy (Thornberg et al., 2012).

Further, regarding to the motivation to become defenders in bullying situations, Jungert and colleagues (2016) have distinguished between extrinsic motivation, that can lead students towards prosocial behaviors, such as making friendships with bullying victims (Bellmore et al., 2012), or receive tangible teacher approval for positive actions (Thornberg et al., 2012), and intrinsic motivation, that is positively associated with warm and close student–teacher relationships. Specifically, a stable four-cluster solution has been found to describe four types of bystanders in regard to their motivation to defend victims of school bullying: a *prosocial* motivation group, a *high externally* extrinsic motivation group, an *intermediate externally extrinsic* motivation group, and an *identified/introjected* regulations group. Interestingly, the distribution of bystanders across the four groups appears to be uneven: most individuals are categorized in the prosocial motivation group, while only a very small percentage of the bystanders belongs to the identified/introjected group. In addition, recently it has been found that some bystanders seem to combine different types of motivation, defending a victim both because they should meet external demands and because they think it is important to help other people (Jungert et al., 2020).

Also, Reijntjes et al. (2016) have highlighted that peer defending is a heterogeneous construct, in which a strong association exists between defending motivation and peer-group status in terms of popularity and/or social preference. According to the Social Evolution Theory framework, they have distinguished three subtypes of peer defending, in relation to effect that behaviors have on the continuance of the bullying, and the motivation that aims defenders (Pronk et al., 2013; Reijntjes et al., 2016).

First type of defending is *indirect*, that is an altruistically motivated prosocial behavior (Reijntjes et al., 2016). It is a victim-oriented behavior, whose function is to support, comfort, encourage and care for victims and be nice to them. Even if it is not aimed to stop the bullying, it can be highly beneficial for victims' well-being. Indirect defending does not directly benefit the executor: in other words, it is not a goal-directed or strategic behavior (Pronk et al., 2019). Thus, despite being associated with high social preference (Reijntjes et al., 2016), indirect defending is not executed from a desire to obtain and maintain positive relationships with peers (Pronk et al., 2019). Conversely, indirect defending is fostered by a concern for victims' well-being, and it is caused by, rather than aimed to, social preference (Pronk et al., 2020). Indirect defenders are typically low in popularity among peers (Reijntjes et al., 2016); in addition, helping victims by supporting them may put indirect defenders at risk for becoming a future bullying target (Pronk et al., 2019).

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Conversely, the second type of defending is a *bully-oriented* behavior, which consists in verbal or physical interventions with the aim of putting an end to the bullying, but does not help victims to cope with the consequences of the bullying. It is a goal-directed behavior, and it is associated with high popularity, but also with a low social preference (Reijntjes et al., 2016). In other words, direct defending is motivated from a desire to obtain and maintain positive social relationships, and subjects may use it to help their friends. Thus, defenders are likely to be socially preferred by their friends, but not necessarily by the larger peer group. Since that direct defending is not associated with altruistic or egocentric motivation for prosocial behavior and is not driven by a concern for victims' well-being, Pronk et al (2019) argued that the decision to directly defend classmates is based on some type of cost-reward analysis. In other words, direct defenders may know how to read social cues and how to make others behave in ways that are beneficial to them. They may turn to direct defending to obtain ultimate benefits (e.g., agentic goals), regardless of the effect the bullying has on victims. Moreover, in individuals who also bully others, direct defending is associated with coercive strategies (Pronk et al., 2019). Specifically, direct defending could be a strategic behavior used by probullying individuals to acquire and/or maintain their friends' loyalty (Huitsing et al., 2014; Reijntjes et al., 2016) and it may be viewed by peers as a coercive strategy in bullies' behavioral repertoire (i.e., using aggression to get ahead; Hawley, 2003).

Finally, it is possible to identify a third subtype of peer defenders behavior, named *hybrid defending* (Reijntjes et al., 2016). It is a prosocial behavior both goal-directed and altruistically motivated. Fostered by a concern for victims' well-being, hybrid defending is associated with both agentic and communal goals and it is successful in reaching those (Pronk et al., 2019). Hybrid defending is also both associated with popularity and social preference (Reijntjes et al., 2016), and it could qualify as a prestige-oriented behavior, since adolescents may use it to earn their classmates' respect, admiration, and sympathy (Pronk et al., 2019). According to the Information Goods Theory, prestige is the result of respect, admiration, and sympathy based on someone's skills, competences, and expertise (Henrich & Gil-White, 2001). Prestige results from competitive altruism (Hardy & van Vugt, 2006), evolves alongside dominance, and positively impacts individuals' personal survival chances (Cheng et al., 2013; Henrich & Gil-White, 2001). Hybrid defending may be a form of competitive altruism and a prestige-oriented behavior, associated with an altruistic motivation for prosocial behavior (Pronk et al., 2019).

1.6. Psychological characteristics in bullying roles

Characteristics of bullies

Early descriptions of psychological characteristics of bullies have highlighted their aggressive personality pattern (Olweus, 1978). Bully characteristics were considered rather stable over time and independent from social context, and aggressive personality pattern was identified as the driving force behind aggressive

behaviors (Olweus, 1978). Empathy, defined as one's emotional reactions to another's state, experiencing the perceived emotional state vicariously (Mehrabian & Epstein, 1972), in bullying traditional conception was lacking. Bullies were described as individuals characterized by low levels of empathy (Gini et al., 2007), with a strong tendency to dominate others, and a natural attitude towards violence (for a review, see Salmivalli, 2010). According to this view, having attitudes and cognitions that are favorable to aggression and low levels of empathy towards other people are associated with both general aggression and bullying (Menesini & Salmivalli, 2017). Some research confirms that negative associations exist among empathy and bullying (Noorden et al., 2015), while positive attitude towards bullying is positively associated with non-physical bully perpetration (Espelage et al., 2018).

Further, Menesini and Salmivalli (2017) in their review highlighted that it is a common belief that low self-esteem may lead individuals to aggression, including bullying. Although negative self-related cognitions are weakly related to bullying, they do not predict a greater likelihood of being a bully, and there is little support for the aggression – low self-esteem hypothesis in general. In turn, narcissism, or a sense of grandiosity and entitlement, as well as callous-emotional traits are associated with bullying (Menesini & Salmivalli, 2017; Reijntjes et al., 2016).

In turn, considering bullying as a proactive aggressive behavior (Dodge, 1991) has led some researchers to a change of perspective: bullies are not necessarily socially unskilled or emotionally dysregulated individuals (Olweus, 1978), but they might turn to bullying behaviors in order to achieve their social goals (Salmivalli, 2010). The belief that bullies are socially incompetent was challenged by Sutton, Smith, and Swettenham (1999), who found that 7–10-year-old bullies scored relatively high in understanding of others' cognitions and emotions. Accordingly, Peeters and colleagues (2010) identified three subtypes of bullies, a *popular-socially intelligent* group, a *popular moderate* group, and an *unpopular-less socially intelligent* group, underlying the heterogeneity of individuals involved in bullying (see Menesini & Salmivalli, 2017).

Research guided by the social cognitive framework has found that bullies are characterized by thought processes that support the use of aggression and use several moral disengagement mechanisms to self-justify their negative behaviors (Gini et al., 2014). Bullies generally feel confident about using aggression, expect positive outcomes for aggression (e.g. peer approval), view aggression as an accepted way of behaving, and have an overall positive view on the use of aggression (see Menesini & Salmivalli, 2017).

Whether such tendencies should be regarded as deficiencies or merely as differences in social-cognitive processing styles, has been debated in the literature. Traditionally, social competence has been seen as a behavior that is socially accepted and associated with being liked by others. However, it can be also defined as an ability to be successful at achieving one's goals. According to the latter view, children who successfully achieve their goals, either by using prosocial or coercive strategies, could be seen as socially competent (see Menesini & Salmivalli, 2017) and many pure bullies are so-called bistrategic controllers, who use both

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prosocial and coercive strategies to get what they want (e.g., Rodkin et al., 2015). Bullies value dominance and they often acquire it (Olthof et al., 2011). Even if they are not necessarily personally liked by many classmates, bullies may be perceived as popular, powerful, and 'cool' among their peers (Reijntjes et al., 2016). Moreover, bullies are often central members of their peer networks and have friends. Adolescent bullies like others who engage in similar behaviors (Sentse et al., 2014), and affiliate with them and can thereby provide reinforcement for each other's coercive behavior (see Menesini & Salmivalli, 2017).

Further, it has been proposed that children and adolescents who bully others at school, especially ringleader bullies, may actually have and use good Theory of Mind skills (i.e., the ability to represent others' mental states; Smith, 2017). Understanding of other's minds is a significant achievement of childhood and it is fundamental to an understanding of the social world (Sutton et al. 1999). Some positive associations of Theory of Mind have been found with bullying behaviors, supporting the view that the ability to represent others' mental states can be used for both prosocial (e.g. defending) and antisocial (e.g. bullying) outcomes (Smith, 2017). Recently, researchers have highlighted that there might be different pathways to bullying via Theory of Mind and social preference, finding that greater earlier Theory of Mind skills may predict greater bullying in the long-term, both directly and indirectly, via poor social preference (Fink et al., 2020).

To sum up, some theoretical accounts view bullies as individuals who lack social skills, have a low self-esteem, deficiencies in social information processing, low social standing in the peer group, and other adjustment problems. Others view bullying as functional, adaptive behavior associated with benefits, especially in social status (see Menesini & Salmivalli, 2017). Bullies are not necessarily lacking social skills or the ability to regulate emotions. Rather, some bullies might be cold and calculating, lacking empathy and resorting to coercive strategies to dominate and control the behavior of peers. Indeed, bullies score high when asked how important it is to be visible, influential, and admired (Juvonen & Graham, 2014). Empirical studies have not always succeeded in clarifying this issue, partly due to the failure to acknowledge the heterogeneity of children and adolescents engaging in bullying (Menesini & Salmivalli, 2017).

Regarding family influence, Cook et al. (2010) have found that, examining together several family factors such as parental conflict, monitoring and socio-economic status, they were only weakly related to bullying. However, bullies tend to perceive their parents as authoritarian, punitive and unsupportive, and they report less family cohesiveness than other children (see Menesini & Salmivalli, 2017).

Characteristics of victims

Many risk factors for being bullied can be understood at the light of the bullies' characteristics and their social and personal goals: students who are unassertive and insecure can elicit aggression, representing a suitable target for someone aiming at status enhancement, and encouraging cognitions in potential bullies (Menesini & Salmivalli, 2017). By choosing victims who are submissive, insecure, physically weak, and/or rejected by

the peer group, bullies can signal their power to the rest of the group, without having to be afraid of confrontation or losing affection of other peers (Veenstra et al., 2010).

Bullying victimization is associated with a number of internalizing problems such as depression, anxiety and low self-esteem (Cook et al., 2010). Victimization is also related to numerous interpersonal difficulties such as peer rejection, low peer acceptance, having few or no friends, and negative friendship quality (Cook et al., 2010; Menesini & Salmivalli, 2017). Also, children and adolescents with externalizing problems and low levels of prosocial behavior are more likely to be victimized (Card, 2003; Menesini & Salmivalli, 2017) and negative associations have been found between Theory of Mind skills and being a victim of bullying (Smith et al., 2017).

Combination of factors associated with bullying may enhance victimization risk. Students with internalizing or externalizing problems are more likely to become victimized if they also face interpersonal difficulties (Menesini & Salmivalli, 2017). In turn, having protective friends moderates the association between risk factors and victimization. Thus, children and adolescents who are shy and anxious have a higher probability of being victimized if they have friends who are physically weak and/or disliked by other peers, as compared to students who have friends and who are strong and/or liked by others (Menesini & Salmivalli, 2017). However, although victimized students can benefit from having friends who are strong and who can protect them from bullies, in reality, victimized children and adolescents tend to hang out with other victimized peers (Menesini & Salmivalli, 2017; Sentse et al., 2013).

Further, often children and adolescents who are victimized by peers tend also to be victimized in other contexts, including their family home (namely poly-victimization; Finkelhor et al., 2007; Menesini & Salmivalli, 2017). In contrast, some studies have found that victims consider their home environment as rather positive, but also overprotective (Menesini & Salmivalli, 2017). A meta-analysis by Lereya and colleagues (2013) found support for both overprotection and abuse/neglect in the family: the former was more strongly related to being a pure victim, whereas the latter was more strongly associated with the bully-victim status.

Characteristics of bully-victims

Showing a different socio-cognitive profile compared to pure bullies, bully-victims are considered as a distinct, smaller group of children and adolescents involved in bullying, characterized by impairments in self-regulation, as well as difficulties across domains of functioning and both externalizing and internalizing problems (Menesini & Salmivalli, 2017; Toblin et al., 2005). Bully-victims are typically highly maladjusted in comparison to pure bullies and are usually highly rejected by their peers. They often come from the most adverse home environments, characterized by maltreatment and neglectful parenting (Cook et al., 2010; Lereya et al., 2013) and tend to score high on reactive aggression, besides scoring high on proactive aggression (Menesini & Salmivalli, 2017).

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Characteristics of defenders

Being bystander in a bullying event is a complex position, that requires subject who witness to the violence to choose from a variety of different roles, such as assistant, supporter/reinforcer, defender, and uninvolved/outsider (Demaray et al., 2016; Pouwels et al., 2016; Salmivalli et al., 2011). Among all these roles, only defenders have the potential to stop and reduce bullying events (Thornberg et al., 2012). Understanding the social developmental process that led a bystander to become a defender it is fundamental to be able to improve and promote interventions against bullying.

Traditionally, defending has been mainly described as a morality-based response of empathic individuals (for a review see Lambe et al., 2019). Defenders are individuals skilled and competent at the social, emotional, and physical levels (e.g., Gini et al., 2008; Lambe et al., 2019; Pronk et al., 2013). Caravita et al. (2009; 2010) have investigated the role of Theory of Mind skills in defending victimized classmates. The results highlighted the contribution of affective and cognitive empathy, social preference and perceived popularity in defending victimized classmates. Skills related to Theory of Mind seem to be positively linked to defending behaviors (Smith et al., 2017), and a significant association exists between affective empathy and defending victims (Caravita et al., 2009; 2010). In addition, students with a high status (i.e., highly socially preferred) in the group of peers tend to show a stronger association between behaviors aimed to defend victims and the presence of affective empathy (Caravita et al., 2009; 2010). Empathy has been found as the most important factor in developing attitudes against bullying in students, significantly predicting defending behaviors, and also having an effect on extrinsic, introjected, and intrinsic motivation to defend (Longobardi et al., 2020).

1.7. Consequences of bullying

In the past three decades, a significant effort has been put by researchers in analyzing the effects of bullying on physical, psychological, relational and general wellbeing. Bullying brings negative health consequences for both bullies and victims, and it can have a negative impact on the bystanders as well (Wolke & Lereya, 2015). Several longitudinal studies from different countries, along with systematic reviews and meta-analyses, have demonstrated the relationship between the experience of school bullying and later health outcomes (Menesini & Salmivalli, 2017; Zych et al., 2015). Bully-victims, victims and bullies have a significantly higher risk for psychosomatic problems than their non-involved classmates (Gini & Pozzoli, 2015), and victimization is a major childhood risk factor that uniquely contributes to later depression, even controlling for many other major childhood risks (Menesini & Salmivalli, 2017; Ttofi et al., 2011a).

Consequences on victims

Despite being bullied is still often wrongly considered as a 'normal rite of passage' (Wolke & Lereya, 2015), research has largely demonstrated that exposure to bullying victimization is associated with a wide-range of

short and long-term adverse outcomes (Schoeler et al., 2018). The main findings show that victimization may causally impact children and adolescents' general wellbeing (Schoeler et al., 2018), and has negative short-term effects on academic career, mental and physical health, and psychosocial adjustment (Menesini & Salmivalli, 2017; Moore et al., 2017; Zych et al., 2015). Further, being bullied can have long-lasting effects that persist until late adolescence and can be directly and indirectly connected to later adult adverse outcomes (Arseneault et al., 2010; McDougall and Vaillancourt, 2015). These negative outcomes are related to the duration, frequency and severity of the victimization experience (van Dam et al., 2012; Menesini & Salmivalli, 2017). Van der Plog and colleagues (2015) have found that victims of frequent and multiple victimization, and victims who were victimized by several bullies, suffered more than those whose experiences were less frequent or perpetrated by fewer peers.

In the short-term, children and adolescents who are bullied miss more school and show signs of poor school achievement (Nakamoto & Schwartz, 2009). Experiences of bullying in childhood is significantly related to higher rates of school drop-out and absenteeism, a decrease in school graduation and lower academic achievement overall (Fry et al., 2018). Also, victims report poorer health levels (Fekkes et al., 2006), more common psychosomatic problems (Gini & Pozzoli, 2013), sleeping difficulties (van Geel et al., 2015), psychotic symptoms (van Dam et al., 2012) and a positive association between being bullying and headache (Gini et al., 2014). Further, exposure to bullying as victims poses risks for deliberate self-harm (Heerde & Hemphill, 2018). Regarding to the psychosocial maladjustment, peer victimization is significantly related to depression, general self-esteem, social-esteem, loneliness, and generalized and social anxiety (Fekkes et al., 2006; Hawker & Boulton, 2000; Juvonen & Graham, 2014; Klomek et al., 2015). Victimization significantly predicts externalizing problems (Reijntjes et al., 2011) and internalizing problems (Reijntjes et al, 2010) over time. Further, internalizing problems (such as anxiety and depression) appear to be both antecedents and consequences of peer victimization, constituting a 'vicious cycle' that contributes to the elevated stability of peer victimization (Reijntjes et al, 2010). A systematic review conducted by Ttofi et al. (2014) on prospective longitudinal studies showed that the progression from bullying to internalizing and externalizing problems can be interrupted by factors such as high school achievement, social skills, strong family attachment and structure, social support and prosocial friends.

In the long-term, victimization is related to at-risk behaviors, such as alcohol misuse in adolescents (Topper & Conrod, 2011), tobacco and illicit drug use (Moore et al., 2017) and is a predictor of later violence (Ttofi et al., 2012). Studies have also linked victimization to suicidal ideation and behavior, finding a relationship between moderate and strong (Holt et al., 2015; Klomek et al., 2015; van Geel et al., 2014a; Shireen et al., 2014). Further, a systematic review of studies on school shootings (Sommer et al., 2014) shows that 29.9% of the shooters reported physical victimization and more than a half (53.7%) report peer rejection (explicitly excluded in 14.9%). Finally, Wolke and Lereya (2015), reviewing studies of genetically identical monozygotic twins who lived in the same households but were discordant for experiences of bullying, have highlighted

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the role of victimization as a major risk factor for reduced adaptation to adult roles, including forming lasting relationships, integrating into work and being economically independent, confirming the dramatic consequences of being a victim of bullying over and above other personal and contextual factors (Menesini & Salmivalli, 2017).

Consequences on bullies

Active bullying also has a relevant impact on the lives of individuals who perpetrate it. Research has highlighted the bidirectional association between bullying perpetration and internalizing problems: bullying perpetration is associated with increased likelihood of moderate/high internalizing problems at follow-up, and youth with moderate/high internalizing problems have higher odds of bullying perpetration at follow-up (Da Silva et al., 2020). Also, a significant association between bullying perpetration and deliberate self-harm has been found (Heerde & Hemphill, 2018).

In addition, bullying perpetration is a strong and a specific risk factor for later criminal offending and psychotic symptoms (Cunningham et al., 2015; Ttofi et al., 2011b) and predicts drug use later in life (Ttofi et al., 2016). Perpetration behaviors predict violence later in life and is negatively associated to the age of perpetration assessment (younger age of perpetration is related to more violence), the age of outcome assessment (later assessments were related to less violence) and the length of follow-ups (longer follow-ups were related to less violence; Ttofi et al., 2012). Klomek et al. (2015) confirmed this pattern and proposed a dose effect, in which more frequent bullying perpetration in childhood is more strongly associated with adult adversities, such as an increased risk of delinquency (Menesini & Salmivalli, 2017).

Consequences on bully-victims

The research literature clearly indicates that being the victim of bullying greatly enhances the odds of subsequently becoming a perpetrator of bullying (Chan & Wong, 2015; Cook et al., 2010; Lee, 2010; Shetgiri et al., 2012). Victimization often leads to bullying behavior, and many victims eventually become bullies themselves (Barker et al., 2008). There is also evidence that those who are both victims and perpetrators of bullying suffer more serious consequences than those who just perpetrate bullying. Bully-victims report significantly more psychological distress, peer victimization, and drug use than pure bullies (Viljoen et al., 2005). Also, bully-victim status is related to suicidal behavior and ideation (Holt et al., 2015) and weapon carrying (van Geel et al., 2014b). Consistent with the control model of criminal lifestyle development (Agnew, 2012; Walters, 2016), Walters and Espelage (2018) have found that hostility may mediate the relation between prior victimization and subsequent bully perpetration, probably because both hostility and bully perpetration are externalizing behaviors, that can be viewed as reactions to being victimized by peers.

1.8. Protective factors against bullying

The influence of the context

Drawing upon Bronfenbrenner's (1979) pioneering work on Ecological Systems Theory, bullying has been conceptualized within a Social-Ecological Perspective (Swearer & Doll, 2001). In his studies, Bronfenbrenner (1979) argued that, to better understand psychological phenomena, it is needed to take in consideration the broader system in which phenomena themselves occur. Starting from the assumption that individuals influence each other through their behaviors within the context (Bronfenbrenner & Kiesler, 1977), the Bio-Ecological Model of Human Development may be applied to research regarding the school as a framework. According to this, an interactive relationship between individuals consists of four principal components: the Process (i.e., forms of interaction between organism and environment), the Persons, the Contexts, and the Time: human development takes place through progressive, reciprocal and dynamic interactions between individuals and the environment where they are integrated (Bronfenbrenner & Morris, 2006). From this theoretical framework, bullying can be defined as an ecological phenomenon that is established and perpetrated over time, as a result of the complex interplay between inter- and intra-individual variables. Individual characteristics are influenced by a variety of ecological contexts, including peers, families, schools, and community factors (for a review, see Espelage & Swearer, 2003).

In accordance with this view, to achieve a better understanding of bullying in schools and classrooms, school staff and researchers should examine the relationships developing within school climate (Batsche & Knoff, 1994). Specifically, taking in consideration the student's relationships with both teachers and the peer group is needed (Espelage & Swearer, 2010; Salmivalli, 1999; Iñiguez-Berrozpe et al, 2021), since peer group and student-teacher relationships are strongly intertwined and have well-known effects on bullying (e.g., Bouchard & Smith, 2017). Positive relationships within school and classroom contexts have an impact on students' school adjustment (Nansel et al., 2003) and serve as a protective factor against participation in situations of aggression, exerting a significant influence on the acquisition of transformative attitudes toward violence. Such attitudes, in turn, significantly help prevent bullying (Iñiguez-Berrozpe et al., 2021).

Interestingly, the four worldwide-most-evaluated anti-bullying programs in schools (i.e., KiVA, NoTrap!, OBPP, and ViSC; Gaffney et al. 2019) incorporate quite similar intervention components (Table 3). Specifically, such common components, including school climate, teachers and peer relationships, are also those which intervene in promoting students' positive school adjustment, and those which represent protective factors against bullying.

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Table 3

Key components in anti-bullying programs (Gaffney et al., 2019).

Intervention program:	KiVa	OBPP	NoTrap!	ViSC
Intervention component:				
Whole-school approach	Yes	Yes	No	Yes
Parental involvement	Leaflets/letters and information nights	Leaflets/letters and involvement	No	Yes
Teacher involvement	Training and implement lessons	Training and implement lessons	Minor	Training and implement lessons
Classroom rules	Yes	Yes	No	Yes
Curriculum materials	Detailed program outline	Detailed program outline	No	Detailed program outline
Work with peers	Engaging bystanders and in-class group exercises	Class discussions	Peer-led	In-class project
Work with bullies	Yes	Yes	Yes	No
Work with victims	Yes	Yes	Yes	No
Punitive approach	Confronting approach	No	No	No
Non-punitive approach	No blame approach	No	No	No
Hot-spot supervision	Yes	Yes	No	No
Approach to bullying	Universal and indicated	Universal and indicated	Peer-led online forum	Socio-ecological

School adjustment

School adjustment is defined by the students’ social motivation in the form of social goal pursuit, behavioral competence and positive interpersonal relationships within the school context (Wentzel, 2003). Being successful at school requires students to perform a range of social, as well as academic competencies. Quite often, students who succeed in social endeavors, being able to establish and maintain interpersonal relationships, developing a social identity and a sense of belongingness, and behaving in a way that is valued by teachers and peers, are also the more academically successful individuals. Positive forms of social behavior can create a classroom environment that facilitates learning and cognitive development. Similarly, positive interpersonal relationships with teachers and peers may motivate and support the development of intellectual competencies in students (Wentzel, 2003). In fact, both less conflictual school friendships and less stressful relationships with teachers are linked with fewer feelings of stress, lower levels of problem problems at school, and higher students’ school adjustment (Aldrup et al., 2018; Wang & Fletcher, 2017).

School adjustment indicates the absence of negative or maladaptive students’ outcomes (e.g., aggressive, inattentive or disruptive behaviors), in addition to the presence of normative and positive competencies (e.g., cooperative, compliant or self-regulated behaviors; Wentzel, 2003). Within an Ecological Approach (Bronfenbrenner, 1989), school adjustment refers to the social competencies that facilitate the achievement of school-related objectives. School adjustment involves goals that result in social integration (such as promoting the smooth functioning of social groups, social approval and social acceptance), as well as in positive developmental outcomes for the self (such as promoting the achievements of personal competences, feeling of self-determination and feeling of social and emotional well-being). In this goal-based framework, the classroom is viewed as a highly specific context, in which students should acquire the

competencies to meet the demands of the environment, as well as to achieve their personal goals (Wentzel, 2003).

The association between bullying and problems in school adjustment has been explored, specifically among early adolescents. Being involved in bullying episodes (as bully and/or victim) has been recognized as an important risk factor for subsequent school adjustment problems during the transition to middle school (Nansel et al., 2003; Salmivalli et al., 2012). Students who are classified as bullies, victims, or bully-victims during 6th grade show poorer school adjustment than their non-involved peers, and victims or bully-victims report a more negative perceived school climate and a higher lack of safety than bullies or in comparison with their non-involved peers (Nansel et al., 2003). Further, a recent study has shown that adolescents suffering from high victimization report more loneliness and worse school adjustment than their classmates (Cañas et al., 2020). In addition, students with mental health troubles or vulnerabilities have been recently found to score lower school adjustment and to be more socially excluded and/or victimized than their peers who have good mental health conditions, suggesting a reciprocal interaction among mental health, school adjustment, and bullying (Arslan & Allen, 2020).

For bullies, problems in school adjustment may reflect difficulties with the social constraints and limits placed by the educational environment, and consequent low levels of school liking (Nansel et al., 2003). In fact, aggressive behaviors are found to be related to low scores in academic engagement, few friends in the classroom, low perception of teacher support, and a negative attitude towards school (López et al., 2018). Differences persist over time, suggesting that bullying and problematic peer interactions may hinder students' adjustment to the school environment, via the mediating role of individuals' difficulties in psychosocial functioning (Nansel et al., 2003). Further, Salmivalli et al. (2012) have highlighted that, within the educational contexts where anti-bullying programs are implemented, improvements in students' school liking, academic motivation and performance are registered, with a positive impact on school adjustment, confirming the existing relationship among bullying and school adjustment.

Wentzel and Battle (2001) stated that there are two general mechanisms whereby students' adjustment at school can be promoted, through a reciprocal influence of social relationships, academic achievements and behavioral outcomes. First, teachers and peers (e.g., with the role of mutual assistant) can provide direct instructional resources, enhancing the development of academic and behavioral competencies. Second, ongoing social interactions may teach students about themselves and what they need to become accepted members in the community. Interpersonal relationships with teachers and peers can take on motivational significance by creating contexts that are developmentally supportive and conducive to the learning and adoption of social-valued goals. These relationships have the potential to provide personal validation that contribute to emotional health and well-being (Wentzel & Battle, 2001).

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Specifically, the most widely documented influence of teachers on students' school adjustment concerns the degree to which teachers are perceived by students as supportive and caring (Wentzel & Battle, 2001). Perceived support from teachers is related to positive motivational outcomes in students, including the pursuit of goals to learn and to behave prosocially and responsibly adhering to classroom rules and norms, mastery orientation toward learning, academic interest, educational aspiration and values and self-concept (Wentzel & Battle, 2001). Interestingly, middle-school students describe caring and supportive teachers in a way that is similar to authoritative parents. Caring teachers are indicated as those who demonstrate democratic and egalitarian communication style, designed to elicit students' participation and inputs, who develop expectations for students' behavior and performance in light of individual differences and abilities, who model a caring attitude and interest in their instruction and personal dealing with students and who provide constructive rather than harsh and critical feedback. Also, teachers can be more influential for some students' adjustment to school, than to others. For at-risk students, teachers can enhance academic success and offset the negative impact of low-levels of acceptance and rejection from peers over time (Wentzel & Battle, 2001).

Similarly, peer relationships may influence school adjustment through both affective and social processes, especially during transition in early adolescence (Nansel et al., 2003). Peers promote identity development and influence each other's motivation through information on normative standards for behaviors and performance. Students articulate an internalized set of goals that they would like and indeed expect each other to achieve. These goals provide clear norms for behaviors sanctioned by peers. There is a link between perceived peer support and motivation. Students who believe that their peers support and care about them tend to be more engaged in positive aspects of classroom life than students who do not perceive such support (Wentzel & Battle, 2001). Perceived social and emotional support from peers has been associated with pursuit of social and academic goals (Wentzel et al., 2004). The failure in developing positive peer relationships may be associated with poorer psychosocial adjustment for both bullies and victims. This has negative consequences not only on social and emotional development, but also may hinder adaptation to the school environment as well (Nansel et al., 2003).

The impact of the context climate

School and class factors are important in considering bullying. Research on the impact of school climate on bullying has found that school size is correlated with bullying and victimization role behaviors (Bowes et al., 2009). Even when controlling for students' socioeconomic status, the size of the student population in a school has been found to be associated with bullying involvement, with larger schools having higher rates of bullying and victimization (Smokowski et al., 2013). Recently, Malecki et al. (2020) have found that school size is also significantly and positively associated with both assisting behavior and outsider behavior. The

larger the school, the greater the extent of students' bullying and ignoring bullying when they see it (Malecki et al., 2020).

Further, research has demonstrated that the social climate of the school can influence students' beliefs about bullying and their engagement in aggressive behaviors (Baker, 1998). If students attend a school in which bullying is accepted, or at least tolerated by adults and peers, it is plausible that they will engage in more aggressive behaviors (for reviews, see Espelage & Swearer, 2003; Menesini & Salmivalli, 2017). Research examining bullying behavior and school climate has shown that students who bully others tend to report a significantly lower perception of school climate, compared with their peers who are victims or bully-victims (Nansel et al., 2001). In addition, students' perceptions of school climate may impact their behavioral and emotional adjustment: students who held more positive perceptions of school climate tend to show fewer aggressive or delinquent behaviors (Kuperminc et al., 1997). Similarly, within the school, classroom norms explain why students in some classrooms are more likely to be involved in bullying. Pro-bullying norms reflect low levels of anti-bullying attitudes, positive expectations regarding the social outcomes of pro-bullying actions and negative expectations of the social outcomes of pro-victim actions (see Menesini, & Salmivalli, 2017).

In addition, classroom hierarchy is associated with bullying behavior: there is more bullying in highly hierarchical classrooms, where peer status (such as popularity) or power (who typically decides about things) are centered upon few individuals, rather than being evenly distributed. Classroom hierarchy leads to an increase in bullying over time, rather than bullying leading to increased hierarchy. A non-hierarchical classroom, on the other hand, is not a favorable environment for bullying to flourish (Menesini & Salmivalli, 2017).

Moreover, in students with high level of self-criticism, a perceived positive school climate may have a protective role in psychosocial functioning against internalizing and externalizing problems (Kuperminc et al., 2001). Schools where lower bullying levels are registered, are characterized by more positive disciplinary actions, stronger parental involvement, and higher academic standards (Ma, 2002). From the point of view of students at risk for becoming the targets of bullying, research has shown that the association between individual risk factors (such as social anxiety and peer rejection) and victimization varies across classrooms, suggesting that individual vulnerabilities are more likely to lead to victimization when the classroom context allows that to happen. The likelihood that vulnerable children become the targets of bullying is exacerbated in classrooms characterized by high levels of reinforcement of the bully and low levels of defense of the victim by the peer bystanders (see Menesini & Salmivalli, 2017). Examining the effects of a bullying prevention program in the social and emotional school features, is it possible to register a decrease in behavioral problems, anxiety and depression symptoms, and alcohol use in students (Kasen et al., 1990), and, as long-

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term effects, aspiration and learning focused school setting may lead to fewer drop-out and deviant behaviors in students (Kasen et al., 1998).

Since the school climate is a potential factor in promoting or inhibiting bullying behaviors (Leff et al., 2003), research have shown that best practices in bullying prevention and intervention programs involve all levels of the social ecology, including school community, that consists of relationships among students and teachers, and students with their peers (e.g., Espelage & Swearer, 2003; Menesini & Salmivalli, 2017), in order to improve students' school adjustment.

The role of student-teacher relationship

Student-teacher relationships consist of meaningful emotional and relational connections that develop as a result of prolonged interactions between students and teachers (Fraire et al., 2013, Longobardi et al., 2016). Although the conceptual framework for teacher–child relationship literature has roots in numerous lines of research within education and psychology, its original framework was perhaps most strongly influenced by Attachment Theory (Sabol & Pianta, 2012).

First studies on children attachment are dated back to the work of Bowlby and Ainsworth, who argued that early mother-child interactions have effects on infant personality development, and a warm relationship between children and the principal caregiver (i.e., traditionally the mother, or a substitute figure) promotes emotional security in children (Ainsworth et al., 1978; 2015; Bowlby, 1969). Successively, the Attachment Theory has been extended to other contexts. For instance, research has explored the nature of relationship between child and father (e.g., Grossmann et al., 2002), as well as the impact of infant attachment in adult romantic relationships (e.g., Simon & Baxter, 1993).

In school context, Pianta and colleagues have largely explored the role of the Student–Teacher Relationship (STR) in students development and academic adjustment (e.g., Hamre & Pianta, 2001; 2006; Murray & Pianta, 2007; Sabol & Pianta, 2012), inspiring current research. Far more than being a manager of academic skills and social relations in class, a teacher is acknowledged for being an important attachment figure with a fundamental role in the students' developmental process (Schwab & Rossmann, 2020). Student-teacher relationships develop over the course of the school year through a complex intersection of student and teacher beliefs, attitudes, behaviors, and interactions with one another (Hamre & Pianta, 2006). Like responsive parents in familiar contexts, a warm relationship with teachers promotes emotional security in students at school (for a review, see Sabol & Pianta, 2012). Teachers represent for their students a secure base, from which they can explore the learning environment, and also a safe haven, to which they can maintain proximity in case of stress or need (Hamre & Pianta, 2001).

In a bullying situation, the students' perceptions regarding teacher attitudes towards bullying are associated with the level of bullying problems in a classroom. For instance, a study examining the mediators of the KiVa

antibullying programme (Saarento et al., 2015) found that changes in student perceptions of their teachers' bullying-related attitudes mediated the effects of the programme on bullying. If students start to perceive their teachers' attitudes as more disapproving of bullying, their bullying behavior tends to be reduced, confirming the importance of student-teacher relationship and the role of teachers' externalized disapproval of bullying (Menesini & Salmivalli, 2017).

Variables in student-teacher relationship

The most frequently used measure of teachers' perceived relationship quality with their students is the Student-Teacher Relationship Scale (STRS; Pianta, 2001), which identifies three distinct dimensions of teacher-child relationships: *closeness*, that indicates the degree of warmth and positive affect; *conflict*, that refers to the negativity or lack of rapport; and *dependency*, that is the emotional clinginess or possessiveness that child displays with the teacher (Sabol & Pianta, 2012).

The quality of relationships between students and their teacher is considered scientifically, clinically, and pedagogically relevant, because, in the short-term, it significantly has an influence on the behaviors of each agent involved in the interaction (Stuhlman & Pianta, 2002), while, in the long-term, it has been demonstrated to have impacts on students' school commitment and outcomes (Hamre & Pianta, 2001). Students' relationships with teachers are fundamental to their success in school at different levels (Hamre & Pianta, 2006).

Children and adolescents experiencing positive relationships with their teachers develop higher interest in school activities, are more motivated and willing to learn (Prino et al., 2016), feel more competent (Hamre & Pianta, 2006) and tend to show higher educational performance and to reach better academic achievements (Hughes, 2011; Longobardi et al., 2016; Pasta et al., 2013). In addition, the quality of student-teacher relationships has been recognized as having a positive influence on students' behaviors (e.g., Birch & Ladd, 1997, Espelage & Swearer, 2003, Rodkin & Hodges, 2003). A strong and supportive relationships with teachers allow students to feel safer and more secure in the school setting, (Hamre & Pianta, 2006), with positive impacts on children and adolescents emotion regulation (Hughes & Im, 2016) school-liking and self-directedness (Birch & Ladd, 1997). Finally forming strong and supportive relationships with teachers in early adolescence is positively associated with more positive connections with peers (e.g., Hughes & Im, 2016; Gini et al., 2015, Hamre & Pianta, 2006), and lead students to an autonomous motivation to defend victims in case of bullying episodes (Jungert et al., 2016).

In turn, research exploring dependency in the teacher-child relationship found a strong correlation with school adjustment difficulties, including poorer academic performance, more negative school attitudes, and less positive engagement with the school environment (Birch & Ladd, 1997).

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Furthermore, conflictual relations between teachers and students is associated with decreased academic achievement (Roorda et al., 2011) and can compound the risk of school failure, especially for at-risk students: experiencing conflict with teacher, students may have difficult in taking advantage of academic and social resources offered within classrooms and schools (Hamre & Pianta, 2006). High levels of perceived conflict with teachers are associated with lower teachers' ratings of students' school liking, school avoidance, self-directedness, and less cooperative participation in the classroom (Birch & Ladd, 1997).

Exploring gender differences in the relationship with teachers, and the impact on students' self-concept, McFarland and colleagues (2016) have found that closeness with teacher have a mild effect on self-concept, that is lower in boys than in girls, while conflictual student-teacher relationship has a strong negative impact on self-concept both in girls and boys (McFarland et al., 2016). Conflictual relationships with teachers are also linked to low students' prosocial behavior in general (Roorda et al., 2014), and significantly predict an increase in conduct problems and hyperactivity/inattention symptoms (Longobardi et al., 2016). Finally, negative student-teacher relationships are associated with lower social statuses among peers (Hughes & Im, 2016), higher levels of peer victimization (Lucas-Molina et al., 2015), increased passive by standing (Jungert et al., 2016) and both bullying and pro-bullying behaviors (Longobardi et al., 2018).

The importance of peer relationships

The impact of peer relationships at school is well described in the literature. Research has demonstrated that students who are able to establish good relationships with their school-mates have better social skills and competencies, and tend to show higher academic outcomes (Hoferichter et al., 2015). Also, social preference scores are negatively related to changes in students' levels of peer victimization (Elledge et al., 2016). Social interaction and close relationships have important influences on both physical and mental health (García Bacete et al., 2014) and are positively associated with lower levels of stress and anxiety in students (Hoferichter et al., 2015). In turn, low childhood peer status has been demonstrated to have a negative impact on long-term health, and it is associated with high overall adult disease risk, such as mental and behavioural disorders (e.g., alcohol abuse and drug dependence), external causes (e.g., suicide) and various lifestyle-related diseases (e.g., ischaemic heart disease and diabetes; Almquist, 2009).

In bullying episodes, the reaction of peers is important, because it provides direct feedback to the bullies, having important implications for the emergence and maintenance of bullying. The frequency of bullying perpetration is indeed higher in classrooms where reinforcing the bullies' behavior is common and defending the victimized classmates is rare, implying that bullying is socially rewarded (see Menesini, & Salmivalli, 2017).

How to measure social status among peers

Coie and colleagues (1982) argued that to investigate social status is important because peers have access to a wider sample of social interactions and a wider range of interaction settings than adults can observe.

The most used instrument to assess the social status among children and adolescents in the classroom is a peer nomination questionnaire that was inspired by Moreno's sociogram techniques (1934) and Coie and colleagues (1982). It represents a sociometric strategy-based instrument that allows researchers to plot a graphic representation of the interpersonal relationships present in a class group, and it consists of questions regarding school life in which students have to nominate three of their peers. For each child, the sum of the positive nominations received from all peers represent their liking scores, and the sum of negative nominations received represent their disliking scores. The liking and disliking scores standardized within each class are used to compute a social preference score and a social impact score for each child.

As a result of peer nomination methods, students can be distinguished into four groups: *popular*, *rejected*, *controversial* and *neglected* (or *isolated*). Students receiving high liking scores and low disliking scores are called *popular*; they are generally described by peers with prosocial valued labels, such as cooperative and being leaders. Students receiving low liking scores and high disliking scores are called *rejected*; they are generally described by peers with negatively valued labels, such as disruptive the group, fighter and seeker help. Students receiving high liking scores and high disliking scores are called *controversial*; they display a profile that combined features of popular and rejected groups: students who are classified as controversial are generally considered by their peers as visible, assertive, but also aggressive and actively engaged in antisocial behaviors; they can be described as disruptive, starting fights, seeking help with school work, or being leaders. Students who are classified as controversial give rise to considerable affective ambivalence and mixed feelings within group members. Finally, students receiving both low liking and low disliking scores, or who are not nominated by their peers as liked or disliked, are called *neglected*, or *isolated*. They are located at the polar opposite of the controversial group, and they constitute a low visibility group. For this reason, it may have been difficult even for their peers to reach a consensus about describing them for instance as shy, since no behavioral features have significant impact on their social status (Coie et al., 1982).

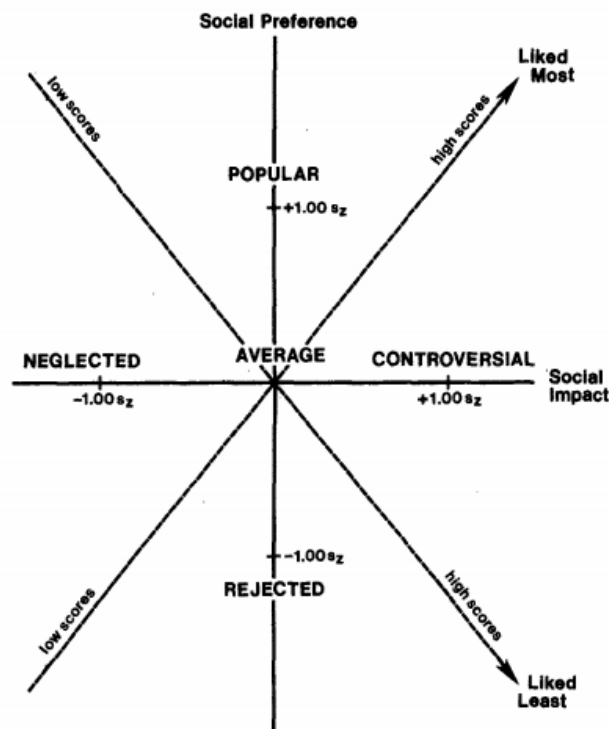
In addition, peer nomination scores that indicate students' like or dislike for a peer can be combined to create two new dimensions of social status: the sum of liking score plus disliking score yields the *social impact*, while liking score minus his or her disliking score yields the *social preference* (Peery, 1979). The four types of social status can be thought of in terms of sectors within the two-dimensional grid formed by the social preference and social impact variables. Figure 2 illustrates the relationship between the dimensions of social preference and social impact and the positive and negative sociometric measures from which the former are derived. It also illustrates the relationship between the dimensions of social preference and social impact and the four

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types of social status groups. An average status group was identified to provide a reference group with whom the more extreme groups could be compared (Coie et al., 1982).

Figure 2

The relationship between the dimensions of social preference and social impact, the positive and negative sociometric measures from which the former are derived and the four types of social status groups (Coie et al., 1982).



Literature has shown that peer relationships can influence students' social and emotional adjustment: sociometric rejection is associated with more internalizing and externalizing problems (Sandstrom et al., 2003). In addition, being rejected has an impact on students' behavior and is highly associated with an aggressive profile (Berger et al., 2015): students who are rejected or excluded by peers usually show more aggressive behaviors (Cillessen & Mayeux, 2004, Espelage et al., 2003). In general, bullying and other related behaviors are more frequent among students who experience low levels of social preference (Caravita et al., 2009; Mouttapa et al., 2004; Rodkin & Hodges, 2003), and rejected students tend to be more involved in active bullying and pro-bully behaviors compared to the adolescents in the other student categories (Longobardi et al., 2018). Because students who act in an aggressive manner are generally disliked by their peers (Coie et al., 1982), for rejected students, bullying seems to represent a way to get attention and to reach recognition and consideration among schoolmates (Longobardi et al. 2018; Pellegrini, 1998; Smokowski & Kopasz, 2005).

Peer group status is relatively stable over time (e.g., Cillessen et al., 2000; Hardy et al., 2002): popular students tend to remain popular, whereas rejected students remain rejected (Brendgen et al., 2001). In addition, the neglected and controversial categories are the least stable (DeRosier & Thomas, 2003). When changes do occur in social status, it is usually from popular to average and vice-versa, or from neglected to average. Rarely popular students become rejected, and even more rarely rejected students become popular (for a review, see Parker et al., 2006). Group acceptance or rejection status reflects the social skills and other characteristics of the individuals, which in turn can represent risk factors for bullying and problems in adjustment.

1.9. Bullying risk factors

As suggested by Whitney and colleagues (1994, p. 213), “just being different in a noticeable way” might put students at risk for peer victimization. Following the Bronfenbrenner's (1979) Socio-Ecological Model in order to understand the complexities and influences surrounding bullying behavior (Espelage & Swearer, 2010), recent research has explored situations where individuals may be targeted for having certain characteristics (Malecki et al., 2020).

According to the Stigma-Based Bullying Framework (Earnshaw et al., 2018), social stigmas might cause societal devaluing of certain characteristics or identities proper of individuals. As a consequence, cultural practices, beliefs, and interpersonal interactions are often influenced by social dominance orientation (Ho et al., 2012) because of stereotypes or prejudice (Malecki et al., 2020). Thus, societal, structural (i.e., school, family), and individual characteristics all interact to create conducive or non-conducive conditions for bully role behaviors, particularly in relation with traditionally stigmatized characteristics (Earnshaw et al., 2018; Malecki et al., 2020). In this framework, several characteristics may be identified as stigmatized and may put individuals at risk of bullying, such as behavioral and emotional outcomes, socioeconomic status, racial or ethnic identity, sexual factors, or disability status (Earnshaw et al., 2018; Malecki et al., 2020; Menesini & Salmivalli, 2017; Zych et al., 2015). Further, recent research have found that having multiple stigma-associated factors (e.g., poverty and disability together) put students at higher risk for bullying involvement, and, as a consequence, more in need of protection and intervention from educational institutions (Earnshaw et al., 2018; Malecki et al., 2020).

Difficulties in school adjustment

As highlighted in the paragraphs above, difficulties in school adjustment are associated with risk factors for bullying (e.g., Cañas et al., 2020; Nansel et al., 2003; Salmivalli et al., 2012). Social and academic developments are highly intertwined, and school adjustment can be difficult especially for student with stigmatized identities and attributes (e.g., sexual/gender minorities, disability, high body weight, race/ethnicity), leading some specific groups of students at higher risk for peer victimization.

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Adolescents from sexual and gender minorities experience both greater school-based peer harassment and poorer academic adjustment compared to their classmates (Lessard et al., 2020). Similarly, weight-based victimization is a common and consequential experience for adolescents with overweight and obesity, and recent research has found that the association between peer weight-based victimization and lower academic grades may be minimized when students perceive their teachers as resources to help prevent future episodes of bullying, suggesting that teachers can help in reducing risk of problems in school adjustment in adolescents with overweight and obesity (Lessard et al., 2021). Also, students from ethnic/race minorities (e.g., African-American and Hispanic students in the U.S.) might experience difficulties in achievement motivation during their schooling experiences because of contextual, social, and cultural factors (Zusho & Kumar, 2018) and students with multiracial background tend to report lower levels of perceived school safety (Yang et al., 2021). However, it is encouraging that greater diversity within schools can also benefit students' intergroup attitudes, mental health and school adaptation via the mediating role of the formation and maintenance of cross-ethnic friendships, the development of complex social identities, and decreases in perceived vulnerability (Graham, 2018). Regarding students with disability conditions, they have elevated rates of involvement as victims and bully-victims, compared to their nondisabled peers (a recent study found that in the U.S students with disabilities are 32% more likely of being a victim of bullying than their peers without disabilities; Gage et al., 2021), indicating that those who receive special education services might be at higher risk for poor school adjustment (Farmer et al., 2012). Despite their inclusion in mainstream education, students with disabilities might experience social exclusion or isolation, and have difficulties in integration and peer relationship (see Farmer et al., 2019).

Further, more negative outcomes and worse school adjustment have been documented for youth experiencing multiple, as opposed to one, type of bias-based bullying (Galán et al., 2021; Mulvey et al., 2018). Victimization targeting specific stigmatized identities can be highly detrimental to students' school adjustment (Russell et al., 2012), because youth victimized for an internal, stable, and uncontrollable characteristic blame themselves for the mistreatment in ways maladaptive to school success (Lessard et al., 2020). Recently, research has highlighted that reducing the bias-based bullying experiences across a range of stigmatized identities and attributes, and supporting schools to take proactive steps to promote broad-reaching social inclusion, can help in improving students' school adjustment (Lessard et al., 2020).

In the following paragraphs, potential bullying, and consequent low school adjustment, risk factors will be illustrated for specific groups of students.

Internalizing and externalizing problems

As highlighted by Menesini and Salmivalli in a review (2017), students with internalizing and/or externalizing problems are more likely to become victimized, if they also face interpersonal difficulties. Victimization is frequently associated with internalizing problems such as depression, anxiety and low self-esteem (Cook et

al., 2010). Also, students with externalizing problems, low levels of prosocial behavior (Card, 2003), and interpersonal difficulties such as peer rejection, low peer acceptance, few or no friends, and negative friendship quality (Cook et al., 2010) are more likely to be victimized. According to Casper and Card's meta-analysis (2017), forms of indirect victimization are mostly correlated with internalizing symptoms, whilst forms of direct victimization are mostly associated with externalizing symptoms. Further, alexithymia (i.e., a cognitive-affective disturbance common in individuals that have had traumatic experiences, and characterized by a reduced ability to identify and describe feelings, diminished imaginative capabilities, and a concrete and externally-oriented way of thinking; Hébert et al., 2018; Taylor, 1984) has been found to have a mediating role in exacerbation of internalized and externalized symptoms among pre-adolescents and adolescents exposed to bullying victimization (Prino et al., 2019).

Socioeconomic status

Socioeconomic inequalities can be considered as potential risk factors for increased involvement in bullying situations. Students with low socioeconomic status are at higher risk of victimization (Fu et al., 2013; Malecki et al., 2020; Son et al., 2014). Further, in a meta-analysis focused on the link between socioeconomic status and bullying has been revealed that both victims and bully-victims are more likely to come from low socioeconomic contexts (Tippett & Wolke, 2014), and students receiving free or reduced lunch at school because of their low socioeconomic status report higher levels of both bullying and victimization (Malecki et al., 2020; Tippett & Wolke, 2014).

In addition, prevalence of students' socioeconomic factors within a school context has been found to have a link with varying rates of bullying behaviors (Malecki et al., 2020). Research has highlighted that in primary school a high concentration of student poverty may increase the risk for involvement in retaliatory aggression and fights (Bradshaw et al., 2009). Also, in middle school a high prevalence of students with low socioeconomic status is associated with an increased risk for bullying involvement (Bradshaw et al., 2009). Further, the association between socioeconomic status and bullying behaviors may be more salient where students' socioeconomic status varies markedly from the general wealth of a school or community (Due et al., 2009).

However, in a recent research, Malecki et al. (2020) have found that the percentage of students with low socioeconomic status in a school is significantly and positively associated with victimization, but also defending behaviors, while negatively with outsider behaviors. This seems to indicate that a higher concentration of student poverty is linked with more victimization, but also, encouragingly, with defending behaviors in school; in turn, lower concentration of poverty among students may be associated with higher outsider and ignoring behaviors toward bullying perpetration against peers (Malecki et al., 2020).

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Sexual behaviors and gender identity

Sexual behaviors and gender identity might put individuals at increased risk of being involved in bullying behaviors (e.g., Hatchel et al., 2020; Lessard et al., 2020). In a meta-analysis conducted by Fedewa and Ahn (2011) on 18 studies on victimization in sexual-minority groups, it was found that verbal, physical and also sexually charged victimization is more frequent in sexual minority groups, when compared to the majority group. Lessard et al. (2020) have found that over 90% of sexual and gender minority adolescents report at least one experience of bias-based bullying. In addition, odds of being both a perpetrator and a victim are 1.41 to 3.22 times higher among gay, lesbian, and bisexual youths, than among heterosexual youths (Eisenberg et al., 2015), while 73% of sexual and gender minority adolescents report being bullied for identities and attributes unrelated to their gender or sexual orientation (e.g., weight-based bullying, race/ethnicity and religious affiliation; Lessard et al., 2020).

Encouragingly and consistent with the early adolescent peak in generalized bullying, also victimization targeting sexual and gender minority students' sexual and gender identities tends to decline in frequency over the course of adolescence (Lessard et al., 2020). However, victims of bullying related to sexual orientation or gender identity/expression may show long-term psychological outcomes, such as higher depressive symptoms, mental health issues, suicide ideation or attempt, and traumatic stress due to sexual and physical abuse (Collier et al., 2013; Fedewa & Ahn, 2011). In addition, social outcomes such as perception of hostile school climate, lack of social support, lower sense of belonging to school, disruptions in educational trajectories, and alcohol and substance use are found to be more common in sexual minorities, compared to the heterosexual youth group (Collier et al., 2013; Fedewa & Ahn, 2011; Zych et al., 2015).

Obesity and overweight

Obesity represents a documented risk factor for bullying (e.g., Şahin & Kırılı, 2021). Peer victimization is more common among overweight youth and youth with obesity, in comparison to their normal-weight peers (Van Geel et al., 2014), and is associated with low levels of self-esteem (Ercan & Özcebe, 2020). Both sexes, and especially girls with overweight and obesity, experience significantly increased odds for victimization by being made fun of because of their physical appearance (Koyanagi et al., 2020). In addition adolescents with overweight and obesity have significantly higher odds of being both a bully victim and a bully perpetrator, in comparison to healthy weight peers (Rupp & McCoy, 2019). Bullying involvement of adolescents with overweight or obesity (as a bully or a victim) put them at risk of behavioral conduct problems, depression and anxiety, arguing excessively, and having difficulty making friends, compared to adolescents with overweight or obesity who are neither a bully perpetrator nor victim (Rupp & McCoy, 2019; Şahin & Kırılı, 2021).

Ethnic minorities

The multicultural society resulting from globalization has caused different reactions throughout society, such as bullying victimization based on racial and ethnic reasons (Fuentes Cabrera et al., 2019). Most of ethnic studies on bullying at school over the past few decades are focused on the Hispanic-American, Caucasian, African, and Asian populations, with a special preponderance of the North American school context (see Fuentes Cabrera et al., 2019). Despite increased research on bullying involving ethnic/race minorities, researchers still have little understanding of how bullying may differentially affect racial and ethnic minority and immigrant background youth, and results seem to be contradictory, probably because of the complexity related, at least in part, to the static identification of race and ethnicity without accounting for broader contextual variables (see Gage et al., 2021).

Vitoroulis and Vaillancourt (2015) synthesized the results of 105 studies focused on bullying related to ethnicity, finding no substantial difference in peer victimization suffered by majority and minority groups. In another review, Xu et al. (2020) have found that studies measuring differences in bullying prevalence by racial and ethnic groups are inconclusive, and discrepancies in findings may be explained by differences in how bullying is measured and the impact of school and social environments. These authors suggested that racial and ethnic minorities and individual with an immigrant background are disproportionately affected by contextual-level risk factors associated with bullying (e.g., adverse community, home, and school environments), which may moderate the effects of individual-level predictors of bullying victimization or perpetration (e.g., depressive symptoms, acculturation stress, attitudes toward aggression, etc.) on involvement and outcomes (Xu et al., 2020). Several recent studies have highlighted that, among adolescents, there may exist several factors that are associated with bullying: sociodemographic factors (sex, gender and age), psychological factors (low self-esteem, negative emotions and aggressiveness), psychosocial factors (aggressiveness, submission, social vulnerability and school dropout) and family factors (existence of broken, cohesive families, family dysfunction, lack of communication and family climate) (Cardozo, 2021; Reisen et al., 2019; Solar et al, 2019; Vázquez et al., 2020).

However, other researchers have highlighted that ethnicity and race may represent important risk factors for being victims of bullying, especially among first generation immigrants (Fuentes Cabrera et al., 2019). Ethnic identity constitutes a differential factor in harassment appearing (Gege et al., 2021), accompanied by very poor socio-economic and cultural levels favoring depressive tendencies and drug consumption in the ethnic harassed (Fuentes Cabrera et al., 2019). Also, minority youth may be more likely to perpetrate bullying, and are at much higher risk for poor health and behavioral outcomes, as a result of bias-based bullying (Earnshaw et al., 2018; Malecki et al., 2020). In the U.S., African-American and Hispanic students are found to score a higher prevalence of bullying involvement, both as victims and bullies, in comparison to other students (Albdour & Krouse, 2014; Gage et al., 2021), and in the UK students from minorities suffer more victimization

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when compared to the majority (Vitoroulis & Vaillancourt, 2015), with a negative impact both physically and psychologically (Fuentes Cabrera et al., 2019). Across Europe, a recent review has highlighted that ethnic minority students are often bullied more than White-European peers, but also that intra-ethnic bullying is becoming prevalent (for instance, some students of Roma ethnic origin bullied classmates they perceived as Roma rather than non-Roma; Kisfalusi et al., 2020), suggesting that, in exploring ethnic bullying/victimization it is important to focus on how both bullies and victims perceive, evaluate and act on their individual and contextual (classroom or school) characteristics, as their efforts to have, maintain, or enhance the fit between environmental and personal needs (Kuldas et al., 2021; 2021a).

Moreover, research suggests that youth of minority races and ethnicities who do not fulfill stereotypes about their racial and ethnic groups are more likely to be bullied than youth who fulfill stereotypes (Earnshaw et al., 2018). For instance, African-American students who do not participate in sports and those with higher scores on national tests are more likely to be bullied than their African-American peers (Peguero & Williams, 2013). In turn, Xu et al. (2020) suggested that racial and ethnic minorities and individuals with an immigrant background may be protected against bullying involvement and its negative consequences as a result of strong ethnic identity, positive cultural and family values, and other resilience factors.

Disability condition

Bullying involvement among youth with disabilities has garnered increased attention in the past decade (e.g. Rose et al., 2011, Rose & Gage 2017). Students with disabilities and special needs are often teased, abused and ignored in schools, and this can have harmful consequences to their self-image. Also, students who experience a disability or special needs condition tend to be less accepted, more rejected and neglected than their classmates, generally have a social status which is lower than that of their peers and are more socially isolated (see for instance Bossaert et al., 2015; Farmer et al., 2019; Koster et al., 2009).

In their review, Rose et al. (2011) reported that the majority of studies that examined bullying involvement among youth with disabilities found that this subset of youth were at greater risk of involvement as both perpetrators and victims. Recently, Gage and colleagues (2021) confirmed these results, highlighting that students with disabilities are more likely to be victims of bullying (32%) and be disciplined for bullying behaviors (41%) when compared to their peers without disabilities. This disproportionate representation has been found to be consistent across national and regional longitudinal studies (Blake et al., 2012; Rose & Gage, 2017; Son et al., 2014), demonstrating the escalating need for providing increased support and skill development regarding bully prevention among youth with disabilities (Gage et al., 2021; Rose et al., 2019). The following paragraphs will focus more specifically on the theme of bullying and school adjustment among children and adolescents with disability and special education needs within educational context.

1.10. Disability

Definition and worldwide prevalence

According to the bio-psycho-social paradigm, the International Classification of Functioning, Disability and Health (ICF; WHO, 2007) describes functioning and disability as the outcome of a complex, multidimensional interaction between a person's health condition(s) and context (environmental and personal factors). Disability is described as arising out of limitations on activity and restrictions on participation that are determined by the interaction between bodily functioning, structural impairments, and an unhelpful context (WHO, 2007). This framework changed the traditional medical view of disability, in which an individual with disability was considered as sick or broken and hence in need of being made well or whole once more (Hall, 2018). The ICF approach allows detailed descriptions of the complexity and uniqueness of each disability condition and introduces a relational vision of disability, seen as the result of the interaction of individual characteristics and contextual aspects (Ianes et al., 2020).

The first ever World report on disability, produced jointly by the World Health Organization and the World Bank (2011), has highlighted that more than a billion people in the world experience disability. Disability represents a public health issue, involving about 15% of the world's population, and the number of people living with disability is increasing (WHO, 2011). People with disabilities have generally poorer health, lower education achievements, fewer economic opportunities and higher rates of poverty than people without disabilities. According to the new multi-prospective adopted by World Health Organization, that qualified disability as a health condition in an unfavorable environment, is the context itself that takes on a crucial role, being able to represent a barrier or an enabling factor (Romano et al., 2021). Disability conditions are largely due to the lack of services available and the many obstacles that disabled people face in their everyday lives. Reducing barriers to health care and improving education, employment, rehabilitation and support services can create the environments which will enable people with disabilities to flourish (WHO, 2011). This is understood in a very broad sense, including the sphere of the family, social and health care context, and especially the school system of a country (Romano et al., 2021).

Students with disabilities at school

Cross-country comparisons about the prevalence of students with disabilities are difficult because of differences in classification systems. UNESCO has estimated that 93 millions of children and adolescents under age 14, or 5.1% of the world's children and adolescents, were living with a 'moderate or severe disability' and that almost one-fifth of students may develop a special educational need during their schooling years (UNESCO, 2015).

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In the US, in 2019–20, the number of students aged 3–21 who received special education services under the Individuals with Disabilities Education Act (IDEA) was 7.3 million, corresponding to 14% percent of all public school students (NCES, 2021). In Europe, using national definitions across education systems, it has been found that the share of students deemed to have special education needs ranges from 1% in Sweden to 20% in Scotland (UNESCO, 2020). Specifically, in Italy students with disabilities have increased significantly and constantly in the last three decades in all school orders. The Italian Minister of Education (MIUR, 2019), has reported that in the academic year 2017/2018, students with disabilities in Italian schools were 268,246, corresponding to 3.1% of school population. Compared to twenty years before, students with disabilities have more than doubled in Italy (they were 123,862 in 1997/1998; MIUR, 2019). Also, In the last thirty years, the Italian school system has registered a constant growth of the group of students recognized as having a disability, which is now between 3 and 4% across various school grades (ISTAT, 2020).

The special education needs

Within the wider group of students with special education needs (SEN), students with disability represent a smaller and more specific category. The definition of students with SEN and policies for their assessment varies widely between countries (Barow & Östlund, 2020), and often the term SEN is used as a synonym of term disability. The UNESCO (2012) and the European Commission (2018) have defined students with SEN as children and adolescents whose learning difficulties hinder their ability to benefit from the general education system without support or accommodation to their needs.

The Organization for Economic Co-operation and Development (OECD, 2005) devised a cross-national framework to collect data on students with SEN. This framework classifies SEN into three categories: disabilities or impairments with organic origins; behavioral or emotional disorders and learning difficulties that do not have organic origins or origins linked to the child's background; and difficulties arising from socio-economic, cultural and/or linguistic factors. Different frameworks might be developed at national level to enable the administration of tailored support at school and in other educational contexts. For instance, France uses seven categories, including separate categorizations for cognitive, language, pervasive developmental and motor function disorders, hearing and visual disorders, as well as the association of multiple disorders (European Commission, 2018).

In Italy, the term SEN represents a wide classification that includes children and adolescents with certified disability conditions, with difficulties because of socio-economic, linguistic, or cultural reasons (e.g. individuals with immigrant background, adopted child) and also with behavioral and emotional difficulties, such as attention-deficit/hyperactivity disorder (ADHD) and specific learning disorders (cf. MIUR, 2012). Within this classification, special needs not fulfilling the World Health Organization definition of disability, but still evidencing an impairment of cognitive functions, learning processes, and fully satisfactory relations

with others are defined as *other special educational needs* (other SEN; Di Nuovo, 2012; MIUR, 2012; Zanobini, 2013).

Neurodevelopmental disorders

Definitions and prevalence

Some of the most common types of disability in childhood and adolescence are included in a larger category of disorders, namely *neurodevelopmental disorders* (Bosch et al., 2021; Hansen et al.; ISTAT, 2020; 2018; MIUR, 2019; NCES, 2021). Specifically, in the recent approval of the 11th Revision of the ICD (ICD-11) by the World Health Organization (WHO, 2018), the category of neurodevelopmental disorders includes disorders of intellectual development, developmental speech or language disorders, autism spectrum disorders (ASD), developmental learning disorders, developmental motor coordination disorder, attention-deficit/hyperactivity disorder (ADHD), stereotyped movement disorder, and a remainder category labeled other neurodevelopmental disorders. Similarly, the DSM-V, published in 2013 by the American Psychiatric Association (APA, 2013), includes the diagnostic category of neurodevelopmental disorders, further examined in an issues published in 2015, which contains intellectual disabilities (ID), communication disorders, autism spectrum disorder (ASD), attention-deficit/hyperactivity disorder (ADHD), and specific learning disorders (APA, 2015). In the following paragraphs, terms and definitions from DSM-V (APA, 2013; 2015) will be adopted.

The wide classification of neurodevelopmental disorders consist of a constellation of disorders with onset in childhood or adolescence, and involving some form of disruption to brain-based functions and development (APA, 2013; 2015; Hoover, 2020; Thapar et al., 2017). These disorders are characterized by prominent neurocognitive deficits (Thapar et al., 2017), which affect behaviors that are important in social contexts, such as at school (APA, 2013; 2015). Some neurodevelopmental disorders affect multiple domains (e.g., intellectual disabilities), others have more circumscribed effects (e.g., specific learning disorders and motor disorder; APA, 2013; 2015). Neurodevelopmental disorders are highly heterogeneous in terms of their clinical characteristics, etiology, and outcomes. Although highly heritable, neurodevelopmental disorders are typically multi-factorial in origin, which can be genetic, prenatal or perinatal (Hoover, 2020). They more commonly affect males (Thapar et al., 2017).

Research focused on prevalence estimates of neurodevelopmental disorders are scarce, as standardized diagnostic methods often are not applied (see Hansen et al., 2018) and most studies have not estimated the prevalence rates of several disorders together (see Kita et al., 2020). However, available data on the prevalence of disabilities indicate neurodevelopmental disorders as one of the most common types of disability. In the U.S., among all students who receive special education services, 33% of them have specific learning disorders and 19% of them have speech or language impairments, which are included in the diagnostic category of neurodevelopmental disorders. Students with autism, developmental delays,

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intellectual disabilities, and emotional disturbances each account for between 5% and 11% of students who receive special education services in the U.S. (NCES, 2021). In Norway, a study aimed to rating the prevalence of neurodevelopmental disorders and comorbid conditions in children and adolescents (aged 0-18), has found that students with neurodevelopmental disorders constitute 55.5% of population referred to mental health services, and thus comprise the largest group of patients (Hansen et al., 2018). A research conducted in Spain schools revealed that 18.3% of the student population aged 5-17 meet criteria for at least one neurodevelopmental disorder, although only one third of them had already received a diagnosis (Bosch et al., 2021). In Italy, 96.4% of the total number of students with disabilities have a psychophysical disability (MIUR, 2019); among these, the most frequent types of disability is intellectual disability (42% of students with education support), followed by other neurodevelopmental disorders (26.4%; ISTAT, 2020). Further, from 2013 to 2018, the number of students with ADHD, communication disorder, and neurodevelopmental disorders in general has increased, passing from 17% to 26.4% (ISTAT, 2020).

Types of neurodevelopmental disorders

Intellectual disability

Intellectual disability (ID, or intellectual developmental disorder) is defined in the DSM-V as an early-onset developmental disorder characterized by deficits in both intellectual functioning and adaptive functioning, compared to peers of same age and gender and same linguistic and socio-cultural background (APA, 2013; 2015). Severity levels range from mild to profound impacts on conceptual, social, and practical functions. The main causes of intellectual disability are chromosomal abnormalities, prenatal and postnatal infections, and exposure to toxic substances such as alcohol in utero (Hoover, 2020). The incidence of ID in childhood is estimated to be 1–2% internationally (Bhaumik et al., 2016).

Communication disorder

Communication disorder refers to a group of impairment that have an impact on an individual's ability to receive, send, process and comprehend verbal, non-verbal, and other graphic symbol systems that are shared by a community. This subclass of neurodevelopmental disorders includes language disorder (receptive and expressive), speech sound disorder (phonological), and childhood-onset fluency disorder, also known as stuttering, characterized by disturbances of the normal fluency and motor production of speech. Further, social (pragmatic) communication disorder is a new category of DSM-V and refers to children and adolescents who have primary difficulty with the pragmatic aspect of language background (APA, 2013; 2015).

Autism spectrum disorder

Autism spectrum disorder (ASD) is characterized by 1) deficits in social communication and social interaction, and 2) restrictive repetitive behaviors, interest, and activities. Both components are required for diagnosis of ASD. In DSM-V, ASD category consolidates into one disorder the following disorders that were separate in DSM-TV-TR: autistic disorder, Asperger's disorder, childhood disintegrative disorder, and pervasive

developmental disorder not otherwise specified (including atypical autism). Although originally autism was thought to be rare, its estimated prevalence in the U.S. is currently 1 in 88 (APA, 2013; 2015).

Attention-deficit/hyperactivity disorder

Attention-deficit/hyperactivity disorder (ADHD) is the most commonly diagnosed childhood neurodevelopmental disorder (Hoover, 2020). It is characterized by developmentally inappropriate persistent problems, inattention, and/or excessive motor restlessness, and/or impulsivity that interfere with functioning. Symptoms for both inattention and hyperactivity/impulsivity are typically first observed in early childhood; onset should be before age 12 years (APA, 2013; 2015). It is estimated that between 6% and 7% of students have symptoms that meet criteria for ADHD (APA, 2013; 2015), diagnosed more in males than in females in school age students (Holmberg & Hjern, 2008). Further, approximately 5% of adults may also suffer from this disorder (APA, 2013; 2015).

The causes of ADHD are genetically influenced and mediated by an impaired or immature nervous system, but symptoms may also be shaped by childhood environmental factors, such as disorganized family functioning, childhood stress, abuse, and other adverse experiences (Davis et al., 2018; Hoover, 2020; Jeste, 2015). Psychosocial factors may affect development, severity, and expression of ADHD (Richards, 2013), as, for instance, children diagnosed with ADHD at a high rate have been shown to have significant reductions in core symptoms with stable placement settings and higher parental warmth (Linares et al., 2010).

Specific learning disorders

Specific learning disorders (or learning disabilities, or learning difficulties - LD) require persistent difficulties in reading (dyslexia), writing (dysorthography and dysgraphia), and/or arithmetic/mathematical reasoning (dyscalculia) that emerge during the developmental period and have a significant negative effect on academic performance, occupational functioning, or daily life (APA, 2015). According to the Learning Disabilities Association of America, students with learning disorders commonly exhibit symptoms including short attention span, poor memory, difficulty following directions; inability to discriminate between or among letters; numbers or signs; poor reading and/or writing ability; problems with eye-hand coordination; difficulties with sequencing; and disorganization. Although these symptoms can be found in all children at some point in their life, students with learning disorders have a cluster of these symptoms that do not disappear (Peguero & Hong, 2020). However, students included in this category of neurodevelopmental disorders have an overall intellectual functioning within the normal range for their age (Arrhenius et al., 2021).

Recent research has highlighted that multiple risk factors can increase the probability for children to be diagnosed with a specific learning disorder. A study conducted in Finnish schools has found that relatively younger children (i.e., students born in September-December, compared with those born in January-April, within the same year) are more likely to be diagnosed with a specific learning disorder by the age of 10

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(Arrhenius et al., 2021). Further, due to language barriers, racial and ethnic minorities such as immigrant youth may often be perceived by teachers and classmates as having a learning disorder (Peguero, & Hong, 2020). In Italy, the number of students with LD out of the total number of attending students has constantly grown and has gone from 0.7% in 2010/2011 to 3.2% in 2017/2018 (MIUR, 2019a), to 4.9 in 2018/2019.

Stereotypic movement disorder

Stereotypic movement disorder is a condition characterized by repetitive behavior that is driven without purpose and is associated with significant distress and impairment (APA, 2015). These inherited neuropsychiatric conditions of childhood onset are characterized by chronic, repetitive, semi-voluntary irregular movements and/or vocalizations called “tics”. Unpleasant premonitory sensations, or “urges”, often precede and are temporarily relieved by performing a tic (Zinner et al., 2012). There are several diagnostic categories of tic disorders; among these, the diagnosis of Tourette syndrome (TS) has been estimated to be less than 1% (Charania et al., 2021), but diagnosis is higher for chronic tic conditions (CTD; APA, 2015). Additional psychiatric conditions usually co-occur in students who have stereotypic movement disorder. Comorbid conditions include Attention-deficit/hyperactivity disorder (ADHD), Obsessive–Compulsive Disorder (OCD), explosive outbursts, and mood and non-OCD anxiety disorders (Charania et al., 2021; Zinner et al., 2012).

1.11. Disability and school adjustment

Research has shown that in general students with disabilities and special education needs in school context have difficulties in social skills (Freire et al., 2019) and tend to have lower levels of prosocial behaviors (Dasioti & Kolaitis, 2018), are less accepted (Broomhead, 2019) and have fewer or no friends (Banks et al., 2018; Pinto, et al. 2019) than their classmates. In addition, students with disabilities and special education needs present problems in terms of closeness and conflict in their relationship with teachers (Freire et al., 2019). Further, in these students, the presence of internalizing and externalizing problems, such as emotional symptoms and hyperactivity, seems to be correlated with bullying victimization (Dasioti & Kolaitis, 2018). For this reason, it seems important to analyze the inclusion and the school adjustment of students with disabilities and special education needs.

The school inclusion of students with disabilities: a short historical overview

Building relationships with other individuals is at the core of children and adolescents development, providing them social competences required to master the social challenges. However, students with disabilities and special needs generally exhibit problems in interaction patterns, indicating the existence of peer competence difficulties (Guralnick, 2010).

For centuries, people with disabilities have been excluded from all social communities or have been segregated in special educational contexts and remained separated from the rest of society. Throughout the twentieth century, great advances have been reached in education and socialization of disabled people (Buchem, 2013). Focusing on education, starting from the 1970s, school social and learning experience of students with disabilities has received increasing interest both from educational professionals and researchers. Many Countries all over the world have developed different education models and practices, whose main aim was to weaken the peer interaction problems exhibited by children and adolescents with disabilities and special needs (for a review, see Guralnick, 2010).

During the 1970s, early interventions aimed at socialization of children with disabilities were realized during free-play time. These interventions involved typically-developing children, brought in from a neighboring classroom with the role of facilitators, in order to engage with disabled students in social activities within specialized programs (Guralnick, 2010). At that time, *integration* (i.e., the physical reception of individuals with disabilities in everyone's school; Ianes et al., 2020) was the term used in special education to indicate actions directed to provide equal quality basic education to all students. The public schools were required to create new spaces for the students with special needs, where they could socialize with non-disabled peers. Within those "spaces" were regular classrooms, special education classrooms and pull out services (Rodriguez & Garro-Gil, 2015). These first interventions suggested the important role for teachers and educators in structuring social experiences for children and adolescents with disabilities, in order to take advantage of the social opportunities created by the presence of typically-developing peers (Guralnick, 2010). During the 1980s and 1990s there was an explosion of interventions in special education, corresponding to the increased recognition of the importance of early socialization of children with disabilities. The strategies developed to promote children's peer interactions involved both more developmentally advanced peers as agents of change, and teachers as support, who took major, active, and direct roles (Guralnick, 2010).

In 1994, as a result of the World Conference on Special Needs Education, a shift happened in terminology of special education, and the term *inclusion* appeared for the first time, within the Salamanca Statement (UNESCO, 1994). The use of the term inclusion meant a step beyond the concept of integration, indicating with the concept of inclusive school a context in which students with disabilities have both the opportunity to share their learning settings with all classmates and at the same time receive the specific support they need (Ianes et al., 2020). The principles behind inclusive perspective were the acknowledgement of every child's unicity and the right of receiving education for all students within the regular education system (where possible), taking into account the diversities, and providing a child-centered pedagogy capable of meeting everyone's needs (Rodriguez & Garro-Gil, 2015; UNESCO, 1994). Social structures (i.e., classrooms, schools, communities) and socio-educational actions were re-designed, considering also the special needs of children and adolescents with disabilities (Rodriguez & Garro-Gil, 2015). Inclusive programs produced different social environments, driven by expectation that "immersion" strategy would enhance students' peer interactions,

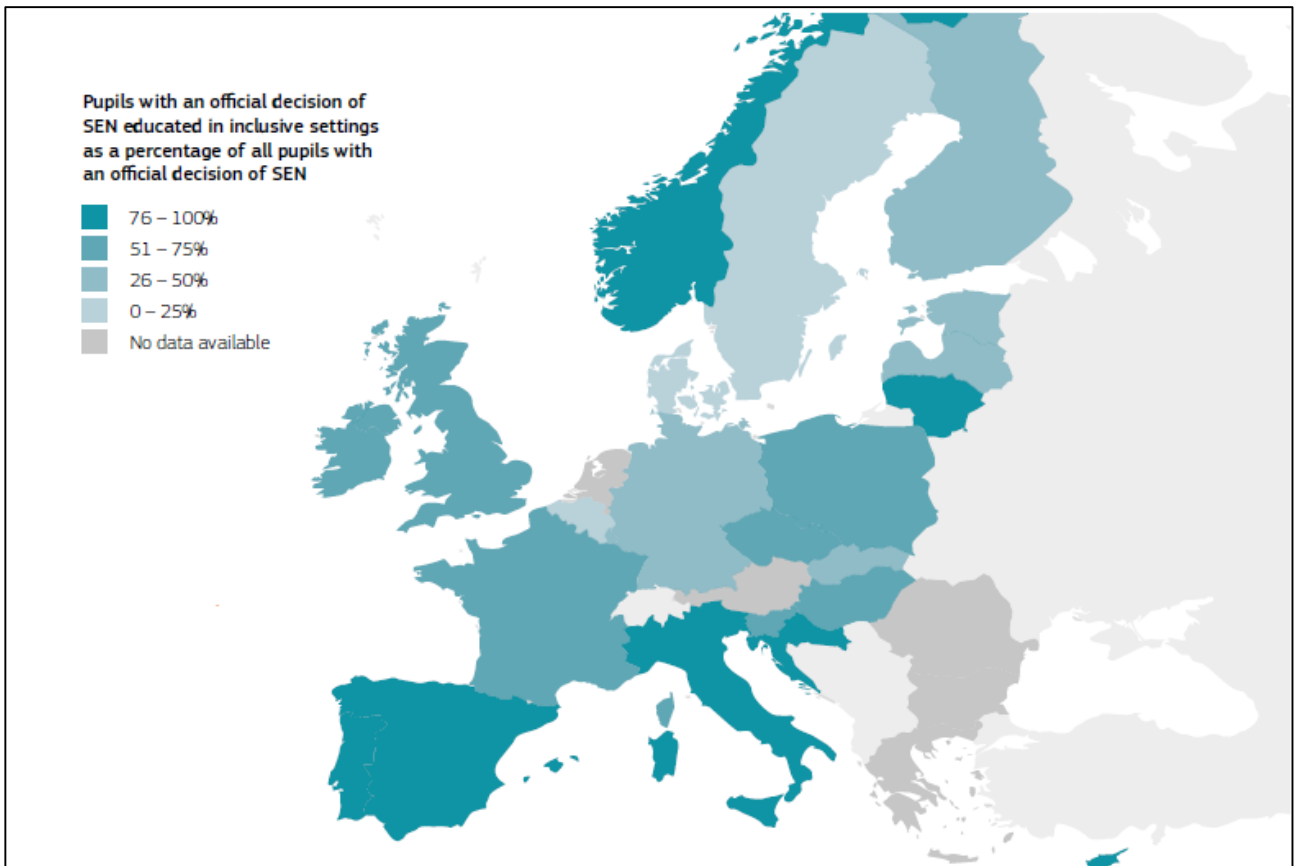
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as well as promote positive relationships between children and adolescents with and without disabilities (Guralnick, 2010).

Nowadays, general or inclusive education laws, developed under Education Ministry responsibility, focus on students with disabilities in 79% of Countries worldwide (UNESCO, 2020). In Europe, the majority of EU member states have adopted, or are moving towards, an Inclusive Education Model, although some countries remain where inclusive education is the exception rather than the rule (European Agency for Special Needs and Inclusive Education, 2018). For countries like Italy, Norway or Scotland, the rates of inclusive education for students with disabilities are above 90%. Countries with a tradition of selective school systems, like the Flemish community of Belgium, tend to have a separate system of schools for students with disability, while countries like Germany or the Netherlands are moving away from this tradition more towards a hybrid system. In turn, in countries like France or the United Kingdom, having special classes within mainstream schools is a frequent practice. Further, in Denmark and Finland, about 50% of children and adolescents with disabilities appear to be educated in special classes (European Agency for Special Needs and Inclusive Education, 2018). Figure 3 shows the variation in the proportion of students with disability educated in inclusive settings across EU member states (please note: SEN is used as a synonym of disability; European Agency for Special Needs and Inclusive Education, 2018).

Figure 3

Variation in the proportion of students with disability educated in inclusive settings across EU member states (please note: SEN is used as a synonym of disability; UE, 2018). UK data: England (59%). Northern Ireland (60%), Scotland (93%) and Wales (47%). Source: European Agency for Special Needs and Inclusive Education, 2018.



The Italian school system: a long tradition of inclusive education

The Italian school system has a long tradition of inclusive education, starting in the 1970s with the first experience of integrating students with disabilities into regular schools. Since then, legislation has developed to guarantee students with disabilities and special educational needs the right to individualization and personalization (Ianes et al., 2020). The Italian school system differs from other European and worldwide Countries in terms of more favorable tradition, law, attitudes and practices toward inclusion of students with disabilities and special education needs (e.g., Čačija et al., 2019; Di Nuovo, 2012; Sharma et al., 2018). The Italian Constitution guarantees the right to education for all individuals and points to the obligation of the state to remove obstacles intended to limit the freedom and equality of citizens. The law dating back to the 1990s (Framework Law on Assistance, Social Inclusion and the Rights of Persons with Disabilities [104/92]) is considered the backbone of the education of students with disabilities and special education needs in Italy. All children and adolescents, irrespective of differences, must be included in mainstream schools and the state is obligated to remove obstacles to inclusion. According to the European Commission report (European Agency for Development in Special Needs Education, Country Data 2010), only 0.01% of Italian students with disabilities attend special schools.

The Italian school legislation recognizes three main categories of students with special needs: students with disabilities, students with other special educational needs and students with specific learning disorders.

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Regarding students with a disability, the mechanisms for entitlement and provisions are defined by national laws. According to Law 104/1992, identification is mainly based on medical statements. Classes also attended by a student with disabilities are assigned some hours of assistance from a special education teacher (i.e., “*insegnante di sostegno*”). The number of special education teacher’s hours depends on the severity of the diagnosed disability (Ianes et al., 2020). The special education teacher works with the support of external health specialists (i.e., neuropsychiatry, psychologist) and the curricular teachers, providing support at the classroom level to achieve the educational and learning goals. As outlined by Barzaghi (2011), Italian law requires the special education teacher to be a teacher of the entire class, and the curricular teacher to be responsible for the educative process of all the students. This principle tries to prevent the unique binomial special education teacher/disabled student relationship, and to avoid segregation and stagnation in the educational relationship, by considering the special education teacher a “class resource” (Ianes et al., 2020) and by encouraging a process of taking responsibility from curricular teachers (Zanobini, 2013).

Regarding other special education needs, in the Italian school system, “students with other SEN” are defined as those who, temporarily or permanently, have some difficulties because of socio-economic, linguistic, or cultural reasons, or because of specific developmental disorders (cf. MIUR, 2012). The term SEN represents a wide classification, including students with difficulties attributable to specific conditions (e.g., immigrant, adopted child), and also with behavioral and emotional difficulties, such as ADHD, and specific learning disorders (cf. MIUR, 2012). In the case of students with specific learning disorders, the Individual-Medical Model is the basis of the entitlement procedure, based on a psychological diagnosis. In turn, for students with other SEN, no formal diagnosis is needed: the Italian law makes it the responsibility of the teaching-team to decide whether the student has needs that require the activation of differentiation measures formalized in an individual learning plan. However, in both cases of students with other SEN and students with specific learning disorders, no extra human resources (i.e., special education teacher/“*insegnante di sostegno*”) are assigned to the class, and it is responsibility of the curricular teaching-team to provide the student of differentiation learning measures, formalized in an individual learning plan (Ianes et al., 2020).

In the last three decades, students with disabilities in Italy have increased significantly and constantly in all school orders. In 2017/2018, students with disabilities were 3.1% of school population; the classes with at least one student with disabilities were 192,606, equal to 45% of the total of the classes activated, including the sections of the kindergarten. Students with disabilities were distributed as follows by school order: 31,724 in the kindergarten, 95,081 in the primary, 71,065 in the lower secondary school, 70,376 in the upper secondary school (MIUR, 2019). The most frequent disability among Italian students is intellectual disability (42% of students with special education support), followed by other neurodevelopmental disorders (26.4%; ISTAT, 2020). Further, from 2013 to 2018, the number of students with ADHD, communication disorder, and neurodevelopmental disorders in general has increased, passing from 17% to 26.4% (ISTAT, 2020). Students who have other special educational needs and who do not fall within the disability definition represent

almost 9% of the Italian school population (ISTAT, 2020). Among students with other SEN, specific learning disorders represent more than half of Italian students (53%), while 35% have socio-economic, linguistic and cultural disadvantage (Cainelli & Bisiacchi, 2019; ISTAT, 2020). Benefits of inclusive education for students with disabilities and special needs

Benefits of inclusive education systems have been largely demonstrated both for children and adolescents with disability and with typical development (Odom et al., 2011; Ianes et al., 2020). Regular schools with inclusive orientation are recognized as the most effective means of reducing negative stereotypes and combating discriminatory attitudes, creating welcoming communities, increasing acceptance and students' participation, enhancing social skill acquisition and achieving social development for all. Moreover, inclusive school contexts provide an effective education to the majority of students and improve the efficiency, and ultimately the cost effectiveness, of the entire education system (Ianes et al., 2020; Rose et al., 2011; UNESCO, 1994).

In turn, isolation limits opportunities to learn, practice, and receive validation for appropriate social skills and hinders the development of a protective peer base. Students educated in segregated settings (i.e., special classrooms or schools) may be victimized more often than students enrolled in mainstream education contexts, although prevalence varies depending on studies (Rose et al., 2011). Despite in a study conducted in Israel (Reiter & Lapidot-Lefler, 2007) the extent of harassment or victimization among students with disabilities educated in segregated settings was similar to that experienced by students in regular schools (49%), other research documented that students in special schools were victimized 2 to 3.5 times more than any other subgroup of students (see Rose et al., 2011).

In addition, segregated education might also exacerbate bullying perpetration. An early research conducted in Ireland (O'Moore & Hillery, 1989) documented students educated in special classes bullied more often (68.6%) than their general education peers (42.0%). Such results confirm that the characteristics of educational setting, and the importance of socialization among peers are factors that could affect the incidence of bullying episodes in students with disabilities, suggesting that inclusive settings could help to prevent victimization and perpetration (Rose et al., 2011).

School adjustment in neurodevelopmental disorders

As in the last decades several countries have started to adopt inclusive school systems, the social participation of students with disabilities has become an important focus of research. A large quantity of literature highlights the challenging inclusion of children and adolescents with disabilities and the importance of warm and emotionally secure relationships with their teachers and with their peers (Murray & Pianta, 2007), which can promote and have an influence on a positive school adjustment (Wentzel & Battle, 2001). However, recent research has highlighted that generally students with mental health troubles or vulnerabilities tend to

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score lower levels of school adjustment and to be more socially excluded and/or victimized than their peers who have good mental health conditions, suggesting the existence of a reciprocal interaction among mental health, school adjustment, and bullying (Arslan & Allen, 2020).

Research on the impact of neurodevelopmental disorders in school adjustment has mostly focused on students with autism (e.g., Calder et al., 2013; Prino et al., 2016; Zendarski et al., 2020), showing the clear relevance of meaningful and close relationships with teachers in terms of behavioral and academic achievements, and the protective role of social status and difficulties in peer relationships.

Regarding students who stutter, little research has explored the role of student–teacher relationship. These studies investigated teachers’ beliefs, knowledge, and attitudes about stuttering in different cultures (Abdalla & St. Louis, 2012, Abrahams et al., 2016), finding that many teachers believe in intelligence (academic performance) and ability to make friends and lead normal lives of students who stutter (Abdalla & St. Louis, 2012), but highlighting also misconceptions about personality stereotypes and inadequate knowledge about this disorder and its causes (Abrahams et al., 2016), together with feelings of not being comfortable or relaxed when interacting with students who stutter (Abdalla & St. Louis, 2012), which can have an impact on the quality of student-teacher relationship.

Also, research has focused on peer interaction in students who stutter, highlighting the adverse effects of this disorder on social functioning and in participating in social activities (Klompas & Ross, 2004). Impaired social development in children who stutter begins as early as age three; at age of five these children report lacking the ability to form successful relationships with peers; at age eleven, they find it harder to deal with the pressures of forming relationships with peers (McAllister, 2016). Negative social experiences in students who stutter have negative consequences in terms of self-esteem, social acceptance, and the ability to make close friends (Adriaensens et al., 2015; Hertsberg & Zebrowski, 2016). Also, analyzing sociometric data inside classrooms, CWS tend to be more stringent or more careful in nominating acceptance, which leads to fewer reciprocated friendships (Adriaensens, Van Waes, & Struyf, 2017). Perceived by peers as shy or withdrawn (Davis et al. 2002), students who stutter are less popular than their more fluent peers and are at increased risk of being rejected and bullied by their classmates (Blood et al., 2011, Erickson & Block, 2013, Yaruss et al., 2012), as well as being victims of mimicking and name-calling and at risk of exclusion (Rose et al., 2012). The lingering effects of childhood victimization, common in some students who stutter, may contribute to the reported psychosocial problems in adulthood (Blood & Blood, 2016).

Regarding students with ADHD, research have found that problems with adjustment at school more frequently than their peers (Sánchez-Pérez & González-Salinas, 2017), as they tend to have less positive teacher-student relationships (e.g., Baker et al., 2008; Zendarski et al., 2020) and generally feel less close to their teachers than their non-ADHD peers (Prino et al., 2016). Teachers experience less emotional closeness, less cooperation, and more conflicts with students with ADHD than with other students, and the student-

teacher relationships are characterized by a higher level of conflict and dependency, and difficulties in the closeness dimension (Ewe, 2019; Prino et al., 2016). On the other hand, students with ADHD frequently remain unaware of the high levels of conflict in their relationships with their teachers (Zee et al., 2020), because their attentional difficulties are closely related to social competency (Fernández-Jaén et al., 2012), and ADHD symptoms can have a significantly negative influence on the ability to adjust to school (Rushton et al., 2020).

Further, teachers' conflictual relationships with ADHD students can be reflected in the perceptions of those children's peers (Longobardi et al., 2019; Longobardi et al., 2021; Zee et al., 2020). Peer relationship problems appear to be particularly pervasive in children with ADHD, and more than half of them experience difficulty in friendships (Gardner & Gerdes, 2015) due to impairment in social functioning, as the intense symptoms of hyperactivity condition the social and leadership skills, as well as the adaptive functions in students with ADHD (Fernández-Jaén et al., 2012). Problems in relationships expose children with ADHD to peer aggression, social isolation, rejection (Gardner & Gerdes, 2015), victimization and bullying (Chou et al., 2018), which may cause difficulties in establishing a stable personal identity and a sense of belonging in the group of peers, especially during adolescence.

Regarding students with LD and SEN, they tend to have a poorer quality of student–teacher relationship than their peers (Prino et al., 2016), with problems of closeness and conflict (Freire et al., 2019) which are associated with increasing depressive symptoms (Schwab & Rossmann, 2020). Students with LD report an increase in the dependency dimension (Pasta et al., 2013; Prino et al., 2016) and greater dissatisfaction in their relationships with teachers (Murray & Greenberg, 2001) who in turn have a higher expectancy of future failure for these students.

Also, students with SEN and LD tend to have fewer or no friends, compared with their classmates (Schwab, 2015). Students with LD present lower friendship quality, higher levels of conflict, more problems with relationship repairing, and less stable peer relationships (Wiener & Schneider, 2002), as well as significantly higher levels of perceived school danger than their classmates (i.e., the students' perception of the school setting as dangerous; Murray & Greenberg, 2001). In addition, a recent study has highlighted the fact that in children with LD, self-esteem, bullying victimization, emotion regulation, social skills, and peer problems might be salient and correlate with externalizing and internalizing problems (Boyes et al., 2020).

1.12. Disability and bullying

Despite the great benefits of mainstream education for students with disabilities, research suggests that, if students are not fully integrated into the peer group, also in inclusive settings may happen problems in school adjustment and peer relationship (see Bossaert et al., 2015; Farmer et al., 2019; Koster et al., 2009), increasing the risk of victimization and/or bullying involvement for students with disabilities (Rose et al.,

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2011). Because children and adolescents with disabilities and other special education needs may be perceived to be “different,” they may be at a higher risk of being bullied in their school relative to their peers without any disabilities. These students are particularly vulnerable because their disability can make it difficult to identify the types of bullying that are happening (Peguero & Hong, 2020).

Literature highlights that, compared with other students, individuals with disabilities are more vulnerable to involvement in bullying, and their prevalence of being involved within the bullying dynamic as perpetrators, victims, and bully-victims is disproportionately huge (Gage et al., 2021; Farmer et al., 2012; Malecki et al., 2020; Rose et al., 2011). Studies involving students with disabilities have estimated victimization rates in excess of 50% (e.g., Bear et al., 2015; Blake et al., 2012; Llewellyn, 2000; Monchy et al., 2004; Norwich & Kelly, 2004; Rose et al., 2015; Singer, 2005). Further, Little (2002) found that up to 94% of students with disabilities report experiencing some form of victimization, indicating that these students are targets of bullying more often than their nondisabled peers.

Studies on victimization of students with disabilities have shown higher prevalence of verbal abuse (e.g., name calling, mimicking disability characteristics, teasing), social exclusion, and physical aggression when compared to nondisabled peers (for a review, see Rose et al., 2011), indicating that these students are targets of victimization more often than their nondisabled peers (Gage et al., 2021; Malecki et al., 2020). Exploring the victimization and perpetration rates of 6,531 students, both with typical development and with disability, in grades 3rd through 12th, over the course of 3 years, Rose & Gage (2017) have found that students with disabilities experienced greater rates of victimization and engaged in higher levels of perpetration than their peers without disabilities over time. Further, students with disabilities may have more negative outcomes from bullying involvement than their peers without a disability, for instance physical and emotional harms, as well as more psychological distress and harmful consequences to their self-image (Bossaert et al., 2015; Farmer et al., 2019; Hartley et al., 2015, Hartley et al., 2017; Koster et al., 2009).

Victimization and age among students with disabilities

As highlighted in one of the most accurate review focused on bullying among students with disabilities (Rose et al., 2011), when children are younger (i.e., in first years of primary school), victimization rates between students with and without disabilities in inclusive settings give comparable results (Woods, & Wolke, 2004). These findings are encouraging and could mean that at young age, disability status and need of special education, although can be indicators for difficulties in socializing, might not impede peer acceptance score, nor represent predictors of bullying and victimization (Rose et al., 2011). In turn, Malecki et al. (2020) have found that in primary school children with disabilities engage in more bullying and assisting behaviors, and less defending, than same-aged peers without disabilities. Possible explanations for these contrasting results could be the children's cognitive immaturity at a young age and/or the visibility of the disability (Langevin et al., 1998; Monks et al., 2005).

Growing older, self-report data reveal that in inclusive settings both classmates and teachers consistently rank students with disabilities as frequent victims of bullying (Rose et al., 2011), suggesting that classmates and teachers are aware of the fact that students with disabilities are victimized more often than their nondisabled peers. Social stigmas regarding individuals with disabilities may influence the bullying rates (Earnshaw et al., 2018). In addition, the discrepancy in victimization and perpetration rates between youth with and without disabilities remains consistent longitudinally over time (Rose & Gage, 2017).

Bully-victim among students with disabilities

Reviewing 32 articles focused on bullying in students with disabilities, Rose and colleagues (2011) have highlighted that one serious concern is that over time victimized students may develop aggressive characteristics as a strategy to face the victimization. Despite some students with disabilities perpetrate bullying, displaying more bullying and/or aggressive behaviors (physical, verbal) than students without disabilities, others might be considered provocative victims. Between 15% and 42% of victims with disabilities exhibit bully characteristics, suggesting that some students with disabilities (e.g., students with behavioral difficulties, psychiatric disorders, or high-incidence disabilities) may adopt aggressive behaviors attempting to eliminate being victimized (Rose et al., 2011) or because of an inability to build and maintain relationships and inappropriate behaviors or feelings under normal circumstances (Rose et al., 2018). In addition, students with disability who were victims within inclusive mainstream schools and who were successively transferred to special schools, in turn have been found to display a higher tendency to adopt bullying behaviors (Whitney et al., 1992).

Bullying behaviors among students with disabilities

As highlighted by Rose et al. (2011; 2018), students with high-incidence disabilities might show significantly higher levels of challenging behaviors (Reiter & Lapidot-Lefler, 2007) and exhibit bullying perpetration about twice as often as their peers (Kaukiainen et al., 2002). Similarly, Gage and colleagues (2021) have found that students with disabilities are approximately 41% more likely to be disciplined for bullying compared to students without disabilities. Specifically, students with emotional or behavioral disorders have been found to score the highest levels of perpetration when comparing students with and without disabilities (Monchy et al., 2004; Rose & Espelage, 2012; Rose et al., 2018; Van Cleave & Davis, 2006). In turn, in students with language impairments (Conti-Ramsden & Botting, 2004), psychiatric disorders (Kumpulainen et al., 2001; Unnever & Cornell, 2003), dyslexia (Singer, 2005), and severe cognitive disabilities (Sheard et al., 2001) perpetration rates seem to be lower (6% to 19%) than for those with high-incidence disabilities and their general education peers disabilities (Rose et al., 2011).

Bullying perpetration acted by students with disabilities can be interpreted as learned behaviors, representing a reaction to prolonged victimization, suffered or observed (Malecki et al., 2020), together with

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an overall lack of social skills (Rose et al., 2011; 2018). Students with disabilities may have greater difficulty with assertion and self-control (Mayer & Leone, 2007), and may act too aggressively or misinterpret social stimuli because of social information processing deficits (Dodge et al., 2003). Behavioral and personal characteristics of students may increase the likelihood of bullying (Rose et al., 2011; 2018), although also educational and familiar settings could affect perpetration.

Rates of perpetration might be exacerbated when students with disability came from a low socioeconomic family, indicating that multiple risk factors can increase the probability for them to be involved in bullying. Low socioeconomic status has been found to have a significant negative moderating effect on the association between disability status and bullying and outsider behaviors (Malecki et al., 2020). The joint characteristics of having a disability and being from a low socioeconomic context are especially problematic for increasing the likelihood of engaging in the perpetration of bullying behaviors, or ignoring bullying when it is acted. Students with disabilities who are from families that are struggling financially have less tangible and social resources from which to draw, and this could contribute to more involvement in bullying behavior, and less awareness and skills to intervene when they see bullying (Malecki et al., 2020).

Interestingly, Malecki and colleagues (2020) have found that in some situations, students with disabilities are found to join in bullying, but not necessarily leading to bullying behaviors. Rather, these students may engage in higher levels of assisting bullying behaviors than their peers. However, it is encouraging the fact that growing older, bullying or assisting behaviors tend to decrease in this group of students with disability, who exhibit more defending behaviors as they progress to high school (Malecki et al., 2020).

Bullying victimization over time in students with disability

Research has found that longitudinally victimization is relatively stable in youth with disabilities and special needs, as they tend to experience high levels of social marginalization over time (Chen et al., 2015). Specifically, some sub-groups of students with disabilities may be at increased risk for escalated rates of victimization (Rose & Gage, 2017). Cross-sectional literature reports that students with autism (Zablotsky et al., 2012; 2013), emotional and behavioral disorders (Bear et al., 2015; Blake et al., 2012), speech or language impairment (Conti-Ramsden & Botting, 2004), and learning difficulties (Bear et al., 2015) have greater rates of victimization than their peers without disabilities.

Also, given the reciprocity between victimization and perpetration, trajectory of perpetration over time mirrors victimization in individuals with disabilities, as they engage in higher rates of bullying behaviors longitudinally, compared with their peers (Rose & Gage, 2017). Specifically, some subgroups of students with disabilities may be at increased risk for escalated rates of perpetration. Rose and Gage (2017) have found that students with behavioral-oriented disabilities, including comorbidity with hyperactivity and attention deficit, tend to report escalated rates of perpetration over time.

Victimization and specific disabilities

The overrepresented rates of students with disabilities involved in bullying dynamics (Gage et al., 2021) might be due to their developmental pattern (Rose & Espelage, 2012), as individual factors might be especially relevant for youth with disabilities (Rose & Gage, 2017). Individual characteristics associated with a specific disability might place these students at escalated risk for bullying involvement (Gage et al., 2021; Rose & Gage, 2017).

Severity and visibility of the disability may be factors that put students at risk of victimization (Rose et al., 2011), as the frequency of bullying behaviors is significantly related to level of impairment (Zablotsky et al., 2013). Although a growing body of evidence supports this finding (e.g., Malecki et al., 2020; Rose et al., 2018), particularly related to observable disabilities and behavioral related characteristics in the general education classroom, the data vary depending on the types of disability. For instance, students with cognitive disabilities (i.e., mild to moderate learning difficulties) are 2 to 3 times more likely to be victimized, and students with observable disabilities (i.e., physical disabilities, hearing impairments) are 2 to 4 times more likely to be victimized than classmates without disabilities (Rose et al., 2011). Also, studies documented around 20% more of victimization in students with language impairments (Davis et al., 2002; Knox & Conti-Ramsden, 2003; Sweeting & West, 2001), with psychiatric disorders (Unnever & Cornell, 2003; Van Cleave & Davis, 2006) and physical disabilities (Whitney et al., 1994; Yude et al., 1998). Similarly, 30% more students with emotional or behavioral disorders (Monchy et al., 2004; Van Cleave & Davis, 2006; Rose et al., 2018) and 66% more students with Asperger syndrome are reported to be victimized compared with peers (Little, 2002). Further, students with emotional or learning disorders are at a significantly higher risk of victimization by their peers, compared with youth with physical disabilities (Peguero & Hong, 2020). It is unclear the reason for this disproportion in bullying risk among students with emotional or learning disorders, and those with physical disabilities. Conceivably, certain students, such as those in a wheelchair or those with visual impairment, may be less likely to be physically assaulted because they are perceived as being “fragile,” although they might be teased and taunted by their peers (Peguero & Hong, 2020).

The presence of internalizing problems is a factor that may contribute to bullying risk in students with disabilities (Tipton-Fisler et al., 2018), placing youth at greater risk for falling into a victim profile, rather than one of perpetrator or bully-victim (Zablotsky et al., 2013). For instance, students with autism have been found to exhibit co-occurring internalizing symptoms such as social anxiety, depressed mood, and social withdrawal, with a large number meeting the diagnostic criteria for anxiety or depression (Gadow et al., 2008). In these students, high internalizing symptoms are found to be a significant risk factor for bullying, with a positive association with victimization (Adams et al., 2014; Cappadocia et al., 2012; Tipton-Fisler et al., 2018; Zablotsky et al., 2013).

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In addition, emotional and behavioral factors and low friendship quality may contribute to prolonged victimization. Being a victim is correlated with characteristics such as emotional problems (Reiter & Lapidot-Lefler, 2007), behavioral problems (Yude et al., 1998), and interpersonal problems (Reiter & Lapidot-Lefler, 2007). Students with emotional difficulties report greater bullying engagement (Bear et al., 2015; Rose & Espelage, 2012) and assisting behavior, experienced more victimization, and demonstrated more outsider behavior (Malecki et al., 2020) compared to their peers without disabilities. Individuals with disabilities often are characterized as having poor social skills (Baker & Donnelly, 2001; Kaukiainen et al., 2002; Kuhne & Wiener, 2000; Llewellyn, 2000; Woods & Wolke, 2004) and may be victimized because they are too passive or exhibit timid responses that may reinforce bullying behavior (Rose et al., 2011), or they misread nonverbal communication or misinterpret non threatening cues (Sabornie, 1994). For instance, students with autism are more victimized than their typically-developing peers, because of social challenges and their communication difficulties (Forrest et al., 2020). Moreover, victims with disabilities generally maintain few close friendships or have unstable relationships, and lack of social networks might deprive them of a substantial social protection base (Rose et al., 2011). Especially during early adolescence, youth with intellectual disability (Tipton et al., 2013) or autism (Mazurek & Kanne, 2010) are found to pass through a period marked by lower quality friendships. Thus, among youth with disabilities, transition into later adolescence may be characterized by social isolation, lack of acceptance, and loneliness (LaFontana & Cillessen, 2010). Moreover, although high school students with autism often minimize their own reports of the severity of their bullying incidents, they also withdraw socially from peer relationships, contributing further to their social isolation (Fisher & Taylor, 2016).

Further, bullying risk may deviate at a noticeable rate as students' progress in age (Rose & Espelage, 2012; Rose & Gage, 2017). Given that social deficits become more apparent as students age increases and they enter adolescence, it is not surprising that behavior difficulties also become more challenging as students struggle to navigate their social groups (Tipton-Fisler et al., 2018). As Nabuzoka (2003) stated, students with disabilities may become targets of bullying if they have difficulty comprehending social cues or applying strategies to avoid victimization. They could be at less risk if they understand, learn and exhibit appropriate social behaviors that help them avoid being victimized. According to Singer (2005), victims often develop strategies that could help them to cope with prolonged victimization, such as hiding from the bully, working hard academically to catch up with peers, fighting back, and/or attempting to explain their disability to the aggressor. Students who understand and accept their disability are more accepted among their classmates (Llewellyn, 2000), develop friendships, and are victimized at lower rates (Schwartz et al., 1999).

Bullying in neurodevelopmental disorders

Current evidence indicates that having a neurodevelopmental disorder might increase the odds that children and adolescents will be exposed to maltreatment and other adverse events (Hoover, 2020). Drawing from literature, students affected by neurodevelopmental disorders might be at higher risk of being involved in

violence, such as abuse, but also bullying victimization (Hoover, 2020), and are two to seven times more likely to experience maltreatment or other violence than their typically developing peers (Sullivan & Knutson, 2000). A recent review has reported the prevalence of bullying victimization among U.S. students with mental health conditions, among which there are neurodevelopmental disorders (Iyanda, 2022): ADHD (18.3%), learning disorders (11.9%), Tourette syndrome (0.5%), developmental delay (10.1%), autism spectrum disorder (4.6%), speech disorder (10.7), and intellectual disability (1.6%).

Consequences of exposure to violence may affect children and adolescents with neurodevelopmental disorders over time, with potentially far-reaching negative effects on their overall adjustment and mental health (Hoover, 2015). Bullying victimization in students with neurodevelopmental disorders is positively associated with anxiety and depression (Iyanda, 2022). In addition, neighborhood disorganization and poverty associated with neurodevelopmental disorders is found to exacerbate bullying victimization (Iyanda, 2022). Further, the shape and course of neurodevelopmental disorder over time may be strongly impacted by traumatic experiences, especially when the trauma occurs early and often during key developmental periods (Hoover, 2020), as the unfolding of these disorders during development period can be worsened or ameliorated by environmental and psychosocial events (Davis et al., 2018).

One of the problems in studying the topic of bullying and disability status is the relatively smaller number of students in the sample. As such, it is difficult to study multiple disability categories with reliable results. Previous research has circumvented this problem by either focusing on one disability profile (Malecki et al., 2020). As a consequence, an imbalance exists among studies on the association between bullying and different neurodevelopmental disorders. While some neurodevelopmental disorders (e.g., ADS, ID) have been largely explored in the association with bullying, for other neurodevelopmental disorders research focused on bullying is scarce at the present time. The following paragraphs will focus on the characteristics and the risk of bullying involvement in individuals with specific types of neurodevelopmental disorders.

Intellectual disability

Currently research strongly supports claims of disproportionate vulnerability to maltreatment and other adverse events in students with intellectual disability (Hoover, 2020). As highlighted by Lung et al. (2019), having friends or supportive peers is typically a protective factor for bullying, however since students with ID show reduced social competence and conflict resolution skills, they are more vulnerable to bullying. Having an ID diagnosis has direct association with being bullied (Lung et al., 2019), and around 60% of students with intellectual disability are found to be victimized by peers (Christensen et al., 2012; Lung et al., 2019). Further, youth with ID are found to experience and report the most severe bullying, in comparison with other students (Lung et al., 2019).

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Communication disorder

Although Malecki et al. (2020) have found no differences in bully role behaviors for youth with speech/language disabilities compared to students without disabilities, other research (Hughes, 2014) revealed that students with communication disorders are at particularly high risk for being bullied by peers. Specifically, students who stuttered are found to be at significantly higher risk of experiencing bullying behavior (61%) than students who do not stutter (22%; Blood & Blood, 2007).

Research has found that stuttering is a characteristic that makes students highly susceptible to bullying (Logan et al, 2008), and about 20% of students demonstrate negative attitudes toward peers who stutter (Langevin, 2009). Difficulties in emotional competence make children and adolescents with developmental language disorder more vulnerable to victimization (Van den Bedem et al., 2018), and in students who stutter bullying is found to be associated with low self-esteem, low perceived communicative competence (Blood & Blood, 2007) and high levels of anxiety (Menzies et al., 2009). Also, some students with communication disorders may behave as “provocative victims”, as they demonstrate impairments in social skills that draw the attention of bullies (Hughes, 2014). Both provocative victims and typical victims with communication disorders tend to react aggressively when bullied, and respond by bullying others in retaliation (Hughes, 2014).

Autism spectrum disorder

In children and adolescents with autism, bullying is the most studied and possibly most prevalent form of traumatic occurrences (Hoover, 2015). Research on students with autism has found conflicting information about rates of victimization. Some research has found lower rates of victimization among students with disabilities when compared to students without disabilities (Humphrey & Hebron, 2015; Rose, et al., 2015b). However, most of studies focused on specific disability type or diagnosis in association with bullying have found that students with autism (specifically, students with autism in inclusive environments) are victimized more often than their peers with other disabilities, more often than nondisabled peers, those with intellectual disabilities alone, and their typically developing siblings (Baumeister et al., 2008; Forrest et al., 2020; Malecki et al., 2020; Nowell et al., 2014; Rose et al., 2015a; Sreckovic et al., ; 2017; Zeedyk et al., 2014). Specifically, students with ASD are bullied at a rate three times more than typically developing students, reporting 33% of physical, 50% of verbal, and 31% of relational school bullying (Maiano et al., 2016). As argued by Cappadocia et al. (2014), the ASD core-feature of deficit in Theory of Mind could make it more difficult for them to understand social cues, increasing their likelihood of marginalization and conflict in peer relationships. Children and adolescents with ASD struggle to understand the thoughts of others and monitor feedback from others about their behavior; this increases the likelihood of misunderstanding and becoming a target of victimization (Cappadocia et al., 2014; Forrest et al., 2020).

Bullying in students with ASD has been shown to have serious negative impacts on their academic and social functioning (Adams et al., 2016). Due to their deficits in social communication and emotion regulation, children and adolescents with autism may be more vulnerable to traumatization consequent of bullying (Forrest et al., 2020; Hoover, 2015). Mayes and colleagues (2013) found that youth with ASD who were teased were three times more likely than those who were not teased to report suicidal ideation or to make a suicide attempt. Further, Malecki et al. (2020) found significantly less defending and outsider behavior in students with autism when bullying occurs, compared to their peers without disabilities. As consequences of bullying, and exposure to violence, in students with autism outcomes such as anxiety, social isolation, and developmental regression are observed (Hoover, 2015). Further, regarding school adjustment, bullying might cause in children with ASD early school refusal, referring to child's avoidance to attend school, as well as difficulties with remaining in school for an entire day, missing entire or partial school days, skipping classes, or unjustifiably arriving late, with long-term consequences, such as poor academic achievement and dropping out of school (Ochi et al., 2020).

Attention-deficit/hyperactivity disorder

ADHD is associated with bullying other students (Holmberg & Hjern, 2008), as students with ADHD show significantly greater engagement in bullying at school, and also assisting behaviors (Malecki et al., 2020). Holmberg and Hjern (2008) have suggested a causal link to the ADHD syndrome for perpetration, since bullying of other students in fourth grade is associated with high scores in parental reports of behavioral problems at entry into first grade. Moreover, ADHD is associated with being bullied by peers (Holmberg & Hjern, 2008), as students with ADHD experience more victimization than their classmates (Malecki et al., 2020; Rose & Espelage, 2012). In turn, it is encouraging that students with ADHD are found to engage also in more defending behavior when assisting to bullying episodes (Malecki et al., 2020).

As highlighted by Sciberras et al. (2012), behaviors deviation typical in individuals with ADHD (e.g., hyperactivity) may be more noticeable and less accepted by female peers, as it may be less socially accepted than when boys engage in the same behavior. Girls with ADHD may be more susceptible to victimization, because hyperactive and impulsive behaviors are tolerated less for girls with ADHD than it is for boys with ADHD (Diamantopoulou et al., 2005).

Different explanations have been adduced for students with ADHD tendency to be highly engaged in bullying behaviors and be victimized by their peers (Sciberras et al., 2012). First, the core of ADHD symptoms (inattention, hyperactivity, impulsivity) may interfere with skills necessary for successful peer interaction. Students with ADHD are more likely to be active, talkative, noisy, rule violating, intrusive, off-task, aggressive and less compliant than students without ADHD (Diamantopoulou et al., 2005; Murray-Close et al., 2010). These behaviors are likely to frustrate and annoy peers and may place students with ADHD at risk for being victimized (Sciberras et al., 2012). Second, students with ADHD have also impaired social information

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processing resulting in a hostile attribution bias (i.e., the tendency to assume that a peer has a hostile intent when the situation is not clear; Crick & Dodge, 1994). This hostile attribution bias is linked to impulsivity and results in reactively aggressive behavior (i.e., defensive behavior that is in response to the perceived negative behavior of another; Taylor et al, 2010). This pattern of responding is likely to increase the likelihood that students with ADHD engage in bullying behavior, which may in turn result in them being the target of victimization in the future (Sciberras et al., 2012). Further, an association has been found between poor Theory of Mind ability and involvement in bullying as victims/perpetrators among students with ADHD (Yilmaz Kafali et al., 2021). As suggested by recent contributes, ADHD and its associated features may represent a diathesis for bullying involvement, both as a perpetrator and a victim, in a cyclical, negative loop (Simmons & Antshel, 2021; Swearer & Hymel, 2015).

Students with ADHD are at high risk also for negative outcomes over time. A Swedish study focused on multiple neurodevelopmental problems has found that childhood ADHD predicts adolescent antisocial behavior and impaired functioning independently from other neurodevelopmental problems (Selinus et al., 2015). Also, a recent review has found positive associations between bullying involvement and depressive symptoms in youth with ADHD (Simmons & Antshel, 2021). Specifically, bullying involvement may serve as both a moderator (where bullying increases risk of depression in youth with ADHD) and as a potential mediator of the relationship between ADHD and depression (where bullying is one mechanism whereby ADHD may lead to depression; Simmons & Antshel, 2021). Further, ADHD is often associated with later adolescent and adult problems, such as conduct disorder and substance abuse (Erskine et al., 2016).

Specific learning disorders

Children with specific learning disorders face a unique set of socio-emotional challenges and report greater anxiety compared to their peers, as a result of their academic difficulties (Haft et al., 2019), and this could exacerbate their likelihood of being confronted with peer victimization (Peguero, & Hong, 2020). Adolescents who are diagnosed with a learning disorder have a significantly higher risk of bullying than those without learning disorders (Klomek et al, 2016) and score higher rates of victimization (Baumeister et al., 2008; Rose, et al., 2015b). Furthermore, data suggest that students with learning disorders report assisting in bullying behavior (Baumeister et al., 2008), but also defending behavior (Malecki et al., 2020) than students without disabilities.

Stereotypic movement disorder

Students with TS/CTD experience lower quality of life when compared to their peers (Storch et al., 2007) and tic severity has been demonstrated to have an impact on their well-being and quality of life (Cutler et al, 2009). Adults who take care of children with TS/CTD (e.g., parents or teachers) describe these children as having impaired social functioning, both in relation to tics and to co-occurring conditions (Storch et al., 2007), and as experiencing discriminations due to their tics (Conelea et al., 2011). Also, typical development children

often tend to consider their peers who show tics in a less positively way, as more withdrawn and less popular, and this could put students with TS/CTD at risk for peer rejection and victimization (Charania et al., 2021; Zinner et al., 2012).

Research conducted among students with stereotypic movement disorder aged 10–17 years has shown that 26% of students with TS/CTD report peer victimization (Zinner et al., 2012). Among students with TS, 56.1% experienced bullying victimization, 20.7% experienced bullying perpetration, and 15.9% experienced both (Charania et al., 2021). Peer victimization may represent an environmental psychosocial stress that may be linked as an increase in premonitory urges, resulting in tic exacerbation (Zinner et al., 2012). Tic exacerbation is associated with both biological and environmental variables (Lin et al., 2007) that may include psychosocial effects (such as those resulting from stress, fatigue and anxiety), illness, some medications and other substances, and situational features, including observers' reactions to tics (Conelea & Woods, 2008; Zinner et al., 2012). Peer victimization in students with TS/CTD is associated with tic severity, tic frequency, and greater tic complexity (including coprophenomena; Zinner et al., 2012). Also, victims have impaired adaptive psychosocial functioning, and experience social difficulties such as loneliness, and internalizing symptoms as anxiety (Boudjouk et al., 2000; Storch et al., 2007; Zinner et al., 2012).

Further, specific psychiatric comorbidities including ADHD have been associated with a particularly disruptive form of impulsive aggression (sometimes referred to in the literature interchangeably as “explosive outbursts” or “rage attacks”) in students with TS/CTD (Budman et al., 2000). Explosive outbursts appear associated with peer victimization, leading students with TS/CTD and psychiatric comorbidities at increased risk of being both a bully and a victim (Zinner et al., 2012).

Long-term consequences of bullying in neurodevelopmental disorders

Despite some changes in symptoms as individuals grow older (Thapar et al., 2017), neurodevelopmental disorders are lifelong conditions (APA, 2013; 2015). Thapar et al. (2017) have highlighted that, considering neurodevelopmental disorders, it is important to recognize the importance of early and life-long developmental processes, as they onset before puberty and tend to show a steady course over time. Neurodevelopmental disorders are subject to maturational change (Thapar & Rutter, 2015), and for this reason it is important to adopt a developmental view across the life-span (Thapar et al., 2017). Many children affected by neurodevelopmental disorders typically improve with age, such that these disorders previously were considered as childhood-limited problems. However, follow-up studies have shown that, although outcomes are variable, in many individuals neurodevelopmental symptoms do persist into adult life (Faraone, 2006; Magiati, 2014; Maughan, 2009; Rutter, 2006; Whitehouse, 2009a). As individuals with neurodevelopmental disorders grow older and enter in adult life, new co-occurring problems can emerge, such as cognitive, psychiatric (e.g. mood disorder, substance misuse) and functional impairments (e.g.,

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difficulties with employment or social relationships; Klein et al., 2012; Moffitt et al., 2015; Whitehouse et al., 2009b).

Individuals with neurodevelopmental disorders continue to experience more frequent victimization over time, as well as lower levels of friendship quality (warmth/closeness and positive reciprocity), when compared to their typically developing peers (Tipton-Fisler et al., 2018). Similarly to their peers with typical development, also in students with neurodevelopmental disorders the frequency of bullying instances tend to peak in late childhood/early adolescence, and to decline by age 15 (Tipton-Fisler et al., 2018). However, for those who continue to experience bullying also during middle/late adolescence, the severity and chronicity of incidents are highest among youth with ASD or ID, compared with their peers (Tipton-Fisler et al., 2018). In addition, between ages 13 and 15 friendship conflicts increase, and adolescents with both ID and ASD report lower levels of warm and close friendships. Possible differences in awareness of friendships and conflict among adolescents with and without neurodevelopmental disabilities may exist, whereby adolescents with ID self-report higher rates of having a best friend across time, but their parents report lower rates across time (Tipton-Fisler et al., 2018). The lack of certain cognitive skills, together with low social awareness, can pose significant obstacles for adolescents in their handling of social teasing and bullying, suggesting the need for better conflict management skills (Larkin et al., 2012).

Further, regarding the long-term evolution in perpetration of aggressive and bullying behaviors, a research conducted among young violent offenders (aged 18-25) in Swedish prisons, has found that almost half of participants suffered from neurodevelopmental disorders, and particularly a high rate of ADHD, but also substantial rates of autism, were found (Billstedt et al., 2017). Also, young violent offenders with neurodevelopmental disorders reported higher rates of bullying perpetration (55%), but also victimization (28%) during childhood, in comparison with young violent offenders with typical development (perpetration: 36%; victimization: 22%; Billstedt et al., 2017).

2. JUSTIFICATIONS AND PURPOSES

Bullying has existed for as long as human societies have existed. In the last decades, bullying has received attention in institutional, academic and educational contexts and it has been recognized as a widespread problem. Nowadays, bullying represents the most common type of violence within the school context (e.g., Han, 2021). Data from different sources estimate that one in four, to nearly one in two children and adolescents worldwide are bullied (UNESCO, 2018; UNICEF, 2017). Bullying compromises children's fundamental rights, including the right to education (The United Nations, 1989), since it has negative consequences on physical, psychological, relational and general wellbeing for victims, bullies and bystanders as well (e.g., Wolke & Lereya, 2015).

Bullying phenomenon is a group process (Salmivalli et al., 1996), in which achieving status goals is one of the driving motivations behind such behaviors (e.g., Pouwels et al., 2018). According to Bronfenhrenner's Ecological Systems Theory (1979), bullying involves school climate in promoting or inhibiting negative and aggressive behaviors (e.g., Leff et al., 2003). Positive social relationships with peers and teachers may serve as protective factors against victimization (e.g., Iñiguez-Berrozpe et al., 2021), while students' problems in social inclusion and school adjustment are related to bullying in both victims (e.g., Cañas et al., 2020) and bullies (López et al., 2018).

According to the Stigma-Based Bullying Framework (Earnshaw et al., 2018), children and adolescents owing to minorities, for instance due to ethnical, sexual, or health both physical and mental reasons, are more at risk for bullying, because individuals are targeted for having characteristics that differ from the group (Malecki et al., 2020). Among these, students with disabilities and other special education needs (SEN) are overrepresented in bullying involvement (e.g., Malecki et al., 2020). These children and adolescents are particularly vulnerable to bullying because they may be perceived as "different" by their peers, and their disability can make it difficult for them to identify the aggressions that are happening (Peguero & Hong, 2020). Involvement in bullying of individuals with disabilities and other SEN is common and persists over time (Dasioti & Kolaitis, 2018; Rose & Gage, 2017), resulting in more negative outcomes than their peers (Hartley et al., 2017). Further, individuals who have troubles or vulnerabilities in mental health are more at risk for poor school adjustment, social exclusion and bullying victimization (Arslan & Allen, 2020). Finally, within the school population, students with other SEN represent almost 9% in Italy (ISTAT, 2020) and neurodevelopmental disorders constitute the most frequently occurring disability worldwide (Hansen et al., 2018).

Inclusive education has been demonstrated to have great benefits for students with disabilities and other SEN, also in helping to prevent victimization and perpetration (Rose et al., 2011). The Italian school system has been defined "a genuinely inclusive school system", because all children and adolescents are included in

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mainstream education (Ianes et al., 2020). As a country with the lowest percentage of students segregated in special schools, Italy shows significant potential for the development of inclusion in schools (Čačija et al., 2019). It differs from other European and worldwide Countries' school systems in terms of tradition, law, attitudes and practices toward inclusion of students with disabilities and other SEN (e.g., Čačija et al., 2019; Di Nuovo, 2012; Sharma et al., 2018).

However, also within inclusive education contexts, bullying episodes in students with disabilities and other SEN can occur, especially when they have problems in school adjustment and in relationships within the classroom (Rose et al., 2011). In mainstream education contexts, students with disabilities and other SEN may have to face more difficulties in social relationships and inclusion (e.g., Guralnick, 2010; Freire, 2019) than their peers.

Despite bullying having been largely explored in school context among the mainstream population, studies focused on bullying in students with disabilities and other SEN still remain scarce. Further, even if neurodevelopmental disorders are the most common disability among students, to date most studies have focused on single neurodevelopmental disorders. Research comparing school adjustment and bullying in different types of neurodevelopmental disorders, and other SEN, still remain scarce. Also, research conducted in the Italian fully-inclusive school system is few.

The main aim of this work was to explore and to compare school adjustment and bullying in children and adolescents with different neurodevelopmental disorders and other SEN conditions within an inclusive education context. Having an in-depth knowledge of the association among the quality of school adjustment and the occurrence of bullying in students with neurodevelopmental disorders and other SEN can be useful for researchers and educational professionals, in order to improve school inclusion and to prevent and contrast bullying episodes. For this purpose, we conducted a quantitative data collection in Italian primary and lower secondary schools using a survey completed by teachers and students. The survey was aimed to measure the quality of school adjustment and the presence of bullying and/or victimization in the mainstream population and in children and adolescents with neurodevelopmental disorders and other SEN. Specifically, we analyzed social relationships with teachers and peers and presence of bullying in students who stutter, students with attention-deficit/hyperactivity disorder (ADHD), students with specific learning disorders (LD), students with other special education needs (SEN), and in students with typical development.

Specifically, the main purposes of the six studies that compose this Doctoral Thesis were as following:

Study 1. The purpose of the first study was to analyze the relationship between the presence of stuttering in students and the students' social status in their peer group; teachers' perceptions of the quality of their relationships with students; student behavior and academic performance. Specifically, the objective was to analyze whether there were differences between students who stutter and students without stuttering in

peer's relationships, the teachers' perceptions of the quality of their relationships with students, the teachers' perceptions of the students' behavior, and the academic performance.

Study 2. The main objective of the second study was to evaluate the effect of the presence of stuttering in students on the student's perception of the quality of their relationships with teachers (closeness, conflict and negative expectations) and the students' social status in their peer group (preference and social impact), and how these variables, in turn, could explain the victimization and perpetration of bullying behaviors (verbal, physical and social).

Study 3. The main objective of the third study was to assess the relationship between the presence of ADHD in students and the students' social status in their peer group; teachers' perceptions of the quality of their relationships with students; student's behavior and academic performance. More specifically, the main objective was to examine whether there were differences between students with ADHD and typically developing students in social status in the peer group, in teachers' perceptions of the quality of their relationships with students, in the teachers' perceptions of students' behavior, and in academic performance.

Study 4. The aim of the fourth study was to examine the effect of the presence of ADHD in students on the student's perception of the quality of their relationships with their teachers (closeness, conflict and negative expectations) and the students' social status in their peer group (preference and social impact), and how these variables, in turn, could explain the victimization and perpetration of bullying behaviors (verbal, physical and social).

Study 5. The aim of the fifth study was to evaluate the relationship between the presence of SEN and LD in students and their social status in the peer groups; the teachers' perceptions of their relationships with these students; the teachers' perceptions of students' behavior; and academic performance. More specifically, the main objective was to examine whether there were differences between students with SEN and LD and typically developing students in social status in the peer group, in teachers' perceptions of the quality of their relationships with students, in the teachers' perceptions of students' behavior, and in academic performance.

Study 6. The objective of the sixth study was to examine the effect of the presence of SEN and LD in students on the student's perception of the quality of their relationships with teachers (closeness, conflict and negative expectations) and the students' social status in their peer group (preference and social impact), and how these variables, in turn, could explain the victimization and perpetration of bullying behaviors (verbal, physical and social).

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3. METHOD

3.1. Participants

In this Doctoral Thesis participated 991 students (56.6% male) between 8 and 17 years old, with a mean age of 11.29 years old ($SD = 1.48$) and 95 teachers (92.6% female, 84.4% permanently employed) between 25 and 65 years old, with a mean age of 46.02 years ($SD = 7.64$) and a mean teaching experience of 18.58 years ($SD = 9.48$, Min. = 2, Max. = 42) recruited from 19 primary and lower secondary schools in Northwestern Italy. Among the total number of students who participated in the research ($n = 991$), there were 62 students who stutter, 27 students with ADHD, 55 students with LD, 46 students with SEN, and 801 students with typical development in the control group. In general, there were no differences in age, gender distribution, or family status distribution between the students with neurodevelopmental disorders, SEN and with typical development.

The schools were selected through convenience sampling. All students (i.e., students with neurodevelopmental disorders, SEN and with typical development) were recruited from the same school. Within the school, were selected those classes in which there was at least one student with a neurodevelopmental disorder (i.e., stuttering, ADHD, LD) or other special education needs (SEN).

Next, it is described how the sample of participants was distributed in the six studies that make up this Doctoral Thesis.

In the **Studies 1 and 2**, the sample consisted of 536 students (50.2% male) between 8 and 17 years old, with a mean age of 11.42 years ($SD = 1.55$) recruited from six primary (40.5%) and secondary (59.5%) schools in Northwestern Italy. Both students with stuttering and students without stuttering were recruited from the same schools. Within the schools, 36 classes were selected, where there was at least one student with stuttering.

The group of students with stuttering was made up of 62 individuals (58.1% male, 66.1% traditional family) with a mean age of 11.72 years old ($SD = 1.72$), while the group of students without stuttering was made up of 474 individuals (49.2% male, 79.2% traditional family) with a mean age of 11.39 years old ($SD = 1.53$). There were no differences in age, in gender distribution, or in the distribution of family status between students with stuttering and students without stuttering.

In addition, data from 36 teachers (92.2% female, 84.5% permanently employed) with a mean age of 46.63 years old ($SD = 8.71$) and a mean teaching experience of 19.23 years ($SD = 9.77$) were also analyzed.

In the **Studies 3 and 4** the sample was composed of 135 students (74.8.2% male) between 9 and 15 years old with a mean age of 11.37 years ($SD = 1.25$) recruited in six Italian primary (40.7%) and secondary (59.3%) schools in Northwestern Italy. The schools were selected through convenience sampling. Both students with

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ADHD and students without ADHD were recruited from the same schools. Within the schools, 19 classes were selected, where there was at least one student with ADHD per class.

The group of students with ADHD consisted of 27 individuals (80% male) with a mean age of 11.48 years ($SD = 1.30$) while the typical development group consisted of 108 individuals (72.1% male) with a mean age of 11.35 years ($SD = 1.24$). There were no statistically significant differences between both groups in terms of age and gender distribution. Also, data from 19 teachers (89.4% female, 84.2% permanent employees) with a mean age of 44.77 years ($SD = 4.96$) and a mean teaching experience of 14.81 years ($SD = 7.58$) were examined.

Finally, in the **Studies 5 and 6**, the sample was made up by 320 students (59.7% male) between 8 and 14 years old, with a mean age of 11.04 years ($SD = 1.42$) recruited from seven Italian primary (55.3%) and secondary (44.7%) schools in Northwestern Italy. The schools were selected through convenience sampling. Of these, 68.4% were students with typical development ($n = 219$), 17.2% were students with LD ($n = 55$), and 14.4% were students with SEN ($n = 46$).

The average age of students with typical development was of 10.75 years ($SD = 1.40$), for students with LD was of 11.68 years ($SD = 1.25$) and for students with SEN was of 11.66 years ($SD = 1.28$). There were statistically significant differences in the mean age of the students. Specifically, the mean age of students with SEN and students with LD were higher than the mean age of students with typical development. There was no statistically significant difference between the mean age of students with LD and students with SEN. The percentage of male for students with typical development was 58.5%, for students with LD was 56.4% and for students with SEN was 69.6%. There were no statistically significant differences in gender distribution among the three groups of students.

Additionally, data from 40 teachers (95.9% female, 88.8% permanently employed) with a mean age of 46.06 years ($SD = 7.59$) and a mean teaching experience of 19.78 years ($SD = 9.57$) were analyzed.

Italian school system

In the Italian school system, children enter the formal and compulsory education at age 6. Comprehensive schooling has a duration of 8 years, divided in two cycles: five years of primary education and three years of lower secondary education. Children generally remain with the same classmates and often with the same teachers for each entire cycle. In primary school, one to three main teachers are usually in charge of the class, while more teachers are involved in lower secondary education. Lower secondary school ends with a nationally-based examination at age 14, after which students choose between a variety of upper secondary educational programs, broadly classified into academic, technical and vocational tracks. Education is compulsory up to age 16 (Contini, 2013).

The Italian school system is mainly public: in primary and lower secondary schools, private institutions host only about 7% and 4% of the students respectively (MIUR, 2011). School choice is free and there are no

ability-related admission restrictions. Most of the students attend their neighborhood public school. Due to urban segregation, schools located in disadvantaged areas mainly recruit students from the lowest family backgrounds, thereby the ethnic and socio-economic composition varies considerably across schools. Classes are formed by school-boards and many schools set internal regulations to define heterogeneity with respect to students' characteristics (ability, gender, immigrant status, disability) as the leading criteria for class formation (Contini, 2013).

Teachers are allocated according to a seniority based centralized system, with no active role played by individual schools in attracting, selecting and retaining teachers. In examining voluntary mobility of Italian teachers, Barbieri et al. (2010) have found that teachers with higher seniority try to avoid schools attended by disadvantaged students' populations. Hence, more experienced teachers are more likely to work in schools with a more favorable student composition in terms of ability and social and ethnic background (Contini, 2013).

3.2. Measures

Socio-demographic characteristics

Both teachers and students were asked to report their socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to report their number of years teaching, the number of hours per week that they spent teaching the class, and the students' family statuses.

Presence of neurodevelopmental disorders or SEN in students

Teachers were asked to report on the presence of neurodevelopmental disorders (i.e., stuttering, ADHD, LD) or special education needs (SEN) in each student. Teacher answers were based on the diagnoses made by therapists in medical centers, or on the activation of differentiation measures formalized in an individual learning plan. All students with neurodevelopmental disorders were enrolled in formal therapy services or have been in the past. We did not obtain information about the specific type of therapy or treatment received.

Adolescent Peer Relations Instrument

The Adolescent Peer Relations Instrument (APRI; Parada, 2000) is a self-report instrument consisting of 36 items with a Likert-type response scale (1 = never to 6 = every day) which measures three types of behaviors used to bully others (physical, verbal, and social) and three ways of being targeted (physical, verbal, and social). The higher the score, the greater the frequency of bullying or being bullied. The score for each subscale was generated by summing the scores for the items that made up it.

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Student Perception of Affective Relationship with Teacher Scale

The Student Perception of Affective Relationship with Teacher Scale (SPARTS; Koomen & Jellesma, 2015) is a self-report instrument of 25 items with a Likert-type response scale (1 = no, that is not true to 5 = yes, that is true), designed for students aged 9 to 14 years, which measures a perception of conflict (10 items), closeness (8 items), and negative expectations (7 items) with regard to a specific teacher. When compiling the SPARTS in our study, the students were asked to refer to their “prevalent teacher” (i.e., the teacher with whom they spent the most hours per week, which, in the Italian education system, is the Italian language or mathematics and science teacher). The score for each subscale was generated by summing the scores for the items that made up it.

Peer nomination technique

This is a peer nomination questionnaire (Italian version) that allows researchers to plot a graphic representation of the interpersonal relationships present in a class group. It was inspired by Moreno’s sociogram techniques (1934) and Coie et al.’s (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions in which students have to nominate three of their peers. The questions are the following: (i) “Who would you want as a table partner?” (ii) “Who would you want as a schoolwork partner?” (iii) “Who would you want as a field trip buddy?” (iv) “Who would you NOT want as a table partner?” (v) “Who would you NOT want as a schoolwork partner?” and (vi) “Who would you NOT want as a field trip buddy?” For each child, the sum of the positive nominations received from all peers represented their liking (L) scores. In the same way, the sum of negative nominations received by each child represented their disliking (D) scores. The L and D scores were standardized within each class (L_z and D_z) and used to compute a social preference (SP) score ($L_z - D_z$) and a social impact (SI) score ($L_z + D_z$) for each child. Thereafter, following the formula developed by Coie et al. (1982), students were categorized into one of five peer-status groups as follows: (a) popular ($SP > 1.0$; $D_z < 0$; $L_z > 0$); (b) neglected ($SI < -1.0$; $L_z < 0$; $D_z < 0$); (c) rejected ($SP < -1.0$; $D_z > 0$; $L_z < 0$); and (d) controversial ($SI > 1.0$; $L_z > 0$; $D_z > 0$), where L_z and D_z stand for standardized liking scores and standardized disliking scores, respectively. Students who did not fit into any of the previous categories were considered average.

The Student-Teacher Relationship Scale

The Student-Teacher Relationship Scale (STRS; Fraire et al., 2013; Pianta, 2001; Settanni et al., 2015) assesses “a teacher’s feelings about his or her relationship with a student, the student’s interactive behavior with the teacher, and a teacher’s beliefs about the student’s feelings toward the teacher” (Pianta, 2001, p. 1). This scale is a self-report instrument consisting of 28 items developed with reference to Attachment Theory, especially the attachment Q-set (Waters & Deane, 1985). Items are evaluated on a 5-point Likert scale, ranging from 1 (definitely does not apply) to 5 (definitely applies). The scale presents three factors, identified as the Conflict, Closeness, and Dependency subscales. The original instrument by Pianta has been adapted

and validated for the Italian context (Fraire et al., 2013). This study used the STRS Short Form validated for the Italian context (Settanni et al., 2015), which consisted of 14 items and 2 factors: Closeness (6 items) and Conflict (8 items). The Conflict dimension assesses the negative aspects in the relationship (e.g., discordant interactions and the absence of a satisfying teacher–pupil relationship). Closeness assesses a warm affective relationship with a teacher, capable of promoting positive attitudes toward school, open communication, involvement, and engagement. The score for each of the two subscales was generated by summing the scores for the items that make up that scale.

The Strengths and Difficulties Questionnaire

The Strengths and Difficulties questionnaire (SDQ; Goodman, 1997; Tobia, Gabriele, & Marzocchi, 2011) is a well-validated behavioral screening questionnaire, which was developed on the basis of nosological concepts that underpinned the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1994) and ICD-10 (World Health Organization, 1993) classifications of childhood psychopathology, as well as factor analyses. The SDQ consists of 25 items and 5 subscales, which are as follows: Conduct Problems, Hyperactivity, Emotional Symptoms, Peer Problems, and Prosocial Behavior. The items are evaluated on a 3-point Likert scale (0 = not true, 1 = partially true, 2 = absolutely true). The score for each of the five subscales was generated by summing the scores for the five items that make up that scale.

Academic performance

Teachers were asked to report the average grade obtained by each student across all the school subjects. Each school subject was graded on a 1–10 scale. Then, for parsimony, the school subject was organized into two areas: Humanity subject (i.e., Italian language, History, Geography, English language, art, Music, and Religion) and Sciences subject (i.e., Mathematics, Sciences and Technology). Please note that in Italian primary school classes there are two teachers: one for humanity subjects and one for science subjects. Moreover, the decision to combine humanity and science subjects was supported by previous research that explored literacy and numeracy development in students with speech and language disorders (McLeod et al., 2019).

3.3. Procedures

The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated.

Prior to data collection, phase (1) included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the Institutional Review Board (IRB) of the University of Turin (Italy). The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

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Phase (2) involved the prevalent teacher for each class that included at least one student with neurodevelopmental disorders or other SEN condition, meaning the teacher who spent most of hours per week in that classroom. Each teacher completed a questionnaire about students from his or her class who he or she had received parental consent for: at least one student with neurodevelopmental disorders or other SEN condition and the rest of students with typical development. The teachers completed the questionnaire (i.e., socio-demographic information and the presence of neurodevelopmental disorders or other SEN in each student) in their free time during the school day.

In phase (3), the students completed anonymous questionnaires (i.e., socio-demographic information, APRI, SPARTS, and Peer nomination technique) during their regular class hours. Before completing the survey, students were asked to give their written assent to participate in the study. With respect to the use of peer nominations, in order to minimize their potential influences on students, participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

3.4. Data analysis

The data were double entered and checked for accuracy. A series of preliminary analyses were performed. The values of kurtosis and skewness were calculated in order to check the normality of the data. All of the values for univariate skewness and kurtosis for all the variables analyzed were satisfactorily within the conventional criteria for normality (-3 to 3 for skewness and -10 to 10 for kurtosis), according to the guidelines suggested by Kline (2015). In addition, a maximum of 0.2% of the cases was missing per variable. Given that missing values were $<1\%$ for each of the variables, they are not considered to cause bias in the estimates (Graham, 2009). Therefore, no adjustments were made to the scores for the variables measured in our studies. All analyses were performed using SPSS version 26.0 for Windows, and all statistical tests were interpreted assuming a significance level of 5% ($\alpha = 0.05$), using 2-tailed tests.

3.4.1. School adjustment in students who stutter, with ADHD, LD and other SEN

Three studies were aimed to explore school adjustment in students. Specifically, study 1 explored school adjustment in students who stutter, study 3 explored school adjustment in students with ADHD, and study 5 explored school adjustment in students with LD and other SEN conditions.

Data analysis of 1, 3 and 5 studies were conducted in two phases.

First, descriptive statistics (means and standard deviations) were computed on the socio-demographic and study variables, both in the overall samples and by groups (students who stutter, with ADHD, LD, other SEN and students with typical development). Then, to investigate whether there were differences between students who stutter, with ADHD, LD, other SEN, and students with typical development on socio-

demographic variables, independent sample t-tests were performed for the continuous variables, and chi-squared tests were carried out for the categorical variables. The Cohen's *d* index for continuous variables and the phi coefficient for categorical variables were used to measure effect size (Cohen, 1988; Cumming & Calin-Jageman, 2017).

To investigate bivariate relationships between the study measures, Pearson's correlation coefficients were computed on the study variables by groups (students who stutter, with ADHD, LD, other SEN and students with typical development). Then, to investigate whether there are differences between students with who stutter, with ADHD, LD, other SEN and students with typical development regarding their social status in the peer group, a chi-squared test was performed, and Cramer's *V* coefficient was used as a measure of effect size. Cohen (1988) established a conventional interpretation of effect sizes, wherein $r < .10$ is considered a small effect, $r = .30$ is a medium-sized effect, and $r = .50$ is a large effect. These guidelines were used to interpret the results throughout these articles.

In second phase, to determine if the presence of neurodevelopmental disorders and other SEN in students affects the investigated variables, several one-way multivariate analyses of variance (MANOVA) were performed on the STRS dimension, SDQ dimension, and academic performance scores in studies 1) (students who stutter) and 3) (students with ADHD). In study 5) (students with LD and other SEN), multivariate analysis of covariance (MANCOVA) were performed to examine the effect of the presence of LD and other SEN in students and their social status in the peer group on the STRS dimensions scores, the SDQ dimensions scores, and academic performance. The age of students was added as a covariate to control the influence that this variable may have on the STRS scores, SDQ scores and academic performance, since the one-way ANOVA showed statistically significant differences between students with LD and other SEN and students with typical development.

The most robust criterion, Pillai's criterion, was used (Tabachnick & Fidell, 2007), and partial eta squared (η^2) was estimated. Subsequently, if the overall F test showed mean differences, a post hoc univariate ANOVA was used to determine which means were statistically different from the others. According to Cohen (1988), a guideline for interpreting an eta square value (η^2) is that .01 indicates a small effect, .06 indicates a moderate effect, and .14 indicates a large effect.

3.4.2. Bullying in students who stutter, with ADHD, LD and other SEN

Three studies were aimed to explore bullying in students. Specifically, study 2 explored bullying in students who stutter, study 4 explored bullying in students with ADHD, and study 6 explored bullying in students with LD and other SEN conditions.

Data analysis of 2, 4 and 6 studies were conducted in two phases.

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First, descriptive statistics were computed for socio-demographic and study variables (means and standard deviations for continuous variables and frequencies and percentages for categorical variables), both in the overall sample and by group (students who stutter, with ADHD, LD, other SEN and students with typical development).

Then, in studies 2 and 4 independent samples t-tests were performed to investigate whether there were differences between the two groups (students who stutter in study 2, students with ADHD in study 4 and students with typical development) regarding the continuous variables. In studies 2 and 4 chi-squared tests were carried out for the categorical variables (gender). In study 6 a one-way ANOVA test was used for the students' age.

In studies 2 and 4, Cohen's *d* was used as an effect size measure for continuous variables (Cohen, 1988), and phi coefficient for categorical variables in study 4. Also, Pearson's correlation coefficients were computed to get an overall view of the relations among the variables in the model for both groups (students who stutter, with ADHD, LD, other SEN and students with typical development).

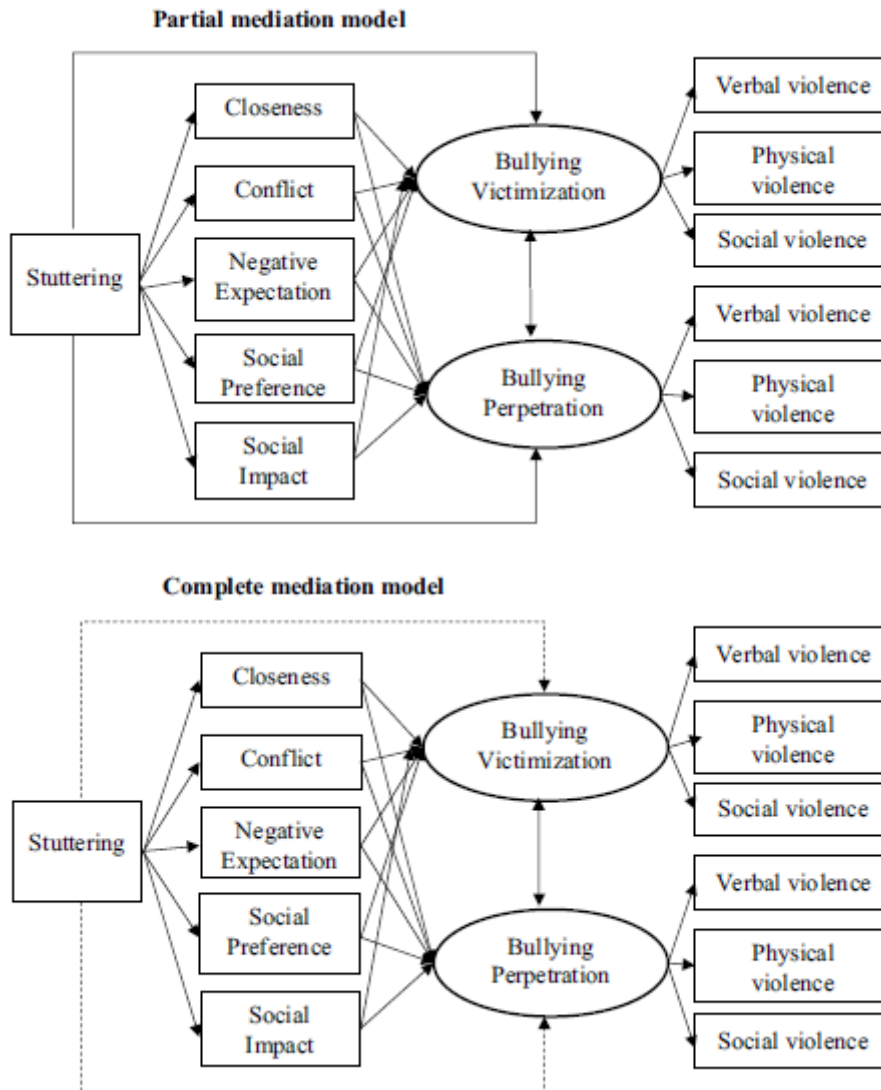
In study 6, separate multivariate analyses of covariance (MANCOVA) on dimensions of SPARTS, APRI and students' social status were performed in order to examine the effect of the presence of LD, other SEN and typical development in students. In these multivariate analyses, the student's age was added as a covariate to control the influence that this variable may have on the analyzed variables, since the one-way ANOVA showed statistically significant differences between students with LD and other SEN and students with typical development in terms of age. The Pillai's trace criterion (the most robust criterion) was used (Tabachnick & Fidell, 2007) to examine significant difference in multivariate analysis and an effect size was estimated using partial eta squared (η^2). Subsequently, if the overall F test showed mean differences among students' groups, a post hoc univariate ANCOVA test was used to determine which means were statistically different from others.

In the second phase, structural equation models were hypothesized, tested, and evaluated using Mplus 7.4 in studies 2 and 6, or Mplus 8 in study 4.

In **study 2**, two models included a sequence in stuttering that affected students' relations with teachers and students' status, and these variables, in turn, explained bullying victimization and perpetration (Figure 4). The first model (partial mediation) tested the direct effects of the presence of stuttering in students on bullying dimensions; the second model (complete mediation) only hypothesized an indirect effect of stuttering in students on bullying dimensions mediated by relations with teachers and students' status, but not a direct one. After comparing models' fit, an additional third model was tested, in which only the statistically significant effects in the best fitting model were retained.

Figure 4

Competitive models testing partial and complete mediation of stuttering in the students on bullying dimensions.

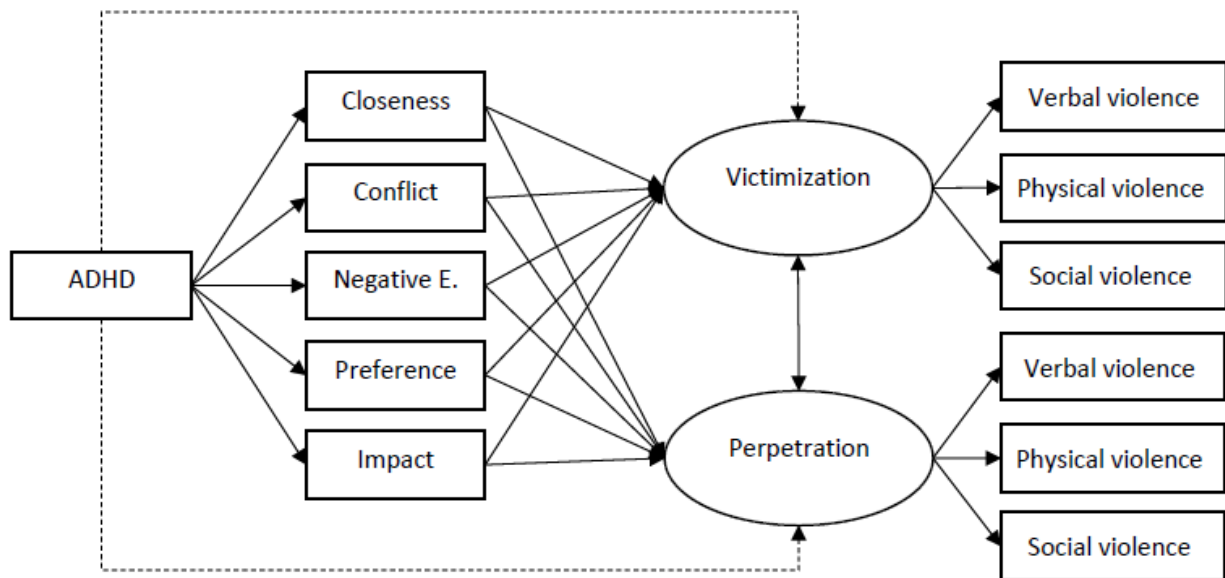


Note. Stuttering = Students with Stuttering. Discontinued arrows showed indirect effects; continued arrows for direct effects.

In **study 4**, the model included a sequence in which ADHD affected students' relations with teachers and students' status, and these variables, in turn, explained bullying victimization and perpetration (Figure 5). The model hypothesized an indirect effect of ADHD in students on bullying dimensions mediated by relations with teachers and students' status.

Figure 5

Model that tests mechanisms of ADHD in predicting bullying, by explaining the variance of victimization and perpetration in correlations with closeness, conflict, negative expectations in student-teacher relationship, social preference, and social impact.

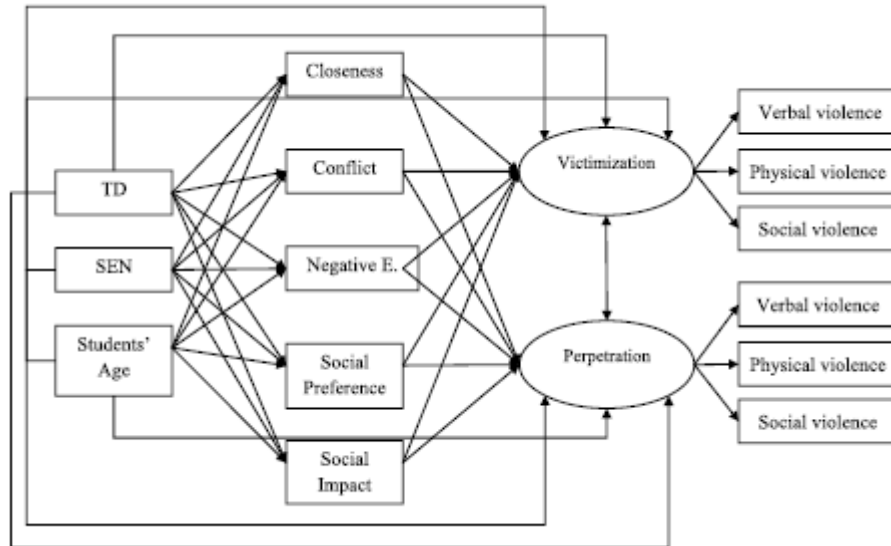


Note. ADHD = Students with ADHD. Correlations between bullying dimensions and among Closeness, Conflict, Negative expectations, Preference, and Impact were estimated. Discontinued arrows showed indirect effects; continued arrows for direct effects. For the sake of clarity, standard errors are not shown.

In **study 6**, the model included a sequence in which the presence of LD/other SEN in the students affected students' relations with teachers and students' statuses and bullying victimization and perpetration, and the effect of students' relationships with teachers and students' statuses in terms of bullying (Figure 6). In order to include the three groups in the model (LD, other SEN and typical development), two dummy variables were created: other SEN = 1 and the rest of the participants = 0; and TD = 1 and the rest of the participants = 0. Students with LD were used as the reference group. Also, it included the students' ages as a covariate.

Figure 6

Hypothesized structural equation model predicting bullying victimization and perpetration in students with LD, other SEN and Typical Development students. For the sake of clarity, standard errors are not shown.



Note. TD = Students with Typical Development. SEN = Student with Special Education Needs. Students with LD were used as the reference group. Correlations between bullying dimensions and among Closeness, Conflict, Negative expectations, Preference, and Impact were estimated.

The goodness of fit for each model was assessed with several fit indexes (Kline, 2015; Tanaka, 1993), specifically: (1) The χ^2 statistic, which is a test of the difference between the observed covariance matrix and the one predicted by the specified model; (2) the Comparative Fit Index (CFI), which assumes a non-central chi-square distribution with cutoff criteria of .90 or more (ideally over .95; Hu & Bentler, 1999) as indicating adequate fit; and (3) the root-mean-square error of approximation (RMSEA) and its 90% confidence interval. Values higher than 0.90 for the CFI or lower than 0.08 in the RMSEA are considered a reasonable fit (Kline, 2015), although values of .95 for the CFI and of .06 for the RMSEA are considered to be an appropriate model fit (Hu & Bentler, 1999).

Additionally, in the study 2), the fits of the models were assessed comparatively. The chi-square difference test has traditionally been used to test for fit differences between nested models (Byrne, 2012). However, there is an increasing tendency to use subjective criteria to make inferences about differences between the CFIs of the models tested. Whereas some authors argue that a difference of .05 or less between two CFIs could be considered negligible (Little, 1997), others suggest that this difference value should not exceed .01 (Cheung & Rensvold, 2002). Whenever these differences between competing models of varying parsimony are negligible, the most parsimonious model is chosen because it allows testing (as explained) for moderation effects.

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4. RESULTS

4.1. Study 1. School adjustment in children who stutter: the quality of the student-teacher relationship, peer relationships, and children's academic and behavioral competence

Berchiatti, M., Badenes-Ribera, L., Ferrer, A., Longobardi, C., & Gastaldi, F. G. M. (2020). School adjustment in children who stutter: The quality of the student-teacher relationship, peer relationships, and children's academic and behavioral competence. *Children and Youth Services Review*, 116, Article: 105226. <https://doi.org/10.1016/j.childyouth.2020.105226>. IF: 2.393, Q1 JCR (**Annex 1**).

4.1.1 INTRODUCTION

Stuttering

Stuttering is a complex and multifaceted developmental disorder within which linguistic, speech-motor, physiological, cognitive, and emotional factors all play significant roles (e.g., Conture & Walden, 2012). Common symptoms of stuttering are recurrent prolongations, reverberations, or blocks of sounds, syllables, phrases, or words, while simultaneous manifestations can include facial grimacing, tremors of muscles used in speech, and eye blinks, in addition to the evasion of words or circumstances that aggravate stuttering episodes (Maguire, Yeh, & Ito, 2012).

Around 5% of children are affected by stuttering, also known as childhood-onset fluency disorder (American Psychiatric Association, 2013) or stammering. Overall, approximately 80–90% of stuttering starts at the age of 6 (Maguire et al., 2012), with an average age at onset of 30–36 months and a lifetime incidence of 5–8% (Erdemir, Walden, Jefferson, Choi, & Jones, 2018).

Repeated communicative difficulties can have a negative influence on the lives of children who stutter (CWS; McAllister, 2016). CWS often appear to be shy, introverted, and not outgoing, as a result of the fear of being mocked by others, and they may be victims of aggression as a result of being unable to express anger openly (Yaruss, Coleman, & Quesal, 2012). Social anxiety associated with stuttering may be influenced by a host of interrelated factors, including fear of negative evaluation, negative social evaluative cognitions, attentional biases, self-focused attention, safety behaviors, and anticipatory and post event processing (Iverach, et al., 2016), that might affect their school participation.

The student-teacher relationship

The teacher is not only a manager of social relations in class, but also an attachment figure who has an important role in the students' development process (Schwab & Rossmann, 2020). Research on the role of the student-teacher relationship (STR) has been inspired by extended Attachment Theory (Bowlby, 1982; Hamre & Pianta, 2001), based on the idea that warm relationships between children and teachers might

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promote emotional security in students (Sabol & Pianta, 2012). The Student–Teacher Relationship Scale (STRS; Pianta, 2001), the most frequently used measure of teachers’ perceived relationship quality with children, identifies three distinct dimensions of teacher–child relationships: closeness, which is the degree of warmth and positive affect; conflict, which is negativity or the lack of rapport; and dependency, which is the clinginess or possessiveness that a child displays with the teacher (Sabol & Pianta, 2012). Like responsive parents, teachers provide children with a secure base from which they can explore their learning environment and a safe haven to which children can maintain proximity in cases of stress or when they feel the need (Hamre & Pianta, 2001).

The Bio-Ecological Model assumes that individuals influence each other through their behavior in a context (Bronfenbrenner & Kiesler, 1977). Specifically, four principal components are in an interactive relationship: the process (i.e., forms of interaction between the organism and the environment), the person, the contexts, and the time: human development takes place through progressive reciprocal interaction between the individual and the environment (Bronfenbrenner & Morris, 2006).

In this way, the quality of student–teacher relationships has a positive influence on primary school students’ emotion regulation and peer relationships (Hughes & Im, 2016). For instance, children experiencing positive relationships with their teachers develop interest in school activities, are more motivated and willing to learn (Prino, Pasta, Gastaldi, & Longobardi, 2016), and show higher academic achievement (Hughes, 2011; Longobardi, Prino, Marengo, & Settanni, 2016; Pasta, Mendola, Longobardi, Prino, & Gastaldi, 2013). In addition, a warm student–teacher relationship in early adolescence is positively associated with autonomous motivation to defend victims in case of bullying episodes (Jungert, Piroddi, & Thornberg, 2016; Longobardi, Prino, Fabris, & Settanni, 2019).

In contrast, conflictual student–teacher relationships have been associated with increased passive by standing (Jungert et al., 2016) and higher levels of peer victimization (Longobardi, Prino, Fabris, & Settanni, 2019; Lucas-Molina, Williamson, Pulido, & Pérez-Albéniz, 2015). Furthermore, an increase in the level of perceived conflict with teachers significantly predicted an increase in conduct problems and hyperactivity/inattention symptoms (Longobardi, Settanni, Prino, Fabris, & Marengo, 2019; Marengo et al., 2018) and can compound the risk of school failure, especially for at-risk children.

Student-teacher relationships in children with Special educational Needs

Previous studies showed that, in general, children with Special Educational Needs (SEN) tend to have a poorer student–teacher relationship than their peers (Prino et al., 2016). Also, negative student–teacher relationships seem to be associated with more depressive symptoms in children with SEN (Schwab & Rossmann, 2020).

Children with behavioral problems tend to have less positive teacher-student relationships (e.g., Baker, Grant, & Morlock, 2008). Children with ADHD generally feel less close to their teachers than their non-ADHD peers; at the same time, teachers experience less emotional closeness, less cooperation, and more conflicts with children with ADHD than with other students. In the case of children with ADHD or of those who suffer from Autistic Spectrum Disorders, relationships with teachers are characterized by a higher level of conflict and dependency, and the closeness dimension is hampered (Prino et al., 2016).

Children with Special Learning Difficulties (SpLD) also suffer an increase in the dependency dimension in their relationships with teachers (Prino et al., 2016). Although teachers feel less frustration and greater levels of sympathy for students with SpLD than for students without SpLD, it was also found that the same teachers have a higher expectancy of future failure for students with SpLD than for those without: Teachers view SpLD as a stable but uncontrollable cause of students' failure and lower achievement.

Regarding children with selective mutism, teachers perceive more closeness in their relationship with children without selective mutism than with children with selective mutism (Longobardi, Badenes-Ribera, Gastaldi, & Prino, 2019).

The relationship with teachers in children who stutter

Despite teachers might be an important part of the intervention process with CWS in primary school, little research has indicated the student-teacher relationship in CWS. These studies investigated teachers' beliefs, knowledge, and attitudes about stuttering in different cultures (Abdalla & St. Louis, 2012; Abrahams, Harty, St. Louis, Thabane, & Kathard, 2016).

There is a general consensus from primary school teachers that CWS have the potential to lead successful lives both socially and economically and that they can be productive members of society (Abrahams et al., 2016). Many teachers believe in their intelligence (academic performance) and ability to make friends and lead normal lives (Abdalla & St. Louis, 2012). Instead of this, teachers still have misconceptions about personality stereotypes and the causes of stuttering (Abrahams et al., 2016). Although some agreed with a genetic causal component as supported in the literature and the belief that CWS can recover spontaneously, the majority of the teachers attributed stuttering to psychological problems or a very frightening event (Abdalla & St. Louis, 2012). Moreover, personality stereotypes are still evident (i.e., CWS are shy and/or fearful or nervous and/or excitable; Abrahams et al., 2016). Confusion about the etiology of stuttering is one of the most consistent findings relating to negative stereotypes toward CWS, such as them being seen as "nervous or excitable" and "shy or fearful." Between 31% and 48% of teachers consider CWS as being "not likeable," "unsociable," "hostile," of "weak character," and "unemployable" (Abdalla & St. Louis, 2012).

Primary school teachers report a lack of perceived knowledge about stuttering as compared to other human attributes (i.e., intelligence, left-handedness, mental illness, and obesity; Abrahams et al., 2016). Teachers

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are also not significantly different from the general public in their levels of knowledge/experience, accommodating/helping, or sympathy/social distance. Although many of the teachers knew a person who stutters and were sensitive in their interactions with CWS, inadequate knowledge about the disorder still remains (Abdalla & St. Louis, 2012). Many teachers would try to act like the person was talking normally and speak calmly and slowly to the person. Teachers also indicated that they would not feel impatient and would never punish a student for stuttering (Abrahams et al., 2016), but approximately half of the teachers say they would not feel comfortable or relaxed when interacting with CWS (Abdalla & St. Louis, 2012).

Peer relationships and social status of children who stutter among peers

The advantages of close peer relationships are well described in different research (e.g., García-Bacete, Marande-Perrin, Schneider, & Blanchard, 2014; Schwab & Rossmann, 2020). At school, a good relationship with peers positively affects academic performance, helps to develop social skills and competencies, and reduces stress and anxiety. Social interaction and close relationships have important implications for both physical and mental health (García-Bacete et al., 2014).

In addition, students' social status in the peer group has also been linked to better scholastic adjustment in terms of academic performance, the teacher-student relationship quality, and the children's emotional and behavioral competence (e.g., Mercer & DeRosier, 2008; Roseth, Johnson, & Johnson, 2008; Rytioja, Lappalainen, & Savolainen, 2019). It seems that students who are more accepted by classmates have better performance in terms of school subjects (Andrei, Mancini, Mazzoni, Russo, & Baldaro, 2015; Roseth et al., 2008), are more preferred by their teachers (Hughes & Chen, 2011; Mercer & DeRosier, 2008), and show more emotional and behavioral competence (Rytioja et al., 2019).

The peer interaction of CWS has been the subject of past research focusing on the adverse effects of stuttering on social functioning at school. Stuttering is perceived by CWS as an obstacle in participating in social activities, and it could lead to preferred school activities that do not involve talking and feeling ashamed when introducing oneself (Klompas & Ross, 2004). Impaired social development in CWS begins as early as age three; CWS at age of five report lacking the ability to form successful relationships with peers. At age eleven, CWS find it harder to deal with the pressures of forming relationships with peers (McAllister, 2016).

Negative social experiences could have consequences in terms of self-doubt about their ability to be competent communicators and lower self-esteem. In this regard, students who perceived their stuttering as more severe scored lower on the specific domains of self-esteem, social acceptance, and the ability to make close friends (Adriaensens, Beyers, Struyf, 2015), and lower stuttering frequency was associated with greater perceived social acceptance (Hertsberg & Zebrowski, 2016).

Also, analyzing sociometric data inside classrooms, CWS tend to be more stringent or more careful in nominating acceptance, which leads to fewer reciprocated friendships (Adriaensens, Van Waes, & Struyf,

2017). CWS could be perceived by peers as shy or withdrawn and, because of this, could be less accepted by the group (Davis, Howell, & Cooke, 2002). Also, stuttering could cause mimicking and name-calling by peers and increase the risk of exclusion (Rose, Swearer, & Espelage, 2012). CWS are less popular than their more fluent peers and are at increased risk of being rejected and bullied by their classmates (Blood et al., 2011; Erickson & Block, 2013; Yaruss et al., 2012). The lingering effects of childhood victimization, common in some children who stutter, may contribute to the reported psychosocial problems in adulthood (Blood & Blood, 2016).

Hyperactivity and emotional symptoms in children who stutter

Studies of behavioral, emotional, and social well-being have demonstrated greater problems among CWS relative to their non-stuttering peers (Briley, O'Brien, & Ellis, 2019; McAllister, 2016) when comparing their scores on the Strengths and Difficulties Questionnaire (SDQ), a measure of behavioral, emotional, and social well-being. CWS seem to be more worried, unhappy, or depressed; get along better with adults than with children; and have difficulty with emotions or concentration. In contrast, CWS are less likely to be well-behaved, have good attention spans, and be able to complete tasks in a timely manner (Briley et al., 2019). Negative emotional factors play a critical role in speech-motor execution (Erdemir et al., 2018).

There are salient associations between temperament, speech-language development, and childhood stuttering. Literature suggests that CWS present with high levels of Hyperactivity traits. Approximately half of the CWS present elevated Hyperactivity symptoms (Druker, Hennessey, Mazzucchelli, & Beilby, 2019). Also, anxiety is more common among CWS than among children who do not stutter, and 24% of stuttering children meet the criteria for social anxiety disorder (Iverach et al., 2016). Related to anxiety, communication apprehension has also been reported in CWS, probably as a consequence of negative peer reactions to difficulties with communication (Briley et al., 2019).

The presence of anxiety among CWS is noteworthy because stuttering is a complex condition that produces anxiety both internally and externally (Briley et al., 2019). For instance, when faced with communicative situations, they may increase avoidance behavior related to people, places, and social situations. Furthermore, the presence of stuttering can produce negative peer responses even in preschool-age children and contributes to high levels of anxiety (Langevin, Packman, Onslow, 2009). The presence of anxiety has an additive negative effect on the stuttering experience and is a precursor to avoidance behaviors. In addition, the presence of anxiety and subsequent avoidance behaviors is indicative of non-optimal responses to the experience of stuttering (Langevin et al., 2009).

Academic performance in children who stutter

CWS may perform poorly in school because of being unable to express themselves in class, work well in groups, and do all that may be expected of them academically-speaking (Yaruss et al., 2012). In this way, as soon as at preschool age, CWS have more difficulty with executive functions (EFs) in everyday life, thus, they

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may experience early delays in their ability to integrate aspects of attention and EFs compared to children who do not stutter (Ntourou, Anderson, & Wagovich, 2018). Indeed, CWS have more difficulty maintaining concentration and need more adult direction to keep on task. CWS are characterized by atypical attentional processing in terms of stimulus evaluation, response selection, and execution (Costelloe, Davis, Cavenagh, & Doneva, 2018).

Aim of the study

Attachment-based research on the student–teacher relationship has recently started to include classmates’ perspectives (e.g., Hughes, 2011), according to Social Referencing Theory: children’s views of teachers’ relationships with classmates are based on social cues regarding how teachers behave and act toward individual children in their classes (Hendrickx, Mainhard, Boor-Klip, & Brekelmans, 2017). This means that by observing teachers’ differential treatment of individual students in their classes children make inferences about their classmates’ social traits and academic competencies and teachers’ relationship perceptions (e.g., Hughes, Im, & Wehrly, 2014). A large body of literature has shown the importance of student–teacher relationships (e.g., Hughes & Im, 2016; Prino et al., 2016) and peer relationships (e.g., García-Bacete et al., 2014; Schwab & Rossmann, 2020) on emotional and behavioral development and academic outcomes in mainstream primary and secondary school children populations.

Conversely, at the present time, literature investigating this relationship in CWS is scarce. For this reason, the aim of this study was to investigate the quality of the student–teacher relationship, peer relationships, emotional and behavioral outcomes, and academic performance in the school adjustment of children who stutter. This study analyzes the relationship between the presence of stuttering in children and the following: 1) their social status in their peer groups; 2) their teachers’ perceptions of their own relationships with these students; 3) their behavior; and 4) their academic performance. And it tries to answer to the following research questions:

Are there differences between CWS and students who do not stutter regarding their social status in the peer group?

Are there differences between CWS and students who do not stutter regarding the teachers’ perceptions of their own relationships with these students?

Are there differences between CWS and students who do not stutter regarding the behaviors?

Are there differences between CWS and students who do not stutter regarding the academic performance?

4.1.2 METHOD

Participants

This investigation was undertaken with 536 primary and secondary school students recruited from six Italian mainstream primary (40.5%) and secondary schools (59.5%). The schools were selected through convenience sampling. Both children who stutter and children who do not stutter were recruited from the same school. Within the schools, 36 classes were selected; there was at least one child who stuttered per class.

The students were aged between 8 and 17 years old ($M = 11.42$; $SD = 1.55$), of whom 50.2% were male. The mean age for children who stutter ($n = 62$) was 11.72 ($SD = 1.72$) and for children who do not stutter ($n = 474$) was 11.39 ($SD = 1.53$). The percentage of males was 58.1% for children who stutter and 49.2% for children who do not stutter. There were no statistically significant differences in age ($t(503) = -1.53$, $p = .128$, Cohen's $d = -0.21$, 95% CI [-0.47, 0.06]) or in gender distribution ($\chi^2(1) = 1.17$, Phi coefficient = -0.06; $p = .187$) between children who stutter and children who do not stutter.

In addition, the data of 36 teachers also were analyzed. The teachers were a mean age of 46.63 years old ($SD = 8.71$, $Min. = 25$, $Max. = 64$) and a mean teaching experience of 19.23 years ($SD = 9.77$, $Min. = 2$, $Max. = 40$). Of them, 92.2% were female, and 84.5% were employed.

Instruments

Socio-demographic characteristics

Both teachers and students were asked to report on the socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to report Number of years of teaching, and Number of hours per week teaching in the class. Data about students' migration backgrounds and the socioeconomic status of their families were not available.

Presence of stuttering in children

Teachers were asked to report on the presence of stuttering in each student. The item used was "The child has difficulty in articulating words" (yes or no). Teacher answers were based on stuttering diagnosis made by speech therapist in medical centers. All CWS have been enrolled in formal speech therapy services in the past or in the present. We did not obtain information about the specific type of therapy/treatment received and/or whether students have other diagnoses together with the presence of stuttering (e.g., anxiety). Please note that formal diagnoses of stuttering take place outside of the school curriculum and are based on national guidelines and protocols. The diagnoses are made by speech therapist, not by school teachers themselves. However, teachers usually work closely together with speech therapist, who inform them about students' diagnosed disabilities. Moreover, these diagnostic labels are registered in the school's administration system and form the basis of Individual Education Plans. Hence, even though teachers obviously do not diagnose the

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children themselves, they are well informed about these diagnoses and as such can relatively reliably report on the prevalence of CWS in their class.

Peer nomination technique

This is a peer nomination questionnaire that allows researchers to plot a graphic representation of the interpersonal relationships present in a class group. It was inspired by Moreno's sociogram techniques (1934) and Coie, Dodge, and Coppotelli's (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions (three positive and three negative) in which children have to nominate three of their peers. The questions are the following: (i) "Who would you want as a table partner?" (ii) "Who would you want as a schoolwork partner?" (iii) "Who would you want as a field trip buddy?" (iv) "Who would you NOT want as a table partner?" (v) "Who would you NOT want as a schoolwork partner?" and (vi) "Who would you NOT want as a field trip buddy?" For each child, the sum of the positive nominations received from all peers represented their liking (L) scores. In the same way, the sum of negative nominations received by each child represented their disliking (D) scores. The L and D scores were standardized within each class (Lz and Dz) and used to compute a social preference (SP) score ($Lz - Dz$) and a social impact (SI) score ($Lz + Dz$) for each child. Thereafter, following the formula developed by Coie et al. (1982), children were categorized into one of five peer-status groups as follows: (a) popular ($SP > 1.0; Dz < 0; Lz > 0$); (b) neglected ($SI < -1.0; Lz < 0; Dz < 0$); (c) rejected ($SP < -1.0; Dz > 0; Lz < 0$); and (d) controversial ($SI > 1.0; Lz > 0; Dz > 0$), where Lz and Dz stand for standardized liking scores and standardized disliking scores, respectively. Children who did not fit into any of the previous categories were considered average.

The Student-Teacher relationship scale (STRS; Fraire et al., 2013; Pianta, 2001; Settanni et al., 2015)

The STRS assesses "a teacher's feelings about his or her relationship with a student, the student's interactive behavior with the teacher, and a teacher's beliefs about the student's feelings toward the teacher" (Pianta, 2001, p. 1). This scale is a self-report instrument consisting of 28 items developed with reference to Attachment Theory, especially the attachment Q-set (Waters & Deane, 1985). Items are evaluated on a 5-point Likert scale, ranging from 1 (definitely does not apply) to 5 (definitely applies). The scale presents three factors, identified as the Conflict, Closeness, and Dependency subscales. The original instrument by Pianta has been adapted and validated for the Italian context (Fraire et al., 2013). This study used the STRS Short Form validated for the Italian context (Settanni et al., 2015), which consisted of 14 items and 2 factors: Closeness (6 items) and Conflict (8 items). The Conflict dimension assesses the negative aspects in the relationship (e.g., discordant interactions and the absence of a satisfying teacher-pupil relationship). Closeness assesses a warm affective relationship with a teacher, capable of promoting positive attitudes toward school, open communication, involvement, and engagement. The score for each of the two subscales was generated by summing the scores for the items that make up that scale. Reliability for this study was adequate, with Cronbach's alpha values equal to 0.87 and 0.93 for Conflict and Closeness, respectively.

The Strengths and difficulties questionnaire (SDQ; Goodman, 1997; Tobia et al., 2011)

The SDQ is a well-validated behavioral screening questionnaire, which was developed on the basis of nosological concepts that underpinned the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1994) and ICD-10 (World Health Organization, 1993) classifications of childhood psychopathology, as well as factor analyses. The SDQ consists of 25 items and 5 subscales, which are as follows: Conduct Problems, Hyperactivity, Emotional Symptoms, Peer Problems, and Pro-social Behavior. The items are evaluated on a 3-point Likert scale (0 = not true, 1 = partially true, 2 = absolutely true). The score for each of the five subscales was generated by summing the scores for the five items that make up that scale. Reliability for this study was adequate, with Cronbach's alpha values equal to 0.75, 0.73, 0.85, 0.70, and 0.86, respectively for the Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems, and Prosocial Behavior subscales.

Academic performance

Teachers were asked to report the average grade obtained by each student across all the school subjects. Each school subject was graded on a 1–10 scale. Then, for parsimony the school subject was organized into two areas: Humanity subject (i.e., Italian language, History, Geography, English language, art, Music, and Religion) and Sciences subject (i.e., Mathematic, Sciences and Technology). Please note that in Italian primary school classes there are two teachers: one for humanity subjects and one for science subjects. Moreover, the decision to combine humanity and science subjects was supported by previous research that explored literacy and numeracy development in children with speech and language disorders (McLeod et al., 2019).

Procedures

The data were collected from six primary and secondary schools in Northwest Italy. The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the IRB of the University of Turin (approval number: 118643). The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

Phase 2 involved the prevalent teacher for each classroom that included at least one child who stutter and the rest with typical development, understanding that the teacher spent at least 18 h per week in that classroom. Each teacher completed a questionnaire about students from his/her class; the questionnaire was formed by 5 surveys, i.e., socio-demographic information, the presence of stuttering in each student, STRS, SDQ, and academic performance, for whom parental consent was received. The teachers completed the questionnaires in their free time during the school day, and the average time taken to complete all 5 surveys was 50 min per each student.

In phase 3, the children completed anonymous questionnaires (i.e., socio-demographic information and Peer nomination technique) during regular class hours. Before completing the survey, students were asked to give

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their written assent to participate in the study. With respect to the use of peer nominations, in order to minimize their potential influences on students, participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

Data analysis

The data were double entered and checked for accuracy. All of the values for univariate skewness and kurtosis for all the variables analyzed were satisfactorily within the conventional criteria for normality (-3 to 3 for skewness and -10 to 10 for kurtosis), according to the guidelines suggested by Kline (2015). In addition, a maximum of 0.2% of the cases was missing per variable. Given that missing values were $< 1\%$ for each of the variables, they are not considered to cause bias in the estimates (Graham, 2009). Therefore, no adjustments were made to the scores for the variables measured in our study.

First, descriptive statistics (means and standard deviations) were computed on the socio-demographic and study variables, both in the overall sample and by group (CWS or students who do not stutter). Then, to investigate whether there are differences between CWS and students who do not stutter on socio-demographic variables, independent sample t-tests were performed for the continuous variables, and chi-squared tests were carried out for the categorical variables. As effect size measure was used, the Cohen's d index for continuous variables and the phi coefficient for categorical variables (Cohen, 1988; Cumming & Calin-Jageman, 2017).

To investigate bivariate relationships between the study measures, Pearson's correlation coefficients were computed on the study variables by group (CWS or those who do not stutter). Then, to investigate whether there are differences between CWS and those who do not stutter regarding their social status in the peer group, a chi-squared test was performed, and Cramer's V coefficient was used as a measure of effect size.

Next, to determine if the presence of stuttering in children affects the investigated variables, it is necessary to control for the students' social status in the peer group because sociometric status groups differ in terms of teacher-student relationship quality, children's behavioral and emotional competence, and academic performance, 3 multivariate analyses of variance (MANOVAs) 2 (presence of stuttering) \times 5 (social status) were performed, one of them on the STRS dimension scores, other on the SDQ dimension scores, and another one on academic performance. The most robust criterion, Pillai's criterion, was used (Tabachnick & Fidell, 2007), and partial eta squared (η^2) was estimated. Subsequently, if the overall F test showed mean differences, a post hoc univariate ANOVA was used to determine which means were statistically different from the others.

All analyses were performed using SPSS version 26.0 for Windows, and all statistical tests were interpreted assuming a significance level of 5% ($\alpha = 0.05$), using 2-tailed tests.

4.1.3 RESULTS

Table 1 presents descriptive statistics of the study variables for both the whole sample and for the stuttering groups (children who stutter and those who do not stutter) and the correlations among all study variables. Overall, for both groups, most of the variables were intercorrelated, and they showed similar relationship patterns. Although, for the CWS group, some relationships between variables did not reach statistical significance, they showed small to moderate relationships (Cohen, 1988), for example, the link between the closeness and conflict dimensions ($r = -.25$), the association of closeness with peer problems ($r = -.20$), or the relationship between conflict and peer problems ($r = .25$). Finally, for CWS, there was no association between emotional symptoms and peer problems or academic performance.

Table 1

Inter correlations among all variables and Mean (Standard Deviation) scores for stuttering groups (Students who stutter and Students who do not stutter).

	1	2	3	4	5	6	7	8	9	10	M(SD)
1. Closeness (STRS)	–	-0.25	-0.10	-0.28*	-0.20	-0.43***	0.55***	0.32*	0.41**	0.40**	38.09(7.45)
2. Conflict (STRS)	-0.36***	–	0.42***	0.62***	0.42***	0.25	-0.36**	-0.28*	-0.31*	-0.29*	18.30(8.11)
3. Emotional Symptoms (SDQ)	-0.04	0.27***	–	0.45***	0.37**	0.32*	-0.13	0.12	-0.09	0.07	7.88(2.27)
4. Behavior Problems (SDQ)	-0.21***	0.59***	0.28***	–	0.66***	0.27*	-0.62***	-0.32*	-0.41**	-0.38**	4.94(2.11)
5. Hyperactivity (SDQ)	-0.19***	0.53***	0.37***	0.71***	–	0.17	-0.55***	-0.26*	-0.44***	-0.34**	5.11(2.80)
6. Peer Problems (SDQ)	-0.23***	0.33***	0.50***	0.30***	0.30***	–	-0.38**	-0.30*	-0.38***	-0.37**	3.20(2.08)
7. Prosocial Behavior (SDQ)	0.52***	-0.43***	-0.22***	-0.48***	-0.47**	-0.47***	–	0.33*	0.55***	0.46***	11.34(2.58)
8. Academic performance (Humanity)	0.33***	-0.27***	-0.26***	-0.44***	-0.52***	-0.25***	0.41***	–	0.65***	0.91***	7.07(0.79)
9. Academic Performance (Sciences)	0.30***	-0.23***	-0.23***	-0.39***	-0.46***	-0.20***	0.35***	0.89***	–	0.90***	6.73(0.92)
10. Academic performance (Total)	0.34***	-0.26***	-0.25***	-0.43***	-0.50***	-0.25***	0.40***	0.97***	0.96***	–	7.03(0.74)
M(SD)	40.48(7.11)	16.51(8.18)	6.75(1.96)	4.26(1.78)	3.51(2.47)	2.62(1.80)	12.20(2.50)	7.75(0.99)	7.40(1.15)	7.67(0.97)	
M(SD) for all sample	40.21(7.18)	16.71(8.18)	6.89(2.03)	4.33(1.83)	3.69(2.56)	2.68(1.84)	12.11(2.53)	7.68(0.99)	7.33(1.14)	7.60(0.97)	

Note. All Variables with Results for Students who stutter in the Top Diagonal and for Students who do not stutter in the Bottom Diagonal

* $p < .05$. ** $p < .01$. *** $p < .001$. STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire

Social status in the peer group

Pearson's chi-squared and Cramer's V tests were performed to evaluate the relationship between the presence of stuttering in students and their social status in their peer groups. The results of the Pearson's chi-squared and Cramer's V tests showed a statistically significant association between the presence of stuttering in students and their social status in their peer groups ($\chi^2(4) = 19.19$; Cramer's $V = 0.19$, $p = .001$). Therefore, there were statistically significant differences between CWS and students who do not stutter in terms of their social status in the peer group. Specifically, CWS were less popular ($z = -3.2$, $p < .001$) and more rejected ($z = 3.4$, $p < .001$) in the peer group than expected. In the rest of the categories related to social status in the peer group, there were no statistically significant differences between CWS and those who do not stutter (Neglected: $z = 0.3$; Controversial: $z = 1.5$; and Average status: $z = -0.8$).

Teacher's perception of his/her relationship with the student

A MANOVA 2 (presence of stuttering) \times 5 (social status group) test was performed to determine if the presence of stuttering in students and the social status in the peer group affect the student-teacher relationships assessed on the Conflict and Closeness dimensions (in the STRS). Previously, the assumption of

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homogeneity of covariance was examined using Box's M test ($F = 2.00, p < .001$) and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate statistical significance of the main effects and interactions. The MANOVA did not show a statistically significant effect for the presence of stuttering in students (Pillai's trace = 0.003, $F[2, 524] = 0.79, p = .455, \eta^2 = .003$) and for their social status in the peer group (Pillai's trace = 0.021, $F[8, 1050] = 1.40, p = .192, \eta^2 = .011$), but it did for the interaction between both (Pillai's trace = 0.029, $F[8, 1050] = 1.94, p = .051, \eta^2 = .015$). Subsequent univariate ANOVAs revealed that the interaction effect was only statistically significant for the conflict dimension ($F[4, 525] = 2.67; p = 0.31, \eta^2 = .020$) and not for the closeness dimension ($F[4, 525] = 0.61, p = .655, \eta^2 = .005$). Finally, post hoc tests showed that for the CWS the conflict with teachers did not differ among students with different social statuses in the peer group. However, the conflict dimension presented statistically significant differences among social status groups for students who do not stutter ($F[4, 525] = 2.68, p = .031, \eta^2 = .042$). Post hoc comparisons showed that among students who do not stutter, conflict was higher for Rejected students ($M = 18.51, SD = 9.38$) than for Popular ones ($M = 14.85, SD = 6.59$); for Rejected students than for Neglected ones ($M = 15.14, SD = 6.50$), and for Controversial students ($M = 19.68, SD = 11.73$) than for Popular ones, while no differences emerged among the rest of the students with different social statuses (Average status: $M = 17.38, SD = 8.27$).

Teachers' perceptions of students' behavior

A MANOVA 2 (presence of stuttering) \times 5 (social status group) test was performed to determine if the presence of stuttering in students and their social status in the peer group affect teachers' perceptions of students' behavior in terms of the following: Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems, and Prosocial Behavior. Previously, the assumption of homogeneity of covariance was examined using Box's M test ($F = 2.20, p < .001$) and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate significance of the main effects and interactions. The MANOVA showed a statistically significant effect for the presence of stuttering in students (Pillai's trace = 0.022, $F[5, 521] = 2.32, p = .042, \eta^2 = .022$) and for the students' social status in the peer group (Pillai's trace = 0.081, $F[20, 2096] = 2.15, p = .002, \eta^2 = .020$), but not for the interaction between both (Pillai's trace = 0.028, $F[20, 2096] = 0.741, p = .786, \eta^2 = .007$). Subsequent univariate ANOVAs revealed that CWS showed statistically significant higher values in Emotional Symptoms ($F[1, 525] = 6.29, p = .012, \eta^2 = .012$) and Hyperactivity ($F[1, 525] = 7.46, p = .007, \eta^2 = .014$) than students who do not stutter (see Table 1). Statistically significant differences were also observed in the students' social status in the peer group related to the following: Hyperactivity ($F[4, 525] = 2.88, p = .022, \eta^2 = .021$), Peer Problems ($F[4, 525] = 8.18, p < .001, \eta^2 = .059$), and Prosocial Behavior ($F[4, 525] = 2.49, p = .043, \eta^2 = .019$). Post hoc comparisons revealed that Rejected students showed statistically significant higher values in Hyperactivity ($M = 5.03, SD = 2.41$) than Popular students ($M = 2.73, SD = 2.11$). They also revealed that Rejected students showed statistically significant higher values in Peer Problems ($M = 3.92, SD = 2.39$) than Popular students ($M = 2.05, SD = 1.26$), Neglected students ($M = 2.61, SD = 1.74$), and

students with the Average status ($M = 2.45$, $SD = 1.56$). Finally, Rejected students showed statistically significant lower values in Prosocial Behavior ($M = 10.98$, $SD = 2.74$) than Popular students ($M = 12.82$, $SD = 2.17$).

Academic performance

A MANOVA 2 (presence of stuttering) \times 5 (social status group) test was performed to determine if the presence of stuttering in students and their social status in the peer group affect academic achievement in humanity and science subjects. Previously, the assumption of homogeneity of covariance was examined using Box's M test (44.55 , $F = 1.43$, $p = .039$) and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate significance of the main effects and interactions. The MANOVA showed a significant effect for the presence of stuttering in students (Pillai's trace = 0.026, $F[2, 488] = 6.53$, $p < .001$, $\eta^2 = .026$) and for their social status in the peer group (Pillai's trace = 0.037, $F[8, 978] = 2.28$, $p = .020$, $\eta^2 = .018$), but not for the interaction between both (Pillai's trace = 0.014, $F[8, 978] = 0.89$, $p = .526$, $\eta^2 = .01$). Subsequent univariate ANOVAs revealed that students who do not stutter showed statistically and significantly higher values in academic performance related to Humanity subjects ($F[1, 489] = 12.67$, $p < .001$, $\eta^2 = .025$; $M = 7.70$, $SD = 1$ vs $M = 7.03$, $SD = 0.81$) and Science subjects ($F[1, 489] = 7.23$, $p = .008$, $\eta^2 = .015$; $M = 7.42$, $SD = 1.64$ vs $M = 6.73$, $SD = 0.89$) than CWS (see Table 1). Moreover, statistical and significant differences were also observed in the students' social status in the peer group related to academic performance: humanity subjects ($F[4, 489] = 2.95$, $p = .020$, $\eta^2 = .024$) and science subjects ($F[4, 489] = 4.49$, $p = .001$, $\eta^2 = .035$). Regarding academic performance related to humanity subjects, post hoc comparisons revealed that Popular students showed statistically significant higher grades ($M = 8.03$, $SD = 0.86$) than Rejected students ($M = 7.13$, $SD = 0.91$), while no differences emerged among the rest of the students with different social statuses in both variables. Concerning academic performance related to science subjects, post hoc comparisons also revealed that Popular students and students with the Average status showed statistically significant higher grades ($M = 7.70$, $SD = 1.02$ and $M = 7.46$, $SD = 1.13$, respectively) than Rejected students ($M = 6.65$, $SD = 1.02$), while no differences emerged among the rest of the students with different social statuses in both variables.

4.1.4 DISCUSSION

The main objective of this study was to investigate the quality of the student–teacher relationship, peer relationships, emotional and behavioral outcomes, and academic performance in the school adjustment of children who stutter. Bivariate correlation tests showed that for both groups (children who stutter and children who do not stutter), most of the variables were intercorrelated, and they showed similar relationship patterns in both groups. For instance, the teacher's perception of their relationship with the student as being close or conflictive was correlated with all dimensions of the SDQ and academic performance in the expected direction. Also, the dimensions of children's emotional and behavioral competence, assessed by the SDQ,

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were associated with academic performance in the expected direction. Although, for the CWS group, some relationships between variables did not reach statistical significance, possibly given the small size of the sample, which affects the statistical power to detect statistically significant associations among variables, small to moderate relationships were shown to exist (Cohen, 1988). Finally, for CWS, there was no association between emotional symptoms and peer problems or academic performance. This result seems to indicate that, despite the presence of emotional symptoms, stuttering in children might affect social status and academic outcomes, and this confirms previous research highlighting peer problems and poor academic performance in CWS (e.g., McAllister, 2016; Yaruss et al., 2012).

In addition, the results showed that the children's relationship with the peer group was affected by suffering from stuttering. Specifically, CWS were more unpopular and rejected by peers than expected, comparing with students who do not stutter. This finding is consistent with the study of Davis et al. (2002), which found that CWS could be less accepted by the group because they are perceived by peers as withdrawn or shy. It is also consistent with evidence that CWS are less popular than their classmates who do not stutter and are at increased risk of being rejected by their peer group (Blood et al., 2011; Yaruss et al., 2012). Considering that the risk of social isolation or exclusion is common among CWS (Briley et al., 2018; Rose et al., 2012), this finding should be taken into consideration by teachers and educators in order to carry out strategies to improve the social wellbeing of CWS in peer groups.

In addition, from the teacher's point of view and with regard to the teacher's perception of his/her relationship with students, the revealed that there was no difference in the teacher's perception of stuttering in the children results and the students' social status in the peer group on the Conflict and Closeness dimensions. But, there was an interaction effect between both variables (the presence of stuttering in children and students' social status in the peer group) on the Conflict dimension scores. Specifically, among students who do not stutter, the perception of conflict in the relationship with the teacher is affected by the students' social status in the peer group. That is, teachers perceived a higher conflict level in their relationships with Rejected students compared to in those with Popular and Neglected students, and with Controversial students compared to Popular students. No differences emerged among the rest of the students who do not stutter with different social statuses. This means that for the teachers it may be easier to build positive relationships with students well accepted by their group of peers, which is in accordance with previous research findings that a warm student-teacher relationship is positively associated with good peer relationships (Hughes & Im, 2016). Nevertheless, the perception of conflict in the relationships of teachers with CWS was not affected by the students' social status in the peer group, which indicates that the teacher's perception of his/her relationship with CWS presents similar levels of conflict for all students. This means that, differently than with other communicative disorders related to anxiety, like selective mutism (Longobardi et al., 2019), the presence of stuttering may not affect the teacher's perception of his/her relationship with students. Finally, as we said earlier, the perception of closeness in the relationship with

teachers was not affected by stuttering in the children nor by the students' social status in the peer group, indicating that closeness levels in the relationships between teachers and students as perceived by teachers were similar for all students. This means that, also in the case of closeness, the presence of stuttering may not affect the perception that teachers have of their relationship with students. This result is encouraging, and it is in contrast with previous research in the study by Abdalla and St. Louis (2012). Abdalla and St. Louis, with a sample of 262 inservice public school teachers (mean age in years = 36.6, range = 19–59; 47.3% females) and 209 pre-service teachers (mean age in years = 19.6, range = 19–30; 99% females) recruited from elementary, intermediate, and secondary schools in an Arabic context, explored Arab teachers' knowledge of and attitudes toward stuttering, as well as the strategies they adopt to cope with class problems. They found that teachers still have negative stereotypes toward CWS and do not feel comfortable with them. Differences in the results could be explained by the different cultural contexts of previous studies and may be the object of future research.

Regarding the Emotional Symptoms, Hyperactivity, Peer Problems, and Prosocial Behavior dimensions, the results showed a statistically significant effect for the presence of stuttering and for the students' social status in the peer group, but not for the interaction between both. Specifically, CWS showed higher Emotional Symptoms and Hyperactivity scores than students who do not stutter. This relationship was expected and already evidenced by previous research, which reported negative emotional symptoms and high levels of Hyperactivity traits among CWS (Briley et al., 2019; Langevin et al., 2009; McAllister, 2016). Druker et al. (2019) found that one half (50%) of children who stutter exhibit elevated hyperactivity symptoms. Because hyperactivity and anxiety disorders frequently occur in the same individual (Tannock, 2000) and children with social anxiety disorders often show disinterest in social situations (Iverach & Rapee, 2014), we could hypothesize that the presence of anxiety, associated with stuttering, makes subjects more vulnerable and sensitive to the stimuli within a relationship with peers in a school context, resulting in hyperactive behaviors. With regard to the students' social status in the peer group for children who do not stutter, the findings also revealed that Rejected students showed higher values in Hyperactivity than Popular students. This result was expected and confirms previous research, finding that, in comparison with Rejected students, Popular children have many behavioral and emotional strengths, and fewer difficulties and behavioral problems (Rytioja et al., 2019). Rejected students also showed higher values in Peer Problems than Popular students, Neglected students, and students with the Average status. Finally, Rejected students showed lower values in Prosocial Behavior than Popular students. These findings were also expected and are in line with previous studies that showed that students reporting Behavioral Problems are correlated with a higher level of social rejection as well as with lower social acceptance by peers (Krull, Wilbert, & Hennemann, 2018).

Regarding academic performance, the findings showed a statistically significant effect for the presence of stuttering and for the students' social status in the peer group, but not for the interaction between both. Specifically, CWS presented lower grade scores in humanity and science subjects than students who do not

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stutter. These findings could mean that CWS obtain lower academic achievements than their peers because of their difficulty communicating, which could affect their ability to express themselves and to work in groups (Yaruss et al., 2012). A previous study also demonstrated that CWS have an overall poorer performance in all three abilities of attention: selective, sustained, and switching attention (Costelloe et al., 2018); such attention difficulties could compromise academic achievements. Concerning the social status of students who do not stutter in the peer group, the results also showed that Popular students presented higher grades than Rejected students in humanity and science subjects. In addition, students with the Average status achieved higher grades than Rejected students in science subjects. This finding is confirmed by previous research, which demonstrated that there is a significant connection between the sociometric status of students and academic achievement. In comparison with the Rejected status group, Popular children experience higher achievement, as assessed by teachers (Rytioja et al., 2019). Students that have higher academic performance may appear more desirable as friends to their peers and, because of this, may receive more preferences and be more popular among their peers.

Implication for practice

Findings from the study highlighted the profound impact of stuttering on children, as well as the effect of this disorder on their adjustment in school context. These results suggest a need for teachers and people in educational community to increase their awareness and understanding of stuttering and to meditate on school wellbeing of CWS, in order to improve their social inclusion in the classmates group. Moreover, at the light of the results, this study could be an opportunity for teachers and educators to meditate also on the way to enhance the social status and academic performance of students who do not stutter. It is important to provide schools with information and literature about practical classroom management strategies. Awareness programs within the school setting should not only be directed towards teachers but also towards classmates, in order to prevent negative perceptions and stereotypes in the group of peers. Among the various teaching approaches available, cooperative learning has been reported in the scientific literature as having beneficial effects upon the socioaffective relations within a group (Soponaru et al., 2014) and may be taken into consideration by teachers in order to improve relational and academic levels among their students.

Implication for research

Findings from the study offer an in-depth knowledge the school experiences of children who stutter, adding informations to the body of research focused on the role of peer and student–teacher relationships at school on emotional, behavioral, social and academic achievements.

Limitations and future directions

Some limitations of the present work should be discussed. The characteristics and size of the sample could also be drawbacks. The monocultural setting may have limited the generalization of our findings. In this way,

it is not possible to generalize the findings to children and teachers located in cities or from different cultural backgrounds. Cross-cultural studies, comparing different cultural groups and school settings using similar measures and variables, may improve the accuracy and generalization of these findings. Also, we were not able to examine some important factors due to the unavailability of such data, such as family socioeconomic status, students' migration backgrounds, and the presence of other diagnoses together with stuttering (e.g., anxiety). Future studies may be conducted to gain greater understanding of the roles of these factors in students' social status in the peer group, the teacher-student relationship quality, students' emotional and behavioral competence, and academic performance. In addition, the majority of the teachers examined in this study were females. The proportion of male teachers was rather small. This difference in gender distribution could bias our findings. Future studies should explore the generalizability of the present findings by using samples with more equal gender distribution. Finally, the size of the sample, specifically the small subsample of children who stutter, could affect the ability to detect statistically significant results (i.e., statistical power) and, thus, the accuracy and generalization of these findings.

Another limitation of this work is the lack of measurement regarding the shyness of the children. Shy children generally tend to have difficulties in terms of communicative skills. For future research, it is important to collect such data so as to tease apart the effects of shyness in children versus stuttering in children on the analyzed variables. Thus, future studies should evaluate the shyness of children and control the statistical analysis of their data for this variable given that it might affect the results. In the same way, social desirability may have biased the results and also our findings. Measurement of this variable through an appropriate questionnaire would make it possible to introduce it into the analyses as a control variable, for example, as a covariate.

Finally, the data are cross-sectional, and, therefore, it is not possible to draw inferences about cause and effect relationships. Thus, future researchers could use a longitudinal design to test the causal relations among variables, which might help us understand how relationships between them unfold over time.

4.1.5 CONCLUSION

In conclusion, this study explored the presence of stuttering in children and its effects on the quality of the student-teacher relationship, students' social status in the peer group, emotional and behavioral outcomes, and academic performance. Results showed that children who stutter were unpopular and rejected by peers and that teachers had great difficulty to establish a relationship based on affective closeness with mainstream students that are unpopular and rejected by classmates, but not with children who stutters. Children who stutter also showed high levels in Hyperactivity and low academic outcomes. These findings would appear to have important implications for teachers and education community awareness, and for the advancement of theory and research.

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4.2. Study 2. Bullying in students who stutter: the role of the quality of the student–teacher relationship and student’s social status in the peer group

Berchiatti, M., Badenes-Ribera, L., Galiana, L., Ferrer, A., & Longobardi, C. (2021). Bullying in Students Who Stutter: The Role of the Quality of the Student–Teacher Relationship and Student’s Social Status in the Peer Group. *Journal of School Violence*, 20(1), 17-30. <https://doi.org/10.1080/15388220.2020.1812077>. IF: 2.835, Q2 JCR (**Annex 2**).

4.2.1 INTRODUCTION

Stuttering

Stuttering, also known as childhood-onset fluency disorder (American Psychiatric Association, 2013) or stammering, is a speech motor social disorder in which fluency disruptions (e.g., sound and syllable repetitions, prolongations) may interfere with functional communication (Blood & Blood, 2016). It is a multidimensional communication disorder, which includes cognitive, affective, and social components (Boyle & Blood, 2015).

Around 5% of children suffer from stuttering, and approximately 80%–90% of these start it at the age of six (Maguire et al., 2012). Repeated communicative difficulties often have a negative influence on the social life of children who stutter (CWS) (McAllister, 2016). Social experiences play a role in the progression and maintenance of stuttering: negative stereotypes and related stigma may interfere with building and maintaining strong peer networks and social skills (Blood & Blood, 2016). CWS are often perceived as shy or withdrawn and because of this they are less accepted by peers (Davis et al., 2002). Also, stuttering could cause mimicking, name-calling, and increase the risk of exclusion (Rose et al., 2012).

Stuttering and bullying

Similar to other disabilities, individuals who stutter experience higher rates of victimization than individuals who do not stutter (Rose et al., 2015). CWS are less popular than their classmates and suffer a higher risk of being rejected and bullied (Erickson & Block, 2013).

There is a complex interaction between stuttering, bullying at school, and psychosocial problems in adulthood, such as social anxiety, fear of negative evaluations, and low satisfaction with life (Blood & Blood, 2016). Cook and Howell (2014) assessed bullying of children and teenagers who stutter, founding a relationship between bullying and children’s self-esteem, as well as between bullying and anxiety in teenagers. The effects of childhood victimization persist into adulthood: nearly 88% of adults who stutter and who show high anxiety scores were bullying victims during their school years (Blood & Blood, 2016). The majority of teachers identify bullying as a problem in their schools and have observed bullying of children who stutter (Plexico et al., 2013).

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Bullying

Empirical research on bullying dates back to the 1970s in Scandinavia (see Hymel & Swearer, 2015). Bullying is defined as a form of violence characterized by recurring acts of aggression by one or more subjects toward a victim, customarily within an asymmetrical power relationship (Olweus, 1994).

Research on school violence has primarily focused on students as both victims and perpetrators (Longobardi et al. 2017; Longobardi, Prino et al., 2019; Longobardi, Settanni et al., 2018). A lot of research has demonstrated links between victimization and the negative psychological, social, academic, and physical effects of bullying in children and adolescents. Some of these include poorer academic performance; the increased likelihood of depression, personality problems, and social anxiety; digestive- and respiratory-related health problems; lower self-confidence and self-esteem; and poorer peer relationships (Hymel & Swearer, 2015).

Within a group, the role of the person who enacts bullying behaviors is most often played by an individual without special needs (Kozmus & Pšunder, 2018), while individuals with special educational needs (SEN) suffer higher levels of victimization and bullying compared to their peers (Andreou et al., 2015). Moreover, students with disabilities (i.e., specific learning disorders, another health impairment, intellectual disability, emotional behavioral disability, autism spectrum disorder, speech, or language impairment, deafness, orthopedic impairment, visual impairment, or traumatic brain injury) display higher rates of online victimization, relational victimization, bullying, fighting, and aggression when compared with students without disabilities (Rose et al., 2015).

Peer relationships at school

The impacts of close peer relationships at school are well described in the literature. A good relationship with peers is positively associated with higher academic outcomes, social skills, and competencies, and lower levels of stress and anxiety. Social interaction and close relationships have important influences on both physical and mental health (García-Bacete et al., 2014). Also, social preference scores are negatively related to changes in children's levels of peer victimization (Elledge et al., 2016).

Students with SEN show poorer peer integration than their peers without SEN (e.g., ; Schwab & Rossmann, 2020) and are more likely to be socially rejected (Bossart et al., 2015). Children with SEN experience high levels of victimization, including physical, verbal, and relational bullying (Andreou et al., 2015). A majority of people who stutter experienced bullying at school, leading to both immediate and long-term effects. Moreover, the likelihood of being bullied is related to reported difficulties in terms of making friends (Hugh-Jones & Smith, 1999).

The student-teacher relationship

The teacher is not only a manager of social relations in the class but also an attachment figure, which has an important role in children's development process (Schwab & Rossmann, 2020). The quality of affective relationships with significant caregivers, such as school teachers, impacts the child's socio-emotional adaptation, directly, or by mitigating or exacerbating the child's vulnerabilities (Hymel & Swearer, 2015; Longobardi et al., 2016).

Research shows the positive influence of a good student-teacher relationship on children's emotion regulation and peer relationships (Hughes & Im, 2016). In contrast, a conflictual student-teacher relationship can intensify the risk of school failure, especially for at-risk children, and increases levels of conduct problems and hyperactivity/inattention symptoms (Longobardi, Settanni et al., 2019).

There is an association between the teacher-child relationship quality and bullying roles (Camodeca & Coppola, 2019). Children are generally less victimized when their teacher-student relationship is viewed as positive. Also, children's social preference scores are directly related to the quality of their relationship with the teacher, replicating the common finding that socially marginalized children are at greater risk from peer victimization. In addition, internalizing problems and social education needs status predict decreased closeness with teachers (Elledge et al., 2016).

Generally, teachers demonstrate insight into the causes and characteristics associated with stuttering, but little awareness of or misperceptions about ways to manage it (Plexico et al., 2013). Nearly one-half of teachers report being unaware of the bullying of CWS (Hugh-Jones & Smith, 1999). However, studies on the student-teacher relationship and CWS are scarce. This means that teachers need an increased knowledge of stuttering, as well as information about how to best accommodate students who stutter in the classroom. Given the high incidence of bullying episodes concerning CWS (Berchiatti et al., 2020; Hugh-Jones & Smith, 1999) and the association between bullying and the student-teacher relationship (Camodeca & Coppola, 2019) and peer status (Elledge et al., 2016), it seems that it is necessary to investigate the bullying of CWS. This will help parents, teachers, educators, and clinicians make decisions regarding when to take action to protect CWS against the negative effects of bullying.

Aims

The aim of the current research is to assess the relationship between students and teachers and students' social statuses in their peer groups and bullying dimensions in children who stutter. For that purpose, two models hypothesizing partial and complete mediation have been tested (see Figure 1).

Model 1 or the partial mediation model: A direct relation between bullying dimensions (victimization and perpetration) and the quality of the relationship between students and teachers (closeness, conflict, and negative expectations) and students' social status in the peer group (social preference and social impact),

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and a direct one between bullying dimensions and the presence of stuttering in the students, mediated by the quality of the relationship between students and teachers and students' social status in the peer group.

Model 2 or complete mediation model: A direct relation between bullying dimensions (victimization and perpetration) and the quality of the relationship between students and teachers (closeness, conflict, and negative expectations) and students' social status in the peer group (social preference and social impact), and an indirect one between bullying dimensions (victimization and perpetration) and the presence of stuttering in the students, mediated by the quality of the relationship between students and teachers and students' social status in the peer group.

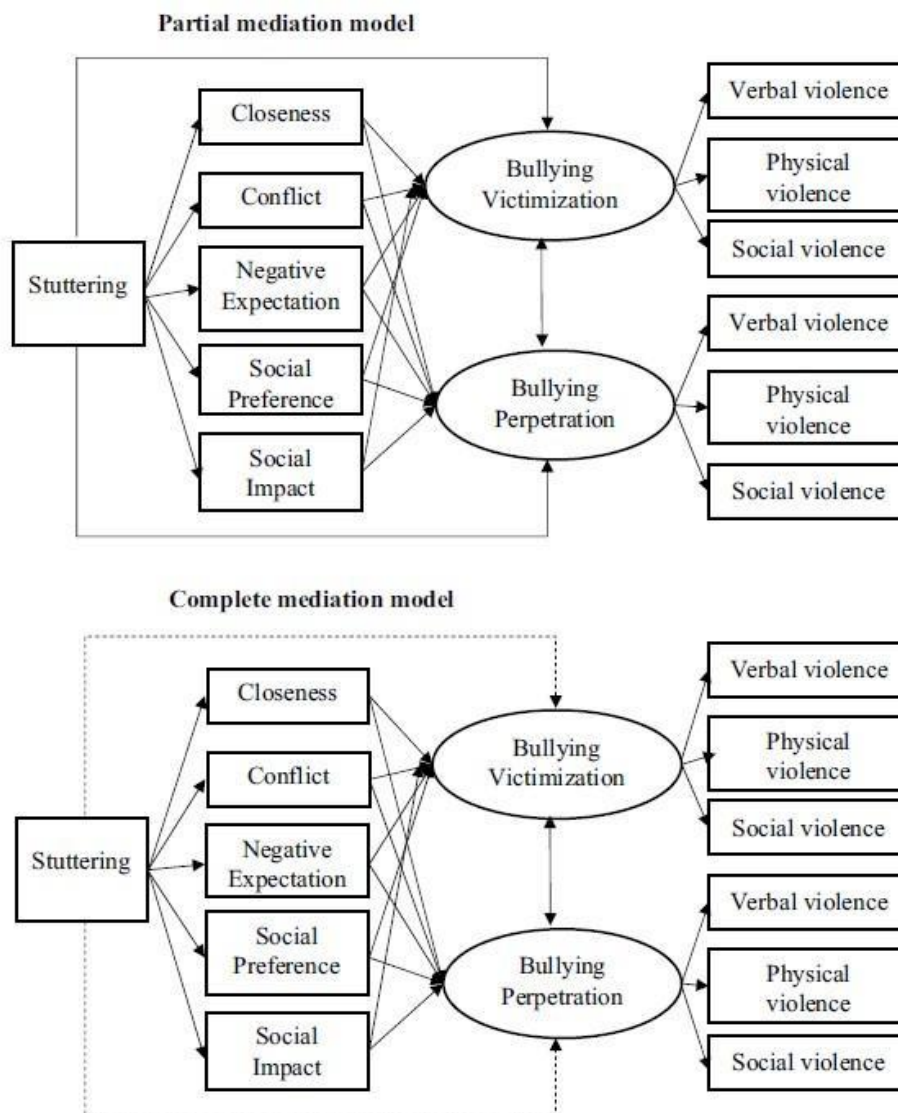


Figure 1. Competitive models testing partial and complete mediation of stuttering in the students on bullying dimensions. Correlations between bullying dimensions and among Closeness, Conflict, Negative expectations, Preference, and Impact were estimated in both models. Discontinued arrows showed indirect effects; continued arrows for direct effects. For the shake of clarity, standard errors are not shown.

4.2.2 METHOD

Participants

This investigation was undertaken with 536 school students recruited from six primary (40.5%) and secondary schools (59.5%) in Northwest Italy. The schools were selected through convenience sampling. Both students who stutter and students who do not stutter were recruited from the same school. Within the school, 36 classes were selected; there was at least one child who stuttered per class. The students were between the ages of 8 and 17 years old ($M = 11.42$; $SD = 1.55$), 50.2% were male, and 74.3% lived with a traditional family (two parents who are married to one another and who are both biological parents to all the children in the family).

The students who stutter group consisted of 62 children (58.1% males) with an average age of 11.72 years old ($SD = 1.72$). Of them, 66.1% lived with a traditional family. And, the students who do not stutter group was made up of 474 children (49.2% males) with an average age of 11.39 years old ($SD = 1.53$). Of them, 79.2% lived with a traditional family. There were no differences in age ($t(503) = -1.53$, $p = .128$, Cohen's $d = -0.21$, 95% CI [-0.47, 0.06]), in gender distribution ($\chi^2(1) = 1.17$, Phi coefficient = $-.06$, $p = .187$), or in the families' status distribution ($\chi^2(5) = 7.91$, Cramer's $V = .12$, $p = .161$) between the students who stutter and those who do not stutter. In addition, the data of 36 teachers were also analyzed. The teachers had a mean age of 46.63 years old ($SD = 8.71$, $Min. = 25$, $Max. = 64$) and a mean teaching experience of 19.23 years ($SD = 9.77$, $Min. = 2$, $Max. = 40$). Of them, 92.2% were female, and 84.5% were employed.

Measures

Socio-demographic characteristics

Both teachers and students were asked to report their socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to report their number of years teaching, the number of hours per week that they spent teaching the class, and the children's family statuses. Data about students' migration backgrounds and the socio-economic statuses of families were not available.

Presence of stuttering in students

Teachers were asked to report on the presence of stuttering in each student. The item used was "The child has difficulty in articulating words" (yes or no). Teacher answers were based on stuttering diagnoses made by speech therapists in medical centers. All CWS are presently enrolled in formal speech therapy services or have been in the past. We did not obtain information about the specific type of therapy or treatment received.

Adolescent peer relations instrument (APRI; Parada, 2000)

The APRI is a self-report instrument consisting of 36 items with a Likert-type response scale (1 = never to 6 = every day) which measures three types of behaviors used to bully others (physical, verbal, and social) and

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three ways of being targeted (physical, verbal, and social). The higher the score, the greater the frequency amounts of bullying or being bullied. The score for each subscale was generated by summing the scores for the items that made up it. For this study, the reliability (Cronbach's alpha) of each of the three ways of being targeted were adequate: .85, .80, and .83 for verbal, physical, and social victimization, respectively. And, the reliability (Cronbach's alpha) of each of the three types of behaviors used to bully others were adequate: .85, .78, and .65 for verbal, physical, and social victimization, respectively.

Student perception of affective relationship with teacher scale (SPARTS; Koomen & Jellesma, 2015)

The SPARTS is a self-report instrument of 25 items with a Likert-type response scale (1 = no, that is not true to 5 = yes, that is true), designed for children aged 9 to 14 years, which measures a perception of conflict (10 items), closeness (8 items), and negative expectations (7 items) with regard to a specific teacher. When compiling the SPARTS in our study, the students were asked to refer to their "prevalent teacher" (i.e., the teacher with whom they spent the most hours per week, which, in the Italian education system, is the Italian language or science teacher). The score for each subscale was generated by summing the scores for the items that made up it. The reliability for these subscales in the present study was adequate, with Cronbach's alpha values equal to .81, .73, and .55 for the closeness, conflict, and negative expectations, respectively.

Peer nomination technique (Italian version)

This is a peer nomination questionnaire that was inspired by Moreno's sociogram techniques (1934) and Coie et al.'s (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions in which children have to nominate three of their peers. The questions are the following: "Who would you want as a table partner?" (ii) "Who would you want as a schoolwork partner?" (iii) "Who would you want as a field trip buddy?" (iv) "Who would you NOT want as a table partner?" (v) "Who would you NOT want as a schoolwork partner?" and (vi) "Who would you NOT want as a field trip buddy?" For each child, the sum of the positive nominations received from all peers represented their liking (L) scores. In the same way, the sum of negative nominations received by each child represented their disliking (D) scores. The L and D scores were standardized within each class (Lz and Dz) and used to compute a social preference (SP) score ($Lz - Dz$) and a social impact (SI) score ($Lz + Dz$) for each child.

Procedures

The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the Institutional Review Board (IRB) of the University of Turin. The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

Phase 2 involved the prevalent teacher for each classroom that included children who stuttered, meaning the teacher who spent at least 18 hours per week in that classroom. Each teacher completed a questionnaire about students from his or her class who he or she had received parental consent for: at least one student who stuttered and the rest with typical development. The teachers completed the questionnaire (i.e., socio-demographic information and the presence of stuttering in each student) in their free time during the school day.

In phase 3, the children completed anonymous questionnaires (i.e., socio-demographic information, APRI, SPARTS, and Peer nomination technique) during their regular class hours. Before completing the survey, students were asked to give their written assent to participate in the study. With respect to the use of peer nominations, in order to minimize their potential influences on students, participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

Data analysis

The data were double-entered and checked for accuracy. All the values for univariate skewness and kurtosis for all the variables were satisfactory (Kline, 2015). Missing values were less than 1% for each of the variables (maximum = 0.2% per variable); then, they were not considered to cause bias in the estimates (Graham, 2009). Therefore, no adjustments were made to the scores for the variables measured in our study.

First, descriptive statistics were computed. Then, independent samples t-tests were performed to investigate whether there were differences between the two groups (students who stuttered and those who did not stutter) regarding the investigated variables. Cohen's *d* was used as an effect size measure (Cohen, 1988). Also, Pearson's correlation coefficients were computed to get an overall view of the relations among the variables in the model for both the students who stuttered and those who did not stutter samples. These analyzes were performed using SPSS version 22.0 for Windows.

Additionally, a set of two structural equation models were hypothesized, tested, and evaluated using Mplus 7.4. Both of them included a sequence in which stuttering affected students' relations with teachers and students' status, and these variables, in turn, explained bullying victimization and perpetration (see Figure 1). However, whereas the first model (partial mediation) tested the direct effects of the presence of stuttering in students on bullying dimensions, the second one (complete mediation) only hypothesized an indirect effect of stuttering in students on bullying dimensions mediated by relations with teachers and students' status, but not a direct one. After comparing models' fit, an additional third model was tested. In this model, only the statistically significant effects in the best fitting model were retained.

The goodness of fit for each model was assessed with several fit indexes (Kline, 2015; Tanaka, 1993), specifically, (1) The χ^2 statistic, which is a test of the difference between the observed covariance matrix and

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the one predicted by the specified model; (2) the Comparative Fit Index (CFI), which assumes a non-central chi-square distribution with cutoff criteria of .90 or more (ideally over .95; Hu & Bentler, 1999) as indicating adequate fit; and (3) the root-mean-square error of approximation (RMSEA) and its 90% confidence interval. Values higher than 0.90 for the CFI or lower than 0.08 in the RMSEA are considered a reasonable fit (Kline, 2015), although values of .95 for the CFI and of .06 for the RMSEA are considered to be an appropriate model fit (Hu & Bentler, 1999).

Finally, the fits of the models were assessed comparatively. The chi-square difference test has traditionally been used to test for fit differences between nested models (Byrne, 2012). However, there is an increasing tendency to use subjective criteria to make inferences about differences between the CFIs of the models tested. Whereas some authors argue that a difference of .05 or less between two CFIs could be considered negligible (Little, 1997), others suggest that this difference value should not exceed .01 (Cheung & Rensvold, 2002). Whenever these differences between competing models of varying parsimony are negligible, the most parsimonious model is chosen because it allows testing (as explained) for moderation effects.

4.2.3 RESULTS

Table 1 presents descriptive statistics and the results of independent t-tests. Results from mean comparisons only revealed statistically significant differences between groups in social preference scores. Specifically, students who did not stutter were preferred by the peer group than students who stuttered ($p < .001$). There were no statistically significant differences between groups for the rest of the variables.

Table 1. Mean (*SD*) scores for whole sample and stuttering groups and t-test.

	Range	Total Sample <i>M (SD)</i>	Students who do not stutter <i>M(SD)</i>	Students who stutter <i>M (SD)</i>	<i>t</i>	<i>p</i>	<i>Cohen's d (95% CI)</i>
Closeness (SPARTS)	8–40	28.57(6.95)	28.75(6.72)	27.24(8.47)	1.33	.183	0.18 (–0.08, 0.43)
Conflict (SPARTS)	10–50	17(6.12)	16.83(5.98)	18.28(7)	–1.75	.080	–0.23 (–0.49, 0.03)
Negative Expectations (SPARTS)	7–35	14.44(4.61)	14.38(4.58)	14.94(4.84)	–0.90	.368	–0.12 (–0.38, 0.14)
Verbal Victimization (APRI)	6–36	10.52(5.20)	10.44(5.06)	11.14(6.19)	–1.00	.319	–0.13 (–0.39, 0.13)
Physical Victimization (APRI)	6–36	8.21(3.55)	8.17(3.56)	8.54(3.49)	–0.77	.444	–0.10 (–0.36, 0.16)
Social Victimization(APRI)	6–36	9.16(4.45)	9.08(4.39)	9.81(4.95)	–1.22	.222	–0.16 (–0.42, 0.10)
Verbal Perpetration (APRI)	6–36	8.72(3.66)	8.71(3.64)	8.76(3.86)	–0.10	.918	–0.01 (–0.27, 0.25)
Physical Perpetration (APRI)	6–36	7.76(2.93)	7.79(3)	7.55(2.34)	0.60	.555	0.08 (–0.18, 0.34)
Social Perpetration(APRI)	6–36	9.84(3.64)	9.86(3.69)	9.66(3.20)	0.41	.685	0.05 (–0.21, 0.32)
Social Preference (Z scores)	–	0.00 (1.67)	0.11(1.63)	–0.85(1.73)	4.32	< .001	0.57 (0.31, 0.84)
Social Impact (Z scores)	–	0.00 (0.97)	0.00(0.98)	–0.001(0.96)	0.11	.992	0.01 (–0.25, 0.28)

CI = Confidence Interval for effect size. SPARTS = Student Perception of Affective Relationship with Teacher Scale. APRI = Adolescents Peer Relations Instrument

Table 2 shows the correlations among all the variables. As can be seen, for students who stuttered, overall, their perceptions of their relationship with the teacher were not associated with bullying dimensions. Only one positive and statistically significant relationship between the conflict dimension and the perpetration of verbal violence emerged, indicating that the students who perceived their relationship with the teacher as more conflictive committed more verbal violence.

Table 2. Intercorrelations between all variables with results for students who stutter in the top diagonal and for students who do not stutter in the bottom diagonal.

	1	2	3	4	5	6	7	8	9	10	11
1.Closeness (SPARTS)	–	–.28*	–.09	.03	.01	.23	.09	.19	–.22	–.06	–.07
2.Conflict (SPARTS)	–.31***	–	.52***	.004	.15	–.003	.13	.04	.36***	.22	.24
3.Negative Expectation (SPARTS)	–.21***	.528***	–	.09	–.01	.11	.17	.20	.13	.23	.03
4.Social Preference	.04	–.12**	–.04	–	–.13	.01	.10	–.03	.07	.03	–.14
5.Social Impact	.05	.05	–.03	.02	–	.13	.10	.07	–.04	–.02	.06
6.Verbal Victimization (APRI)	–.02	.37***	.25***	–.23***	.06	–	.69***	.69***	.11	.07	.31*
7.Physical Victimization (APRI)	–.05	.42***	.28***	–.14***	.03	.70***	–	.54***	.22	.35**	.18
8.Social Victimization (APRI)	–.03	.37***	.27***	–.24***	.08	.74***	.65***	–	.30***	.27***	.31***
9.Verbal Perpetration (APRI)	–.10*	.45***	.20**	–.17***	.09*	.41***	.43***	.30***	–	.57***	.35**
10.Physical Perpetration (APRI)	–.05	.41***	.21***	–.13***	.09	.32***	.49***	.27***	.66***	–	.11
11.Social Perpetration (APRI)	–.09	.39**	.28***	–.05	.08	.37***	.39***	.31***	.60***	.46**	–

* $p < .05$. ** $p < .01$. *** $p < .001$. SPARTS = Student Perception of Affective Relationship with Teacher Scale. SDQ = Strengths and Difficulties Questionnaire. APRI = Adolescents Peer Relations Instrument

However, for students who did not stutter, the student's perception of his or her relationship with the teacher with reference to the conflict dimension and the negative expectations about this relationship were positive and statistically related to the three types of behaviors used to bully others (verbal, physical, and social) and the three ways of being targeted (physical, verbal, and social). Moreover, the perception of closeness was negative and statistically linked to verbal violence perpetration. In addition, a negative and statistical association emerged between social preference and the three ways of being targeted (physical, verbal, and social) and two of the types of behaviors used to bully others (verbal and physical). Finally, the social impact was positive and statistically related to verbal perpetration.

Stuttering in students predicts bullying: a structural equation model

Table 3 shows the fit indices and the comparison of the models tested. Both models showed excellent general fit. When they were compared, no statistically significant chi-square differences were found between them. As regards the analytical fit, the direct effects of the presence of stuttering in students on bullying in the partial mediation model were not statistically significant. Therefore, the most parsimonious model, the complete mediation model, was the best representation of the data. As some of the relations were not statistically significant neither in the partial nor the complete mediation models, a third model was tested. This model only included the statistically significant relations and, as displayed in Table 3, showed excellent fit again. This latest and most parsimonious model was, therefore, retained. The explained variance of victimization in this model was 21%, while for perpetration, it was 25%. The parameter standardized estimations are shown in Figure 2.

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Table 3. Models' general fit.

	χ^2	df	p	CFI	RMSEA	RMSEA 90% IC	$\Delta\chi^2$	Δdf	p	ΔCFI
Model 1: Partial mediation model	99.54	32	<.01	.95	.06	[.05,.08]	-	-	-	-
Model 2: Complete mediation model	101.02	34	<.01	.95	.06	[.04,.08]	1.63	2	.44	.00
Model 3: Complete mediation model with statistically significant relations	109.02	38	<.01	.94	.06	[.05,.07]	-	-	-	-

df = degrees of freedom

The presence of stuttering had one negative and direct effect on social preference, and one indirect effect on bullying victimization (verbal, physical, and social) through social preference. And, social preference had a negative and direct effect on bullying victimization. In addition, there was a positive and direct effect of the dimensions of the student's perception of his or her relationship with the teacher (conflict, closeness, and negative expectations) on bullying victimization. Finally, there was a positive and direct effect of the student's perception of his or her relationship with the teacher with reference to the conflict dimension on bullying perpetration (see Table 4).

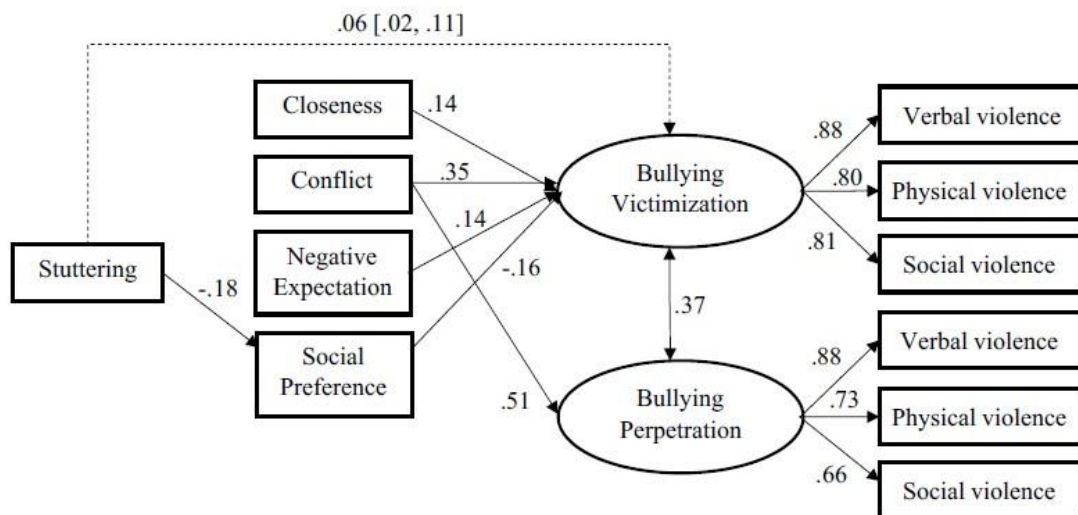


Figure 2. Standardized coefficients of the most parsimonious structural equation model that tests model of mechanisms of bullying. Stuttering was coded as: 1 = Students who stutter, 0 = Students who do not stutter. Correlations among Closeness, Conflict, Negative expectations, Preference Social, and Impact Social were estimated and can be consulted in Table 4.

Table 4. Correlations among closeness, conflict, negative expectations, preference, and impact in the retained model.

	1	2	3	4	5
1.Closeness (SPARTS)	-				
2.Conflict (SPARTS)	-.31**	-			
3.Negative Expectations (SPARTS)	-.19**	.53**	-		
4.Social Preference	.04	-.10*	-.02	-	
5.Social Impact	.06	.05	-.01	.01	-

* $p < .05$; ** $p < .01$

4.2.4 DISCUSSION

The aim of this study was to test the relationship between the presence of stuttering in students, social status, and the quality of the relationships with the teacher and the bullying dimensions (victimization and perpetration). The results only showed significant differences between students who stuttered and those who did not stutter on social preference scores, which indicates that CWS were less preferred by their peer group than children who did not stutter. This result was expected and confirms previous research showing that students with SEN report poorer peer integration than their peers without SEN (Schwab & Rossmann, 2020) and are more likely to be rejected by their group of peers (Bossaert et al., 2015). Stuttering is perceived by CWS as an obstacle in participating in social activities; probably because of their behaviors related to communicational difficulty, CWS are perceived as shy or withdrawn and are less accepted by peers (Davis et al., 2002).

No difference was found among the three dimensions of relationships with teachers, the three types of behaviors used to bully others, or the three ways of being targeted scores. This finding contributes to research on student–teacher relationships (STR) (Camodeca & Coppola, 2019) and shows that the relationship with significant caregivers is not influenced by episodes of bullying or victimization, but, conversely, the association between student–teacher relationships and school bullying may depend on the students' social statuses in the classroom (Longobardi, Settanni et al., 2018).

Nevertheless, the findings from bivariate correlations suggest a different pattern in the relationships for the two groups (students who stuttered and those who did not stutter) among the analyzed variables (STR and social status) with bullying dimensions. For instance, in the sample of students who did not stutter, the student's perception of conflict in the relationship with the teacher and the negative expectations regarding this relationship were associated with the three types of behaviors used to bully others and the three ways of being targeted. These relationships were not noted among CWS. In the same line, in the sample of students who did not stutter, social preference was linked to all types of bullying (victimization and perpetration), except social violence perpetration. Again, these relationships were not found in the sample of CWS. This could be because, in the relationship with bullying variables, the presence of stuttering plays a key role and has an influence on the relationships with teachers and peers: stuttering in students seems to be a component that introduces changes in terms of the relationships between bullying mechanisms (victimization and perpetration).

This finding is important and adds to the existing literature about stuttering (Blood & Blood, 2016; Erickson & Block, 2013) by showing how repeated communicative difficulties may have a negative influence on the social life of CWS, and, because of this, bullying affects a majority of CWS (McAllister, 2016). Consequently, school teachers should be aware of the high possibility of CWS being bullied by classmates because of their

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communicative difficulties, in order to be prepared to face, and eventually prevent, this phenomenon successfully.

However, given the unbalanced sample size between groups (474 students who did not stutter versus 62 students who stuttered), it was not possible to estimate multi-sample path analyses to evaluate the possible moderating role of the stuttering variable in the relationships between the student–teacher relationship and students’ peer status and the bullying dimension. Consequently, a series of multi-sample path analyses should be performed in the future.

Regarding the retained structural equation model, bullying victimization was negatively predicted by students’ social preference and positively predicted by the dimensions of the student’s perception of his or her relationship with the teacher (conflict, closeness, and negative expectation). That is, having a low social preference is linked to experiencing bullying. At the same time, a student’s perceptions of his or her relationship with the teacher as being conflictive or as having negative expectations means more of a risk of suffering from bullying. However, a close relationship with the teacher is not a factor that protects from bullying. The findings point out that closeness to the teacher is associated with bullying victimization and complete previous research: higher conflict with teachers is related to lower social statuses, but higher scores of closeness are not always linked to a student’s standing among his or her peers (Hughes & Im, 2016), probably because it is the students’ social status among peers that makes the difference in the link between student–teacher relationships and bullying (Longobardi, Iotti et al., 2018).

In addition, the presence of stuttering had an effect on bullying victimization mediated by social preference. That is, students who stuttered were less socially preferred by the peer group, and this low preference is related to bullying victimization. This result contributes to research on the social status of CWS (e.g., Blood & Blood, 2016; McAllister, 2016) and confirms that CWS tend to be less popular than their more fluent peers and are at increased risk of being rejected and bullied (Erickson & Block, 2013). Similar to other students with SEN (Andreou et al., 2015), a correlation exists among children’s social competence and their bullying/victimization experiences. Because there is also a link between bullying/victimization and loneliness, on the one hand, and perceived social efficacy, on the other (Andreou et al., 2015), the present study highlights how difficulties in communication may be an obstacle for CWS in building positive peer relationships and, consequently, how they can put them at a high risk of being bullied.

Finally, the student’s perception of his or her relationship with the teacher as conflictive predicted bullying perpetration. In other words, the perpetration of bullying was not linked to students’ social status in the peer group nor to the student’s perception of closeness or the negative expectations of the relationship with the teacher. This finding contributes to research on student–teacher relationships (Camodeca & Coppola, 2019) by showing that conflictual student–teacher relationships are not only associated with an increased risk of school failure, conduct problems, and hyperactivity/inattention symptoms (Longobardi et al., 2016), but are

also linked to higher levels of peer victimization (Lucas-Molina et al., 2015) and positively correlated to both active bullying and pro-bully behaviors (Longobardi, Iotti et al., 2018).

Limitations and future research

Some limitations of the present work should be discussed. The data are cross-sectional, and, therefore, it is not possible to draw longitudinal correlations, examining to what degree variables predict other variables over time, as well as directionality in terms of the associations between variables. Moreover, several studies have pointed to some biases that can stem from the use of mediation within a cross-sectional framework (Maxwell et al., 2011). Thus, future researchers could use a longitudinal design to test these longitudinal relations and their directionality, which might help us understand how relationships between them unfold over time. In addition, social desirability may have biased the results and also our findings. The measurement of this variable through an appropriate questionnaire would make it possible to introduce it into the analyses as a control variable, for example, as a covariate.

On the other hand, the limited nature of the presence of stuttering in student's measure also might condition our findings. The measure consists of one item that assesses the presence or absence of stuttering in child. However, it does not differentiate between child with high levels of difficulty in articulating words and those with lesser difficulty. Severity of stuttering and different causes of difficulty in articulating words might have an effect moderator on the relationships analyzed in this study. Therefore, it is necessary to develop more research on this topic that includes the stuttering in students variable taking into account different levels of severity in articulating words and different causes.

Moreover, it should be considered that the "prevalent teacher" may not be the individual who has the strongest relationship with any particular student, especially for children who experience difficulties with bullying, even if the teacher spends most of his or her school time with the students. Children with communication deficits may seek support from any adult in their environment (e.g., band/music teacher, art teacher, special education teacher). The relationship with a designated teacher can be difficult to define as children age. This needs to be considered more thoroughly and discussed in future research.

Another limitation of this study relates to Cronbach's alpha value of the verbal victimization ($\alpha = .65$) dimension of the APRI and of the negative expectation ($\alpha = .55$) dimension of the SPARTS. Consequently, the findings must be verified in other samples in which the quality of their measurement is improved.

Finally, the characteristics and size of the sample could also be drawbacks. The size of the sample, specifically the subsample of children who stutter, could affect the significance of the results found and their generalization, too. Also, it is not possible to generalize the findings to children and teachers located in cities or from different cultural backgrounds. Thus, the use of other samples in future research would be recommended. Thereby, it would test the generalizability of our findings in the future.

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Practical and policy implications

This study offers preliminary evidence about the role of the presence of stuttering in students as a predictor of bullying. The findings could be important for teachers and educational researchers in different ways. For teachers, the results could highlight peculiarities of CWS and could represent an opportunity for them to meditate on, and eventually rethink, the pedagogical resources that educators provide, in order to enhance social inclusion and prevent bullying episodes at school. Our findings seem to suggest that social preference might play a key role in bullying episodes concerning CWS. As research on interventions with regard to attitudes toward stuttering demonstrated, the high interest or involvement of the peer group is associated with more successful interventions (Louis et al., 2020). Regarding prevention, individual support, social supportiveness, and collaboration between educational figures seem to be the most important elements in dealing with bullying at school (Ubudiyah et al., 2020). Among the approaches available, focus groups could be useful in identifying the ways in which youths talk about bullying and other types of peer aggression, while cooperative learning has beneficial effects on the socio-affective relations within a group (Soponaru et al., 2014) and may be taken into consideration by teachers in order to improve relational levels among their students.

For educational researchers, in light of the results that have emerged, it would be interesting to focus any future research on other trajectories of bullying in CWS, in order to better understand the specificities of their adjustment in a mainstream education context.

4.2.5 CONCLUSION

This work represents the first study investigating the relationships between the presence of stuttering in students, social status, the quality of the relationship with the teacher, and the bullying dimensions (victimization and perpetration).

It is an exploratory approach of this phenomenon in a specific sample and provides insight into the patterns of relationships among the study variables. It is, therefore, the first exploration of reality, and it has been carried out in the simplest and sophisticated way, always based on the theory. Although bullying has received international attention, there is still a dearth of research on this topic for specific samples. We need to address violence across multiple perpetrators and multiple systems.

4.3. Study 3. School adjustments in children with attention-deficit/hyperactivity disorder (ADHD): peer relationships, the quality of the student-teacher relationship, and children's academic and behavioral competencies

Berchiatti, M., Ferrer, A., Badenes-Ribera, L., & Longobardi, C. (2022a). School Adjustments in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Peer Relationships, the Quality of the Student-Teacher Relationship, and Children's Academic and Behavioral Competencies. *Journal of Applied School Psychology*, 38(3), 241-261. <https://doi.org/10.1080/15377903.2021.1941471>. IF: 0.48, Q2 SJR (**Annex 3**).

4.3.1 INTRODUCTION

Attention-deficit/hyperactivity disorder

Attention-deficit/hyperactivity disorder (ADHD) is a childhood-onset neurodevelopmental condition with multiple, controversial genetic and environmental etiology (Sciberras et al., 2017). While it was initially called the hyperkinetic reaction of childhood, with a focus on excessive motor activity (APA, 1968), the term ADHD was first introduced in the DSM- III-R (American Psychiatric Association, 1987; Epstein & Loren, 2013). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association, 2013) defines ADHD as a mental disorder whose symptoms include developmentally inappropriate and impairing inattention (not being able to keep focus), hyperactivity (excess movement that is not fitting to the setting), and impulsivity (hasty acts that occur at the moment without thought). ADHD is one of the most common mental disorders, affecting 8.4% of children and 2.5% of adults. In addition, it is often initially identified in school-aged children, where it can lead to classroom disruptions, problems with academic activities, and difficulties in school adjustment (American Psychiatric Association, 2013).

School adjustment

The concept of adjustment refers to a consonance between individual characteristics and the demands and opportunities of a specific context. At school, it consists of a combination of social engagement, behavioral competence, and positive interpersonal relationships with peers and teachers (Wentzel, 2012). While positive school adjustment enhances constructive experiences, poor school adjustment can negatively impact children's self-esteem and their representation of their schools, teachers, and peers (for review, see Sánchez-Pérez & González-Salinas, 2017). Researchers agree on the presence of significant correlations between children's temperament, academic achievement, and their school adjustment. Children with ADHD encounter problems with adjustment at school more frequently than their peers (Sánchez-Pérez & González-Salinas, 2017). While a large body of studies has focused on the individual factors associated with the risk of poor adjustment in schools for children with ADHD (Sánchez-Pérez & González-Salinas, 2017), research on the connections among these variables and their impacts on the school adjustment of children with ADHD remains scarce.

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The student-teacher relationship

School-age children spend a lot of time with their teachers. In Italy, school can amount to as much as eight hours per day, which is much greater than the waking time children spend with their parents. During this time, while the teacher is not the only person who manages learning activities, they do act as a reference point for children. A strong and supportive relationship with a teacher has been demonstrated to positively benefit learning outcomes, peer status in class groups, self-esteem, and students' emotions in the classroom over time (Berchiatti et al., 2020; Berchiatti et al., 2021; Goetz et al., 2021; Pasta et al., 2013). The most frequently used measure for the quality of the perceived relationship between teachers and their students is the Student–Teacher Relationship Scale (STRS) (Pianta, 2001), which identifies the following three dimensions: closeness, conflict, and dependency. These dimensions of the student-teacher relationship are scored to demonstrate how the school adjustment of children can be influenced. While closeness between students and teachers is related to higher levels of behavioral and emotional engagement in children (Longobardi et al., 2016; Zee & Koomen, 2020), conflict in the student-teacher relationship is indicative of low social competence in children. Research has also highlighted that students with behavioral difficulties are at risk of experiencing negative relationships with their teachers. For this group of students, developing a positive student-teacher relationship appears to have both protective and predictive functions on both school-based outcomes and later in life.

The relationships between teachers and children with ADHD

A teacher's job can be particularly challenging when a student with ADHD is enrolled in their class. Problems related to conduct, which are typical of children with ADHD, predict poorer quality teacher-student relationships (Zendarski et al., 2020), and research shows that teachers who deal with children with ADHD report higher levels of stress than their colleagues. In general, teachers experience less emotional closeness, less cooperation, and more conflict with students with ADHD (Ewe, 2019). They also tend to interact more negatively with these students than with other pupils (Greene et al., 2002).

On the other hand, although students with ADHD generally report more difficult relationships with their teachers than their peers (Ewe, 2019), they frequently remain unaware of the high levels of conflict in their relationships with their teachers (Zee et al., 2020). For these children, attentional difficulties are closely related to social competency (Fernández-Jaén et al., 2012), and ADHD symptoms can have a significantly negative influence on their ability to adjust to school (Rushton et al., 2020). For children with ADHD, reducing conflict with their teachers can enhance their emotional engagement with school and improve their long-term outcomes (Rushton et al., 2020).

Peer relationships and social status of children with ADHD among peers

Research has highlighted that teachers' conflicted relationships with ADHD children can be reflected in the perceptions of those children's peers (Longobardi et al., 2019; Longobardi et al., 2021; Zee et al., 2020), who may use their teachers' negative reactions as cues to interpret relationships within the classroom. Peer

relationship problems appear to be particularly pervasive in children with ADHD, and more than half of them experience difficulty in friendships (Gardner & Gerdes, 2015). The reason for such problems in peer relationships is due to impairment in social functioning, as the intense symptoms of hyperactivity condition the social and leadership skills of children with ADHD, as well as their adaptive functions (Fernández-Jaén et al., 2012).

Problems in relationships expose children with ADHD to peer aggression, social isolation or rejection (Gardner & Gerdes, 2015), and victimization or episodes of bullying (Chou et al., 2018). As a consequence, these children risk developing psychosocial problems, may find it difficult to establish a sense of belonging in a group of their peers, or struggle to establish a stable personal identity, especially in adolescence.

Academic performance in children with ADHD

Students with ADHD frequently encounter significant academic difficulty. When compared to their peers, they show more problems in mathematical and language skills (Sánchez-Pérez & González-Salinas, 2017) and tend to perform worse in intelligence tests (Fernández-Jaén et al., 2012). Moreover, children with ADHD are at increased risk of a shorter education, dropping out of high school, psychological distress, and internalizing and externalizing their disorders during college. At the root of academic impairment, there exists a deficit in executive functions that are typical of individuals with symptoms of ADHD (Sánchez-Pérez & González-Salinas, 2017). Interestingly, although the academic performance of people with ADHD improves after treatment (for review, see Arnold et al., 2020), age also appears to play a mediating role between the symptoms of ADHD and school adjustment.

Aim of the study

While a large body of research has focused on the individual factors related to the risk of developing problems at school for children with ADHD (for review, see Sánchez-Pérez & González-Salinas, 2017), studies examining the relationship between these variables and their impact on school adjustment remain scarce.

This study aimed to investigate the quality of student-teacher relationships, peer relationships, emotional and behavioral outcomes, and academic performance and how these factors impact the ability of children with ADHD to adjust at school. Specifically, the study examined whether there are differences in social status in peer groups, teachers' perceptions of their relationships with children, children's behavior, and academic performance between children with ADHD and children with typical development.

4.3.2 METHOD

Participants

The sample was made up of 135 primary and secondary school students recruited from six mainstream Italian primary (40.7%) and secondary schools (59.3%). The schools were selected through convenience sampling. Both children with ADHD and children without ADHD were recruited from the same schools. Within the schools, 19 classes were selected where there was at least one child with ADHD per class.

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The children were between 9 and 15 years of age ($M = 11.37$; $SD = 1.25$), and 74.8% were male. The mean age for children with typical development ($n = 108$) was 11.35 years ($SD = 1.24$), and the mean age for children with ADHD ($n = 27$) was 11.48 years ($SD = 1.30$). The percentage of children with typical development who were male was 72.1%, and the percentage of children with ADHD who were male was 80%. There were no statistically significant differences between the groups in age ($t(121) = -0.47$, $p = .637$, Cohen's $d = -0.10$, 95% CI [-0.54, 0.34]) or in gender distribution ($\chi^2[1] = 0.80$, Phi coefficient = $-.08$; $p = .372$).

The data of 19 teachers (89.4% females and 84.2 permanently employed) were also examined. The teachers had a mean age of 44.77 years ($SD = 4.96$, $Min. = 36$, $Max. = 53$) and a mean duration of teaching experience of 14.81 years ($SD = 7.58$, $Min. = 4$, $Max. = 40$).

Instruments

Sociodemographic characteristics

Both the teachers and children were asked to report on the following sociodemographic information: current age, gender, and school grade. Moreover, the teachers were asked to report on the number of years they had taught and the number of hours they taught in the classroom per week.

Presence of ADHD in Children. In Italian schools, students with ADHD are included in mainstream classes (cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca]). After families are delivered an official label by the local sanitary authority to a school, children with ADHD are eligible for additional educational resources at that school. Curricular teachers provide them pedagogical assistance in order to close the gap between their and other students' behavioral and academic performance.

It is worth noting that formal diagnoses of ADHD take place outside of the school curriculum and are based on national guidelines and protocols. The diagnoses are made by certified psychologists and psychiatrists and not by school teachers themselves. However, teachers usually work closely with internal supervisors and school psychologists who inform them about students' diagnosed disabilities. In most cases, these diagnostic labels are registered in the school's administrative system and form the basis for the school's Individual Education Plans. Hence, although teachers do not diagnose the children themselves, they are well informed about their diagnoses and can often reliably report on the prevalence of children with ADHD in their classrooms.

As such, the teachers who participated in this study were asked to list all children in their classroom who had officially been diagnosed by the local sanitary authority to have ADHD according to the DSM-IV-TR diagnostic criteria and were also asked to report on the presence of ADHD in each student by answering the following question: "Does the student have ADHD?" (yes or no).

Peer nomination technique (Italian version)

This section describes a peer nomination questionnaire that enables researchers to plot a graphic representation of the interpersonal relationships that are present in a class group. The method was inspired by Moreno's sociogram techniques (1934) and Coie et al. (1982) sociometric strategy for assessing peer status in the classroom. It was made up of six questions (three positive and three negative), wherein children are required to nominate three of their peers. The questions are as follows: (i) "Who would you want as a table partner?" (ii) "Who would you want as a schoolwork partner?" (iii) "Who would you want as a field trip buddy?" (iv) "Who would you NOT want as a table partner?" (v) "Who would you NOT want as a schoolwork partner?" and (vi) "Who would you NOT want as a field trip buddy?"

For each child, the sum of the positive nominations received from all peers represented their liking (L) scores, and the sum of the negative nominations received represented their disliking (D) scores. The L and D scores were standardized within each class (L_z and D_z) and were then used to compute a social preference (SP) score ($L_z - D_z$) and a social impact (SI) score ($L_z + D_z$) for each child. Thereafter, following the formula developed by Coie et al. (1982), the children were categorized into one of five peer-status groups: (a) popular ($SP > 1.0$; $D_z < 0$; $L_z > 0$); (b) neglected ($SI < -1.0$; $L_z < 0$; $D_z < 0$); (c) rejected ($SP < -1.0$; $D_z > 0$; $L_z < 0$); and (d) controversial ($SI > 1.0$; $L_z > 0$; $D_z > 0$), where L_z and D_z stand for standardized liking scores and standardized disliking scores, respectively. Children who did not fit into any of the previous categories were considered average.

The Student-Teacher relationship (STRS, Fraire et al., 2013; Pianta, 2001; Settanni et al., 2015)

The STRS (Fraire et al., 2013; Pianta, 2001; Settanni et al., 2015) is a self-reporting instrument based on the Attachment Theory and especially the attachment Q-set (Waters & Deane, 1985). It assesses "a teacher's feelings about his or her relationship with a student, the student's interactive behavior with the teacher, and a teacher's beliefs about the student's feelings toward the teacher" (Pianta, 2001, p. 1). The STRS consists of 28 items evaluated on a 5-point Likert scale, ranging from 1 "definitely does not apply" to 5 "definitely applies" and divided into three subscales: the conflict, closeness, and dependency. Pianta's original instrument was adapted and validated to fit the Italian context (Fraire et al., 2013). This study used a short form STRS that had been validated to apply to an Italian context (Settanni et al., 2015) and consisted of 14 items divided into two subscales: closeness (6 items) and conflict (8 items). The conflict dimension measures the negative aspects in a relationship (e.g. discordant interactions or the absence of a satisfying teacher-pupil relationship). The closeness dimension assesses how warm and affective a student's relationship is with their teacher and if the teacher is capable of promoting positive attitudes toward school, open communication, involvement, and engagement. The score for each of the two subscales was obtained through the sum of the scores of each item that make up that scale. For this study, the reliability, or internal consistency, was adequate ($\alpha = .92$ for conflict and $\alpha = .77$ for closeness).

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The strengths and difficulties questionnaire (SDQ, Goodman, 1997; Tobia, Gabriele, & Marzocchi, 2011)

The SDQ (Goodman, 1997; Tobia, Gabriele, & Marzocchi, 2011) is a well-validated behavioral screening questionnaire that was developed on the basis of factor analyses and nosological concepts that underpinned the DSM-IV (American Psychiatric Association, 1994) and ICD-10 (World Health Organization, 1993) classifications of childhood psychopathology. The SDQ consists of 25 items rated on a 3-point Likert scale, ranging from 0 “not true” to 2 “absolutely true” and divided into five subscales: conduct problems (5 items), hyperactivity (5 items), emotional symptoms (5 items), peer problems (5 items), and prosocial behavior (5 items). The score for each of the five subscales was obtained through the sum of the scores of each item that make up that scale. For this study the reliability, or internal consistency, was adequate ($\alpha = .72$ for emotional symptoms; $\alpha = .80$ for conduct problems; $\alpha = .89$ for hyperactivity; $\alpha = .71$ for peer problems; and $\alpha = .85$ for prosocial behavior).

Academic performance

Teachers were asked to report the average grade obtained by each child across all school subjects. Every school subject was graded on a 1–10 scale. Then, the school subjects were organized into the following two areas to achieve parsimony: humanities subjects (i.e., Italian language, history, geography, English language, art, music, and religion) and science subjects (i.e., mathematics, sciences, and technology). It is worth noting that there are two types of teachers in Italian primary schools: those who teach humanities and those who teach the sciences. The decision to combine the humanities and sciences was supported by previous research that explored literacy and numeracy developments in children with speech and language disorders.

Procedures

The data were collected from six primary and secondary schools in Northwest Italy. The schools' principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology, which was approved by the IRB of the University of Turin. The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

Phase 2 involved the leading teacher of each classroom, or the teacher who spent at least 18 hours per week in that classroom. All classrooms included children with ADHD. Each teacher completed a questionnaire about five students from his or her class: one with a clinical diagnosis of ADHD and four with typical development. The five students in each classroom were randomly selected from those who participated in the research and represented about 20% of the students in the classroom. The questionnaire was formed by five surveys, including the STRS, the SDQ, a survey that gauged sociodemographic information, a survey that assessed the presence of ADHD in each student, and a survey that evaluated academic performance. Parental consent was received before students completed these surveys. The teachers finished the questionnaires in

their free time during the school day, and the average time it took for each student to complete every survey was 50 minutes.

In phase 3, the children completed anonymous questionnaires (i.e., socio-demographic information and peer nomination technique surveys) during regular class hours. Before completing the questionnaires, students were asked to give their written consent to participate in the study. In order to minimize the potential influences of the peer nominations on students, participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

Data analysis

Preliminary analyses were performed. The values of kurtosis and skewness were calculated in order to check the normality of the data. Because the values of skewness and kurtosis were satisfactorily within the conventional criteria for normality (-3 to 3 for skewness and -10 to 10 for kurtosis), the data were considered to have a normal distribution (Kline, 2015). Following this, descriptive statistics (means and standard deviations) were computed on the sociodemographic and study variables, both in the overall sample and by group (students with ADHD or students with typical development). In addition, independent sample t-tests were performed for the continuous variables, and chi-squared tests were carried out for the categorical variables to analyze whether there were differences between the sociodemographic variables of both student groups. The Cohen's *d* index for continuous variables and the phi coefficient for categorical variables were used to measure effect size (Cohen, 1988; Cumming & Calin-Jageman, 2017).

To examine bivariate relationships between the study's measures, Pearson's correlation coefficients were performed on the study's variables and according to the groups (children with ADHD and children with typical development). Then, a chi-squared test was computed to investigate whether there were differences in social status within peer groups between children with ADHD and those with typical development, and Cramer's *V* coefficient was used as a measure of effect size. Cohen (1988) established a conventional interpretation of effect sizes, wherein $r < .10$ is considered a small effect, $r = .30$ is a medium-sized effect, and $r = .50$ is a large effect. These guidelines were used to interpret the results throughout this article.

Next, to analyze if the presence of ADHD in children affected the variables under study, several one-way multivariate analyses of variance (MANOVA) were performed on the STRS dimension, SDQ dimension, and academic performance scores. Pillai's criterion, the most robust criterion, was used (Tabachnick & Fidell, 2007), and partial eta squared (η^2) was estimated as the effect size measure. Subsequently, if the overall *F* test statistically showed significant differences in the mean, a post hoc univariate ANOVA was used to determine which means were statistically different from the others. The data were double entered, checked for accuracy, and analyzed through the IBM SPSS 26.0 package program for Windows. All statistical tests were interpreted at a significance level of 5% ($\alpha = .05$).

4.3.3 RESULTS

Table 1 presents the descriptive statistics for the variables of the ADHD groups (children with ADHD and those who have typical development) and the correlations amongst all the study's variables. Overall, most of the variables for both groups were intercorrelated and showed similar relationship patterns. Although some relationships between the variables in the ADHD group did not reach statistical significance, they did show small to moderate relationships (Cohen, 1988). These relationships included the association between closeness and conflict ($r = -.32$); the link between closeness and behavior problems ($r = -.36$); the associations between conflict and emotional symptoms ($r = .28$) and conflict and peer problems ($r = .30$); the connection between emotional symptoms and prosocial behavior dimensions ($r = -.26$); the relationships between behavior problems and peer problems ($r = .35$), behavior problems and prosocial behavior ($r = -.31$), and behavior problems and academic performance ($r = -.35$ for humanities subjects and $r = -.28$ for science subjects); the correlations between hyperactivity and prosocial behavior ($r = -.23$) and hyperactivity and academic performance in the humanities ($r = -.25$); or the link between prosocial behavior and academic performance ($r = .20$ for humanities subjects and $r = .27$ for science subjects). Finally, there was no association between emotional symptoms and academic performance for children with ADHD.

Social status in peer groups

Pearson's chi-squared and Cramer's V tests were performed to evaluate the relationship between the presence of ADHD in children and their social status in their peer groups. The results of the Pearson's chi-squared and Cramer's V tests revealed a statistically significant relationship between the presence of ADHD in children and their social status in their peer groups ($\chi^2(4) = 18.14$; Cramer's $V = .37$, $p = .001$). Consequently, there were statistically significant differences in social status within peer groups between children with ADHD and children with typical development.

Specifically, children with ADHD were less popular ($p < .05$) and rejected more ($p < .05$) in their peer groups than expected. In the remaining categories for social status in peer groups, there were no statistically significant differences between the observed and expected values of either group.

Teachers' perceptions of their relationships with students

A one-way MANOVA test was performed to determine if the presence of ADHD in children affected the conflict and closeness dimensions (in the STRS) of student-teacher relationships. The MANOVA test showed that ADHD in children statistically and significantly affected these relationships (Pillai's trace = 0.20, $F[2, 131] = 15.86$, $p < .001$). The results reflected a small association between the presence of ADHD in children and the combined dependent variables ($\eta^2 = .20$).

Table 1. Inter correlations among all variables and Mean (Standard Deviation) scores for ADHD groups (Students with ADHD and Students without ADHD).

	1	2	3	4	5	6	7	8	9	10	M(SD)
1.Closeness (STRS)	—	-.25	-.10	-.28*	-.20	-.43***	.55***	.32*	.41**	.40**	38.09(7.45)
2.Conflict (STRS)	-.36***	—	.42***	.62***	.42***	.25	-.36**	-.28*	-.31*	-.29*	18.30(8.11)
3.Emotional Symptoms (SDQ)	-.04	.27***	—	.45***	.37**	.32*	-.13	.12	-.09	.07	7.88(2.27)
4.Behavior Problems (SDQ)	-.21***	.59***	.28***	—	.66***	.27*	-.62***	-.32*	-.41**	-.38**	4.94(2.11)
5.Hyperactivity (SDQ)	-.19***	.53***	.37***	.71***	—	.17	-.55***	-.26*	-.44***	-.34**	5.11(2.80)
6.Peer Problems (SDQ)	-.23***	.33***	.50***	.30***	.30***	—	-.38**	-.30*	-.38***	-.37**	3.20(2.08)
7.Prosocial Behavior (SDQ)	.52***	-.43***	-.22***	-.48***	-.47**	-.47***	—	.33*	.55***	.46***	11.34(2.58)
8.Academic performance (Humanity)	.33***	-.27***	-.26***	-.44***	-.52***	-.25***	.41***	—	.65***	.91***	7.07(0.79)
9.Academic Performance (Sciences)	.30***	-.23***	-.23***	-.39***	-.46***	-.20***	.35***	.89***	—	.90***	6.73(0.92)
10.Academic performance (Total)	.34***	-.26***	-.25***	-.43***	-.50***	-.25***	.40***	.97***	.96***	—	7.03(0.74)
M(SD)	40.48(7.11)	16.51(8.18)	6.75(1.96)	4.26(1.78)	3.51(2.47)	2.62(1.80)	12.20(2.50)	7.75(0.99)	7.40(1.15)	7.67(0.97.)	
M(SD) for all sample	40.21(7.18)	16.71(8.18)	6.89(2.03)	4.33(1.83)	3.69(2.56)	2.68(1.84)	12.11(2.53)	7.68(0.99)	7.33(1.14)	7.60(0.97)	

Note. All Variables with Results for Students with DHD in the Top Diagonal and for Students without ADHD in the Bottom Diagonal

* $p < .05$. ** $p < .01$. *** $p < .001$. STRS=Student-Teacher Relationship Scale. SDQ=Strengths and Difficulties Questionnaire

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Subsequent univariate ANOVAs revealed that the effect of the presence of ADHD in children was statistically significant for the dimension of conflict ($F[1, 132] = 19.76; p < .001, \eta^2 = .13$) but not the dimension of closeness ($F[1, 132] = 1.30, p = .257, \eta^2 = .01$). Consequently, although children with ADHD showed higher values in the dimension of conflict than children with typical development, there were no differences in either group's dimension of closeness (see Table 1).

Teachers' perceptions of student behavior

A one-way MANOVA test was performed to determine if the presence of ADHD in children affected teachers' perceptions of student behavior in the following areas: emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behavior. The MANOVA test showed a statistically significant effect for the presence of ADHD in children (Pillai's trace = 0.39, $F[5,128] = 16.51, p < .001$). The results reflected a moderate association between the presence of ADHD in children and the combined dependent variables ($\eta^2 = .39$).

Subsequent univariate ANOVAs revealed a statistically significant effect for the presence of ADHD in children on the dimension scores for emotional symptoms ($F(1, 132) = 9.03, p = .003, \eta^2 = .06$), conduct problems ($F(1, 132) = 32.44, p < .001, \eta^2 = .20$), hyperactivity ($F(1, 132) = 68.73, p < .001, \eta^2 = .34$), and peer problems ($F(1, 132) = 9.21, p = .003, \eta^2 = .07$), but not for the dimension scores of prosocial behavior ($F(1, 132) = 3.09, p = .081, \eta^2 = .02$). Specifically, children with ADHD showed higher values than children with typical development for emotional symptoms, conduct problems, hyperactivity, and peer problems, but no differences were noted between either group's prosocial behavior scores (see Table 1).

Academic performance

A one-way MANOVA test was performed to determine if the presence of ADHD in children affected academic achievement in humanities and science subjects. The MANOVA did not show a statistically significant effect for the presence of ADHD in children on the combined dependent variables (Pillai's trace = 0.04, $F[2,115] = 2.53, p = .084, \eta^2 = .04$). Consequently, there were no statistically significant differences between children with ADHD and those with typical development on academic performance.

4.3.4 DISCUSSION

This study's primary objective was to examine how children with ADHD symptoms adjust to school by analyzing the quality of their peer relationships, student-teacher relationships, emotional and behavioral outcomes, and academic performances. The results showed that ADHD affected children's relationships with their peer groups. Specifically, children with ADHD were more unpopular and were rejected by their peers more frequently than expected when compared to children with typical development. The ADHD symptoms of attention deficiency and hyperactivity may play a role in the development of children's social relationships. This finding has been confirmed by a large body of research about the social status of children with ADHD. A

high percentage of children with ADHD find it difficult to form friendships and are at risk of social isolation, rejection (Gardner & Gerdes, 2015), peer aggression, and involvement in episodes of bullying (Chou et al., 2018). Research in this field has highlighted decreased adaptive function in the social skills of children with ADHD when compared to their peers and that the symptoms of hyperactivity negatively impact their social and leadership skills (Fernández-Jaén et al., 2012). Alarming, peer rejection in children with ADHD is associated with later negative outcomes, such as anxiety, involvement in delinquency, heavy smoking, and general impairment during adolescence (Mrug et al., 2012). For these reasons, enhancing their relationships with their peers is particularly important to their future wellbeing.

According to teachers' points of view, and, more specifically, their perceptions of their relationships with their students, the results revealed that there were no differences in the dimension of closeness between teachers' perceptions of children with ADHD and children with typical development. This result was not expected and contrasts with existing studies of the student-teacher relationship between teachers and children with ADHD, which have posited that it can be more difficult for teachers to build close and warm relationships with students with ADHD than their classmates (Ewe, 2019; Prino et al., 2016). Nurmi (2012) argued that students' who externalize behaviors may negatively influence their relationships with their teachers, resulting in decreased closeness. By comparison, Zendarski et al. (2020) found only a small difference between the closeness levels of children with ADHD and their peers and that children with ADHD tended to form poorer relationships. These varying results can be explained and identified through the characteristics of the settings where the present study was conducted. In the Italian school system, children with ADHD are integrated into the same classrooms as children with typical development. Due to their special needs and the symptoms of attention deficiency and hyperactivity, some teachers may form closer relationships with these children in order to help them improve their behavioral, academic, and social skills. Further research is needed to better explore the dimension of closeness in the relationships between teachers and children with ADHD in different settings.

Nonetheless, the results also revealed differences in the dimension of conflict and between teachers' perceptions of their relationships with children with ADHD and children with typical development. Specifically, teachers perceived their relationships with children with ADHD to have more conflict than their relationships with normally developing children. This means that teachers' perceptions of conflict may be affected by the presence of ADHD in children. This result is in line with previous studies that have reported that student-teacher relationships with children with ADHD are characterized by high levels of conflict and lower warmth than those experienced with their typically developing peers (Prino et al., 2016; Zendarski et al., 2020). Research also shows that teachers tend to interact more negatively with children with ADHD than with other students (Greene et al., 2002) and report higher conflict and lower cooperation in their relationships with them (Ewe, 2019). Rushton et al. (2020) noted that although ADHD symptoms can negatively impact children's emotional engagement with school, reducing conflict in the student-teacher

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relationship can also help mediate their feelings toward school. In other words, conflict in the relationship between students and teachers may play a critical role in how children with ADHD adjust to school, and reducing levels of conflict may promote positive long-term results (Rushton et al., 2020). To clarify how conflict and closeness between teachers and students impact social, academic, and behavioral outcomes, future research should focus on how student-teacher relationships influence children with ADHD.

For the SDQ dimensions of emotional symptoms, hyperactivity, and peer problems, the results showed a statistically significant effect for the presence of ADHD in children. Specifically, children with ADHD showed high levels in their emotional symptoms, hyperactivity, and peer problems scores. These results indicate that the ADHD symptoms of attention deficiency and hyperactivity may affect children's behavioral and emotional developmental pathways, leading to difficulties in self-regulation and issues related to internalizing or externalizing problems. These results are consistent with previous studies that have reported that children with ADHD present heightened risks of externalizing or internalizing problems. Research has also highlighted that peer problems can mediate the associations between attention symptoms, externalized problems, and internalized problems (Yip et al., 2013), such as depression, in children with ADHD. Follow-up studies have found that the long-term outcomes of ADHD include low self-esteem, poor social function, and an increased likelihood of recurrent depression in young adulthood.

Regardless, because no differences were noted between either group's prosocial behavior scores, ADHD symptoms may not influence children's feelings of empathy or attitudes toward other people. This result is consistent with findings that hyperactivity and symptoms of inattention function as protective factors against difficulties in peer relationships. Moreover, children with ADHD frequently lack awareness about their classmates' negative feelings and beliefs about them (Zee et al., 2020). Put differently, this may lead them to engage more in prosocial behaviors with their peers and teachers since higher perceived social acceptance may protect them against any symptoms of depression. While Cristofani et al. (2020) highlighted the subtle complexities of empathy deficits in neurodevelopmental disorders, such as ADHD, subsequent research is needed to form a better understanding of how the symptoms of ADHD impact the development of prosocial behaviors in children.

In the measures of academic performance, the findings indicated that there were no differences between the academic performances of children with ADHD and those with typical development. In other words, the symptoms of inattention and hyperactivity did not impact learning outcomes in our sample. In contrast, previous research has shown academic impairment in children with ADHD, both in the subjects of math and language (Sánchez-Pérez & González-Salinas, 2017), and that educational performance can improve after ADHD has been treated (Arnold et al., 2020). These differences in results may be attributed to the specificity of the Italian school setting. Unlike other school systems (e.g., Swedish), where children with ADHD typically attend classes that have specifically been designed for them (Malmqvist & Nilholm, 2016), mainstream

classes in Italian schools are inclusive, and curricular teachers provide children with ADHD pedagogical help in order to close the gap between the behavioral and academic performance of these students and their peers. As school inclusion has been demonstrated to enhance the academic performance of students (Peetsma et al., 2001), we can hypothesize that these measures may also hold true for children with ADHD. To the best of our knowledge, literature in this field is scarce. Therefore, future research is needed to explore the role of school inclusion on the academic outcomes of students with ADHD.

Implications for practice

This study's findings revealed how the symptoms of ADHD impact children's ability to adjust to school and how attentional and hyperactivity problems affect social, emotional, and academic development. These results indicate the need for teachers, psychologists, clinicians, and those in the educational community to increase their awareness and understanding of ADHD so that they may improve children's capacity to adjust to school. Among the various teaching and clinical approaches available, recent studies have highlighted mindfulness and meditation as practices that can reduce the symptoms of ADHD (Saxena et al., 2020) and improve academic, social, and emotional variables. Teachers and clinicians should consider these approaches so that they may improve the wellbeing and relational and behavioral outcomes of students with ADHD at school.

Implications for research

This study's findings provide in-depth knowledge about the school experiences of children with ADHD and add information to the body of research focused on the impact of inattention and hyperactivity on emotional, behavioral, social, and academic achievements.

Limitations and future directions

This study's primary limitation was its small subsample of children with ADHD. Results from this study require caution in generalization to the mainstream children population, since the limited sample size of group of children with ADHD may have affected the ability to detect statistically significant results (i.e. statistical power), and thus, the accuracy and generalizability of these findings. Moreover, due to the small sample size, it was not possible to analyze the effect of students' social status in peer groups as a covariable. It is known that social status in peer groups may affect scholastic adjustment due to its relationship with teacher-student relationship quality, children's emotional and behavioral competencies, and academic performance (Rytioja et al., 2019). In this way, previous studies have found that students who are accepted by their classmates are preferred by their teachers, show more emotional and behavioral competence (Rytioja et al., 2019), and perform better in their school subjects. Therefore, future studies should examine how students' social status and the presence of ADHD in students interact with the quality of teacher-student relationships, students' emotional and behavioral competencies, and academic performance.

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The study was also limited by its characteristics sampling (e.g., the mono-cultural setting), which may limit the generalizability of its findings. As such, cross-cultural studies that compare different cultural groups and school settings with similar measures and variables may improve the accuracy and generalizability of these findings. It is also worth noting that it would be impossible to generalize these findings to children and teachers located in cities or from different cultural backgrounds.

This work was also limited because it did not measure social desirability, which may have introduced bias to its results and findings. Measuring this variable with the appropriate questionnaire could introduce social desirability to future analyses as a control variable or covariate.

Finally, because this study's data were cross-sectional, it was not possible to draw inferences about cause-and-effect relationships. Thus, future studies should apply a longitudinal design to test the causal relations among variables, which may help researchers to understand how these relationships unfold over time.

4.3.5 CONCLUSION

In conclusion, this study investigated the presence of ADHD in children and explored its effects on students' social status in peer groups, the quality of student-teacher relationships, emotional and behavioral outcomes, and academic performance. The findings revealed that in our sample size children with ADHD were unpopular, rejected by their peers, experienced greater degrees of conflict with their teachers, and had high emotional symptoms, hyperactivity, and peer problems scores. Due to the small sample size, results require caution in generalization to the mainstream children population. However, findings from this study might have important implications for clinicians, teachers, educational and community awareness, and the advancement of theory and research.

4.4. Study 4. Bullying in students with attention-deficit/hyperactivity disorder (ADHD): analyzing students' social status and the student-teacher relationship quality

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4.4.1 INTRODUCTION

ADHD

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder with typical childhood onset, affecting 8.4% of the school-age population (APA, 2013). ADHD's etiology is multifaceted and controversial, as it is associated with both genetic characteristics and environmental conditions, such as prenatal and postnatal risk factors (e.g., maternal smoking during pregnancy, prematurity, low birth weight, extreme early adversity). ADHD symptoms are defined by the presence of excessive inattention and/or hyperactivity impulsivity whose pervasiveness remains stable in different settings, such as the home and school contexts, where they can lead to disruptions in the classroom, problems with academic activities, and difficulty adjusting (APA, 2013). Follow-up studies have found that in the majority of cases, ADHD persists into adolescence and adulthood (for a review, see Barkley et al., 2008), with 2.5% of adults affected by ADHD (APA, 2013). Among the long-term outcomes of ADHD are low self-esteem, poor social functioning, and an increased likelihood of recurrent depression in young adulthood (Riglin et al., 2021).

ADHD and Bullying

A recent review reports a positive association between ADHD, depressive symptoms, and bullying involvement (Simmons & Antshel, 2021). The literature further shows a high risk for children who suffer from this disorder of being involved in bullying episodes, both as the bully and victim (Holmberg & Hjern, 2008; McQuade et al., 2018; Winters et al., 2020), because of their behavioral problems (Verlinden et al., 2015). Bullying involvement in children with ADHD is associated with low self-control and high scores in parental reports of behavioral problems (Holmberg & Hjern, 2008). In addition to typical attention and social competence difficulties, children with ADHD exposed to bullying victimization are more likely to exhibit psychosocial problems and are at increased risk of depression (Simmons & Antshel, 2021). Moreover, both bullies and victims with ADHD have problems building peer relationships and are less well-accepted than their peers.

Bullying Behavior

According to Olweus's (1993) definition of bullying, individuals are bullied when they are exposed, repeatedly and over time, to negative action on the part of one or more other persons. Negative actions consist of physical violence, verbal attacks, and relational/social aggressions (making faces, dirty gestures, spreading rumors, social exclusion, or refusing to comply with another's wishes; Olweus, 1993; Smith, 2014). Considering bullying as a group process (Salmivalli et al., 1996), one motivation behind bullying behaviors

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might be the desire to increase one's social status in terms of perceived popularity. Six roles are typical in a bullying situation within a group: victim, bully, reinforcer of the bully, assistant of the bully, defender of the victim, and outsider (Salmivalli et al., 1996). The risk of becoming a victim is higher among students who diverge from the norm, such as those who are obese or belong to ethnic or sexual minorities. Students with disabilities are also at increased risk of suffering from bullying victimization compared to their peers. Additionally, internal and external problems and difficulties in interpersonal relationships are associated with peer victimization (Menesini & Salmivalli, 2017).

Peer Social Status

The literature largely focuses on peer relationships among children at school (Schwab Rossmann, 2020). Close relationships with peers have positive impacts both on physical and mental health, with advantages for academic performance, social skills, and emotional and behavioral outcomes, as well as reducing stress and anxiety levels and enhancing school adjustment (Mercer & DeRosier, 2008). In addition, students who are more accepted by their classmates are more preferred by their teachers (Mercer & DeRosier, 2008) and experience less peer victimization (Elledge et al., 2016).

Students with ADHD, meanwhile, exhibit specific social skill deficits and are at risk of peer relationship difficulties. The ADHD symptoms of inattention, hyperactivity, or impulsivity can negatively affect these children's social functioning by displaying their difficulties with interactions and relationship (APA, 2013). Children with ADHD have problems making friends, have less friends than their peers, tend to develop poorer quality relationships, and are less sensitive to their friends' needs and preferences. In addition, research indicates that children with ADHD are approximately four times more likely to be rejected by their peers. Peer rejection in children with ADHD is related to long-term academic difficulties and poor emotional adjustment in adolescent peers (Normand et al., 2011).

Student–Teacher Relationship Quality

Teachers create an attachment figure with a fundamental role in students' development (Schwab & Rossmann, 2020). Inspired by Attachment Theory (Bowlby, 1982; Hamre & Pianta, 2001), research on the role of the student–teacher relationship (STR) tells that a positive relationship with teachers can enhance students' emotional security (Sabol & Pianta, 2012). As with responsive parents, teachers give children a secure base to explore new learnings and a safe haven in case of need (Hamre & Pianta, 2001). According to the Bio-Ecological Model (Bronfenbrenner & Kiesler, 1977), individuals influence each other through their behavior in a given context (Bronfenbrenner & Morris, 2006). A warm and close STR has a positive influence on students' emotion regulation and peer relationships (Hughes & Im, 2016), and is associated with interest in school activities (Prino et al., 2016) and autonomous motivation to defend victims in bullying episodes (Longobardi et al., 2019a). In contrast, conflictual STRs increase the risk of peer victimization and predict

conduct problems and the appearance of hyperactivity/inattention symptoms (Longobardi et al., 2019b; Marengo et al., 2018).

Regarding children with ADHD, conduct problems seem to predict poorer STR quality (Zendarski et al., 2020). Research shows that the relationship between children with ADHD and their teachers is generally characterized by less emotional closeness, less cooperation, and more conflict than their peers, with a negative impact on these students' school adjustment (Ewe, 2019). A recent study demonstrates that reducing the conflict between children with ADHD and their teachers can positively enhance their emotional engagement at school and offer longer-term benefits, even though the stress level of teachers who teach children with ADHD is higher than that of their colleagues (Rushton et al., 2020).

However, studies examining the impact of children with ADHD's relationships with teachers and their social status or inclusion are scarce. Teachers need increased knowledge of ADHD, as well as information about how best to integrate students with ADHD into the classroom. Given the high incidence of bullying episodes in children with ADHD (Taylor et al., 2020) and the association between bullying, STRs (Camodeca & Coppola, 2019), and peer status (Elledge et al., 2016), it is necessary to better investigate the role of relationships with teachers and peers in the victimization of children with ADHD. This will help parents, teachers, educators, and clinicians make decisions and take action to enhance the inclusion of children with ADHD at school and protect them against the negative effects of bullying.

Aims

The purpose of this study is to assess the relationship between students with ADHD and teachers and these students' social status, as well as bullying dimensions (victimization and perpetration). A mediation model was tested in which ADHD predicted the quality of the relationship between students and teachers (closeness, conflict, and negative expectations) and students' social status in their peer group (social preference and social impact); in turn, relationships between students and teachers and students' social status in their peer group predicted bullying dimensions (victimization and perpetration; see Figure 1).

4.4.2 METHOD

Participants

This study analyzed the data of 135 primary and secondary school students recruited from 6 Italian mainstream primary (40.7%) and secondary schools (59.3%). The schools were selected through convenience sampling. Both children with ADHD and children without ADHD were recruited from the same schools. Within the schools, 27 classes were selected; there was at least 1 child with ADHD per class.

The children were between 9 and 15 years old ($M = 11.37$, $SD = 1.25$), and 74.8% were male. The mean age for children with typical development ($n = 108$) was 11.35 ($SD = 1.24$) and for children with ADHD ($n = 27$) 11.48 ($SD = 1.30$). The percentage of males was 72.1% for children with typical development and 80% for

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children with ADHD. There were no statistically significant differences in age ($t(121) = -0.47, p = .637$, Cohen's $d = -0.10$, 95% CI [-0.54, 0.34]) or gender distribution ($\chi^2[1] = 0.80$, phi coefficient = $-.08, p = .372$) between children with typical development and with ADHD.

The data of 19 teachers were also analyzed. The teachers were a mean of 44.77 years old ($SD = 4.96$, $Min. = 36$, $Max. = 53$) and had a mean teaching experience of 14.81 years ($SD = 7.58$, $Min. = 4$, $Max. = 40$). Of the teachers, 89.4% were female, and 84.2% were permanently employed.

Measures

Socio-demographic characteristics

Both students and teachers reported on the socio-demographic variables: age, gender, and school grade. In addition, the teachers also reported on number of hours per week teaching in the class, number of years of teaching, and children family status.

Attention-Deficit Hyperactivity Disorder (ADHD) in Children

In the Italian school context, students with ADHD are included in mainstream classes. After their families deliver the school an official label by the local health authority, children with ADHD are eligible for additional educational resources at school. Curricular teachers also provide them pedagogical help to close the gap between their and other students' behavioral and academic performances.

Formal ADHD diagnoses in Italy take place outside the school curriculum and are based on national guidelines and protocols. These diagnoses are made by certified psychologists and psychiatrists, not by schoolteachers. However, teachers usually work closely together with internal supervisors and school psychologists who inform them about students' diagnosed disabilities. In most cases, these diagnostic labels are registered in the school's administration system and form the basis of Individual Education Plans. Hence, even though teachers do not diagnose the children themselves, they are well informed about their diagnoses and, as such, can relatively reliably report on the prevalence of children with ADHD in their classes.

Thus, for this study, class teachers were asked to list all children in their class who were officially labeled by the local health authority as having ADHD. The teachers reported on the presence of ADHD in each student as well through the item, "Does the student have ADHD?" (yes or no).

Adolescent Peer Relations Instrument (APRI; Parada, 2000)

The APRI comprises 36 items distributed in two subscales: 18 related to three types of bullying behaviors (physical, verbal, and social) and 18 related to the three ways of being bullied (physical, verbal, and social). All items were measured on a six-point Likert-type response scale that ranges from 1 "never" to 6 "every day." Responses closer to 1 show small amounts of bullying or being bullied, whereas scores closer to 6 show frequent amounts of bullying or being bullied. Thus, the higher the score, the greater the frequency of bullying or being bullied. The score for each subscale was computed by adding the scores of the items that

comprised it. For this sample, the reliability (Cronbach's alpha) of each of the three types of bullying behaviors were assessed as having adequate internal consistency ($\alpha = .86$ for verbal, $\alpha = .78$ for physical, and $\alpha = .67$ for social). The reliability of each of the three ways of being targeted was adequate as well ($\alpha = .89$ for verbal, $\alpha = .90$ for physical, and $\alpha = .87$ for social).

Student Perception of Affective Relationship with Teacher Scale (SPARTS; Koomen & Jellesma, 2015)

The SPARTS is a self-report instrument designed for children aged 9 to 14 years. It consists of 25 items with a five-point Likert-type response scale that ranges from 1 "no, that is not true" to 5 "yes, that is true", that measure children perceptions of conflict (10 items), closeness (8 items), and negative expectations (7 items) regarding a specific teacher. When compiling the SPARTS in this study, the students were asked to refer to their "prevalent teacher", that is, the teacher with whom they spent the most hours per week (in the Italian education system, the prevalent teacher is the Italian language or science teacher). The score for each subscale was computed by adding the scores of the items that comprised it. In this sample, the reliability for these subscales—assessed as internal consistency—was adequate ($\alpha = .87$ for closeness, $\alpha = .80$ for conflict, and $\alpha = .56$ for negative expectations).

Peer Nomination Technique (Italian Version)

The Italian version of the Peer Nomination Technique was inspired by Moreno's (1934) sociogram techniques and Coie et al.'s (1982) sociometric strategy for assessing peer social status in the classroom. The peer nomination questionnaire comprises the following 6 questions in which children have to nominate 3 of their peers: (1) "Who would you want as a table partner?"; (2) "Who would you want as a schoolwork partner?"; (3) "Who would you want as a field trip buddy?"; (4) "Who would you NOT want as a table partner?"; (5) "Who would you NOT want as a schoolwork partner?"; and (6) "Who would you NOT want as a field trip buddy?" For each child, the sum of the positive nominations received from all peers represented their like (L) scores. And the sum of negative nominations received by each child represented their dislike (D) scores. The L and D scores were standardized within each class (L_z and D_z , respectively) and used to generate a social preference (SP) score ($L_z - D_z$) and a social impact (SI) score ($L_z + D_z$) for each child.

Procedures

The data were collected from 6 primary and secondary schools in northwest Italy. The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who did. Prior to data collection, phase 1 included obtaining parental consent for the students to participate in the study and describing the study's nature and objective in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the Institutional Review Board of the University of Turin. The forms stated that data confidentiality would be ensured and participation in the study was voluntary.

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Phase 2 involved the prevalent teacher for each classroom (which included children with ADHD), meaning the teacher who spent at least 18 hours per week in that classroom. All teachers completed a questionnaire about 5 students from their classes: 1 with a clinical diagnosis of ADHD and 4 with typical development. The 5 students in each classroom were randomly selected from those who were participating in the research and represented about 20% of the students in the classroom. The questionnaire was formed by 5 surveys, that is, a socio-demographic information survey, a survey on the presence of ADHD in each student, STRS, SDQ, and an academic performance survey, for which parental consent was received. The teachers completed the questionnaires in their free time during the school day, and the average time taken to complete all 5 surveys was 50 minutes per each student.

In phase 3, the children completed anonymous questionnaires (i.e., a socio-demographic information survey and the Peer Nomination Technique) during regular class hours. Before completing the questionnaires, the students were asked to give their written assent to participate in the study. With respect to peer nominations, to minimize their potential influence on students, the participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

Data Analysis

Firstly, the data were double-entered and checked for accuracy. Then, preliminary analyses were performed. Kurtosis and skewness values were calculated to check data normality (-3 to 3 for skewness and -10 to 10 for kurtosis). All univariate skewness and kurtosis values for all variables were satisfactory (Kline, 2015). Moreover, descriptive statistics (means and standard deviations) were calculated on the socio-demographic and study variables, both in the overall sample and by group (students with ADHD and students with typical development). In addition, to analyze whether there were differences between both student groups in the socio-demographic variables, independent sample t-tests were computed for the continuous variables and chi-squared tests for the categorical variables.

The Cohen's *d* index for continuous variables and the phi coefficient for categorical variables were used as effect size measures (Cohen, 1988). To gain an overall view of the relations among the variables in the model for both the students with ADHD and those with typical development, Pearson's correlation coefficients were also performed. Cohen (1988, 1992) establishes a conventional interpretation of effect sizes in which $r < .10$ is considered a small effect, $r = .30$ a medium effect, and $r = .50$ a large effect. These guidelines were used throughout this article to interpret the results. These analyses were computed using SPSS version 26.0 for Windows.

Finally, a structural equation model was hypothesized, tested, and evaluated using Mplus version 8 (Muthén & Muthén, 1998–2017). The model included a sequence in which ADHD affected students' relations with teachers and the students' status, and these variables in turn explained bullying victimization and

perpetration (see Figure 1). Therefore, the model hypothesized an indirect effect of ADHD in students on bullying dimensions as mediated by relations with teachers and the students' status.

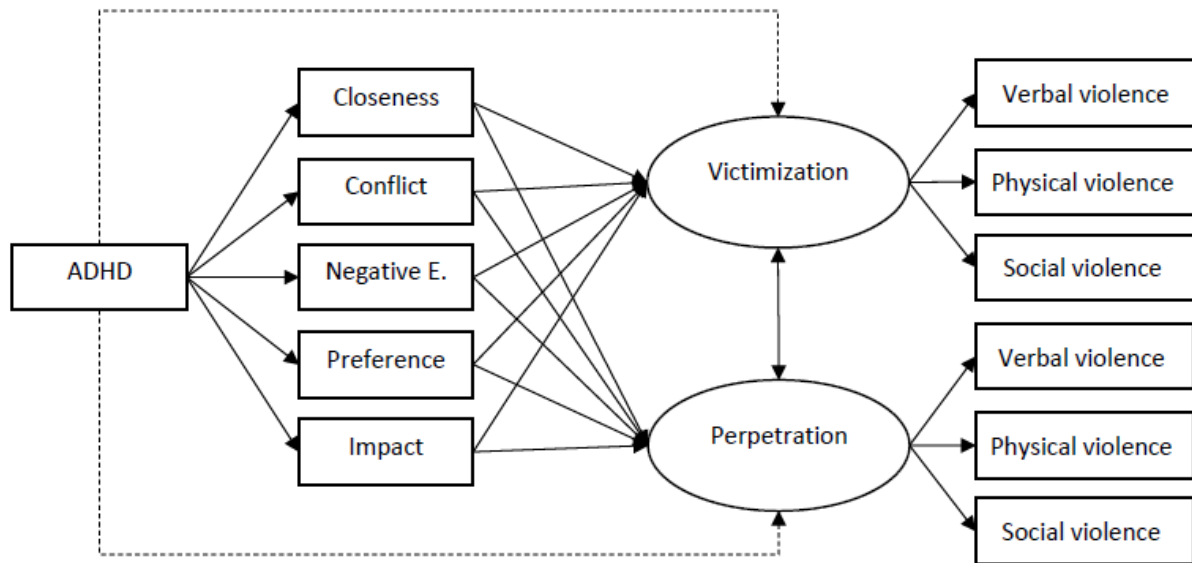


Figure 1. Theoretical model testing complete and partial mediation of TDAH on bullying dimensions. Discontinued arrows show the direct effects of ADHD on the bullying dimensions of victimization and perpetration.

Goodness-of-fit was assessed by means of different statistics and indexes, as recommended in the literature (Kline, 2015; Tanaka, 1993), specifically the following: (1) the chi-squared (χ^2) statistic, which is a test of the difference between the observed covariance matrix and the one predicted by the specified model; (2) the Comparative Fit Index (CFI), which assumes a non-central chi-squared distribution with a cut-off criteria of .90 or higher (ideally over .95; Hu & Bentler, 1999) indicating adequate fit; and (3) the Root Mean Square Error of Approximation (RMSEA, Steiger & Lind, 1980) and its 90% confidence interval (CI), which uses prediction and measurement errors to assess the degree of match between the hypothesized model and the true model. Values higher than .90 for the CFI or lower than .08 for the RMSEA are considered a reasonable fit (Kline, 2015), although values of .95 for the CFI and .06 for the RMSEA are considered a more appropriate model fit (Hu & Bentler, 1999).

4.4.3 RESULTS

Descriptive statistics and results of the independent t-tests are presented in Table 1. The t-tests performed found statistically significant differences between groups on SPARTS conflict, APRI social victimization, social preference, and social impact scores. Specifically, compared to students with typical development, students with ADHD had more conflictual teacher-student relationships ($p = .024$), more social victimization ($p = .040$), and a greater social impact score ($p = .045$). Conversely, students with typical development were more preferred by their peer group than students with ADHD ($p < .001$). Statistically significant differences between groups were not noted for the remaining variables.

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Table 1

Mean (SD) scores for whole sample and students groups (Students with Attention Deficit Hyperactivity Disorder [ADHD] and Students with normal development [ND]) on all variables and *t* test

	Range	Total Sample <i>M</i> (SD)	Students with ADHD <i>M</i> (SD)	Students with ND <i>M</i> (SD)	<i>t</i>	<i>p</i>	Cohen's <i>d</i> (95% CI)
Closeness (SPARTS)	8-40	28.13(7.91)	29.78(8.68)	27.71(7.69)	1.22	.225	0.26(-0.16, 0.69)
Conflict (SPARTS)	10-44	18.36(6.91)	21.04(6.80)	17.69(6.80)	2.29	.024	0.49(0.07, 0.92)
Negative Expectations (SPARTS)	7-28	15.36(4.92)	15.94(4.67)	15.21(4.99)	0.69	.490	0.15(-0.27, 0.57)
Verbal Victimization (APRI)	6-36	11.72(6.57)	13.64(7.21)	11.24(6.34)	1.71	.090	0.37(-0.06, 0.79)
Physical Victimization (APRI)	6-32	9.41(5.59)	10.57(6.66)	9.11(5.29)	1.21	.228	0.26(-0.16, 0.68)
Social Victimization (APRI)	6-36	10.15(5.83)	12.20(6.71)	9.63(5.50)	2.08	.040	0.45(0.02, 0.87)
Verbal Perpetration (APRI)	6-29	9.30(3.82)	9.78(3.95)	9.18(3.80)	0.73	.466	0.16(-0.26, 0.58)
Physical Perpetration (APRI)	6-25	8.24(3.49)	8.61(3.98)	8.15(3.68)	0.62	.534	0.13(-0.29, 0.56)
Social Perpetration (APRI)	6-28	10.25(3.76)	9.96(4.05)	10.32(3.70)	-	.664	-0.09(-0.52, 0.33)
Social Preference (Z scores)	--	-0.27(1.79)	-1.75(1.93)	0.10(1.55)	-	<.001	-1.13(-1.58, -0.69)
Social Impact (Z scores)	--	0.17(0.97)	0.58(1.17)	0.07(0.90)	2.12	.045	0.53(0.11, 0.96)

Note. CI = Confidence Interval for effect size. SPARTS = Student Perception of Affective Relationship with Teacher Scale. APRI = Adolescents Peer Relations Instrument

Matrix correlation among all variables is presented in Table 2. As it demonstrates, for students with ADHD, their perceptions of their relationship with their teacher with reference to the SPARTS closeness and conflict dimensions were linked to the three types of bullying behaviors (verbal, physical, and social). Although some relationships between variables did not reach statistical significance, they showed a moderate relationship (Cohen, 1988, 1992): for example, the association between conflict and social perpetration ($r = .32$). Meanwhile, negative expectations about the students' perceptions of their relationship with their teacher were not statistically associated with bullying dimensions, though some did have a moderate relationship to bullying victimization (Cohen, 1988, 1992): for instance, the association between negative expectations and verbal ($r = .37$) and physical victimization ($r = .34$).

In addition, social impact was positive and statistically associated with verbal perpetration ($r = .44$), and social preference was moderately and negatively related to verbal perpetration ($r = -.33$), although this association did not reach statistical significance (Cohen, 1988, 1992).

Table 2

Inter correlations between All Variables with Results for Students with Attention Deficit Hyperactivity Disorder in the Top Diagonal (SUPERIOR) and for Students with Normal Development in the Bottom Diagonal

	1	2	3	4	5	6	7	8	9	10	11
1. Closeness (SPARTS)	--	-.32	-.05	.25	.19	.14	-.39*	-.50**	-.12	.22	.01
2. Conflict (SPARTS)	-.32**	--	.25	.14	.18	.21	.51***	.60***	.32	-.06	.26
3. Negative Expectation (SPARTS)	-.25**	.37***	--	.37	.34	.19	.10	.10	.29	.03	.15
4. Verbal Victimization (APRI)	-.04	.40***	.02	--	.84***	.58**	-.05	-.19	-.20	.13	.01
5. Physical Victimization (APRI)	-.11	.42***	.07	.82***	--	.68***	-.05	.02	-.23	.06	-.17
6. Social Victimization (APRI)	-.04	.41***	.06	.86***	.81***	--	-.17	-.09	-.06	-.10	-.07
7. Verbal Perpetration (APRI)	-.07	.44***	.12	.42***	.50***	.43***	--	.69***	.38*	-.33	.44*
8. Physical Perpetration (APRI)	-.01	.36***	.08	.43***	.62***	.40***	.73***	--	.25	-.27	.13
9. Social Perpetration (APRI)	-.08	.46***	.16	.44***	.48***	.49***	.73***	.62***	--	.15	.07
10. Social Preference	.20*	-.17	.18	-.23*	-.20*	-.23*	-.24*	-.18	-.19*	--	-.54**
11. Social Impact	.04	.18	.15	.20*	.10	.16	.26**	.30**	.22*	.12	--

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. SPARTS = Student Perception of Affective Relationship with Teacher Scale. SDQ = Strengths and Difficulties Questionnaire. APRI = Adolescents Peer Relations Instrument

For students with typical development, their perceptions of their relationship with their teacher with reference to the SPARTS dimensions conflict and negative expectations about this relationship were not statistically associated with bullying dimensions. Only the perception of closeness was positively and statistically related to the three types of bullying behaviors (verbal, physical, and social) and the three ways of being targeted (physical, verbal, and social). Moreover, negative statistical relationships emerged between social preference and the three ways of being targeted (physical, verbal, and social) and the three types of bullying behaviors (physical, verbal, and physical). Lastly, social impact was positively and statistically related to verbal victimization and the three types of bullying behaviors (physical, verbal, and physical).

ADHD in Students Predicts Bullying: A Structural Equation Model

The model general fit was excellent, with $\chi^2(34) = 60.931$ ($p = .003$), CFI = .952, SRMR = .038, and RMSEA = .077 (CI 90% .044, .107). The explained variance of perpetration in this model was 32.7%, while for victimization, it was 21.2%. Standardized structural coefficients and factor loadings are shown in Figure 2.

For analytical fit, the measurement part of the model exhibited adequate factorial structures for the bullying victimization dimensions with factorial loadings ranging from .865 to .912 ($p < .001$), as well as from .700 to .917 ($p < .001$) for bullying perpetration. The correlation between bullying victimization and bullying perpetration was not statistically significant ($r = .270$, $p = .076$).

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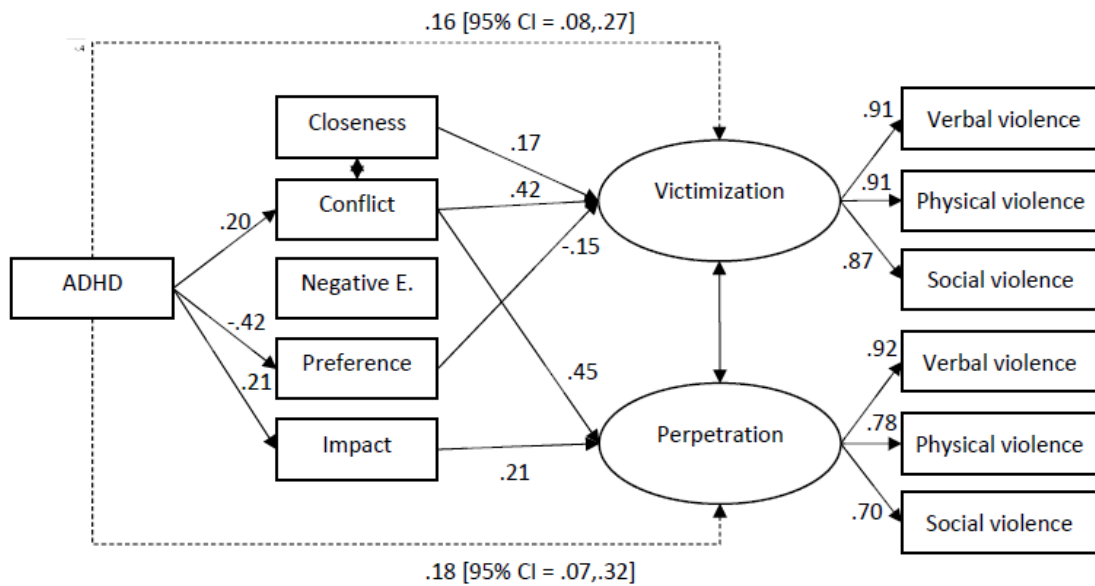


Figure 2. Results of the model testing complete and partial mediation of TDAH on bullying dimensions. Correlations between bullying dimensions and among Closeness, Conflict, Negative expectations, Social Preference (Preference) and Social Impact (Impact) were estimated. Discontinued arrows showed indirect effects, continued arrows for direct effects. For the shake of clarity, standard errors are not shown

The presence of ADHD, meanwhile, predicted social preference ($\beta = -.416, p < .001$), social impact ($\beta = .210, p = .025$), and conflict ($\beta = .195, p = .019$). That is to say, students with ADHD received lower levels of social preference but higher social impact and conflict scores. As for bullying predictions, the direct effects of social preference ($\beta = -.152, p = .028$), closeness ($\beta = .168, p = .021$), and conflict ($\beta = .421, p < .001$) were observed in bullying victimization, as were the indirect effects of ADHD ($\beta = .164 [95\% \text{ CI} = .075, .274], p = .001$). Students with greater bullying victimization, therefore, were those with lower social preference and higher scores in closeness, conflict, and presenting ADHD. The prediction of bullying perpetration also had direct effects on social impact ($\beta = .205, p < .001$) and conflict ($\beta = .445, p < .001$), together with the indirect effects of ADHD ($\beta = .182 [95\% \text{ CI} = .070, .317], p = .002$). Thus, students with ADHD and higher levels of social impact and conflict were more likely to perpetrate bullying. The correlations among the relationship between students and teachers and students' social status in their peer group can be consulted in Table 3.

Table 3

Correlations among Closeness, Conflict, Negative expectations, Preference, and Impact in the structural equation model

	1	2	3	4	5
1. Closeness (SPARTS)	--				
2. Conflict (SPARTS)	-.320**	--			
3. Negative Expectations (SPARTS)	-.209**	.346***	--		
4. Social Preference	.205*	-.145	.144	--	
5. Social Impact	.032	.200**	.149	-.068	--

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

4.4.4 DISCUSSION

The aim of this study was to test the relationship between the presence of ADHD in students, those students' social status, and the quality of their relationship with their teacher from their viewpoint, as well as bullying dimensions (victimization and perpetration). The results revealed statistically significant differences between students with ADHD and those with typical development in their perceptions of their relationship with their teacher in the conflict dimension and their social victimization, social preference, and social impact scores. Specifically, students with ADHD perceived their relationship with their teacher as more conflictual and were less preferred by their peer group compared to students with typical development. This means that these students' perception of conflict in their relationships with their teacher and peers might be affected by ADHD. These results confirm previous studies in highlighting that ADHD symptoms might have a negative impact on children's emotional engagement with school (Rushton et al., 2020), and that a complex association between social self-perceptions and adjustment exists in subjects with ADHD. Perceived relationships with teachers and peers in children with ADHD might explain differences in their socio-emotional and behavioral functioning as well. Students with ADHD generally feel not as close to teacher than their peers (Ewe, 2019) and demonstrate impaired social cognition that could make it difficult for them to understand facial expressions and emotional prosody.

Students with ADHD also experienced more social victimization than students with typical development. This finding was expected, as previous research reports a high incidence of bullying against children with ADHD (Taylor et al., 2020). In turn, children who suffer from this disorder are at high risk of being involved in bullying episodes, both as bullies and victims (e.g., Holmberg & Hjern, 2008; McQuade et al., 2018; Winters et al., 2020). Verlinden et al. (2015) argue that behavioral problems are a possible reason for the frequent victimization of students with ADHD, as bullying involvement in this group of children is associated with low self-control and high parent-reported behavioral problems (Holmberg & Hjern, 2008).

On the other hand, the bivariate correlation findings suggested a different pattern in the relationships between students with ADHD and students with typical development among the analyzed variables (STR and social status) and bullying dimensions (victimization and perpetration). For instance, in the sample of students with ADHD, the students' perceptions of closeness in their relationship with their teacher were related to the three types of bullying behaviors. These relationships did not appear among students with typical development. In the same vein, in the students with ADHD, social preference and social impact were linked to verbal perpetration. However, in the students with typical development, social preference was linked to the three ways of being targeted for bullying and the three types of bullying behaviors, and social impact positively and statistically related to verbal victimization and the three types of bullying behaviors. Consequently, ADHD seems to be a component that introduces changes to students' relations with bullying dimensions (victimization and perpetration). Similarly, McQuade et al. (2018) found that in children with

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ADHD and with high scores in peer preference, a higher perceived social acceptance predicts greater aggression/conduct problems, while in children with typical development, this result is different. Still, given the unbalanced sample size between groups in this study (27 students with ADHD and 108 students with typical development), it was not possible to estimate multi-sample path analyses to evaluate the possible moderating role of ADHD in STRs, students' peer status, and the bullying dimensions. Consequently, a series of multi-sample path analyses should be performed in the future.

Regarding the structural equation model of the mainstream student population, bullying victimization was negatively predicted by the students' social preference and positively predicted by two dimensions of the students' perceptions of their relationship with the teacher (conflict and closeness). Specifically, having a low social preference is linked to more bullying experiences. At the same time, students' perceptions of their relationship with their teacher as conflictual or close implies more of a risk of suffering from bullying. Moreover, the students' social impact scores predicted bullying perpetration. These findings are consistent with previous research, indicating that students who are more socially accepted are generally less victimized by peers (Elledge et al., 2016), as well as more preferred by their teachers (Mercer & DeRosier, 2008). According to the Bio-Ecological Model's vision of contexts (Bronfenbrenner & Kiesler, 1977), individuals tend to influence each other through their behavior (Bronfenbrenner & Morris, 2006). Research identifies that high conflict between students and teachers is linked to students' lower social status among peers (Hughes & Im, 2016), and while a conflictual STR may increase the risk of peer victimization (Longobardi et al., 2019a), it is also associated with bullying and pro-bullying behaviors (Longobardi et al., 2018). Previous studies further indicate that a warm and close STR could have a positive influence on students' peer relationships, but also that high levels of closeness with teachers are not always linked with high social status among peers (Hughes & Im, 2016). For instance, Longobardi et al. (2018) notes that in neglected students, a close STR is positively associated with pro-bullying behaviors, while Camodeca and Coppola (2019) argue that in children with a high social preference, having a close relationship with the teacher is related to defending behaviors. It is possible that, in some situations, having a close relationship with the teacher might be associated with a higher risk of suffering from peer victimization. Bullies can manifest jealousy of the close relationships that some of their peers have developed with teacher, and because of this, they might bully them. Likewise, because most bullying episodes occur when teachers are not monitoring children, in such situations students with a close STR may not benefit from the protective role of their relationship with the teacher (Elledge et al., 2016). This study's results add to the literature on STRs and school bullying (Longobardi et al., 2018), highlighting the complexity of the relationships between students and their teachers. Further investigations are needed to better understand the impact of children's social status in the classroom on the association between STRs and peer victimization.

In addition, the presence of ADHD in students had an effect on bullying victimization as mediated by these students' social preference and perceptions of their relationship with their teacher as close and conflictual.

That is, students with ADHD had more conflictual relationships with their teacher, and this conflict related to bullying victimization. In the same way, students with ADHD had a closer relationship with their teacher, and this closeness related to bullying victimization. Students with ADHD were also more socially preferred by their peer group, and this high preference related to bullying victimization. Furthermore, the presence of ADHD in students had an effect on bullying perpetration as mediated by these students' perceptions of their relationship with their teacher as conflictual. In particular, students with ADHD had more conflictual relationships with their teacher, which related to bullying perpetration. These findings are significant and add to extant literature concerning bullying in children with ADHD (e.g., Holmberg & Hjern, 2008; McQuade et al., 2018; Winters et al., 2020). Previous research also highlights that children with ADHD are at a high risk of being involved in bullying episodes as both bully and victim. The results of this study seem to indicate that the disorder's symptoms of inattention and hyperactivity/impulsivity might interfere with the protective effect of positive relationships with teacher and peers against bullying (Elledge et al., 2016), suggesting a connection between ADHD and victimization risk, as well as bullying perpetration. In other words, ADHD symptoms may represent a predictor of bullying, even if children have a warm and positive relationship with their teacher or a high status among their peers.

Limitations and Future Research

Some limitations in the present work should be discussed. The main limitation of this study is the small subsample of children with ADHD, which might affect the ability to detect statistically significant results (i.e., statistical power) and thus the findings' accuracy and generalization. Moreover, as mentioned above, given this small sample size, it was not possible to analyze ADHD's possible moderating role in STRs, students' peer status, and bullying.

Another limitation concerns the sample's characteristics (e.g., the mono-cultural setting), which might limit the findings' generalization. In this way, cross-cultural studies that compare different cultural groups and school settings using similar measures and variables may improve the accuracy and generalization of these findings. It is not possible to generalize the findings to children and teachers located in cities or from different cultural backgrounds either. Additionally, the data analyzed in this study involved self-reported responses, which were dependent on the participants' honesty. In this way, social desirability may have biased the results and, therefore, the study's findings. Thus, the measurement of this variable through an appropriate questionnaire would make it possible to introduce it into analyses as a control variable: for example, as a covariate.

A third limitation of this study relates to the Cronbach's alpha value of the APRI's social perpetration dimension ($\alpha = .67$) and of the SPARTS's negative expectation dimension ($\alpha = .56$). Consequently, the findings should be verified in other samples in which the quality of their measurement is improved.

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Finally, the data were cross-sectional in nature, so variable causality could not be determined. Several studies pinpoint certain biases that can stem from the use of mediation within a cross-sectional framework as well (Maxwell et al., 2011). Thus, longitudinal studies are warranted to test these longitudinal relations and their directionality, which might improve understanding of how the relationships between them unfold over time.

Practical and Policy Implications

The results from this study showed the impact of ADHD symptoms on bullying dimensions (victimization and perpetration), as well as the effect of attentional and hyperactivity problems on STRs and student social status. The findings could be important to the educational community and researchers in different ways. For teachers, psychologists, and clinicians, the results could highlight the peculiarities of children with ADHD and represent opportunity to meditate and even re-think the pedagogical resources educators provide to enhance the social inclusion and protection of children with ADHD from bullying. For researchers, this study adds to the body of research focused on the impact of ADHD symptoms on STRs, peer status, and bullying at school. In light of the results that have emerged, it may be interesting to conduct future research on other trajectories of bullying in children with ADHD to better understand the specifics of their adjustment in the education context.

4.4.5 CONCLUSION

This work offers a unique contribution to investigating the relationships between students with ADHD, their social status, the quality of their relationships with their teachers, and bullying dimensions (victimization and perpetration). The results highlight the role of ADHD symptoms as predictors of bullying. This study also offers an exploratory approach of this phenomenon in a specific sample and provides insight into the patterns of relationships among the study variables. Therefore, it was carried out in a simple and sophisticated way and always based on theory. Although bullying has received international attention, there is still a dearth of research on this topic for specific samples. Researchers need to address violence across multiple perpetrators and systems. Accordingly, further research is necessary to create an in-depth understanding of the role of ADHD symptoms and students' relationships with their teachers and peers in school bullying.

4.5. Study 5. Student–teacher relationship quality in students with learning disabilities and special educational needs

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4.5.1 INTRODUCTION

Student–teacher relationship

Over the past three decades, considerable research has focused on the importance of the relationships between students and teachers in shaping the quality of students' motivation and classroom learning experiences; teachers bring to the relationship resources to support children's intellectual, social, and emotional development. Empirical research on the role of the student–teacher relationship (STR) has been inspired by extended Attachment Theory (Hamre & Pianta, 2001). This theory is based on the idea that a warm relationship between children and teachers might promote emotional security in students; like responsive parents, teachers provide children with a secure base from which they can explore their learning environment and a safe haven to which children can maintain proximity in the case of stress or need (Hamre & Pianta, 2001).

The extent of the support and emotional security that teachers provide to children depends on the degrees of closeness, conflict, and dependency in this dyadic relationship (e.g., Pianta, 1999). Relationships with teachers indirectly predict academic outcomes through motivation (Scales et al., 2020); specifically, a high level of closeness in the STR is significantly associated with advances in academic performance (Valiente et al., 2019) and improvements in attentional behavior, via the mediating role of emotion regulation. Additionally, a high level of closeness with the teacher is associated with behavioral outcomes, such as, for instance, greater autonomous motivation in children to defend victims in case of bullying episodes (Iotti et al., 2020); conversely, children with high rates of conflict with the teacher might present bullying behaviors. Furthermore, a warm STR and a higher level of school well-being might reduce students' intentions to leave school early (Schwab, 2015), and, combined with a positive relationship with peers, might facilitate children's adjustment at school (e.g., Demirtaş-Zorbaz & Ergene, 2019).

Recently, attachment-based research on the STR has started to include classmates' perspectives (e.g., Hughes, et al., 2014), according to Social Referencing Theory; children's views of teachers' relationships with classmates are based on social cues regarding teachers' behaviors and actions toward individual children in the class (Hendrickx et al., 2017; Walden & Ogan, 1988). This means that, by observing teachers' differential treatment of individual students in the class, children make inferences about their classmates' social traits and academic competencies and teachers' relationship perceptions (e.g., Hughes et al., 2014).

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Inclusion of children with SEN and LD at school

During the last decades, several countries have started to adopt inclusive education in their school systems, and the social participation of students with disabilities has become an important focus of research. A large quantity of literature highlights the challenging inclusion of children with disabilities and the importance of warm and emotionally secure relationships with their teachers and with their peers (Murray & Pianta, 2007).

Research has mostly focused on students with autism, ADHD and intellectual disability (Zendarski et al., 2020), showing the clear relevance of meaningful relationships with teachers in terms of behavioral and academic achievements. In addition, other studies have explored the protective role of social status and difficulties in peer relationships regarding children with autism (Calder et al., 2013) and those with ADHD (e.g., Powell et al., 2020).

In contrast, research has rarely encompassed subjects with special educational needs (SEN). Few studies existing in this field emphasize the challenging social participation of students with SEN at school; regarding the relationship with their peers, this group of children tends to have fewer or no friends, compared with their classmates (Schwab, 2015). Additionally, difficulties in terms of social skills might be correlated with problems of closeness and conflict with the teacher (Freire et al., 2019). Nevertheless, the SEN condition at school appears to be difficult to describe because it is often defined very differently in research, and the labeling processes are dissimilar depending on the countries.

Among SEN, learning disabilities (LD, that is, reading, writing, and mathematics deficits) are one of the most frequently diagnosed neurodevelopmental disabilities. Previous studies have shown that children with LD tend to have a higher level of dependency in the STR (Pasta et al., 2013) and greater dissatisfaction in their relationships with teachers (Murray & Greenberg, 2001) than their classmates with typical development. Regarding the relationship with peers, students with LD might present lower friendship quality, higher levels of conflict, more problems with relationship repairing, and less stable relationships than children without LD (Wiener & Schneider, 2002), as well as significantly higher levels of perceived school danger than their classmates (i.e., the students' perception of the school setting as dangerous; Murray & Greenberg, 2001). In addition, a recent study has highlighted the fact that in children with LD, self-esteem, bullying victimization, emotion regulation, social skills, and peer problems might be salient and correlate with externalizing and internalizing problems (Boyes et al., 2020).

Although the literature shows that children with LD, and SEN in general, might present difficulties in relationships with teachers (Freire, et al., 2019; Murray, 2001; Pasta, 2013) and peers (Boyes et al., 2020; Schwab, 2015; Wiener & Schneider, 2002), these students tend to present milder problems in STR than children who suffer from other specific disabilities (i.e., autism, ADHD; Prino et al., 2016; Zee et al., 2020) and no significant difference in school well-being, compared with their classmates with typical development (Schwab, 2015). On one hand, this could be considered a strength for the inclusion of children with SEN and

LD at school; on the other hand, because their social participation appears less problematic than other groups of students, teachers might give less importance to enhancing the inclusion of children with SEN and LD, who could be at risk of lower social, behavioral, and academic achievements.

At the moment, literature in this field of research appears scarce and specifically focused on single aspects of the school inclusion of students with SEN or LD, such as their relationships with teachers (Freire et al., 2019; Murray, 2001; Pasta, 2013) or peers or their psycho-social adjustment (Boyes et al., 2020; Schwab, 2015; Wiener & Schneider, 2002).

Aims of this study

Given the lack of literature, the aim of this study was to examine in-depth the inclusion at school of children with SEN and LD, in order to provide an extensive view of the quality of the STR and the effects of this relationship on the students' behavioral and academic outcomes and on their social and relational skills.

In this study, we analyze the relationship between the presence of SEN and LD in students and 1) their social status in their peer groups; 2) the teachers' perceptions of their relationships with these students; 3) their behavior; and 4) their academic performance.

4.5.2 METHOD

Sample

The sample was composed of 320 students (59.7% males) recruited from seven Italian primary and secondary schools. The schools were selected through convenience sampling. The average age of the students was 11.04 ($SD = 1.42$, $Min. = 8$, $Max. = 14$). Of them, 68.4% were students with typical development ($n = 219$), 17.2% were students with LD ($n = 55$), and 14.4% were students with SEN ($n = 46$). The average age of the students with typical development was 10.75 ($SD = 1.40$), and it was 11.68 ($SD = 1.25$) for students with LD and 11.66 ($SD = 1.28$) for students with SEN. There were statistically significance differences in the mean age of students ($F(2, 311) = 15.34$, $p < .001$; $\eta^2 = .08$). Specifically, a post hoc comparison showed that the mean ages of students with SEN and students with LD were higher than the mean age of students with typical development ($p < .001$ in both cases). There was no statistically significant difference between the mean age of students with LD and that of students with SEN. The percentage of males for the students with typical development was 58.5%, and it was 56.4% for students with LD and 69.6% for students with SEN. There were no statistically significant differences in gender distribution ($\chi^2(2) = 2.26$, Cramer's $V = .08$; $p = .323$) among the three groups of students. In addition, it analyzed the data of 40 teachers with a mean age of 46.06 ($SD = 7.59$, $Min. = 30$, $Max. = 65$), 95.9% of whom were females. The average number of years of teaching experience was 19.78 ($SD = 9.57$, $Min. = 2$, $Max. = 42$), and the average number of teaching hours in the class per week was 10.55 ($SD = 5.31$, $Min. = 2$, $Max. = 22$).

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Measures

Socio-demographic characteristics.

Participants (teachers and students) were asked to report their socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to provide their years of teaching experience and their number of teaching hours in the class per week.

Presence of SEN and LD in students.

In the Italian school context, “students with SEN” are defined as children who, permanently or temporarily, have some difficulties because of socio-economic, linguistic, or cultural reasons. All students with SEN are included in mainstream schools. Within the students with SEN group, the sub-category of students with LD exists (cf. MIUR [Ministero dell’Istruzione dell’Università e della Ricerca]). Students with SEN and LD do not present cognitive impairment that affects their general intelligence, and, for this reason, they are not considered to need special education teachers. For students with SEN and LD, curricular teachers provide pedagogical help in order to close the gap between their and the other students’ behavioral and academic performance. While, in general, students with SEN do not have a medical diagnosis, students with LD need an official label from the local sanitary authority in order to be eligible for additional educational resources at school.

Please note that formal diagnoses of LD take place outside of the school curriculum and are based on national guidelines and protocols. The diagnoses are made by certified psychologists and psychiatrists, not by school teachers themselves. However, teachers usually work closely together with internal supervisors and school psychologists, who inform them about students’ diagnosed disabilities. In most cases, these diagnostic labels are registered in the school’s administration system and form the basis of Individual Education Plans. Hence, even though teachers obviously do not diagnose the children themselves, they are well informed about these diagnoses and, as such, can relatively reliably report on the prevalence of LD, and SEN, in their classes.

Thus, for our study, class teachers were asked to list all the children in their classes who had SEN and who were officially labeled by the local sanitary authority as having LD. Teachers were asked to report on the presence of SEN and LD in each student. Three items were used: (1) “Does the student have special educational needs?” (yes or no), (2) “If yes, which type of SEN (SEN, LD, etc.)?” and (3) “Does the student have a medical diagnosis?”

Peer nomination technique (Italian version).

This is a peer nomination questionnaire that allows researchers to plot a graphic representation of the interpersonal relationships present in a class group. It was inspired by Moreno’s sociogram techniques (1934) and Coie, Dodge, and Coppotelli’s (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions (three positive and three negative) in which children have to nominate three of their peers. The questions are the following: (i) “Who would you want as a table partner?” (ii) “Who would you

want as a schoolwork partner?" (iii) "Who would you want as a field trip buddy?" (iv) "Who would you NOT want as a table partner?" (v) "Who would you NOT want as a schoolwork partner?" and (vi) "Who would you NOT want as a field trip buddy?" For each child, the sum of the positive nominations received from all peers represented their liking (L) score. The sum of the negative nominations received by each child represented their disliking (D) score. The L and D scores were standardized within each class (L_z and D_z) and used to compute a social preference (SP) score ($L_z - D_z$) and a social impact (SI) score ($L_z + D_z$) for each child. Thereafter, following the formula developed by Coie et al. (1982), the children were categorized into one of five peer status groups as follows: (a) popular ($SP > 1.0$; $D_z < 0$; $L_z > 0$); (b) neglected ($SI < -1.0$; $L_z < 0$; $D_z < 0$); (c) rejected ($SP < -1.0$; $D_z > 0$; $L_z < 0$); and (d) controversial ($SI > 1.0$; $L_z > 0$; $D_z > 0$), where L_z and D_z stand for standardized liking scores and standardized disliking scores, respectively. Children who did not fit into any of the previous categories were considered average.

Student-Teacher Relationship Scale (STRS; Pianta, 2001).

The STRS assesses "a teacher's feelings about his or her relationship with a student, the student's interactive behavior with the teacher, and a teacher's beliefs about the student's feelings toward the teacher" (Pianta, 2001, p. 1). This study used the STRS Short Form validated for the Italian context (Settanni, Longobardi, Sclavo, Fraire, & Prino, 2015), which consisted of 14 items evaluated on a 5-point Likert scale (1 = definitely does not apply, 5 = definitely applies) and two factors: closeness (6 items) and conflict (8 items). The conflict dimension assesses the negative aspects in the relationship. Closeness assesses a warm affective relationship with the teacher, capable of promoting positive attitudes toward school, open communication, involvement, and engagement. Reliability for this study was adequate, with Cronbach's alpha values equal to .90 for the closeness dimension and .89 for the conflict dimension.

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997; Tobia et al., 2011).

The SDQ is a well-validated behavioral screening questionnaire, which was developed on the basis of nosological concepts that underpin the Diagnostic and Statistical Manual of Mental Disorders, DSM-IV (APA, 1994), and ICD-10 (World Health Organization, 1993) classifications of childhood psychopathology, as well as factor analyses. The SDQ consists of 25 items evaluated on a three-point Likert scale (0 = not true, 1 = partially true, 2 = absolutely true) and 5 subscales: conduct problems, hyperactivity, emotional symptoms, peer problems, and prosocial behavior. Reliability for this study was adequate, with Cronbach's alpha values equal to .69 for emotional symptoms, .74 for conduct problems, .86 for hyperactivity, .67 for peer problems, and .84 for prosocial behavior.

Academic performance.

Teachers were asked to report the average grade obtained by each student across all the school subjects. Each school subject was graded on a 1–10 scale.

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Procedures

The data were collected from seven primary and secondary schools in Northwest Italy. The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the Institutional Review Board (protocol no. 118643) of the University of Turin. The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

Phase 2 involved the prevalent teacher for each classroom that included children who stuttered, meaning the teacher who spent at least 18 hours per week in that classroom. Each teacher completed a questionnaire about the students from his/her class (i.e., socio-demographic information, the presence of SEN or LD in each student, the STRS, the SDQ, and academic performance) who he/she had received parental consent for: at least one student who stuttered and the rest with typical development. The teachers completed the questionnaire in their free time during the school day.

In phase 3, the children completed anonymous questionnaires (i.e., socio-demographic information and the peer nomination technique) during their regular class hours. Before completing the survey, students were asked to give their written assent to participate in the study. With respect to the use of peer nominations, in order to minimize their potential influences on students, participants were told that their answers

Data analysis

First, a series of preliminary analyses, which examined the descriptive statistics of scores for all study variables and the normality of their distribution, were conducted. These analyses were computed for the overall sample and for student groups (students with typical development, students with L,D and students with SEN).

Then, several multivariate analyses of covariance (MANCOVA) were performed to examine the effect of the presence of any type of SEN (i.e., SEN and LD) in students and their social status in the peer group on the STRS dimension scores, the SDQ dimension scores, and academic performance. The age of students was added as a covariate to control the influence that this variable may have on the STRS scores, SDQ scores, and academic performance, since the one-way ANOVA showed statistically significant differences between students with SEN (SEN and LD) and students with typical development. Pillai's criterion (the most robust criterion) was used (Tabachnick & Fidell, 2007), and the effect size was estimated using partial eta squared (η^2). Subsequently, if the overall F test showed mean differences, a post hoc univariate ANOVAs were used to determine which means were statistically different from others. According to Cohen (1988), a guideline for interpreting an eta squared value (η^2) is that .01 indicates a small effect, .06 indicates a moderate effect,

and .14 indicates a large effect. The data were double entered and checked for accuracy, and they were analyzed using SPSS version 26.0 for Windows.

4.5.3 RESULTS

Preliminary analysis

Table 1 shows descriptive statistics of the study variables for both the whole sample and for the three student groups. Skewness and kurtosis statistics were used to identify the normality of the data. There is no consensus regarding an acceptable degree of nonnormality, but the data may be considered being normal for the range of skewness from -2 to +2 and kurtosis from -7 to +7 (Finney & DiStefano, 2006). Table 1 shows that only for the normal student group the conflict and conduct problems variables displayed skewness > 2.00 ($Sk = 2.38$, $Sk = 2.13$, respectively). Thus, data were considered to have an acceptable normal distribution (Finch et al., 1997) and they were all considered appropriate for use in parametric. In addition, there were only missing data for academic performance variables (1.6% for humanity subjects and 8.4% for science subjects). Therefore, no adjustments were made to the scores for the variables measured in our study.

Social status in the peer group

Pearson's chi-squared and Cramer's V tests were performed to evaluate the relationship between the presence of SEN (i.e., SEN and LD) in students and their social status in their peer groups. The results of Pearson's chi-squared and Cramer's V tests showed a statistically significant association between the presence of some types of SEN (i.e., SEN and LD) in students and their social status in their peer groups ($\chi^2(8) = 32.93$; $p < .001$, Cramer's $V = .23$, $p < .001$). Specifically, students who have SEN and LD were less popular ($z = -2.2$, $p < .050$) and more rejected ($z = 4$, $p < .001$) in the peer group than expected. Moreover, students with typical development were less rejected ($z = -2.2$, $p < .050$) in the peer group than expected. In the rest of the categories regarding social status in the peer group, there were no statistically significant differences between the observed and expected values in the three groups of students (i.e., students with normal development, students who have SEN and students who have LD).

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Table 1. Descriptive statistics of study variables for all sample and for student groups (students with normal development (ND), students with learning difficulties (LD) and students with special education needs (SEN)).

	All sample (N = 320)				ND (n = 219)				LD (n = 55)				SEN (n = 46)			
	Range	M (SD)	Sk	Kr	Range	M (SD)	Sk	Kr	Range	M (SD)	Sk	Kr	Range	M (SD)	Sk	Kr
Closeness (STRS)	15–55	40.42 (9.49)	−0.55	−0.318	15–55	41.24 (10.27)	−0.75	−0.27	24–55	38.62 (6.98)	0.18	−0.62	17–51	38.67 (7.69)	−0.25	−0.08
Conflict (STRS)	11–51	15.85 (7.26)	2.04	4.19	11–51	15.22 (7.30)	2.38	5.87	11–34	16.19 (5.79)	1.37	1.56	11–42	18.45 (8.13)	1.25	0.73
Emotional Symptoms (SDQ)	5–13	6.62 (1.83)	1.12	0.61	5–13	6.30 (1.61)	1.30	1.42	5–13	7.29 (2.20)	0.77	−0.35	5–12	7.30 (1.95)	0.60	−0.76
Conduct Problems (SDQ)	5–14	6.33 (1.84)	1.74	2.85	5–14	6.17 (1.84)	2.13	4.56	5–12	6.27 (1.62)	1.52	2.12	5–12	7.20 (1.95)	0.67	−0.35
Hyperactivity (SDQ)	5–15	7.80 (2.64)	0.97	0.32	5–15	7.19 (2.35)	1.27	1.42	5–15	8.56 (2.59)	0.82	0.44	5–15	9.81 (2.81)	0.26	−1.10
Peer Problems (SDQ)	5–13	6.67 (1.79)	1.23	1.51	5–13	6.42 (1.74)	1.57	2.80	5–11	7.09 (1.52)	0.40	−0.53	5–13	7.31 (2.09)	0.77	0.14
Prosocial Behavior (SDQ)	5–15	11.69 (2.55)	−0.21	−0.89	5–15	11.97 (2.55)	−0.40	−0.75	5–15	11.07 (2.58)	0.04	−0.77	7–15	11.13 (2.28)	0.44	−0.84
Academic performance (Humanity)	4.60–10	7.88 (1.18)	−0.20	−0.65	4.60–10	8.26 (1.10)	−0.57	0.004	5.57–9.14	7.28 (0.82)	0.06	−0.63	5–9	6.71 (0.87)	0.22	−0.09
Academic Performance (Sciences)	4.33–10	7.45 (1.27)	−0.03	−0.89	5–10	7.86 (1.15)	−0.23	−0.75	5–8.67	6.77 (0.97)	0.09	−1.13	4.33–9	6.35 (1.06)	0.72	0.25

Note. ND = Normal development. LD = Learning difficulties, SEN = Special Education Needs. M (SD) = Mean (Standard Deviation), SK = Skewness, Kr = Kurtosis. STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire.

Teachers' perceptions of their relationships with the students

A MANCOVA test was performed to determine if, controlling for the age of students, the presence of any type of SEN (i.e., SEN and LD) in students and their social status in the peer group affected student–teacher relationships measured as the conflict and closeness dimensions (of the STRS). Previously, the assumption of the homogeneity of covariance was examined using Box's M test (142.70, $F = 3.63$, $p < .001$), and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate statistical significance of the main effects and interactions. The multivariate results showed that age was statistically significant as a covariate: Pillai's trace = 0.21, $F(2, 297) = 40.32$, $p < .001$, $\eta^2 = .21$. A main effect was found for the students' social status in the peer group: Pillai's trace = 0.09, $F(8, 596) = 3.51$, $p = .001$, $\eta^2 = .05$; however, the presence of SEN in students was not: Pillai's trace = 0.01, $F(4, 596) = 0.46$, $p = .768$, $\eta^2 = .003$. Thus, there were not statistically significance difference among students with normal development, students who have SEN and students who have LD on conflict and closeness dimension scores (student–teacher relationships). No effect was found for the interaction between these variables: Pillai's trace = 0.05, $F(16, 596) = 1.04$, $p = .414$, $\eta^2 = .03$.

Table 2 presents the results of the univariate ANCOVAs of the main effect on the scores of the different dependent variables in terms of the presence of SEN and LD in the students and the social status of the students within the peer group.

Table 2. Results of the ANCOVAs by presence of any type SEN: adjusted means (i.e. controlling for age), F -values, significance levels and effect size for the scores of the different DVs.

	ND <i>M</i>	LD <i>M</i>	SEN <i>M</i>	<i>F</i>	<i>p</i>	η^2
Closeness (STRS)	39.33	40.40	40.92	0.37	.693	.002
Conflict (STRS)	16.05	15.72	17.09	0.33	.721	.002
Emotional Symptoms (SDQ)	6.54	7.66	6.66	5.08	.007	.03
Conduct Problems (SDQ)	6.39	6.10	6.75	0.80	.452	.01
Hyperactivity (SDQ)	7.58	8.80	9.28	6.31	.002	.04
Peer Problems (SDQ)	6.62	6.62	6.83	0.12	.884	.001
Prosocial Behavior (SDQ)	11.70	11.62	11.93	0.09	.913	.001
Academic performance (Humanity)	7.91	7.57	6.95	9.87	<.001	.07
Academic Performance (Sciences)	7.70	7.08	6.62	11.91	<.001	.08

Note. ND = Normal development. LD = Learning difficulties, SEN = Special Education Needs. STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire.

Subsequent univariate ANCOVAs of the main effect on the students' social status in the peer group revealed statistically significant results for the conflict dimension scores ($F(4, 298) = 7.03$, $p < .001$, $\eta^2 = .09$) but not for the closeness dimension scores ($F(4, 298) = 1.08$, $p = .367$, $\eta^2 = .01$; see Table 3). Post hoc comparisons showed that conflict was higher for rejected students (M adjusted = 20.20) compared to popular students (M adjusted = 13.43) and neglected students (M adjusted = 13.21), while no statistically significant differences emerged for the conflict dimension among the rest of the students with different social statuses (see Table 3).

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Table 3. Results of the ANCOVAs by students' social status in the peer group: adjusted means (i.e. controlling for age), *F*-values, significance levels and effect size for the scores of the different DVs.

	Popular <i>M</i>	Rejected <i>M</i>	Neglect <i>M</i>	Controversial <i>M</i>	Average <i>M</i>	<i>F</i>	<i>p</i>	η^2
Closeness (STRS)	42.70	38.58	40.58	39.02	40.21	1.08	0.367	.01
Conflict (STRS)	13.43	20.20	13.21	17.35	17.26	7.03	<.001	.09
Emotional Symptoms (SDQ)	5.74	7.36	6.88	7.86	6.91	4.47	.002	.06
Conduct Problems (SDQ)	5.56	7.37	5.78	6.69	6.68	6.94	<.001	.09
Hyperactivity (SDQ)	6.92	9.78	7.71	9.75	8.60	8.76	<.001	.11
Peer Problems (SDQ)	5.75	7.84	6.75	6.41	6.69	8.36	<.001	.10
Prosocial Behavior (SDQ)	12.93	10.44	12.26	11.75	11.38	5.70	<.001	.07
Academic performance (Humanity)	8.04	7.07	7.55	7.34	7.38	5.87	<.001	.08
Academic Performance (Sciences)	7.91	6.66	7.19	6.87	7.02	7.72	<.001	.10

Note: STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire.

Teachers' perceptions of students' behavior (the SDQ)

A MANCOVA test was performed to determine if, controlling for the age of students, the presence of any type of SEN (i.e., SEN and LD) in students and their social status in the peer group affected teachers' perceptions of students' behavior: emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behavior. Previously, the assumption of the homogeneity of covariance was examined using Box's M test (356.49, $F = 2.04$, $p < .001$), and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate statistical significance of the main effects and interactions. The multivariate results showed that age was statistically significant as a covariate: Pillai's trace = 0.08, $F(5, 294) = 5.03$, $p < .001$, $\eta^2 = .08$. A main effect was found for the presence of SEN and LD in students: Pillai's trace = 0.13, $F(10, 590) = 3.97$, $p < .001$, $\eta^2 = .06$, and also for the students' social status in the peer group: Pillai's trace = 0.20, $F(20, 1188) = 3.06$, $p < .001$, $\eta^2 = .05$. No effect was found for the interaction between these variables: Pillai's trace = 0.16, $F(40, 1490) = 1.26$, $p = .127$, $\eta^2 = .03$.

Subsequent univariate ANCOVAs revealed statistically significant differences for the presence of SEN and LD in the students related to the following: emotional symptoms [$F(2, 298) = 5.08$, $p = .007$, $\eta^2 = .03$] and hyperactivity [$F(2, 298) = 6.31$, $p = .002$, $\eta^2 = .04$] (see Table 2). Post hoc comparisons revealed that students with LD showed statistically significant higher values in terms of emotional symptoms (M adjusted = 7.66) than students with typical development (M adjusted = 6.54). There was no statistically significant difference between students who have SEN (M adjusted = 6.66) and those with typical development. Post hoc comparisons also revealed that students with SEN and students with LD showed statistically significant higher values in terms of hyperactivity (M adjusted = 9.28; M adjusted = 8.80, respectively) than students with typical development (M adjusted = 7.58; see Table 2). There was no statistically significant difference between students who have SEN and those who have LD.

Statistically significant differences were also observed in the subsequent univariate ANCOVAs for the students' social status in the peer group on all SDQ dimension scores: emotional symptoms [$F(4, 298) = 4.47$, $p = .002$, $\eta^2 = .06$]; conduct problems [$F(4, 298) = 6.94$, $p < .001$, $\eta^2 = .09$]; hyperactivity [$F(4, 298) = 8.76$, $p <$

.001, $\eta^2 = .11$], peer problems [$F(4, 298) = 8.36, p < .001, \eta^2 = .10$], and prosocial behavior [$F(4, 525) = 5.70, p < .001, \eta^2 = .07$] (see Table 3). Post hoc comparisons revealed that rejected students and students with an average status showed statistically significant higher values in terms of emotional symptoms (M adjusted = 7.36; M adjusted = 6.91, respectively), conduct problems (M adjusted = 7.37; M adjusted = 6.68, respectively), and hyperactivity symptomatology (M adjusted = 9.78; M adjusted = 8.60, respectively), than popular students (M adjusted = 5.74; M adjusted = 5.56; M adjusted = 6.92, respectively). Moreover, rejected students showed statistically significant higher values concerning conduct problems and hyperactivity symptomatology than neglected students (M adjusted = 5.78; M adjusted = 7.71, respectively). Also, rejected students showed statistically significant higher values in terms of hyperactivity symptomatology than students with an average status (M adjusted = 8.60).

Moreover, rejected students (M adjusted = 7.84) showed statistically significant higher values for peer problems than popular students (M adjusted = 5.75), neglected students (M adjusted = 6.75), and students with an average status (M adjusted = 6.41). Finally, popular students (M adjusted = 12.93) and neglected students (M adjusted = 12.26) showed statistically significant higher values in terms of prosocial behavior than rejected students (M adjusted = 10.44; see Table 3), while no differences emerged among the rest of the students with different social statuses regarding either variable.

Academic performance

A MANCOVA test was performed to determine if, controlling for the age of students, the presence of any type of SEN (i.e., SEN and LD) in students and their social status in the peer group affected academic achievement in terms of humanity and science subjects. Previously, the assumption of the homogeneity of covariance was examined using Box's M test (35.50, $F = 0.90, p = .645$). The multivariate results showed that age was statistically significant as a covariate: Pillai's trace = 0.28, $F(2, 272) = 53.64, p < .001, \eta^2 = .283$. A main effect was found for the presence of SEN and LD in the students: Pillai's trace = 0.09, $F(4, 546) = 6.63, p < .001, \eta^2 = .046$; and also for the social status of the students in the peer group: Pillai's trace = 0.11, $F(8, 546) = 3.79, p < .001, \eta^2 = .053$. No effect was found for the interaction between these variables: Pillai's trace = 0.07, $F(16, 546) = 1.23, p = .241, \eta^2 = .035$.

Subsequent univariate ANCOVAs of the main effect of the presence of any type of SEN (i.e., SEN and LD) in the students revealed statistically significant differences in terms of academic performance in humanity subject scores [$F(2, 273) = 9.87, p < .001, \eta^2 = .07$] and science subject scores [$F(2, 273) = 11.91, p < .001, \eta^2 = .08$] (see Table 2). Post hoc comparisons revealed that students with typical development showed statistically significant better academic performance in humanity and science subjects (M adjusted = 7.91; M adjusted = 7.70, respectively) than students with SEN (M adjusted = 6.95; M adjusted = 6.62, respectively). Moreover, popular students also showed statistically significant better performance in science subjects than students with LD (M adjusted = 7.08). In addition, students with LD (M adjusted = 7.57) showed better

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academic performance in humanity subjects than students with SEN (see Table 2). There was no statistically significant difference in academic performance in terms of science subject scores between students with SEN and students with LD ($p = .331$).

Subsequent univariate ANCOVAs of the main effect of the students' social status in the peer group revealed statistically significant differences for academic performance in terms of humanity subject scores [$F(4, 273) = 5.87, p < .001, \eta^2 = .08$] and science subject scores [$F(4, 273) = 7.72, p < .001, \eta^2 = .10$] (see Table 3).

Regarding academic performance related to humanity subjects, post hoc comparisons revealed that popular students showed statistically significant higher grades in humanity and science subjects (M adjusted = 8.04; M adjusted = 7.91, respectively) than rejected students (M adjusted = 7.97; M adjusted = 6.66, respectively) and students with an average status (M adjusted = 7.38; M adjusted = 7.02, respectively), while no differences emerged among the rest of the students with different social statuses in either variable (see Table 3).

4.5.4 DISCUSSION

The main objective of this study was to analyze the effect of SEN and LD on students' social status in the peer group, teachers' perceptions of their relationships with these students, and behavioral and academic achievement.

The results showed that the students' relationship with the peer group was affected by having SEN or LD. Students with SEN and LD were more unpopular and rejected than expected, and students with typical development were more popular than expected. This result is in line with previous studies conducted in other countries, reporting that children with SEN present problems in terms of integration and have limited meaningful contact with peers, difficulties regarding friendship, and low levels of social acceptance (Schwab, 2015), as well as a high probability of having no friends or just one friend. In addition, within the group of students with SEN, children with LD have been demonstrated to have difficulties with peer relationships and social functioning, and most of them are rejected by peers with typical development.

As regards the teacher's perception of his/her relationship with students, controlling for the age of the students, the results revealed that there was no difference in the teacher's perception of the presence of SEN and LD in the students, nor an interaction effect between the presence of any type of SEN (i.e., SEN and LD), and the social status of students in the peer group in terms of their closeness and conflict dimension scores. This means that the teachers' perception of their relationships with students is not related to the presence of SEN and LD in children, that is, that the relationships with children with SEN and LD are perceived to be equally close or conflictive by their teacher regardless of whether the children have learning difficulties or not. In addition, the perception of closeness in the relationship with the teacher was not affected by students' social status in the peer group, indicating that the closeness levels in the STR perceived by the teacher were similar for all students, regardless of the children's status in the peer group. This finding is

encouraging for schools' inclusion of children with SEN and LD. It is interesting to note, also, that teachers, when asked to compare with students with other disabilities, report less conflict and more closeness in their relationships with students with LD (Zee et al., 2020); these students probably tend to be perceived by teachers as less problematic than others, and, because of this, their SEN or LD do not affect their relationships with adults at school.

However, the teachers' perception of the relationship with their students as conflictive was affected by students' social status in the peer group. The teachers perceived higher levels of conflict in their relationships with rejected students, compared to those with popular and neglected students. No differences emerged among the rest of the students with different social statuses. This result confirms that an interaction exists between the STR and social status, as highlighted by research showing that, when the levels of children being disliked by their peers increase, conflict with their teachers also tends to increase (e.g., Gülay Ogelman, 2020). Children's social preference scores are directly related to the quality of their relationships with their teachers, and the relation between social risk and poor TSRQ is particularly strong for children rejected by their peers (Elledge et al., 2016). Moreover, a link exists between a conflictual STR and active bullying that is reported to be significantly stronger for rejected students than for students with other social statuses (Longobardi et al., 2018). Additionally, rejected children enjoyed a supportive STR score that was lower in terms of self-reported peer victimization, compared to rejected children who have a poorer STR than their peers (Elledge et al., 2016). Our finding adds to the body of research focused on the role played by the relationship with teachers in contrasting or favoring at-risk behaviors in students, especially in those who experience peer rejection (Wang et al., 2016).

Regarding the SDQ dimensions, the findings showed that there was an effect of the presence of SEN and LD in the students and of the students' social status in the peer group on their SDQ dimension scores, but not for the interaction between both, controlling for the age of the students. Specifically, students with LD showed higher values in terms of emotional symptoms than students with typical development, while no statistically significant differences emerged between students with SEN and students with typical development. This finding is consistent with literature focused on behavioral and psychological assessment in students with LD. In previous studies, children with LD showed lower levels of psychosocial health, concerning emotional and school functioning, compared to children from the general population, reporting symptoms of generalized anxiety, school-related anxiety, depressed moods, lower school self-esteem, and peer problems, salient correlated of externalizing and internalizing problems (Boyes et al., 2020). In addition, internal symptoms, such as emotional symptoms, predict academic and social failure and success; because of their attributional style, students with LD tend to explain these failures with internal stable and uncontrollable factors, such as low ability and chance (Emam, 2018). Moreover, students with LD and students with SEN showed higher levels of hyperactivity than students with typical development. This finding adds to the research focused on neurodevelopmental disorders, reporting a high percentage of comorbidity

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between LD and attention-deficit/hyperactivity disorder (ADHD), which might be attributable to common causal influences that are genetic or environmental (for a review, see Moreau et al., 2016). Both disorders, LD and ADHD, are classified as SEN in the Italian school context (cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca]). Thus, the high levels of hyperactivity registered in children with LD and SEN could be explained by a possible presence of subjects who also suffer from ADHD in our sample. Additionally, previous studies have demonstrated that hyperactivity and inattentive behaviors have a predictive role in terms of reading problems in the early years of school (Medford et al., 2016), something which affects most children with LD. Finally, no difference was noted among students who have SEN or LD and students with typical development regarding the rest of the SDQ dimension scores (conduct problems, peer problems, and prosocial behavior). This result partially confirms previous research, showing that a SEN status does not influence school well-being significantly (Schwab, 2015). Further research is needed for an in-depth exploration of the behavioral and psychological adjustment of children with SEN and LD at school.

With regard to the effect of the students' social status in the peer group on SDQ dimension scores, the findings revealed that rejected students and children with an average status showed higher levels of emotional symptoms, conduct problems, and hyperactivity symptoms than popular students. A previous study also found that, in comparison with the rejected status group, popular children showed fewer behavioral problems. Sociometrically, popular children are typically described by teachers as prosocial, well-adjusted, and academically competent; conversely, the behavioral profile of rejected children seems to be the opposite of that of popular children (Rytioja et al., 2019). Also, rejected students showed higher values in terms of conduct problems and hyperactivity symptoms than neglected students. Moreover, rejected students showed higher levels of hyperactivity than students with an average status. In addition, rejected students showed higher values concerning peer problems than popular students, neglected students, and students with an average status. These results confirm that students who complain of conflicts with peers, and who perceive unfair treatment by friends, are likely to experience high levels of tension and, consequently, are more likely to manifest problematic behavior (Bae, 2016). As described in the literature, higher satisfaction with peer relationships is associated with better behavioral outcomes: peer support and good relationships with friends can help to prevent behavioral problems (Bae, 2016). Finally, popular students and neglected students showed higher values in terms of prosocial behavior than rejected students. These findings were expected and are confirmed by previous research, which observed that sociometrically popular children tend to have many behavioral and emotional strengths and fewer difficulties compared to other sociometric groups (Rytioja et al., 2019).

Concerning academic performance, controlling for the age of the students, the findings showed an effect of the presence of SEN and LD in the students and of their status in the peer group, but not for the interaction between both. As expected, students with LD and SEN showed lower grade scores in science subjects than those who have typical development, and no difference in academic performance was noted between

students with LD and students with SEN. Also, as expected, students with SEN presented a lower grade score in humanity subjects than those who have typical development. The findings regarding academic outcomes confirm previous research showing that students with LD tend to score lower in terms of performance than students with typical development, probably because of their specific intellectual style (Inacio et al., 2018), which might compromise their academic outcomes. Children with LD are likely to experience difficulties in executive functioning and motivation, and both aspects are fundamental for academic performance (for a review, see Graham, 2017). Moreover, students with SEN also presented lower academic performance in humanity subjects than students with LD. No difference in academic performance was noted between students with LD and students with typical development. This finding could be explained by the positive effect of pedagogical help that curricular teachers provide to children with LD in order to close the gap between their and the other students' academic performance. Please note that these results might be specific for the Italian school context, where, while students with SEN in general do not have a medical diagnosis, students with LD need an official label from the local sanitary authority in order to be eligible for additional educational resources at school. Probably, pedagogical facilitations provided by teachers for children with LD tend to be more effective than those provided for students with SEN in general, in terms of academic outcomes.

Concerning the effect of students' social status in the peer group on academic performance, controlling for the age of the students, the results also showed that popular students presented higher grades in humanity and science subjects than rejected students and those with an average status. This finding is consistent with previous research that focused on the relationship between social status and academic performance, showing that peer social acceptance is related significantly and positively to academic achievement (for a review, see Wentzel et al., 2020). Moreover, there is an association, especially in primary school, between unpopularity and peer rejection and poor academic outcomes.

Study Limitations

Some limitations of the present work should be discussed. Given the nature of the study sample (convenience sample), it is not possible to generalize the findings for children and teachers located in cities or from different cultural backgrounds. Therefore, diverse samples should be used to test the generalizability of our findings in the future. In addition, social desirability in teachers' answers may have biased the results and also our findings. The measurement of this variable through an appropriate questionnaire would make it possible to introduce it into the analyses as a control variable, for example, as a covariate. Moreover, the data are cross-sectional, and therefore, it is not possible to draw inferences about cause-and-effect relationships. Thus, future researchers could use a longitudinal design to test the causal relations among the variables, which might help us understand how relationships between them unfold over time. In addition, social desirability may have biased the results and also our findings. The measurement of this variable through an appropriate questionnaire would make it possible to introduce it into the analyses as a control variable, for example, as a covariate.

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4.5.5 CONCLUSION

Relationships with teachers are important for school well-being, especially for at-risk children. To the best of our knowledge, literature that focuses on the school inclusion of children with SEN and LD is scarce. This study offers an in-depth exploration of the role of the student–teacher relationship in students with SEN and LD, and its effect on school inclusion, in terms of behavior and work, and on social and relational skills.

Students with SEN tend to be unpopular and rejected by the peer group, but, fortunately, the SEN condition does not affect the relationship with the teacher. Students with SEN and LD, compared to students with typical development, presented higher levels of emotional and hyperactivity symptoms, and poorer academic outcomes.

The findings of this study could be important for teachers and educational researchers in different ways. For teachers, results from our study show that students with SEN and LD may have higher levels of hyperactivity and emotional symptoms, and lower academic outcomes, when compared with their peers. Also, they may be more unpopular and rejected in the peer group. These results could highlight peculiarities of children with SEN and LD and could represent an opportunity for them teachers to meditate, and eventually rethink, the pedagogical resources that teachers they provide to children with LD and SEN, in order to help these students to achieve improvements in behavioral and academic outcomes, and to enhance their social inclusion. For this purpose, it is important to provide schools with information and literature about practical classroom management strategies. Among the various teaching approaches available, cooperative learning has been reported in the scientific literature as having beneficial effects upon the socio-affective relations within a group (Soponaru et al., 2014) and we think it may be taken into consideration by teachers in order to improve relational, emotional and academic levels among all their students. For educational researchers, in light of the results that have emerged, it would be interesting to focus any future research on other trajectories of children with SEN and LD, in order to better understand their specificities.

What this paper adds

Despite the clear relevance of the student–teacher relationship, few studies have focused on children with special educational needs (SEN) and learning disabilities (LD). This study offers an in-depth exploration of the inclusion of students with SEN and LD and adds to the knowledge of the role of student–teacher relationships in school adjustment. Although results of the present paper cannot be generalized, they offer to education professionals and researchers an overview of the situation, and the possible risks, of students with SEN and LD within an inclusive school context. These findings highlight the different pathways that students with SEN and LD have in school adjustment, related to peer status in group, relationship with the teacher, emotional and hyperactivity symptoms, and academic outcomes, and can represent a starting point for future research and education interventions aimed to improve the inclusion of students with SEN and LD.

4.6. Study 6. Bullying in students with special education needs and learning difficulties: the role of the student–teacher relationship quality and students’ social status in the peer group

Berchiatti, M., Ferrer, A., Galiana, L. Badenes-Ribera, L., & Longobardi, C. (2022b). Bullying in Students with Special Education Needs and Learning Difficulties: The Role of the Student–Teacher Relationship Quality and Students’ Social Status in the Peer Group. *Child and Youth Care Forum* 51, 515–537. <https://doi.org/10.1007/s10566-021-09640-2>. IF: 2.203, Q3 JCR (**Annex 5**).

4.6.1 INTRODUCTION

Since the 1970s, school inclusion of children with disabilities has received increased interest, both from educational professionals and researchers (for a review, see Guralnick, 2010). Models for inclusive contexts have been developed in many countries, the benefits of which have largely been demonstrated, both for children with disabilities and those without (Odom et al., 2011). Italy was the first country in the world to abolish special schools for children with disabilities and to include them in mainstream education contexts (Cornoldi et al., 1998). Despite the great efforts for inclusion made by education systems in many countries (Odom & Diamond, 1998), children with developmental delays may show vulnerability in terms of difficulties with social competence (Guralnick, 2010) and are at risk of social exclusion (Rose et al., 2011). Moreover, children with disabilities in inclusive educational contexts may be involved in bullying episodes, experiencing significantly higher rates of victimization than their peers without disabilities (Rose & Gage, 2017; Rose et al., 2011) because they have less social power (Malecki et al., 2020) and fewer social and communication skills necessary to avoid victimization (Guralnick, 2010; Rose & Gage, 2017), and because they are perceived as deviant from the norm group (Rose & Gage, 2017). Research has explored the elevated risk of bullying victimization in children with autism (Jackson et al., 2019), attention-deficit disorder, and/or hyperactivity disorder (Fite et al., 2014; Prino et al., 2016), as well as in those affected by intellectual disabilities (Lorger et al., 2015). However, research on bullying among children with Special Education Needs (SENs) and Learning Difficulties (LDs) appears to be scarce at the present time.

Definitions of SENs and LDs

The definition of children with SENs varies widely between countries, as do the policies for their assessment (Barow & Östlund, 2020). In the Italian school system, “students with SENs” are defined as those who, temporarily or permanently, have some difficulties because of socioeconomic, linguistic, or cultural reasons, or because of specific developmental disorders; the term represents a wide classification, including children with behavioral and emotional difficulties, such as Attention-Deficit/Hyperactivity Disorder (ADHD) (cf. Ministero dell’Istruzione dell’Università e della Ricerca [MIUR]). Of SENs, LDs, that is, reading, writing, and math deficits, are among the most frequently diagnosed specific developmental disorders (Cainelli & Bisiacchi, 2019; MIUR). All students with SENs and LDs are included in the mainstream Italian school system,

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in which curricular teachers provide them with pedagogical support in order to improve both their behavioral and academic performance.

School Adjustment in Children with SEN and LD

Research has shown that children with SEN and LD have difficulties in social skills (Freire et al., 2019; Wiener & Schneider, 2002). Compared to their classmates, children with SEN tend to have lower levels of prosocial behaviors (Dasioti & Kolaitis, 2018), are less accepted (Broomhead, 2019) and have fewer or no friends (Banks et al., 2018; Pinto et al., 2019). Also, students with LD present lower friendship quality, higher levels of conflict, more problems with relationship repair, and less stable relationships than their peers (Wiener & Schneider, 2002).

In addition, children with SEN present problems in terms of closeness and conflict with teachers (Freire et al., 2019) and children with LD have higher levels of dependency (Pasta et al., 2013) and greater dissatisfaction in their relationships with teachers (Murray & Greenberg, 2001) than their classmates. Children with LD tend to perceive significantly high levels of school danger (Murray & Greenberg, 2001) and in both in children with SEN and LD, the presence of internalizing and externalizing problems, such as emotional symptoms and hyperactivity, seems to be correlated with bullying victimization (Boyes et al., 2020; Dasioti & Kolaitis, 2018).

Bullying

Empirical research on bullying is relatively recent: the earliest studies on this topic emerged in the late 1970s in Scandinavia, with the pioneering work of Olweus (1978). Since then, bullying has received attention both from the media and academia (for a review, see Hymel & Swearer, 2015). Bullying is defined as an interpersonal aggressive behavior characterized by intentionality, repetition, and an imbalance of power between subjects; the literature distinguishes between direct bullying, with open attacks carried out by physical contact or by words, and indirect bullying, which is less visible and includes social isolation and exclusion (Olweus, 1991).

The prevalence of bullying varies greatly across studies, with 10% to 33% of students reporting victimization by peers and 5% to 13% admitting to bullying others (Hymel & Swearer, 2015). School bullying episodes affect both mental health and academic outcomes, since severe victims of school bullying show higher levels of depression, emotional symptoms, and hyperactivity/inattention (Marengo et al., 2018); lower levels of school liking (Stefanek et al., 2017); and lower achievement scores (Konishi et al., 2010) than their not-involved classmates. As research into bullying highlights the interaction of individual vulnerabilities, context effects, and experiences, a Social-Ecological Model can be useful for understanding this phenomenon as a systemic problem, impacting the contexts in which such behaviors occur (Hymel & Swearer, 2015).

Protective Factors Against Bullying: The Role of Peers and Teachers

Relationships with peers and teachers are widely recognized as protective factors against bullying (e.g., Iotti et al., 2020; Longobardi et al., 2019a, 2019b; Marengo et al., 2018; Saracho & Spodek, 2007). Building relationships with peers is at the core of children's development, providing them with social competences required to master social challenges (Guralnick, 2010).

Bullying can be considered a group process that involves not only a bully and a victim but also the entire group of peers (Salmivalli et al., 1996). This group of peers has a fundamental role in promoting or hindering bullying episodes in childhood (Saracho & Spodek, 2007) and social status among peers is a protective factor against school bullying (Iotti et al., 2020; Longobardi et al., 2019a, b). There is also a large body of literature indicating an association between relationships with teachers and behavioral outcomes in students (e.g., Sointu et al., 2017). A conflictual student–teacher relationship represents a risk factor for active bullying behaviors (Longobardi et al., 2018) or victimization (Marengo et al., 2018) and could lead to disruption and coercion escalations in students (Jalón Díaz-Aguado & Arias, 2013). By contrast, a warm and close student–teacher relationship is a protective factor against bullying (Iotti et al., 2020). This relationship, especially in the first years of school, has been pointed to as key to the future adaptation and development of students (Pianta et al., 1995; Wanders et al., 2020). However, because of their impairment, students with SEN and LD may have difficulties with social participation (Banks et al., 2018; Freire et al., 2019; Wiener & Schneider, 2002) and their relationships with teachers (Freire et al., 2019; Murray & Greenberg, 2001), being at higher risk of victimization and exclusion (Boyes et al., 2020; Dasioti & Kolaitis, 2018).

Purpose of this Study

Challenging aspects of school participation and inclusion of children with SEN and LD (Broomhead, 2019; Freire et al., 2019; Pinto et al., 2019) might expose these students as at risk of bullying. To the best of our knowledge, research on bullying in children with SEN and LD and its association with both the relationship with the teacher and students' social status in the peer group are scarce. Studies on school inclusion of students with SEN and LD are mainly focused on single variables, such as their relationships with teachers (Freire et al., 2019; Pasta et al., 2013) or peers (Boyes et al., 2020; Pinto et al., 2019).

Therefore, the aim of the current research is to assess the relationship between these two variables (i.e., the student–teacher relationship and peer status) and bullying, testing the following:

- if there is a direct relationship between bullying dimensions (i.e., victimization and perpetration) and the quality of the relationship between students and teachers (closeness, conflict, and negative expectations) and students' social status in the peer group (social preference and social impact);

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– if there is a direct relationship between bullying dimensions and the presence of SEN and LD in the students, mediated by the quality of the relationship between students and teachers and students’ social status in the peer group, as shown in Figure 1.

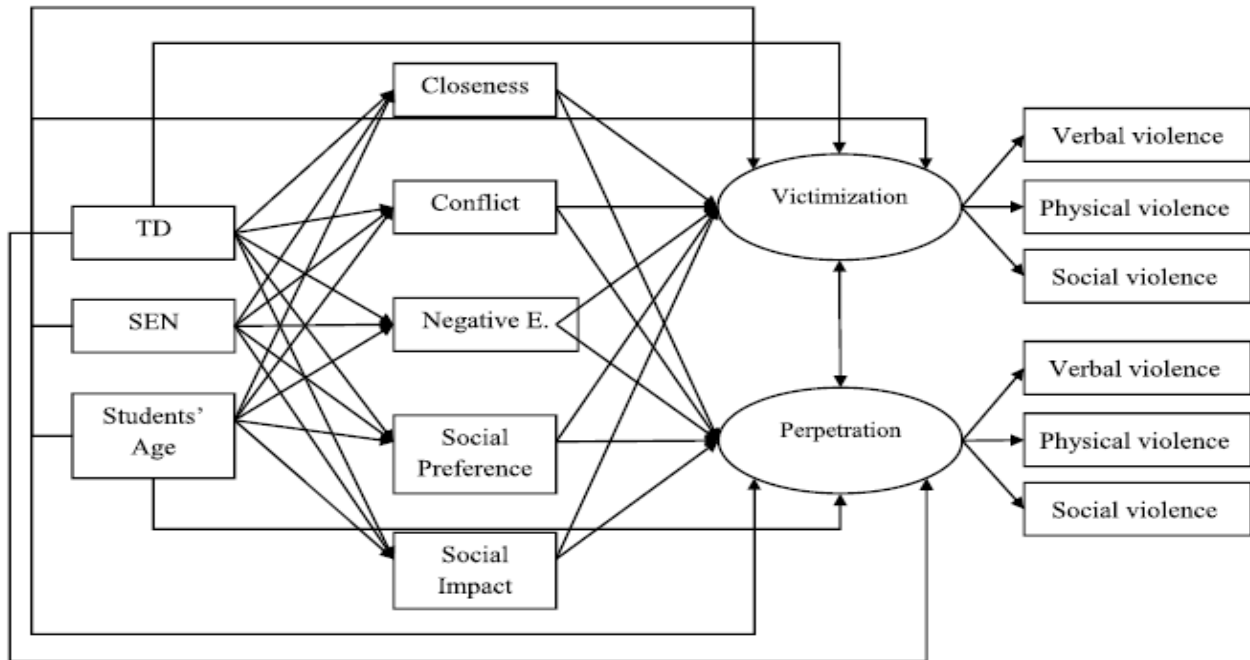


Fig. 1 Hypothesized structural equation model predicting bullying victimization and perpetration in SEN, LD and Typical Development students. TD= Students with Typical Development. SEN= Student with Special Education Needs

4.6.2 METHOD

Participants

The sample was composed of 320 students (59.7% males) recruited from seven primary and secondary schools in Northwest Italy. The schools were selected through convenience sampling, with the school directors, teachers, families, and children being asked about their availability to participate in the research before the data collection.

The average age of the students was 11.04 ($SD = 1.42$, $Min. = 8$, $Max. = 14$). Of them, 68.4% were students with typical development ($n = 219$), 17.2% were students with LD ($n = 55$), and 14.4% were students with SEN ($n = 46$). The average age of the students with typical development was 10.75 ($SD = 1.40$, $Min. = 8$, $Max. = 14$), and it was 11.68 ($SD = 1.25$, $Min. = 9$, $Max. = 14$) for students with LD and 11.66 ($SD = 1.28$, $Min. = 10$, $Max. = 14$) for students with SEN. There were statistically significance differences in the mean ages of students ($F(2, 311) = 15.34$, $p < 0.001$; $\eta^2 = .08$). Specifically, the mean ages of students with SEN and students with LD were higher than the mean age of students with typical development ($p < .001$, in both cases). There was no statistically significance difference between the mean ages of students with LD and students with SEN. The percentage of males for the students with typical development was 58.5%, and it was 56.4% for students with LD and 69.6% for students with SEN. There were no statistically significance differences in

gender distribution ($\chi^2[2] = 2.26$, Cramer's $V = 0.08$; $p = .323$) among the three groups of students. In addition, the data of 40 teachers with a mean age of 46.06 ($SD = 7.59$, $Min. = 30$, $Max. = 65$) and 95.9% of whom were females were analyzed. The average of the years of teaching experience was 19.78 ($SD = 9.57$, $Min. = 2$, $Max. = 42$), and the average of the hours spent teaching the class per week was 10.55 ($SD = 5.31$, $Min. = 2$, $Max. = 22$).

Measures

Socio-Demographic Characteristics

Participants (teachers and students) were asked to report on their socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to report their years of teaching experience and hours spent teaching the class per week.

Presence of SEN and LD in Students

In the Italian school context, "students with SEN" are defined as those who, temporary or permanently, have some difficulties because of socio-economic, linguistic, or cultural reasons, or because of specific developmental disorders. SEN represents a large classification that includes also children with behavioral and emotional difficulties (e.g., ADHD) and specific developmental disorders (cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca]). Within the group of students with specific developmental disorders, the subcategory of students with LD exists (cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca]). All students with SEN are included in mainstream schools. Neither of the groups of students with SEN and LD present cognitive impairment that affects general intelligence; for this reason, they are not considered to need a special education teacher. For students with SEN and LD, curricular teachers provide pedagogical help in order to close the gap between their and the other students' behavioral and academic performance. While, in general, students with SEN do not have a medical diagnosis, students with LD need an official label by the local sanitary authority in order to be eligible for additional educational resources at school.

Please note that formal diagnoses of LD take place outside of the school curriculum and are based on national guidelines and protocols. The diagnoses are made by certified psychologists and psychiatrists, not by school teachers themselves. However, teachers usually work closely together with internal supervisors and school psychologists, who inform them about students' diagnosed disabilities. In most cases, these diagnostic labels are registered in the school's administration system and form the basis of Individual Education Plans. Hence, even though teachers obviously do not diagnose the children themselves, they are well informed about these diagnoses and, as such, can relatively reliably report on the prevalence of LD and SEN in their classes.

Thus, for our study, class teachers were asked to list all children in their classes who had SEN and who were officially labeled by the local sanitary authority as having LD. Teachers were asked to report on the presence of SEN and LD in each student. Three items were used: (1) "Does the student have special education needs?"

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(yes or no), (2) “If yes, which type of SEN (SEN, LD, etc.)?” and (3) “Does the student have a medical diagnosis?”.

Student Perception of Affective Relationship with Teacher Scale (SPARTS; Koomen & Jellesma, 2015).

The SPARTS consists of 25 items with a Likert-type response scale (1 = no, that is not true to 5 = yes, that is true). It measures the perception of conflict, closeness, and negative expectations with regard to a specific teacher in children aged 9 to 14 years old. The closeness subscale (8 items) reflects the degree of openness, warmth, and security that the students perceive in the relationship; the conflict subscale (10 items) refers to the degree to which a student perceives teacher-student interactions as negative, discordant, and unpredictable; and the negative expectations subscale (7 items) reflects a lack of confidence experienced by students in relationships with their teachers. When compiling the SPARTS in our study, the students were asked to refer to their “prevalent teacher” (i.e., the teacher with whom they spent the most hours per week, which, in the Italian education system, is the Italian language or science teacher). Prior investigators have provided evidence for the reliability and construct validity of the SPARTS dimensions (Jellesma et al., 2015; Longobardi et al., 2019a, b). The score for each subscale was generated by summing the scores for the items that made up that scale. For this study, the reliabilities (McDonald’s ω) for these subscales were adequate: 0.86 for closeness, 0.77 for conflict, and 0.58 for negative expectations.

Adolescent Peer Relations Instrument (APRI; Parada, 2000).

The APRI consists of 36 items with a Likert-type response scale (1 = never to 6 = every day). It measures three types of behaviors used to bully others (physical, verbal, and social) and three ways of being targeted (physical, verbal, and social). The higher the score, the greater the frequency of bullying or of being bullied. Prior investigators have demonstrated that the APRI is an instrument with solid psychometric properties (reliability and validity) for measuring bullying and victimization among preadolescents and adolescents (e.g., Balan et al., 2022). The score for each subscale was generated by summing the scores for the items that made up that scale. For this study, the reliability (McDonald’s ω) of each of the three ways of being targeted were adequate: 0.85 for verbal victimization, 0.85 for physical victimization, and 0.81 for social victimization. And, the reliability (McDonald’s ω) of each of the three types of behaviors used to bully others were adequate: 0.84 for verbal perpetration, 0.75 for physical perpetration, and 0.71 for social perpetration.

Peer Nomination Technique (Italian Version)

This is a peer nomination questionnaire inspired by Moreno’s sociogram techniques (1934) and Coie et al. (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions in which children have to nominate three of their peers. The questions are the following: (i) “Who would you want as a table partner?” (ii) “Who would you want as a schoolwork partner?” (iii) “Who would you want as a field trip buddy?” (iv) “Who would you NOT want as a table partner?” (v) “Who would you NOT want as a schoolwork partner?” and (vi) “Who would you NOT want as a field trip buddy?” For each child, the sum of

the positive nominations received from all peers represented their liking (L) score, and the sum of the negative nominations received represented their disliking (D) score. The L and D scores were standardized within each class (Lz and Dz) and used to compute a social preference (SP) score ($Lz - Dz$) and a social impact (SI) score ($Lz + Dz$) for each child.

Procedures

The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the Institutional Review Board (IRB) of the University of Turin (Italy). The forms stated that data confidentiality would be assured and that participation in the study was voluntary. Adherence to the legal requirements of the study country was followed and 'informed consent' has been appropriately obtained. No potential conflict of interest existed for either author in the form of grants, employment by, consultancy for, shared ownership in, or any close relationship with, an organization whose interests, financial or otherwise, may be affected by the publication of the paper.

Data Analysis

First, descriptive statistics were calculated for the participants' characteristics (means and standard deviations for continuous variables and frequencies and percentages for categorical variables). Then, to examine whether there were significant differences in sociodemographic characteristics between three children's groups (SEN, LD, and typical development), a Chi-squared test was performed on the gender distribution, while a one-way ANOVA test was used for the children's age. When the one-way ANOVA test was used, the equality of variance was checked by Levene's test. As the three groups analyzed had equal variance, no corrections to the one-way ANOVA test were required.

Second, descriptive statistics (means, deviation standard, and range) were computed on the main study variables (SPARTS, APRI, and students' social status). The calculation of skewness and kurtosis values was carried out to check the normality of the data. As Table 1 shows, all the values for univariate skewness and kurtosis for all the variables analyzed in the groups of children with SENs and LDs fell within the conventional criteria for normality (-3 to 3 for skewness and -10 to 10 for kurtosis; Kline, 2015); they were thus considered to have a normal distribution and therefore no data transformation was performed. However, in children with typical development and for the whole sample, the values for univariate skewness and kurtosis for physical and social victimization and verbal and physical perpetration did not meet these conventional criteria for normality. Consequently, these variables were transformed using the square root transformation, since this is one of the best transformations for dealing with asymmetric distributions (Rodríguez-Ayán & Ruiz, 2008).

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Third, separate multivariate analyses of covariance (MANCOVA) on dimensions of SPARTS, APRI and students' social status were performed in order to examine the effect of the presence of SEN, LD, and typical development in students. In these multivariate analyses, the student's age was added as a covariate to control the influence that this variable may have on the analyzed variables, since the one-way ANOVA showed statistically significant differences between students with SEN and LD and students with typical development in terms of age. The Pillai's trace criterion (the most robust criterion) was used (Tabachnick & Fidell, 2007) to examine significant difference in multivariate analysis and an effect size was estimated using partial eta squared (η^2). Subsequently, if the overall F test showed mean differences among children's groups, a post hoc univariate ANCOVA test was used to determine which means were statistically different from others.

Fourth, Pearson correlation coefficient tests were carried out to examine the relationships between the research variables. All these analyses were performed using SPSS version 26.0 for windows.

Lastly, a structural equation model was hypothesized, tested, and evaluated using Mplus 7.4. The model included a sequence in which the presence of SEN/LD in the children affected students' relations with teachers and students' statuses and bullying victimization and perpetration, and also included the effect of students' relationships with teachers and students' statuses in terms of bullying. In order to include the three groups in the model (SEN, LD, and typical development), two dummy variables were created: SEN, where students with special education needs = 1 and the rest of the participants = 0; and TD, where students with typical development = 1 and the rest of the participants = 0. Therefore, students with LD were used as the reference group. Also, it included the students' ages as a covariate to control the influence that this variable may have on the analyzed variables (see Fig. 1). The estimation method was maximum likelihood with robust corrections (MLR) for the estimates to accommodate the non-normality nature of the data (e.g., Finney & DiStefano, 2013; Satorra & Bentler, 1994). Full information maximum likelihood was used to deal with missing data, a procedure adequate for data missing completely at random and missing at random; this is the most recommended method for structural models (Finney & Di Stefano, 2013). The goodness of fit for each model was assessed with several fit indexes (Kline, 2015; Tanaka, 1993): (1) The χ^2 statistic, which is a test of the difference between the observed covariance matrix and the one predicted by the specified model; (2) the comparative fit index (CFI), which assumes a non-central chi-square distribution with cut-off criteria of .90 or more (ideally over .95; Hu & Bentler, 1999) indicating adequate fit; and (3) the root mean square error of approximation (RMSEA) and its 90% confidence interval. Values higher than .90 for the CFI or lower than .08 in the RMSEA are considered a reasonable fit (Kline, 2015), and values of .95 for the CFI and of .06 for the RMSEA are considered excellent (Hu & Bentler, 1999).

4.6.3 RESULTS

The descriptive statistics for the variables studied are presented in Table 1.

Table 1 Descriptive statics of study variables for all sample and for student groups (students with typical development (TD), students with learning difficulties (LD) and students with special education needs (SEN))

	All sample (<i>N</i> =320)				TD (<i>n</i> =219)			LD (<i>n</i> =55)			SEN (<i>n</i> =46)		
	<i>Range</i>	<i>M (SD)</i>	<i>Sk</i>	<i>Kr</i>	<i>M (SD)</i>	<i>Sk</i>	<i>Kr</i>	<i>M (SD)</i>	<i>Sk</i>	<i>Kr</i>	<i>M (SD)</i>	<i>Sk</i>	<i>Kr</i>
Closeness (SPARTS)	8 to 40	26.88 (7.79)	-0.38	-0.51	26.84 (7.36)	-0.28	-0.46	27.47 (8.20)	-0.64	-0.30	26.39 (9.29)	-0.39	-0.92
Conflict (SPARTS)	10 to 42	17.73 (6.37)	1.02	0.81	17.53 (6.57)	1.17	1.13	17.61 (5.98)	0.91	0.42	18.82 (5.82)	0.37	-0.21
Negative expectations (SPARTS)	7 to 30	14.62 (4.76)	0.47	-0.13	14.42 (5)	0.60	-0.01	15.07 (4.37)	0.04	-0.74	15.03 (4.01)	0.30	-0.30
Verbal victimization (APRI)	6 to 34	10.57 (5.06)	1.91	4.05	10.25 (4.83)	1.96	4.16	9.89 (3.91)	1.53	2.65	12.90 (6.56)	1.50	2.02
Physical victimization (APRI)	6 to 32	8.02 (3.51)	3.86	19	7.81 (3.12)	4.09	21.90	7.45 (1.93)	1.70	2.59	9.70 (5.64)	2.51	6.86
Social victimization (APRI)	6 to 29	8.95 (4.01)	2.52	7.29	8.64 (3.67)	2.95	10.90	8.36 (2.66)	1.82	4.15	11.10 (5.84)	1.27	0.62
Verbal perpetration (APRI)	6 to 29	8.54 (3.46)	2.85	11.67	8.27 (3.34)	3.22	14.40	8.45 (2.84)	1.44	2.33	9.89 (4.35)	2.31	7.70
Physical perpetration (APRI)	6 to 25	7.39 (2.43)	3.56	17.93	7.21 (2.34)	4.27	25.20	7.19 (1.73)	2.16	5.36	8.53 (3.19)	2.10	5.98
Social perpetration (APRI)	6 to 28	9.36 (3.40)	2.24	7.46	9.20 (3.43)	2.65	10.30	9.68 (3.33)	1.37	1.49	9.73 (3.37)	1.42	2.19
Social preference (Z scores)	-5 to 4	0.03 (1.63)	-0.47	0.53	0.34 (1.55)	-0.70	0.69	-0.22 (1.40)	0.02	0.10	-1.13 (1.67)	0.11	-0.30
Social impact (Z scores)	-2 to 3	-0.01 (0.97)	0.31	0.09	-0.01 (0.97)	0.21	-0.03	-0.21 (0.87)	0.26	-0.50	0.19 (1.07)	0.58	-0.44

M (SD)=Mean (Standard Deviation), SK=Skewness, Kr=Kurtosis. SPARTS=Student Perception of Affective Relationship with Teacher Scale. APRI=Adolescents Peer Relations Instrument

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Differences Between the Groups of Children Regarding the Analyzed Variables

Separated MANCOVA tests were performed to determine if, controlling for the ages of the students, the presence of SEN, LD, or typical development in students affects the main study variables. Previous to running the MANCOVA tests, the assumption of homogeneity of covariance was examined using Box's M test (SPARTS: 32.87, $F = 2.67$, $p = .001$; APRI: 211.18, $F = 4.79$, $p < .001$; Student's social status: 21.31, $F = 3.49$, $p = .002$), and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate statistical significance of the main effects in each case.

Regarding the student-teacher relationship, measured in terms of the conflict, closeness, and negative expectations dimensions (SPARTS), the multivariate results showed that age was statistically significant as a covariate [Pillai's trace = 0.04, $F(3, 308) = 4.00$, $p = .008$, $\eta^2 = .04$], but not effect was found for the presence of SEN in students [Pillai's trace = 0.01, $F(6, 618) = 0.26$, $p = .956$, $\eta^2 = .002$]. Table 2 presents the results of the univariate ANCOVAs of the main effects in terms of the scores for the different dependent variables in the groups of children.

Concerning the violence victimization and perpetration dimensions (APRI), the multivariate results showed that age was statistically significant as a covariate: Pillai's trace = 0.06, $F(6, 304) = 3.04$, $p = .007$, $\eta^2 = .06$. A main effect was found for the presence of SEN in students: Pillai's trace = 0.08, $F(12, 610) = 2.22$, $p = .010$, $\eta^2 = .04$. Subsequent univariate ANCOVAs revealed statistically significant differences for the presence of SEN in the students related to the following: verbal violence victimization [$F(2, 309) = 5.38$, $p = .005$, $\eta^2 = .03$], physical violence victimization [$F(2, 309) = 5.85$, $p = .003$, $\eta^2 = .04$], social violence victimization [$F(2, 309) = 7.29$, $p = .001$, $\eta^2 = .05$], and physical violence perpetration [$F(2, 309) = 5.49$, $p = .005$, $\eta^2 = .03$] (see Table 2). Post hoc comparisons revealed that students with SEN showed statistically significantly higher values in terms of all types of violence victimization than students with typical development (Verbal: $p = .008$, Physical: $p = .007$, and Social: $p = .001$) and students with LD (Verbal: $p = .010$, Physical: $p = .005$, and Social: $p = .002$). There was no statistically significant difference between students with LD and those with typical development regarding these variables. In addition, post hoc comparisons revealed that students with SEN showed statistically significantly higher values in terms of physical violence perpetration than students with typical development ($p = .008$) and students with LD ($p = .009$). Again, there was no statistically significant difference between students with LD and those with typical development concerning this variable.

Table 2 Results of the ANCOVAs by presence of any type SEN: adjusted means (i.e., controlling for age), F-values, significance levels and effect size for the scores of the different DVs

	TD	LD	SEN	<i>F</i>	<i>p</i>	η^2
	<i>M</i>	<i>M</i>	<i>M</i>			
Closeness (SPARTS)	26.67	27.73	26.25	0.51	.598	.003
Conflict (SPARTS)	17.80	17.23	18.27	0.33	.717	.002
Negative expectations (SPARTS)	14.57	14.67	14.61	0.01	.991	.00
Verbal victimization (APRI)	3.14	3.08	3.49	5.38	.005	.03
Physical victimization (APRI)	2.76	2.70	3.02	5.85	.003	.04
Social victimization (APRI)	2.90	2.85	3.24	7.29	.001	.05
Verbal perpetration (APRI)	2.86	2.81	3.03	2.81	.062	.02
Physical perpetration (APRI)	2.67	2.63	2.86	5.49	.005	.03
Social perpetration (APRI)	3.00	3.03	3.05	0.20	.819	.001
Social preference (Z scores)	0.36	-0.32	-1.23	20.02	< .001	.11
Social impact (Z scores)	-0.01	-0.18	0.12	1.23	.295	.01

TD=Students with Typical Development, LD=Students with Learning Difficulties, SEN=Students with Special Education Needs, SPARTS=Student Perception of Affective Relationship with Teacher Scale, APRI=Adolescent Peer Relations Instrument

With regard to students' social status measured as the effect of social preference and social impact, the multivariate results also showed that age was marginally statistically significant as a covariate [Pillai's trace = 0.02, $F(2, 309) = 2.80$, $p = .062$, $\eta^2 = .02$]. Moreover, a main effect was found for the presence of SEN in students [Pillai's trace = 0.12, $F(4, 620) = 10.13$, $p < .001$, $\eta^2 = .06$]. Subsequent univariate ANCOVAs revealed statistically significant differences for the presence of SEN in the students related to social preference [$F(2, 310) = 20.02$, $p < .001$, $\eta^2 = .11$], but not for social impact [$F(2, 310) = 1.23$, $p = .295$, $\eta^2 = .01$] (see Table 2). Post hoc comparisons revealed that students with typical development showed statistically significantly higher values in terms of social preference than students with SEN ($p < .001$) and students with LD ($p = .015$). In addition, students with LD showed statistically significantly higher values regarding social preference than students with SEN ($p = .011$).

Intercorrelations Between the Variables Under Study

Table 3 shows the correlations between all the variables. As can be seen from Table 3, most of the variables showed statistically significant relationships among them. The conflict and negative expectations dimensions of SPARTS showed positive relationships with all types of violence (victimization and perpetration) and the student's age, indicating that a higher level in terms of the student's perception of his/her relationship with the teacher as conflictive and the student's negative expectations regarding his/her relationship with the teacher were associated with higher levels of all types of violence (victimization and perpetration) and with being older. However, the closeness dimension showed a negative and statistically significant association with the perpetration of types of violence and with the student's age, indicating that a higher level of the student's perception of his/her relationship with the teacher in terms of closeness was related to lower levels of all types of violence perpetration and with being younger.

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Table 3 Inter correlations between all variables under study

	1	2	3	4	5	6	7	8	9	10	11
1. Closeness (SPARTS)	–										
2. Conflict (SPARTS)	–.39***	–									
3. Negative expectation (SPARTS)	–.20***	.47***	–								
4. Verbal victimization (APRI)	–.06	.41***	.31***	–							
5. Physical victimization (APRI)	–.04	.36***	.27***	.70***	–						
6. Social victimization (APRI)	–.04	.38***	.30***	.75***	.67***	–					
7. Verbal perpetration (APRI)	–.12*	.38***	.21***	.45***	.44***	.37***	–				
8. Physical perpetration (APRI)	–.14*	.34***	.21***	.33***	.54***	.31***	.62***	–			
9. Social perpetration (APRI)	–.15*	.34***	.39***	.45***	.44***	.44***	.59***	.46***	–		
10. Social preference	.11*	–.12*	–.07	–.25***	–.19**	–.22***	–.17**	–.15**	–.09	–	
11. Social impact	.02	.09	.07	.08	.03	.06	.16**	.14*	.08	.01	–
12. Age of students	–.12*	.16**	.17**	.09	.05	.10	.24***	.17**	.15*	.04	.02

SPARTS = Student Perception of Affective Relationship with Teacher Scale, APRI = Adolescents Peer Relations Instrument

* $p < .05$. ** $p < .01$. *** $p < .001$

Also, the closeness dimension showed a positive relationship with social preference, indicating that a higher level of the student's perception of his/her relationship with the teacher in terms of closeness was related to higher levels of social preference. In addition, all types of violence (victimization and perpetration) were negatively related to social preference, indicating that higher levels of violence were associated with lower levels of social preference, except regarding social perpetration. In addition, only verbal and physical violence perpetration showed a positive association with social impact and the student's age, indicating that higher levels of verbal and physical violence perpetration were linked to social impact and to being older (Table 3).

Predicting Bullying: A Structural Equation Model

The model showed a good fit: $\chi^2(40) = 102.398$, $p < .001$, CFI = .940, RMSEA = .070 [90% CI=.054, .088]. In addition, the explained variance of victimization in this model was 31.1%, while for perpetration it was 27.5%. Figure 2 shows the structural model parameters' standardized estimations.

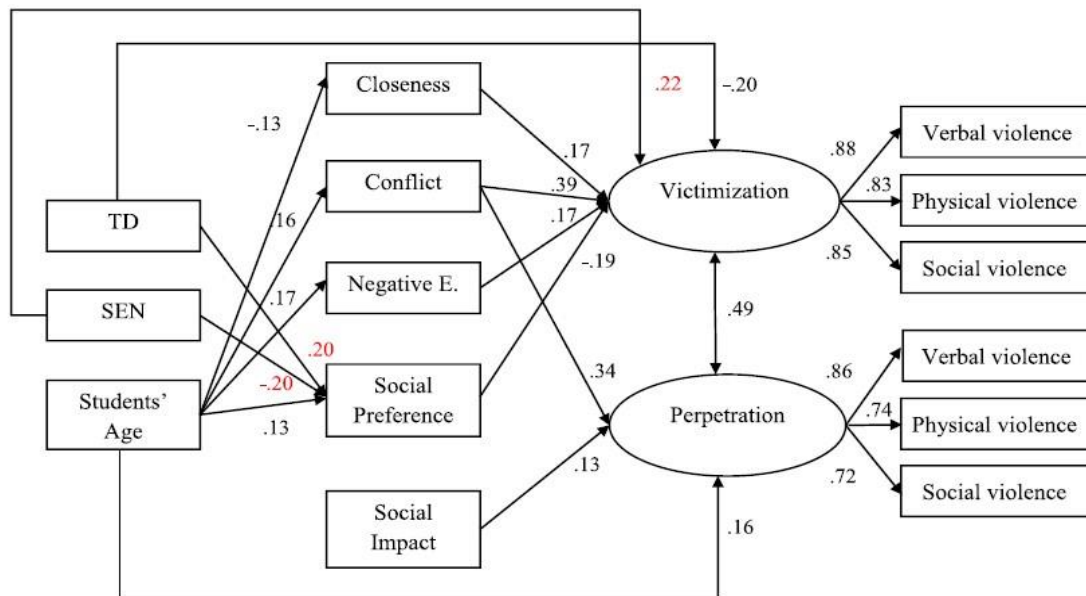


Fig. 2 Results of the structural equation model predicting bullying victimization and perpetration in SEN, LD, and Typical Development students. Standardized coefficients of the model. TD= Students with Typical Development. SEN= Student with Special Education Needs

As can be seen in Fig. 2, the presence of SENs in students had a positive direct effect on bullying victimization, whereas typical development had a negative one. As the reference group was LD students, these relationships mean that levels of bullying victimization were higher for LD students when compared to typical development students, while SEN students showed higher levels of bullying victimization when compared to LD students. In addition, a positive direct effect of typical development in students was found on social preference compared to students with LDs, and a negative effect for SEN students. That is, students with LDs showed lower levels of social preference when compared to typical development students but higher social preference when compared to SEN students. In turn, social preference had a positive direct effect on bullying victimization.

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The student's age had a positive direct effect on bullying perpetration, social preference, and the conflictive and negative expectations dimensions of the student's perception of his/ her relationship with the teacher, and it had a negative direct effect on the closeness dimension. In turn, social preference and the dimensions of the student's perception of his/her relationship with the teacher (conflict, closeness, and negative expectations) had a positive effect on bullying victimization. Finally, there was a positive and direct effect of social impact and the student's perception of his/her relationship with the teacher with reference to the conflict dimension on bullying perpetration.

4.6.4 DISCUSSION

The purpose of the study was to assess the quality of the relationships with teachers from students' viewpoints and their social status in the peer group in relation with bullying dimensions (victimization and perpetration). First, we explored the role of student-teacher relationship in the whole group class (i.e., in students with typical development, SEN and LD); second, we analyzed the association between peer status and bullying in the whole group class; finally, we compared the association of these variables in three groups of students: children with typical development, SEN and LD.

Student-Teacher Relationship

The findings from the bivariate correlations found relationships among most of the analyzed variables.

Conflict with Teacher, Negative Expectation and Bullying

In the whole group class, the student's perception of the relationship with the teacher as conflictual, and negative expectations about this relationship, were positively related to all the ways of being targeted (verbal, physical, and social), the three types of behaviors used to bully others (physical, verbal, and social), and the student's age. These findings might indicate that the student's perception of a conflictual relationship with the teacher, and negative expectations in terms of this relationship, are associated with high levels of victimization and perpetration, and the student's age. That is, students with perceived conflictual and negative relationships with their teachers may also be those who tend to be more involved in bullying episodes. In addition, the possibility of taking part in bullying episodes, as a bully or victim, seems to be higher when students are older.

These findings confirm a large body of literature indicating the association between relationships with teachers and behavioral outcomes in students (e.g., Sointu et al., 2017). A conflictual student-teacher relationship represents a risk factor for active bullying behaviors (Longobardi et al., 2018) or victimization (Marengo et al., 2018) and could lead to disruption and coercion escalations in students (Jalón Díaz-Aguado & Arias, 2013). Moreover, taking into account age, the direction of the relationship between teacher acceptance and students' perceptions of teacher support is age-specific (Košir & Tement, 2014): as they get older, students develop less positive relationships with teachers (McGrath & Van Bergen, 2015). Our results

seem to confirm that early adolescence could represent a critical moment for students, especially for those at risk regarding social and emotional factors (McGrath & Van Bergen, 2015), taking also into account that older children experience a decline in physical victimization, and a shift toward verbal forms of victimization (Marengo et al., 2019), which is less visible for teachers.

Closeness with Teacher and Bullying

In the whole group class, the closeness dimension was negatively related to the three types of behavior used to bully others (physical, verbal, and social) and to the student's age. These results indicate that a higher level of student perception of a close relationship with a teacher may be associated with lower levels of all types of violence perpetration, and with being younger. That is, students with perceived warm and close relationships with their teachers may also be those less likely to bully others. In addition, the possibility of taking part in bullying episodes as a bully seems to be lower when students are younger. Our results highlight the positive impact of the student–teacher relationship on children's behavior (Espelage & Swearer, 2003) and the protective role of this relationship against bullying (Jungert et al., 2016). In addition, the results confirm the developmental trajectory of bullying behaviors, being less frequent in younger children and increasing with age (Cook et al., 2010; Ladd et al., 2017).

Closeness with Teacher and Social Preference Among Peers

Also, in the whole group class the closeness dimension was positively linked to social preference, indicating that a higher level of student's perception of a close relationship with teacher was associated with higher levels of social preference. That is, students sharing warm and positive relationships with teachers might be more accepted by their groups of peers. This result confirms the important role of a warm and close student–teacher relationship in the first years of school for students' future adaptation and development (Pianta et al., 1995; Wanders et al., 2020).

Student's Age, Relationship with Teacher and Bullying Behaviors

The student's age was found to have a direct effect on the three dimensions of the student's perception of the relationship with the teacher (i.e., conflict, closeness, and negative expectations) in the whole group class. Specifically, older students showed higher levels of conflict and negative expectations, and lower levels of closeness in their relationship with teachers. In turn, the three dimensions of the student–teacher relationship positively predicted bullying victimization, and the student's perception of a conflictual relationship with the teacher and the student's social impact within the peer group predicted bullying perpetration. That is, a positive relationship with teachers is protective against bullying victimization, consistent with previous literature (Iotti et al., 2020). In turn, difficulties in the relationships with teachers and peers might expose students to higher risk of exhibit bullying behaviors (Pianta et al., 1995; Wanders et al., 2020). Taking into account the age-specificity in the relationship between teachers' support and students' perceptions, that tend to decrease with age (Košir & Tement, 2014; McGrath & Van Bergen, 2015), these

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results confirm the influence of early positive relationships with teachers on the long-lasting school well-being of students (Pianta et al., 1995; Wanders et al., 2020).

Peer Status, Bullying and Age

Considering the whole group class, the results show that student age predicted peer status, with older students showing higher levels of social preference among peers. In addition, a link seems to exist between bullying victimization and perpetration and social status among peers. Specifically, we have found the following results.

The three pathways of being targeted (verbal, physical, and social) and the types of behaviors used to bully others (physical, verbal, and social) were negatively related to social preference, except in the case of social perpetration. This finding may indicate that higher levels of violence in students, both in victimization and perpetration, are associated with lower levels of social preference among peers. That is, students who suffer from or act out bullying are less preferred by their peers. Only verbal and physical violence perpetration showed a positive association with social impact and the student's age. That is, older students who exhibit higher levels of verbal and physical violence perpetration might have a higher social status among peers. The student's age had a positive direct effect on bullying perpetration. This finding seems to indicate that older students may exhibit higher levels of bullying behaviors.

Considering these results together, findings are in line with previous research, showing that in older students reported rates of bullying are higher, and bullying behaviors are related with an increase in social status (Van der Ploeg et al., 2020). In turn, younger students report higher rates of victimization (Scheithaue et al., 2006) and tend to sanction bullying behaviors with a decrease in peer status. Bullying behaviors are characterized by a developmental trajectory (Cook et al., 2010) and increase over the years from childhood, with a peak during early adolescence (Hymel & Swearer, 2015; Menesini & Salmivalli, 2017). In addition, research has shown that, starting from middle childhood, bullying and victimization start to be group processes (Monks et al., 2021) and are driven by status goals (Salmivalli, 2010). Older students might turn to bullying more than younger students because this could lead to an improvement in their social status.

Children with SEN, LD, and Typical Development

Finally, we compared the results of the associations between bullying variables, student–teacher relationship, peer status, and the presence of SEN, LD, or typical development in children.

Bullying in Children with SEN, LD and Typical Development

The results showed significant differences between students with SEN, LD, and typical development in terms of the three types of behaviors used to bully others (physical, verbal, and social) and physical violence perpetration. Specifically, students with SEN showed higher values for all types of violence victimization, and in the perpetration of physical violence, than students with typical development and students with LD. It is

interesting to note that no difference was found between students who have LD and those with typical development regarding these variables when studied in the analysis of variance context. When modeled using the structural equation model, the presence of LDs in students had a direct effect on bullying victimization, indicating that students who had LDs were bullied more than students with typical development but less than SEN students.

These findings are in line with previous research, showing that children with SEN tend to report more bullying victimization and perpetration than their peers (Dasioti & Kolaitis, 2018; Rose & Gage, 2017; Rose et al., 2011). As suggested by other research (Fink et al., 2015), we could hypothesize that probably the presence of behavioral and emotional problems might predict bullying behaviors in children with SEN. Literature has shown that children with SEN tend to report high levels of behavioral problems (Dasioti & Kolaitis, 2018), and this could make their impairments more visible than the difficulties of children with LD. Moreover, in the Italian school context, SEN is a large classification that also includes children with behavioral and emotional difficulties (e.g., ADHD; cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca]). Thus, the different results in terms of bullying variables (victimization and perpetration) registered in children with SEN and LD, and in children with typical development, could be explained by the presence of behavioral and emotional problems in the children with SEN in our sample. As confirmed by previous studies, bullying seems to be part of a continuum of interpersonal relationships that exist within the peer group, and there could be an association between social skills problems and bullying (Mauder & Crafter, 2018).

Social Preference in Children with SEN, LD and Typical Development

Results showed significant differences between students with SEN, students with LD, and those with typical development in terms of social preference scores. Specifically, students with typical development showed higher values regarding social preference than students with LD, and this finding was supported also by the results of the structural equation mode. Also, students with LD showed higher social preference than students with SEN. This result confirms the large body of literature showing that children with disabilities or difficulties at school score lower in terms of levels of popularity and are at risk of social exclusion (Rose et al., 2011). In particular, Pinto et al. (2019) found that children with SEN have more problems in peer relationships, score lower in terms of peer acceptance, have fewer reciprocated friendships, and experience less integration into peer groups.

When comparing social preference with regard to SENs and LDs, students with LDs showed higher values in terms of social preference than did students with SENs. To the best of our knowledge, previous studies comparing the social status of students with SENs and LDs at school do not exist, and this finding adds to the previous literature focusing on school inclusion and the adjustment of children with disabilities. Research has documented the social skill difficulties in both children with SENs and with LDs and their consequent problems in peer relationships. When compared with their typical development classmates, children with

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SENs have lower levels of peer acceptance and are generally less integrated into peer groups (Pinto et al., 2019), scoring lower in social participation. In particular, students with SENs showing emotional and behavioral difficulties are more likely to have fewer friends and to experience negative peer relationships (Banks et al., 2018). In sum, our results may be explained by SEN students' problems with peer acceptance and integration into peer groups, which may lead to lower social preference when compared to children with LDs.

Student–Teacher Relationship and Bullying in Children with Sen, Ld and Typical Development

Finally, no differences among student groups (SEN, LD and typical development) were found concerning the three dimensions of relationships with teachers and two ways of being targeted (verbal, and social). This finding is encouraging and seems to indicate that the existing association between bullying victimization and the relationship with the teacher (Marengo et al., 2018), measured in terms of the conflict, closeness, and negative expectations dimensions, might be independent from the SEN or LD status. With regard to the structural equation model, neither there was an effect of belonging to the group of students with SEN, LD, or typical development concerning the three dimensions of the student's perception of the relationship with the teacher (conflict, closeness, and negative expectations), probably because relationships between students and teachers is not influenced by the presence of SEN or LD in children.

Study Limitations

Some limitations of the present work should be discussed. The data were obtained through convenience sampling, and through students' self-reports, which may incorporate the effect of social desirability, and there is also a risk of self-selection. Therefore, it is not possible to generalize the findings to people located in cities or from different cultural backgrounds. A more representative sample from different areas of Italy would have allowed for the better generalization of the results. Thus, the use of other samples in future research would be recommended. Thereby, it would test the generalizability of our findings in the future. In addition, the data are cross-sectional, and, therefore, it is not possible to draw inferences about cause-and-effect relationships. Moreover, several studies have pointed to some biases that can stem from the use of mediation within a cross-sectional framework (Cole & Maxwell, 2003; Maxwell et al., 2011). Thus, future researchers could use a longitudinal design to test the causal relationships among variables, which might help us understand how the connections between them unfold over time.

Another limitation of this study is related to the McDonald's omega value of the negative expectations ($\omega = 0.58$) dimension of the SPARTS. Consequently, the findings must be verified in other samples in which the quality of their measurement is improved. Finally, some variables that could also affect bully behaviors, such as children's temperament, were not assessed, and therefore its influence could not be studied. Future research on this regard would also be welcomed.

4.6.5 CONCLUSION

This work represents the first study investigating the relationships between the presence of SEN and LD in students, the quality of the relationship with the teacher from the student's viewpoint, the social status of the student, and bullying dimensions (victimization and perpetration). This study provides insight into the patterns of relationships among the study variables. This is the first time the interrelations of such a group of variables have been studied, and we have tried to do it in the simplest and most sophisticated way, always based on theory. Although bullying has received international attention, there is still a dearth of research on this topic for specific samples. We need to address violence across multiple perpetrators and multiple systems. Further research is needed to provide an in-depth understanding of the role of behavioral and emotional problems in the development of bullying behaviors of children with SEN and LD.

The findings of this study could be important for teachers and educational researchers in different ways. For teachers, the results could highlight peculiarities of children with SEN and LD and could represent an opportunity for them to meditate on, and eventually re-think, the pedagogical resources educators provide, in order to enhance these children's social inclusion and prevent bullying episodes at school. Our results point to higher levels of bullying victimization for LD and SEN students, especially for the latter. As this victimization has been predicted both by teacher attitudes and group dynamics, specifically regarding social preference, teachers' actions could reduce bullying victimization of LD and SEN students in two ways: through their own behavior toward students, by reducing conflict and negative expectations, and through the improvement of SEN and LD students' social skills and peer relationships. For educational researchers, findings add knowledge on the association between bullying student-teacher relationship and peer status in children with SEN and LD. In light of the results that have emerged, it would be interesting to focus any future research on other trajectories of bullying in children with SEN and LD, in order to better understand the specificities of their adjustment in a mainstream education context.

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5. GLOBAL FINDINGS

The purpose of this research work was to explore and to compare school adjustment and bullying in children and adolescents with different neurodevelopmental disorders and other SEN conditions within an inclusive education context. Social relationships with teachers and peers and presence of bullying perpetration and victimization were analyzed in students who stutter, students with attention-deficit/hyperactivity disorder (ADHD), students with specific learning disorders (LD), students with other special education needs (SEN), and in students with typical development. Specifically, three studies were aimed to explore school adjustment, respectively in students who stutter (study 1); in students with ADHD (study 3), and in students with LD and other SEN conditions (study 5), comparing it with school adjustment in students with typical development. Similarly, three studies were aimed to explore bullying, respectively in students who stutter (study 2); in students with ADHD (study 4), and in students with LD and other SEN conditions (study 6), comparing it with bullying in students with typical development. In the following paragraphs, the main findings of these studies will be illustrated.

5.1. Students who stutter

School adjustment in students who stutter

The main aim of the first study was to investigate the quality of the peer relationships, student–teacher relationship, emotional and behavioral outcomes, and academic performance in the school adjustment of children and adolescents who stutter (CWS), compared with the mainstream school population. For both groups (students who stutter and students who do not stutter), most of the variables were intercorrelated and showed similar relationship patterns. Although, for the CWS group, some relationships between variables did not reach statistical significance, possibly given the small size of the sample, small to moderate relationships were shown to exist, for example, the link between the closeness and conflict dimensions, the association of closeness with peer problems, and the relationship between conflict and peer problems. Finally, for CWS, there was no association between emotional symptoms and peer problems or academic performance. Table 1 shows inter correlations among all variables and mean (standard deviation) scores for stuttering groups (students who stutter and students who do not stutter).

Social status in the peer group

Firstly, it was evaluated the relationship between the presence of stuttering in students and their social status in their peer groups. A statistically significant association was found between the presence of stuttering in students and their social status in their peer groups. Therefore, there were statistically significant differences between CWS and students who do not stutter in terms of their social status in the peer group. Specifically, CWS were less popular and more rejected in the peer group. In the rest of the categories related to social

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status in the peer group (i.e., neglected, controversial and average status), there were no statistically significant differences between CWS and students with typical development.

Teacher's perception of the relationship with the student

Secondly, it was determined if the presence of stuttering in students and their social status in the peer group affect the student–teacher relationships. Results show not a statistically significant effect for the presence of stuttering in students and for their social status in the peer group, but a statistically significant interaction was found between both. Further, the interaction effect was only statistically significant for the conflict dimension and not for the closeness dimension. Finally, for the CWS the conflict with teachers did not differ among students with different social statuses in the peer group.

In turn, the conflict dimension presented statistically significant differences among social status groups for students who do not stutter. Specifically, among students who do not stutter, conflict was higher for rejected students than for popular ones, for rejected students than for neglected ones, and for controversial students than for popular ones, while no differences emerged among the rest of the students with different social statuses (i.e., average status).

Teachers' perceptions of students' behavior

In the third place, it was determined if the presence of stuttering in students and their social status in the peer group affect teachers' perceptions of students' behavior in terms of emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behavior. A statistically significant effect was found for the presence of stuttering in students and for the students' social status in the peer group, but not for the interaction between both. In this way, CWS showed statistically significant higher values in emotional symptoms and hyperactivity than students who do not stutter.

In addition, statistically significant differences were also observed in the students' social status in the peer group related to hyperactivity, peer problems and prosocial behavior.-Specifically, rejected students showed statistically significant higher values in hyperactivity than popular students, and statistically significant higher values in peer problems than popular students, neglected students and students with the average status. Finally, rejected students showed statistically significant lower values in prosocial behavior than popular students.

Academic performance

Finally, it was determined if the presence of stuttering in students and their social status in the peer group affect academic achievement in humanity and science subjects. A significant effect was found for the presence of stuttering in students and for their social status in the peer group, but not for the interaction between both. In this way, students who do not stutter showed statistically and significantly higher values in academic performance related to both humanity subjects and science subjects than CWS. Moreover,

statistical and significant differences were also observed in the students' social status in the peer group related to academic performance, in both humanity subjects and science subjects.

Specifically, regarding academic performance in humanities subjects, popular students showed statistically significant higher grades than rejected students, while no differences emerged among the rest of the students with different social statuses in both variables. Concerning academic performance related to science subjects, popular students and students with the average status showed statistically significant higher grades than rejected students, while no differences emerged among the rest of the students with different social statuses in both variables.

Bullying in students who stutter

The main aim of the second study was to test the relationship between the presence of stuttering in students, social status among peers, the quality of the relationships with the teacher, and the bullying dimensions (victimization and perpetration).

Social preference

Analyzing descriptive mean comparison among groups, significant differences were found between students who stutter and students who do not stutter on social preference scores. Specifically, CWS are less preferred by their peer group than their classmates.

Bullying and relationship with peers and teacher

No difference was found among the three dimensions of relationships with teachers, the three types of behaviors used to bully others, or the three ways of being targeted scores.

However, in the correlation with bullying variables (victimization and perpetration), the presence of stuttering plays a key role and has an influence on the relationships with teachers and peers: stuttering in students seems to be a component that introduces changes in terms of the relationships between bullying mechanisms. The perception of the relationship with the teacher in students who stutter is not associated with bullying dimensions. Only one positive significant relationship between the conflict dimension and the perpetration of verbal violence emerged, indicating that the students who perceived their relationship with the teacher as more conflictive committed more verbal violence.

In turn, for students who do not stutter, the student's perception of the relationship with teacher with reference to the conflict dimension and the negative expectations about this relationship were positive related to the three types of behaviors used to bully others (verbal, physical, and social) and the three ways of being targeted (physical, verbal, and social). Moreover, the perception of closeness was negatively linked to verbal violence perpetration. In addition, a negative association emerged between social preference and the three ways of being targeted (physical, verbal, and social) and two of the types of behaviors used to bully

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others (verbal and physical). Finally, the social impact was positive and statistically related to verbal perpetration.

Stuttering in predicting bullying

Given the unbalanced sample size between groups (474 students who do not stutter versus 62 students who stutter), it was not possible to evaluate the possible moderating role of the stuttering variable in the relationships between the student–teacher relationship and students’ peer status and the bullying dimension. However, some statistically significant relations among variables were found.

The presence of stuttering had a negative and direct effect on social preference, and an indirect effect on bullying victimization (verbal, physical, and social) through the mediating role of social preference. That is, students who stutter are less socially preferred by the peer group, and this low preference is related to bullying victimization.

Social preference had a negative and direct effect on bullying victimization, and the dimensions of the student’s perception of his or her relationship with the teacher (conflict, closeness, and negative expectations) had a positive and direct effect on bullying victimization. That is, having a low social preference is linked to experiencing bullying. At the same time, student’s perceptions of the relationship with the teacher as being conflictive or as having negative expectations means more of a risk of suffering from bullying.

Finally, there was a positive and direct effect of the student’s perception of his or her relationship with the teacher with reference to the conflict dimension on bullying perpetration. That is, the perpetration of bullying is linked to the conflict with the teacher, and it is not linked to students’ social status in the peer group, nor to the student’s perception of closeness or the negative expectations of relationship with teacher.

5.2. Students with attention-deficit/hyperactivity disorder

School adjustment in students with ADHD

The main aim of the third study was to investigate the quality of student-teacher relationship, peer relationship, emotional and behavioral outcomes, and academic performance in the school adjustment of children and adolescents with ADHD, compared with mainstream school population. Most of the variables for both groups were intercorrelated and showed similar relationship patterns. Although some relationships between the variables in the ADHD group did not reach statistical significance, they did show small to moderate relationships.

Social status in peer groups

Firstly, it was evaluated the relationship between the presence of ADHD in students and their social status in their peer groups. A statistically significant relationship was found between the presence of ADHD in students

and their social status in the peer group. Consequently, there were statistically significant differences in social status within the peer group between students with ADHD and students with typical development. Specifically, students with ADHD are less popular and more rejected in the peer group. In the remaining categories of social status (i.e., neglected, controversial, average status), there were no statistically significant differences between groups.

Teacher's perception of the relationship with the student

Secondly, it was determined if the presence of ADHD in students affects the conflict and closeness dimensions of student–teacher relationships. Results showed that ADHD in students statistically and significantly affected these relationships. Specifically, the effect of the presence of ADHD in students was statistically significant for the dimension of conflict, but not the dimension of closeness. In other words, although students with ADHD show higher values in the dimension of conflict than students with typical development, there are no differences in either group's dimension of closeness.

Teachers' perceptions of students' behavior

In the third place, it was determined if the presence of ADHD in students affects teachers' perceptions of students' behavior in terms of emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behavior. A statistically significant effect was found for the presence of ADHD in students. Specifically, students with ADHD show higher values than students with typical development for emotional symptoms, conduct problems, hyperactivity, and peer problems, but no differences were noted between either group's prosocial behavior scores.

Academic performance

Finally, it was determined if the presence of ADHD in students affects academic achievement in humanity and science subjects. Results did not show a statistically significant effect for the presence of ADHD in students. In other words, there are no statistically significant differences between students with ADHD and those with typical development on academic performance.

Bullying in students with ADHD

The main aim of the fourth study was to test the relationship between the presence of ADHD in students, social status among peers, and the quality of the relationships with the teacher and the bullying dimensions (victimization and perpetration).

Relationships with teacher and peers

Analyzing descriptive mean comparisons among groups (students with ADHD and students with typical development), statistically significant differences were found between groups on conflict dimension of student-teacher relationship, social victimization, social preference, and social impact. Specifically, compared to students with typical development, students with ADHD show higher conflictual teacher-student

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relationships, more social victimization experience, less social preference and more social impact score. This means that the perception of conflict in the relationship with the teacher and the peer relationships might be affected by the presence of ADHD in students. Conversely, students with typical development are more preferred by the peer group than students with ADHD.

Bullying and relationship with peers and teacher

In correlation with bullying variables (victimization and perpetration), the presence of ADHD seems to be a component that introduces changes in the relationships with teachers and peers.

In students with ADHD, the perception of the relationship with the teacher with reference to the closeness and conflict dimension was linked to the three types of behaviors used to bully others (verbal, physical, and social). Moreover, the negative expectations about the student's perception of the relationship with the teacher showed a moderate relationship with verbal and physical victimization. In addition, verbal perpetration was positively associated with social impact and negatively associated with social preference.

In turn, in the sample of students with typical development, the perception of the relationship with the teacher with reference to the conflict dimension and the negative expectations were not statistically associated with bullying dimensions. Only the perception of closeness was positively related to the three types of behaviors used to bully others (verbal, physical, and social) and the three ways of being targeted (physical, verbal, and social). Moreover, a negative relationship emerged between social preference and the three ways of being targeted (physical, verbal, and social) and the three types of behaviors used to bully others (physical, verbal, and physical). Finally, the social impact was positively related to verbal victimization and the three types of behaviors used to bully others (physical, verbal, and social).

ADHD in predicting bullying

Given the unbalanced sample size between groups (27 students with ADHD versus 108 students with typical development), it was not possible to evaluate the possible moderating role of the ADHD variable in the relationships between the student-teacher relationship and students' peer status and the bullying dimension. However, some statistically significant relations among variables were found.

The presence of ADHD predicted lower social preference, and higher social impact and conflict with teachers, than their peers with typical development.

Regarding the prediction of bullying victimization, direct effects of social preference, closeness and conflict were observed on bullying victimization, and indirect effects of ADHD. Specifically, in the mainstream population, bullying victimization was negatively predicted by social preference and positively predicted by conflict and closeness with teachers. That is, having a low social preference is linked to experiencing bullying. At the same time, student's perceptions of the relationship with the teacher as being conflictual or close means more of a risk of suffering from bullying. In turn, the presence of ADHD has an effect on bullying

victimization mediated by the perception of the relationship with teachers as close and conflictual, and social preference. Further, students with higher levels of bullying victimization were those with lower levels of social preference, and higher scores of closeness and conflict, and presenting ADHD.

As regards the prediction of bullying perpetration, direct effects of social impact and conflict were found, together with indirect effects of ADHD. Specifically, in the mainstream population, students' social impact predicted bullying perpetration. In turn, the presence of ADHD has an effect on bullying perpetration mediated by the perception of the relationship with the teacher as conflictual. Further, those students with ADHD presenting higher levels of social impact and conflict with teachers, were more likely to show bullying perpetration.

5.3. Students with learning disorders and other special education needs

School adjustment in students with LD and other SEN

The main aim of the fifth study was to investigate the quality of the peer relationships, student–teacher relationship, emotional and behavioral outcomes, and academic performance in the school adjustment of children and adolescents with LD and other SEN, compared with the mainstream school population. For the three groups (students with LD and other SEN and students with typical development), most of the variables were intercorrelated and showed similar relationship patterns.

Social status in the peer group

Firstly, it was evaluated the relationship between the presence of LD and other SEN in students and their social status in their peer groups. A statistically significant association was found between the presence of LD and other SEN in students and their social status in their peer groups. Specifically, students who have SEN and LD were less popular and more rejected in the peer group, while students with typical development were less rejected in the peer group. In the rest of categories of status social in the peer group (i.e., neglected, controversial, average status) there were no statistically significant differences between observed and expected value in the three groups of students (i.e., students with LD, with other SEN and with typical development).

Teacher's perception of the relationship with the student

Secondly, it was determined if, controlled by students' age, the presence of SEN and LD and the social status in the peer group affect the student–teacher relationships. Results show that there is no difference in the teacher's perception by the presence of LD and other SEN, and neither an interaction effect between the presence of LD and other SEN, and social status on closeness and conflict with teacher. That is, the teachers' perception of the relationship with students is not related to the presence of LD and other SEN in students. However, a main effect for the students' social status in the peer group on the teachers' perception of their

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relationships with the students as conflictual was found. Specifically, considering together the three groups of students (i.e., students with LD, with other SEN and with typical development), teachers perceive a higher conflict level with rejected students, compared to popular and neglect students. No differences emerged among the rest of the students with different social status (i.e., controversial and average status). The teacher's perception of closeness was not affected by students' social status in the peer group, indicating that the closeness levels perceived by the teacher are similar in all students regardless of students' status in the peer group.

Teachers' perceptions of students' behavior

In the third place, it was determined if, controlling by students' age, the presence of LD and other SEN in students and their social status in the peer group affect teachers' perceptions of students' behavior in terms of emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behavior. No effect was found for the interaction between the presence of SEN and LD in students and the students' social status in the peer group on the teachers' perceptions of students' behavior. However, the presence of SEN and LD in students and students' social status in the peer group had a main effect on the teachers' perception of students' behavior.

Specifically, students with LD showed statistically significant higher values in emotional symptoms than students with typical development, while there was no difference between students with other SEN and those with typical development in emotional symptoms. Further, students with other SEN and students with LD showed statistically significant higher values in hyperactivity than students with typical development, while there was no difference between students with LD and other SEN in hyperactivity.

Further, considering together the three groups of students (i.e., students with LD, with other SEN and with typical development), statistically significant differences were observed for the students' social status in the peer group on all SDQ dimensions: emotional symptoms, conduct problems, hyperactivity, peer problems and prosocial behavior. Specifically, rejected students and students with average status showed higher values in emotional symptoms, conduct problems and hyperactivity, than popular students. Moreover, rejected students showed higher values in conduct problems and hyperactivity than neglect students, higher values in hyperactivity than students with average status, and higher values in peer problems than popular students, neglect students and students with average status. Finally, popular students and neglect students showed higher values in prosocial behavior than rejected students.

Academic performance

Finally, it was determined if, controlling by age, the presence of LD and other SEN in students and their social status in the peer group affect academic achievement in humanity and science subjects. No effect was found for the interaction between the presence of SEN and LD in students and the students' social status in the

peer group on academic performance. However, the presence of SEN and LD in students and students' social status in the peer group had a main effect on academic achievement.

Specifically, the presence of LD and other SEN in the students revealed statistically significant differences on academic performance in humanity and sciences subjects. Students with typical development showed significantly better academic performance in humanity and sciences subjects than students with other SEN. Moreover, popular students also showed better performance in science subjects than students with LD. In addition, students with LD showed a better academic performance in humanity subjects than students with other SEN, while there was no difference in academic performance in sciences subjects between students with LD and students with other SEN.

Considering together the three groups of students (i.e., students with LD, with other SEN and with typical development), for the students' social status in the peer group statistically significant differences were found on academic performance in humanity and sciences subject. Specifically, popular students showed statistically significant higher grades in humanity and science subjects than rejected and average status students, while no differences emerged among the rest of students with different social status (i.e., controversial and neglected) in both variables (i.e., humanity and science subjects).

Bullying in students with LD and other SEN

The main aim of the sixth, and last, study was to test the relationship between the presence of LD and other SEN in students, the social status among peers, and the quality of the relationships with the teacher and the bullying dimensions (victimization and perpetration).

Differences between the groups regarding the analyzed variables

Firstly, it was determined if, controlling for the ages of the students, the presence of LD, other SEN or typical development in students affects the main study variables, by analyzing descriptive mean comparisons among groups (students with LD, other SEN and students with typical development).

Regarding the student–teacher relationship, measured in terms of the conflict, closeness, and negative expectations, results showed that age was statistically significant, but no effect was found for the presence of LD and other SEN in students.

With regard to students' social status, measured as the effect of social preference and social impact, results showed that age was marginally statistically significant. Moreover, a main effect was found for the presence of LD and other SEN in students. Specifically, statistically significant differences were found for the presence of LD and other SEN in the students related to social preference, but not for social impact. Students with typical development showed higher values in terms of social preference than students with LD and students

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with other SEN. In addition, students with LD showed statistically significantly higher values in social preference than students with other SEN.

Concerning the violence victimization and perpetration dimensions, results showed that age was statistically significant. Further, a main effect was found for the presence of LD and other SEN in students: specifically, significant differences were found for the presence of other SEN related to verbal violence victimization, physical violence victimization, social violence victimization, and physical violence perpetration. Students with other SEN showed higher values in terms of all types of violence victimization than students with typical development and students with LD. There was no difference between students with LD and those with typical development regarding these variables. In addition, students with other SEN showed higher values in terms of physical violence perpetration than students with typical development and students with LD. Again, there was no between students with LD and those with typical development concerning this variable.

Intercorrelations between the variables

Most of the variables showed statistically significant relationships among them. The conflict and negative expectations dimensions showed positive relationships with all types of violence (victimization and perpetration) and the student's age, indicating that a higher level in terms of the student's perception of the relationship with teacher as conflictive and the student's negative expectations regarding the relationship with teacher were associated with higher levels of all types of violence (victimization and perpetration) and with being older.

However, the closeness dimension showed a negative association with the perpetration of all types of violence and with the student's age, indicating that a higher level of the student's perception of the relationship with teacher in terms of closeness was related to lower levels of all types of violence perpetration and with being younger. Also, the closeness dimension showed a positive relationship with social preference, indicating that a higher level of the student's perception of the relationship with teacher in terms of closeness was related to higher levels of social preference.

In addition, all types of violence (victimization and perpetration) were negatively related to social preference, indicating that higher levels of violence were associated with lower levels of social preference, except regarding social perpetration. In addition, only verbal and physical violence perpetration showed a positive association with social impact and the student's age, indicating that higher levels of verbal and physical violence perpetration were linked to social impact and being older.

LD and other SEN in predicting bullying

The presence of LD and other SEN in students had a positive direct effect on bullying victimization, whereas typical development had a negative one. As the reference group was LD students, these relationships mean that levels of bullying victimization were higher for LD students when compared to typical development

students, while other SEN students showed higher levels of bullying victimization when compared to LD students.

In addition, a positive direct effect of typical development in students was found on social preference compared to students with LD, and a negative effect for other SEN students. That is, students with LD showed lower levels of social preference when compared to typical development students but higher social preference when compared to other SEN students. In turn, social preference had a negative-direct effect on bullying victimization.

The student's age had a positive direct effect on bullying perpetration, social preference, and the conflictive and negative expectations dimensions of the student's perception of the relationship with the teacher, and it had a negative direct effect on the closeness dimension. In turn, social preference, and the dimensions of the student's perception of the relationship with the teacher (i.e., conflict, closeness, and negative expectations) had a positive effect on bullying victimization. Finally, there was a positive and direct effect of social impact and the student's perception of the relationship with the teacher with reference to the conflict dimension on bullying perpetration.

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6. GLOBAL DISCUSSION

Findings from the six studies confirm that students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN condition are more at risk for having problems in school adjustment (e.g., Farmer et al., 2019) and being involved in school bullying (e.g., Hoover, 2020), compared with their peers with typical development. Also, results highlight the presence of differences in school adjustment and bullying variables, depending on the categories of neurodevelopmental disorders or other SEN conditions students belong to. The main findings can be summarized as follows.

6.1. School adjustment in students with neurodevelopmental disorders and other SEN

For school adjustment, the focus was on the analysis of the correlation among neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions, and social status among peers, teacher's perception of student-teacher relationship, teachers' perception of students' behavior, and student's academic performance. Results highlight the following correlations among variables.

Social status in the peer group

Regarding the social status among peers, all categories of students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions show difficulties in the relationship within the group of peers. In other words, the presence of neurodevelopmental disorders and other SEN conditions affects the social status among peers: students who stutter, with ADHD, LD and other SEN are more unpopular and rejected, and less popular, than their classmates with typical development.

These findings are consistent with literature focused on the risk of problems in school adjustment and difficulties in peer status for students with disabilities (e.g., Farmer et al., 2019). Previous research had highlighted that CWS tend to be less popular than their classmates and are at increased risk of being rejected (Blood et al., 2011; Yaruss et al., 2012), socially isolated or excluded (Briley et al., 2018; Rose et al., 2012), because they could be perceived as withdrawn or shy by their peers (Davis et al., 2002). Similarly, students with SEN have problems in integration and few meaningful contact with peers (Pinto et al., 2019), difficulties in friendship and low social acceptance (Schwab, 2015), with high probability of having no friends or just one friend (Banks et al., 2018). Also, students with LD have demonstrated to have difficulties with peer relationships and social functioning, and most of them are rejected by peers with typical development (for a review, see Martin et al., 2017). Finally, students with ADHD, having decreased adaptive function in the social skills (Fernández-Jaén et al., 2012), have commonly difficulties in forming friendships and are at risk of social isolation and rejection (Gardner & Gerdes, 2015), which in turn is associated with later negative outcomes, such as anxiety, involvement in delinquency, heavy smoking, and general impairment during adolescence (Mrug et al., 2012).

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Teacher's perception of the relationship with the student

With reference to the teacher's perception of student-teacher relationship, no differences were found in the closeness dimension among students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions and their classmates with typical development. In particular, in the teachers' perception of closeness, all students (students who stutter, with ADHD, LD and other SEN and with typical development) show similar patterns: this means that the teacher's perception of closeness is not affected by the students' social status in the group of peers.

In turn, focusing on the dimension of conflict with teachers, all categories of students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions show different patterns, in comparison with their classmates with typical development. In particular, for students with typical development, the teacher's perception of conflict is affected by the students' social status in the group of peers, with a higher level of perceived conflict with rejected students, compared with popular and neglected students, and a higher level of perceived conflict with controversial students compared with popular students. In contrast, in students who stutter and in students with LD and other SEN, the teacher's perception of conflict is not affected by the students' social status in the group of peers, with similar levels of perceived conflict with all students in these categories (CWS, LD, other SEN), aside from their social status in the peer group. Nonetheless, in students with ADHD, the teacher's perception of the relationship with students shows higher levels of conflict, than in students with typical development.

These findings are consistent with literature, confirming that, in the mainstream school population, an interaction exists between the relationship with teachers and social status in the group of peers. Previous research had found that, when students' levels of being disliked by their peers increase, also conflict with their teachers tends to increase (e.g., Gülay Ogelman, 2020). Students' social preference scores are directly related to the quality of their relationship with the teacher, and the relation between social risk and poor student-teacher relationship is particularly strong for students rejected by peers (Elledge et al., 2016).

Also, it is well-known that student-teacher relationships develop over the course of the school years through a complex intersection of student and teacher beliefs, attitudes, behaviors, and interactions (Hamre & Pianta, 2006). Specifically, in the case of students with neurodevelopmental disorders and other SEN conditions, we could hypothesize that teachers' attitudes and perception about disability might affect the relationship they have with these students in terms of conflict, independently from students' social status in peer group. Regarding CWS, Abdalla and St. Louis (2012), exploring teachers' knowledge of and attitudes toward stuttering, as well as the strategies they adopt to cope with class problems, found that teachers still have negative stereotypes toward CWS and do not feel comfortable with them. In students with SEN and LD, it is interesting to note that teachers report less conflict and more closeness in their relationships with these students, than with students with other disabilities (Zee et al., 2020), probably, because teacher perceive

these students as less problematic than others. Finally, in case of ADHD, previous studies have reported that student-teacher relationships have high levels of conflict, lower warmth and lower cooperation than those experienced with their typically developing peers (Prino et al., 2016; Zendarski et al., 2020), and that teachers tend to interact more negatively and to cooperate less with students with ADHD than with other students (Ewe, 2019; Greene et al., 2002). Students with ADHD seem to be particularly at-risk for negative student-teacher relationship, and consequent negative impact on school adjustment. Research has demonstrated that reducing levels of conflict with teachers may promote positive long-term results and help mediate their feelings toward school (Rushton et al., 2020).

Teachers' perceptions of students' behavior

Regarding the teachers' perception of students' behavior, results showed a significant effect for the presence of neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions in students. Students who stutter, with ADHD, LD and other SEN show higher levels of hyperactivity, when compared with their classmates with typical development. Also, students who stutter, with ADHD, and LD show higher emotional symptoms than their classmates with typical development. In addition, students with ADHD show higher levels of peer problems, when compared with their classmates with typical development. These findings are consistent with literature, confirming that a correlation exists among behavioral and emotional problems, and neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions in students.

Specifically, for CWS, previous research has found negative emotional symptoms and high levels of hyperactivity traits (Briley et al., 2019; Langevin et al., 2009; McAllister, 2016), reporting that one-half (50%) of students who stutter exhibit elevated hyperactivity symptoms (Druker et al., 2019). Because hyperactivity and anxiety disorders frequently occur in the same individual (Tannock, 2000) and children with social anxiety disorders often show disinterest in social situations (Iverach & Rapee, 2014), we could hypothesize that the presence of anxiety, associated with stuttering, makes subjects more vulnerable and sensitive to the stimuli within a relationship with peers in a school context, resulting in hyperactive behaviors.

Similarly for students with ADHD, results are consistent with previous studies that have reported higher risks of behavioral and emotional problems. Specifically, in students with ADHD peer problems can mediate the associations between attention symptoms, externalized problems, and internalized problems, such as depression (Yip et al., 2013), suggesting that the ADHD symptoms of attention deficiency and hyperactivity may affect children's behavioral and emotional developmental pathways, leading to difficulties in self-regulation and issues related to internalizing or externalizing problems.

Further, for students with LD, previous studies have reported symptoms of generalized anxiety, school-related anxiety, depressed moods, lower school self-esteem, and peer problems, saliently correlated with externalizing and internalizing problems (Boyes et al., 2020), suggesting general lower levels of psychosocial

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health, concerning emotional and school functioning, compared to the general student population. In addition, since internal symptoms, such as emotional symptoms, were found to predict academic and social failure and success, students with LD, because of their attributional style, tend to explain their failures with internal stable and uncontrollable factors, such as low ability and chance (Emam, 2018).

Moreover, the higher levels of hyperactivity founded in students with ADHD, LD and other SEN founded in our study contribute to the research focused on comorbidity between such disorders, suggesting that these disability conditions might be attributable to common causal influences that could be genetic or environmental (for a review, see Moreau et al., 2016). Since both disorders, LD and ADHD, are classified as special education needs in the Italian school context (cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca]), the high levels of hyperactivity registered in students with LD and other SEN could be explained by a possible presence of subjects who also suffer from ADHD in our sample.

Interestingly, in all examined neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions, the social status in the group of peers does not affect the teachers' perception of students' behavior. In turn, in students with typical development, the social status among peers has an effect on the teachers' perception of students' behavior. In particular, when compared with their classmates with different social status, rejected students score higher levels of hyperactivity, emotional symptoms, conduct problems and peer problems, while popular and neglected students score higher levels of prosocial behaviors. Also, previous research has found that students reporting behavioral problems are correlated with a higher level of social rejection, as well as with lower social acceptance by peers (Krull et al., 2018). In addition, in comparison with rejected students, popular students have many behavioral and emotional strengths, and fewer difficulties and behavioral problems (Rytioja et al., 2019).

Academic performance

With reference to academic performance, results show that, in students with typical development, the students' social status among peers has an effect on their school achievements. In particular, popular students score higher levels than rejected students in both humanity and science subjects, and average students score higher levels than rejected students in science subjects.

In turn, among students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions, the social status among peers does not have an effect on the academic performance. However, students with neurodevelopmental disorders and other SEN conditions show lower levels of academic performance when compared with their classmates with typical development, and these findings are consistent with literature.

In particular, students who stutter score lower academic performance both in humanity and science subjects. Previous research has found similar results, showing that CWS tend to perform poorly in school, have problems in expressing themselves in class, working well in groups, and doing all that may be expected of

them academically-speaking (Yaruss et al., 2012). CWS may experience early delays in their ability because they have more difficulty with executive functions (Ntourou et al., 2018) and are characterized by atypical attentional processing in terms of stimulus evaluation, response selection, and execution (Costelloe et al., 2018), that may put these students at risk for low academic performance.

Also, students with LD and other SEN conditions score lower academic performance in science subjects. The findings confirm previous research showing that students with LD tend to score lower in terms of performance than students with typical development, probably because of their specific intellectual style (Inacio et al., 2018) and their difficulties in executive functioning and motivation (Graham, 2017), which might compromise their academic outcomes. Moreover, students with other SEN also presented lower academic performance in humanity subjects than students with LD, while no difference in academic performance was noted between students with LD and students with typical development. This finding might be specific for the Italian school context, where, unlike students with SEN in general who do not have a medical diagnosis, students with LD need an official label from the local sanitary authority in order to be eligible for additional educational resources at school. Probably, pedagogical facilitations provided by teachers for children with LD tend to be more effective than those provided for students with SEN in general, in terms of academic outcomes.

Also results of academic performance in students with ADHD might be attributed to the specificity of the Italian school setting. In the present study, no differences were found in academic performance of students with ADHD and their classmates with typical development. In contrast, previous research has shown academic impairment in children with ADHD, both in the subjects of math and language (Sánchez-Pérez & González-Salinas, 2017), highlighting also that educational performance can improve after ADHD has been treated (Arnold et al., 2020). Unlike other school systems (e.g., Swedish), where children with ADHD typically attend classes that have specifically been designed for them (Malmqvist & Nilholm, 2016), Italian schools are fully-inclusive, and curricular teachers provide children with ADHD pedagogical help in order to close the gap between the behavioral and academic performance of these students and their peers. As school inclusion has been demonstrated to enhance the academic performance of students (Peetsma et al., 2001), we can hypothesize that these measures may also hold true for children with ADHD.

6.2. Bullying in students with neurodevelopmental disorders and other SEN

For bullying, the rates of victimization and perpetration among students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions were explored. In addition, we analyzed the mediating roles of students' perception of their relationship with teachers and the social status among peers in the link between neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions, and bullying

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dimensions (victimization and perpetration). Results confirm that, similar to other disabilities (Rose et al., 2015), students who stutter, with ADHD, LD and other SEN conditions experience higher rates of victimization and/or perpetration than individuals with typical development, as they have problems in social relationships and have less social power (Malecki et al., 2020), scoring lower in terms of levels of popularity and being at risk of social exclusion (Rose et al., 2011; Rose & Gage, 2017). Further, results add to existing literature, highlighting the mediating role of the relationship with teachers and the social status among peers in the link between bullying and neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions in students. Following paragraphs illustrate the main findings.

Students who stutter

Findings from the present study highlights that students who stutter experience higher rates of bullying victimization than their peers. Further, for students who stutter, the main result is that the presence of stuttering has a negative and direct effect on social preference. Also, the presence of stuttering has a negative and indirect effect on bullying victimization (verbal, physical and social). That is, peers' social preference in students who stutter has a mediating role among the presence of stuttering and bullying victimization. These results highlight that stuttering in students predicts low social preference, which in turn predicts bullying victimization, and these findings confirm previous research.

Research on the social status of CWS have found that these students tend to be less popular than their classmates (Blood & Blood, 2016; Erickson & Block, 2013; McAllister, 2016; Plexico et al., 2013), probably because repeated communicative difficulties may have a negative influence on the social life of CWS. In addition, a correlation exists among students' social competence and their bullying/victimization experiences (Andreou et al., 2015; Blood & Blood, 2016), and CWS suffer a higher risk of being rejected and bullied, compared with their peers (Blood & Blood, 2016; Erickson & Block, 2013; McAllister, 2016; Plexico et al., 2013). Because there is also a link between bullying/victimization and loneliness, on the one hand, and perceived social efficacy, on the other (Andreou et al., 2015), the present study highlights how difficulties in communication may be an obstacle for CWS in building positive peer relationships and, consequently, how they can put them at a high risk of being bullied. Further, research has highlighted a complex interaction between stuttering, bullying at school, and psychosocial problems in adulthood, such as social anxiety, fear of negative evaluations, and low satisfaction with life (Blood & Blood, 2016). Cook and Howell (2014) assessed bullying of children and teenagers who stutter, finding a relationship between bullying and children's self-esteem, as well as between bullying and anxiety in teenagers. Further, the effects of childhood victimization persist into adulthood: nearly 88% of adults who stutter and who show high anxiety scores were bullying victims during their school years (Blood & Blood, 2016), suggesting, together with the high rate of victimization, how pervasive bullying effects can be for CWS's social life.

Students with ADHD

Findings from the present study highlights that students with ADHD experience higher rates of bullying victimization and perpetration than their peers. Further, for students with ADHD, there are two main results, regarding the role of student-teacher relationship and social status among peers as mediators between ADHD and bullying.

First, the presence of ADHD has a positive and direct effect on students' perception of their relationship with teachers as conflictual. Also, the presence of ADHD has a positive and indirect effect on both bullying victimization and bullying perpetration (verbal, physical and social). That is, perceived conflict with teachers in students with ADHD has a mediating role among the presence of ADHD and both bullying victimization and perpetration. These results highlight that ADHD in students predicts perceived conflict with teachers, which in turn predicts both bullying victimization and perpetration.

Further, in students with ADHD, the presence of ADHD has a negative and direct effect on social preference. Also, the presence of ADHD has an indirect effect on bullying victimization (verbal, physical and social). That is, peers' social preference in students with ADHD has a mediating role among the presence of ADHD and bullying victimization. This result highlights that ADHD in students predicts low social preference, which in turn predicts bullying victimization.

These findings confirm previous research on bullying in students with ADHD, reporting a high incidence of bullying involvement in students with ADHD, both as bullies and victims (e.g., Holmberg & Hjern, 2008; McQuade et al., 2018; Taylor et al., 2020; Winters et al., 2020). Verlinden et al. (2015) argued that behavioral problems are a possible reason for the frequent victimization of students with ADHD, as bullying involvement in this group of children is associated with low self-control and high parent-reported behavioral problems (Holmberg & Hjern, 2008). In addition, conduct problems seem to predict poorer student-teacher relationship quality (Zendarski et al., 2020), as the relationship between students with ADHD and their teachers is generally characterized by less emotional closeness, less cooperation, and more stress levels and conflict than their peers, with a negative impact on these students' school adjustment (Ewe, 2019; Rushton et al., 2020). A recent study demonstrates that reducing the conflict between students with ADHD and their teachers can positively enhance their emotional engagement at school and offer longer-term benefits (Rushton et al., 2020).

Further, students with ADHD exhibit specific social skill deficits and are at risk of peer relationship difficulties. The ADHD symptoms of inattention, hyperactivity, or impulsivity can negatively affect social functioning by displaying difficulties with interactions and relationships (APA, 2013). Students with ADHD have problems making friends, have less friends than their peers, tend to develop poorer quality relationships, and are less sensitive to their friends' needs and preferences and are approximately four times more likely to be rejected by their peers. In long-term, peer rejection in students with ADHD is related to academic difficulties and poor

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emotional adjustment in adolescence (Normand et al., 2011), and bullying involvement is associated with the risk of developing depressive symptoms (Simmons & Antshel, 2021). By highlighting the role of ADHD symptoms as predictors of bullying, this work offers a unique contribution to investigating the relationships between students with ADHD, the quality of their relationships with their teachers, their social status, and bullying dimensions (victimization and perpetration).

Students with LD and other SEN

Findings from the present study highlight that students with LD and other SEN experience higher rates of bullying victimization and perpetration than their peers. Further, the main result is that the presence of LD or other SEN has a negative and direct effect on social preference. Also, the presence of LD or other SEN has a negative and indirect effect on bullying victimization (verbal, physical and social). That is, peers' social preference in students with LD or other SEN has a mediating role among the presence of LD or other SEN and bullying victimization. This result highlights that LD or other SEN in students predicts low social preference, which in turn predicts bullying victimization.

These results confirm previous research, showing that students with SEN tend to report more bullying victimization and perpetration than their peers (Dasioti & Kolaitis, 2018; Rose & Gage, 2017; Rose et al., 2011), probably because of their behavioral and emotional problems (Fink et al., 2015), and this could lead them to have difficulties in social skills (Freire et al., 2019; Wiener & Schneider, 2002). Compared to their classmates, children with SEN tend to have lower levels of prosocial behaviors (Dasioti & Kolaitis, 2018), are less accepted (Broomhead, 2019) and have fewer or no friends (Banks et al., 2018; Pinto et al., 2019). Also, students with LD present lower friendship quality, higher levels of conflict, more problems with relationship repair, and less stable relationships than their peers (Wiener & Schneider, 2002).

Further, results reveal differences in bullying levels among students with LD and other SEN. Specifically, students with SEN report higher rates of bullying victimization (physical, verbal, and social) and physical perpetration than students with LD. Since students with SEN tend to report also high levels of behavioral problems (Dasioti & Kolaitis, 2018), and this could make their impairments more visible than the difficulties of students with LD, we could hypothesize that probably the presence of behavioral and emotional problems might predict higher levels of bullying behaviors in students with SEN, as also suggested by other research (Fink et al., 2015).

Students with typical development: the effect of age

Findings from the present study highlight that, for students with typical development, the students' age has a positive and direct effect on students' perception of their relationship with teachers as conflictual. In other words, growing older, students tend to perceive their relationship with teachers as more conflictual. Also, the students' age has a positive and indirect effect on both bullying victimization and bullying perpetration (verbal, physical and social). That is, the students' perception of their relationship with teachers as conflictual

has a mediating role among the students' age and both bullying victimization and perpetration. These results highlight that, when students grow older, the students' age predicts perceived conflict with the teacher, which in turn predicts both bullying victimization and perpetration.

These results are supported by previous research, confirming that difficulties in the relationships with teachers might expose students to higher risk of exhibiting bullying behaviors (Pianta et al., 1995; Wanders et al., 2020). In turn, a positive relationship with teachers is protective against bullying victimization, consistent with previous literature (Iotti et al., 2020). Taking into account the age specificity in the relationship between teachers' support and students' perceptions, that tend to decrease with age (Košir & Tement, 2014; McGrath & Van Bergen, 2015), these results confirm the influence of early positive relationships with teachers on the long-lasting school well-being of students (Pianta et al., 1995; Wanders et al., 2020).

Further, results show that the students' age has a positive and direct effect on students' peer status. In other words, growing older, students tend to be more popular among peers. Also, the students' age has a negative and indirect effect on bullying victimization (verbal, physical and social), with older students that are less victimized. That is, the students' social status among peers has a mediating role among the students' age and bullying victimization. These results highlight that, when students grow older, the students' age predicts more popularity among peers, which in turn predicts lower levels of bullying victimization.

Considering these results together, findings are in line with previous research, showing that social status among peers is a protective factor against school bullying (Iotti et al., 2020; Longobardi et al., 2019). Also, these results seem to confirm that, starting from middle childhood, bullying and victimization start to be group processes (Monks et al., 2021) and are driven by status goals (Salmivalli, 2010). Older students might be less victimized than younger students because they had reached an improvement in their social status. Similarly, previous research has found that younger students report higher rates of victimization and tend to sanction bullying behaviors with a decrease in peer status (Scheithaue et al., 2006). In turn, in older students reported rates of bullying perpetration are higher and are related with an increase in social status (Van der Ploeg et al., 2020).

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7. FINAL CONCLUSIONS

To sum up, the purpose of this doctoral dissertation was to explore and compare school adjustment and bullying variables in children and adolescents with different types of neurodevelopmental disorders (stuttering, ADHD, LD) and other SEN conditions, within an inclusive education context. Findings highlight that students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions are more at risk for having problems in school adjustment and being involved in school bullying, compared with their peers with typical development, showing differences depending on the categories of neurodevelopmental disorders or other SEN conditions students belong to.

7.1. School adjustment in students with neurodevelopmental disorders and other SEN

For school adjustment, all categories of analyzed students have difficulties in the relationship within the group of peers, suggesting that the presence of neurodevelopmental disorders and other SEN conditions affects the social status among peers: students who stutter, with ADHD, LD and other SEN are more unpopular and rejected, and less popular, than their classmates with typical development.

With reference to the teacher's perception of student-teacher relationship, no differences were found in the closeness dimension and all categories of analyzed students (students who stutter, with ADHD, LD, other SEN) show similar patterns with typically developed students, suggesting that the teacher's perception of closeness is not affected by the students' social status in the group of peers.

In turn, in the dimension of conflict with teachers, all categories of students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions show different patterns, in comparison with their classmates with typical development. In particular, for students with typical development, the teacher's perception of conflict is affected by the students' social status in the group of peers, with a higher level of perceived conflict with rejected and controversial students, compared with popular and neglected students. In contrast, in students who stutter, with LD and other SEN, the teacher's perception of conflict is not affected by the students' social status in the group of peers, with similar levels of perceived conflict aside from social status in the peer group. Nonetheless, in students with ADHD, the teacher's perception of the relationship with students shows higher levels of conflict, than in students with typical development.

Regarding the teachers' perception of students' behavior, results showed a significant effect for the presence of neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions in students. In the categories of analyzed students were found higher levels of hyperactivity (students who stutter, with ADHD, LD and other SEN), higher emotional symptoms (students who stutter, with ADHD, and LD) and higher levels of peer problems (students with ADHD) when compared with their classmates with typical development,

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suggesting a correlation among behavioral and emotional problems, and neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions.

Interestingly, in all examined neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions, the social status in the group of peers does not affect the teachers' perception of students' behavior, while in students with typical development, the social status among peers has an effect on the teachers' perception of students' behavior, with rejected students scoring higher levels of hyperactivity, emotional symptoms, conduct problems and peer problems, and popular and neglected students scoring higher levels of prosocial behaviors.

With reference to academic performance, in students with typical development, the students' social status among peers has an effect on their school achievements, with popular and average students scoring higher levels than rejected students in humanity and science subjects. In turn, among students with neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions, the social status among peers does not have an effect on the academic performance, and they show lower levels of academic performance when compared with their classmates with typical development.

In particular, students who stutter score lower academic performance both in humanity and science subjects. Also, students with LD and other SEN conditions score lower academic performance in science subjects. Moreover, students with other SEN also presented lower academic performance in humanity subjects than students with LD, while no difference in academic performance was noted between students with LD and students with typical development. In turn, no differences were found in academic performance of students with ADHD and their classmates with typical development.

7.2. Bullying in students with neurodevelopmental disorders and other SEN

For bullying, results show that students who stutter, with ADHD, LD and other SEN conditions experience higher rates of victimization and/or perpetration than individuals with typical development. Further, results add to existing literature, highlighting the mediating role of the relationship with teachers and the social status among peers in the link between bullying and neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions in students.

Specifically, students who stutter experience higher rates of bullying victimization than their peers. Further, the main result is that the presence of stuttering has a negative and direct effect on social preference and a negative and indirect effect on bullying victimization (verbal, physical and social), suggesting that peers' social preference in students who stutter has a mediating role among the presence of stuttering and bullying victimization. These results highlight that stuttering in students might predict low social preference, which in turn might predict bullying victimization.

Students with ADHD experience higher rates of bullying victimization and perpetration than their peers. Further, for students with ADHD, there are two main results, regarding the role of student-teacher relationship and social status among peers as mediators between ADHD and bullying.

First, the presence of ADHD has a positive and direct effect on students' perception of their relationship with teachers as conflictual, and positive and indirect effect on both bullying victimization and bullying perpetration (verbal, physical and social), suggesting that perceived conflict with teachers in students with ADHD has a mediating role among the presence of ADHD and both bullying victimization and perpetration. These results highlight that ADHD in students predicts perceived conflict with teachers, which in turn predicts both bullying victimization and perpetration.

Secondly, in students with ADHD, the presence of ADHD has a negative and direct effect on social preference, and a negative and indirect effect on bullying victimization (verbal, physical and social), suggesting that peers' social preference in students with ADHD has a mediating role among the presence of ADHD and bullying victimization. This result highlights that ADHD in students predicts low social preference, which in turn predicts bullying victimization.

Students with LD and other SEN experience higher rates of bullying victimization and perpetration than their peers. Further, the main result is that the presence of LD or other SEN conditions has a negative and direct effect on social preference, and a negative and indirect effect on bullying victimization (verbal, physical and social), suggesting that peers' social preference in students with LD or other SEN has a mediating role among the presence of LD or other SEN and bullying victimization. This result highlights that LD or other SEN in students predicts low social preference, which in turn predicts bullying victimization.

In the control group of students with typical development, the age has a positive and direct effect on students' perception of their relationship with teachers as conflictual, suggesting that growing older, students tend to perceive their relationship with teachers as more conflictual. Also, the age has a positive and indirect effect on both bullying victimization and bullying perpetration (verbal, physical and social), suggesting that students' perception of their relationship with teachers as conflictual has a mediating role among the students' age and both bullying victimization and perpetration. In other words, when students grow older, the students' age predicts perceived conflict with the teacher, which in turn predicts both bullying victimization and perpetration.

Further, results show that the students' age has a positive and direct effect on students' peer status, suggesting that growing older, students tend to be more popular among peers. Also, the students' age has a negative and indirect effect on bullying victimization (verbal, physical and social), with older students that are less victimized, suggesting that the students' social status among peers has a mediating role among the

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students' age and bullying victimization. In other words, when students grow older, the students' age predicts more popularity among peers, which in turn predicts lower levels of bullying victimization.

8. STRENGTHS, LIMITATIONS AND FUTURE DIRECTIONS

The present doctoral dissertation was aimed to explore and compare school adjustment and bullying in children and adolescents with different types of neurodevelopmental disorders and other SEN conditions, within an inclusive education context. A preliminary review of literature was conducted. Despite the great interest that bullying and adjustment in school context have received in the last decades (e.g., UNICEF, 2018), and the various benefits that mainstream school contexts are well-established to have for general inclusion of students with disabilities (Odom et al., 2011), studies focused on the relationship of such variables together (i.e., bullying, school adjustment, and presence of disabilities in students) seem to be in some way scarce and partial.

In the present study, in order to better analyze the variables of school adjustment and bullying in individuals with disability conditions within an inclusive school context, the focus was on students with different categories of neurodevelopmental disorders or other SEN conditions, which represent the most common categories of disability among school population. For this purpose, the sample included students who stutter, students with ADHD, students with LD and students with other SEN, who were compared with their classmates with typical development. Six studies were conducted in Italian primary and secondary schools. To the best of our knowledge, this work represents the first instance of a research aimed to explore and compare the differences in school adjustment and bullying involvement among students with different types of neurodevelopmental disorders or other SEN conditions, within a full-inclusive education context.

Some limitations of the present doctoral dissertation should be discussed. The characteristics and size of the sample could be drawbacks. The mono-cultural setting may have limited the generalization of our findings. In this way, it is not possible to generalize the findings to children and teachers located in cities or from different cultural backgrounds. It is also worth noting that it would be not possible to generalize these findings to students and teachers located in different areas or cities, enrolled in different school settings (e.g., not fully-inclusive), or from different cultural backgrounds. Cross-cultural studies, comparing different cultural groups and school settings using similar measures and variables, may improve the accuracy and generalization of these findings. Also, the present study did not examine some important factors due to the unavailability of such data, such as family socioeconomic status, students' migration backgrounds, and the presence of other diagnoses together with neurodevelopmental disorders or SEN condition (e.g., anxiety). Future studies may be conducted to gain greater understanding of the roles of these factors in students' social status in the peer group, the student-teacher relationship quality, students' emotional and behavioral competence, academic performance, and bullying victimization and perpetration. Moreover, data analyzed in the study involved self-reported responses which were dependent upon participants' honesty and temperament. This means that social desirability, or shyness for instance, may have biased the results. The

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measurement of these variables through an appropriate questionnaire would make it possible to introduce it into the analyses as control variables, for example, as covariates.

Further, the size of the sample, specifically the small subsample of children with neurodevelopmental disorders or other SEN condition, could affect the ability to detect statistically significant results (i.e., statistical power) and, thus, the accuracy and generalization of these findings. On the other hand, the limited nature of the presence of neurodevelopmental disorders or SEN in student's measures also might condition the findings. The measure consists of one item that assesses the presence or absence of neurodevelopmental disorders (stuttering, ADHD, LD) or other SEN in students. However, it does not differentiate between students with high levels of disability and those with lesser difficulty. Severity of neurodevelopmental disorders or other SEN conditions might have an effect moderator on the relationships analyzed in this study. Therefore, it is necessary to develop more research on this topic that includes neurodevelopmental disorders or other SEN in students, taking into account different levels of severity in disability conditions.

In addition, the majority of the teachers examined in this study were females. The proportion of male teachers was rather small. This difference in gender distribution could bias our findings. Future studies should explore the generalizability of the present findings by using samples with more equal gender distribution. Also, it should be considered that the "prevalent teacher" may not be the individual who has the strongest relationship with any particular student, especially for those who experience difficulties with bullying and in school adjustment, even if the teacher spends most of the school time with the students. Students with neurodevelopmental disorders or other SEN conditions may seek support from any adult in their environment (e.g., band/music teacher, art teacher, special education teacher). The relationship with a designated teacher can be difficult to define as students grow up. This needs to be considered more thoroughly and discussed in future research.

Finally, another limitation of this work is that the data are cross-sectional, and, therefore, it is not possible to draw longitudinal correlations examining to what degree variables predict other variables over time, as well as directionality in terms of the associations between variables and inferences about cause-and-effect relationships. Moreover, several studies have pointed to some biases that can stem from the use of mediation within a cross-sectional framework (Maxwell et al., 2011). Thus, future researchers could use a longitudinal design to test the causal relations among variables and their directionality, which might help us understand how relationships between them unfold over time.

9. IMPLICATIONS FOR RESEARCH AND PROFESSIONAL PRACTICE

Results from this doctoral dissertation may have implications both for researchers and for professionals in education. For researchers, findings from this work offer in-depth knowledge about the school experience of students with neurodevelopmental disorders and SEN conditions, adding information to the body of research focused on the role of the relationships with teachers and peers on emotional, behavioral, social and academic achievements and well-being. This work highlights differences and specificities among students in experiencing school adjustments and bullying depending on their characteristics, suggesting also the mediating role of the relationship with teachers and the social status among peers in the link between bullying and neurodevelopmental disorders (CWS, ADHD and LD) and other SEN conditions.

For professionals in education (teachers, educators, pedagogists, psychologists), findings from this study highlight the profound impact that neurodevelopmental disorders and SEN conditions may have on students, as well as the effect of disability on their adjustment and acceptance in an inclusive school context. These results suggest a need for teachers and people involved in educational jobs to increase their awareness and understanding of different categories of neurodevelopmental disorders and SEN and to meditate on school well-being of students with such condition, in order improve their social inclusion in the classmates group and prevent the risks of bad school adjustment and involvement in bullying episodes, both as bully and/or victim.

The following paragraphs will present the main aims, the key components and the scientific effectiveness evidence of different anti-bullying intervention programs, which were applied in several countries, both to the mainstream school population and among students with disabilities within inclusive educational contexts.

Anti-bullying interventions

A recent report published by the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2018) stated that creating educational spaces that are free from violence and safe learning environments for all children and adolescents remains a global priority. As seen previously, bullying perpetration and victimization are prevalent and the consequences are devastating for all the students involved in the phenomena. Several information has been gathered in relation to individual and contextual risk and protective factors, and researchers have suggested that experiences of school bullying may function as stepping stones towards many undesirable life outcomes (Arsenault et al., 2010). Bullying is not only a concern for parents and educators, but it represents a public health concern also (Masiello & Schroeder,

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2013), and it is imperative that effective intervention efforts are put in place (Ttofi, 2015). Thus, it is not surprising that dozens of anti-bullying interventions have been conducted all over the world and different meta-analyses and systematic reviews synthesized research on the topic (Gaffney et al., 2019; Ttofi & Farrington, 2011; Zych et al., 2015).

Effectiveness

A recent comprehensive systematic review and meta-analysis of the effectiveness of school-based bullying prevention programs from 12 countries across the world (i.e., Australia, Canada, Cyprus, Finland, Germany, Greece, Italy, Netherlands, Norway, Spain, UK, USA) has found that anti-bullying programs are collectively effective in reducing school-bullying perpetration by around 19–20% and school-bullying victimization by around 15–16% (Gaffney et al., 2019). Similar results were found previously by Ttofi and Farrington (2011), who highlighted that school-based anti-bullying programs are often effective in decreasing bullying by around 20–23% and victimization by around 17–20%. In general, interventions are slightly more effective in reducing school-bullying perpetration than school-bullying victimization, despite there is significant heterogeneity in the results (Gaffney et al., 2019).

Regional differences have been found (Gaffney et al., 2019) in the effectiveness of anti-bullying programs. Specifically, intervention programs conducted in Middle and South Europe (i.e., Cyprus, Germany, Greece, Italy, Netherlands, Spain) significantly reduce bullying perpetration by around 13%, while interventions conducted in Scandinavian countries (i.e., Finland and Norway) significantly reduce bullying perpetration by around 20%, and evaluations conducted in North America (i.e., the USA and Canada) significantly reduced bullying perpetration by around 21%. Comparatively, anti-bullying programs that are implemented and evaluated in Scandinavia and Middle and South Europe reduced victimization by a larger percentage, 18% and 15% respectively, while evaluations conducted in North America reduced bullying victimization by around 11% (Gaffney et al., 2019).

Within Europe, anti-bullying programs evaluated in Greece are found to be the most effective in reducing bullying perpetration, followed by Spain and Norway. In turn, anti-bullying programs evaluated in Italy are the most effective in reducing bullying victimization, followed by Spain and Norway (Gaffney et al., 2019). Ttofi and Farrington (2011) have suggested that, among European Countries, anti-bullying programs implemented in Norway may work best probably because of the long tradition of bullying interventions and research in Scandinavian countries, but also the high quality of schools, with small classes and well-trained teachers, and a tradition of state intervention in matters of social welfare.

However, the majority of anti-bullying programs have been implemented in regions where the prevalence of bullying is already comparatively low, for example Europe and North America. There still remains a lack of existing anti-bullying programs in areas where UNESCO (2018) report worryingly high levels of bullying, such

as sub-Saharan Africa and the Middle East (Gaffney et al., 2019). In addition, since previous research has indicated that there are differences in bullying behavior due to culture (e.g., Smith et al., 2016), future anti-bullying programs should reflect these cultural differences (Gaffney et al., 2019).

Anti-bullying programs in practical: four examples

Ttofi and Farrington (2011) have recommended that, in developing new policies and practices to reduce bullying, policy-makers and practitioners should draw upon high-quality evidence-based programs that have been proved to be effective. Despite there have been many previous attempts to establish what works in bullying intervention and prevention, very few specific anti-bullying programs all over the world have been implemented and evaluated more than once using independent samples (Gaffney et al., 2019).

Analyzing sixty-five different school-based bullying intervention and prevention programs used in 12 countries within three geographical regions (i.e., Europe, North America and Scandinavia), Gaffney et al. (2019) have found that only four programs were evaluated more than twice across different locations with different evaluators (i.e., OBPP, KiVa, NoTrap!, and ViSC). Among these, the Olweus Bullying Prevention Program has been found to produce the largest effect sizes for bullying perpetration outcomes, but the NoTrap! Program appears to be the most effective in reducing bullying victimization (Gaffney et al., 2019). In the following paragraphs, a short description of the four most evaluated school-based bullying intervention and prevention programs (i.e., OBPP, KiVa, NoTrap!, and ViSC; Gaffney et al., 2019) will be provided.

Olweus Bullying Prevention Program

The Olweus Bullying Prevention Program (OBPP; Olweus, 1993a; 1993b) was the first whole-school anti-bullying program. This program aims to improve the school environment in order to reduce existing bullying problems and prevent further instances of bullying (Olweus et al., 1999). The program includes elements at many levels, specifically, school, classroom, individual, and community levels (Olweus et al., 2007). Intervention components are guided by four key principles. Specifically, adults, both at school and home, should (1) show warmth and positivity towards students; (2) set strict limits and restrictions on unacceptable student behavior; (3) apply consistent and non-aggressive consequences; (4) act as positive and authoritative role models (Olweus & Limber, 2010).

At the school-level, the OBPP intervention involves establishing a Bullying Prevention Coordinating Committee (BPCC) that is composed of school staff, parents, and members of the wider community (Olweus & Limber, 2010). Intensive training is also provided for staff, and regular staff discussion groups are held. School rules against bullying are implemented at the whole-school and classroom levels, and a school-wide “kick off” event is held to launch the start of the intervention. At the individual level, intervention components include “hot-spot” supervision (i.e., increased staff presence at locations around the school where bullying is known to occur). The intervention also targets specific individuals who are recognized as

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bullies and victims, and their respective parents. Individual-specific intervention strategies are also designed for students involved in bullying (Olweus & Limber, 2010).

Compared with other school-based bullying intervention and prevention programs around the world, the OBPP was found to be the most effective in reducing school-bullying perpetration. Across 12 evaluations, the OBPP reduced bullying perpetration by approximately 26% (Gaffney et al., 2019).

Viennese Social Competence Program

The Viennese Social Competence (ViSC; Spiel, 2007) is an intervention program that approaches bullying prevention from a Socio-Ecological Perspective (Bronfenbrenner, 1979; Swearer & Espelage, 2004). This intervention targets not only individual students, but it also includes teachers, parents, and school staff, from a Social Learning Theory perspective (Bandura, 1977). The ViSC program ensures that teachers have a shared responsibility to prevent bullying perpetration and victimization amongst students. The aim of the ViSC program is to reduce aggressive and bullying behaviors and also to create social and intercultural competencies within the school environment (Gradinger et al., 2015). Designed to be implemented with secondary school students, the ViSC program is a 1-year program and adopts a “Train-the-Trainer” Model, in which experts train teachers, who in turn train their students (Gradinger et al., 2015).

The first semester of the program incorporates school-level intervention components, implemented with teachers and school staff. Participants are trained in how to recognize and tackle bullying scenarios and implement preventative measures at the school- and class-levels. Participating students also complete 13 lessons that follow a Student-Centered Approach. Lessons one to eight focus on bullying behaviors and require students to actively work together to develop ways to prevent aggressive behavior in their respective classes. In the remaining five lessons, students work together on a class project to achieve a positive common goal and practice their social skills (Spiel, 2007; Gradinger et al., 2015).

Compared with other school-based bullying intervention and prevention programs around the world, the ViSC program was the only program to increase bullying perpetration (by roughly 4%) and bullying victimization (by roughly 4%), although these effects were not statistically significant and may have been influenced by the evaluation methods that have been used (Gaffney et al., 2019).

KiVa Anti-bullying Program

The KiVa anti-bullying program was developed and widely disseminated in Finland from 2007 to the present (Kärnä et al., 2013). The program is based on several theoretical models of human social behavior, such as Bandura’s (1989) Social-Cognitive Theory and the complex involvement of peers in school-bullying scenarios (e.g., Salmivalli, 2010). Thus, the KiVa anti-bullying program targets bystanders in bullying situations, with the aim of reducing the social rewards for bullies and in turn reducing their bullying behaviors (Kärnä et al., 2013).

The program is composed of three age-appropriate curriculum materials that focus on enhancing empathy, self-efficacy, and anti-bullying attitudes of bystanders. Trained teachers implement the KiVa intervention program in their classrooms and are provided with detailed lesson plans, which include various activities, such as group discussion, role-play, and short anti-bullying videos reported (Kärnä et al., 2011a; 2011b; 2013). Classroom anti-bullying rules are also devised throughout lessons. The KiVa program also includes a virtual-learning element, with primary school students playing an anti-bullying computer game both during and between lessons. Secondary school students are introduced to “KiVa Street” which is an online forum, providing vast information on bullying-related topics. KiVa program includes many features that are significantly effective intervention components (Farrington & Ttofi, 2009), such as disciplinary methods, improved playground supervision, teacher training, classroom rules, a whole-school anti-bullying policy, information for parents, videos, and cooperative group work (Kärnä et al., 2011a).

Compared with other school-based bullying intervention and prevention programs around the world, the KiVa program significantly reduced school-bullying perpetration by approximately 9% and school-bullying victimization by approximately 11% (Gaffney et al., 2019).

NoTrap!

Noncadiamointrappola (let us Not Fall Into a Trap), or NoTrap!, is a web-based anti-bullying program that has been developed and evaluated in Italian high schools (Menesini et al., 2012). The intervention involves actively engaging students in the development of a website to promote anti-bullying. In addition, a number of participating students are enrolled as peer-educators throughout the intervention. These students act as moderators of the online anti-bullying forum, regulating discussion threads and responding to users' questions and concerns (Menesini et al., 2012). Additionally, peer-educators hold workshops offline with participating students to highlight the key issues surrounding both school- and cyberbullying (Palladino et al., 2016). Offline activities incorporate several elements that focus on (1) victims' roles and victim support; (2) involving bystanders in bullying; (3) greater involvement of teachers; and (4) creation of a Facebook group to supplement online forum materials (Palladino et al., 2012). Classroom workshops target empathy and problem-solving skills (Palladino et al., 2016).

Compared with other school-based bullying programs around the world, in relation to victimization outcomes the NoTrap! program was the most effective, reducing victimization by around 37%. NoTrap! also reduced bullying perpetration by a considerable amount, approximately 22%, but this effect was not statistically significant (Gaffney et al., 2019).

Anti-bullying intervention components

Analyzing different school-based bullying intervention and prevention programs, research has found that more intensive anti-bullying programs are more effective (Gaffney et al., 2019), since intensity and duration

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are directly linked to effectiveness (Ttofi & Farrington, 2011). That is, programs need to be intensive and long-lasting to have an impact on bullying behaviors, given that a considerable time period is needed in order to build up an appropriate school ethos that efficiently tackles bullying (Ttofi & Farrington, 2011). Further, programs have a bigger impact on bullying when they are conducted among older students, probably because of their superior cognitive abilities, decreasing impulsiveness, and increasing likelihood of making rational decisions. Ttofi and Farrington (2011) have suggested that programs should be targeted on students aged 11 or older, rather than on younger children, and that the outcome measure of bullying or victimization should be two times per month or more.

Programs including firm disciplinary methods, improved playground supervision, and parent meetings are found to be highly effective (Gaffney et al., 2019). Disciplinary methods (i.e., firm methods for tackling bullying, such as serious talks with bullies, sending them to the principal, making them stay close to the teacher during recess time, and depriving them of privileges) is an intervention component significantly related to reductions in both bullying and victimization (Ttofi & Farrington, 2011). Also, playground supervision is one of the elements that are most strongly related to program effectiveness, given that many bullying episodes occur during recess time (Ttofi & Farrington, 2011). Moreover, since bullied students often do not communicate their problem to anyone (e.g., Fekkes et al. 2005), anti-bullying initiatives should go beyond the scope of the school and target wider systemic factors, such as the family. Parent training/meetings are significantly related to a decrease in both bullying and victimization, suggesting that efforts should be made to sensitize parents about the issue of school bullying through educational presentations and teacher-parent meetings (Ttofi & Farrington, 2011). In turn, work with peers, that refers to the formal engagement of peers in tackling bullying, and could include peer mediation, peer mentoring, and encouraging bystander intervention to prevent bullying (Ttofi & Farrington, 2011), should be used carefully and under the strict supervision of teachers and educators, because, if not well managed, it could lead to an increase in victimization (Gaffney et al., 2019a). However, cooperative group work among experts is significantly related to the reduction of both bullying and victimization (Gaffney et al., 2019; Ttofi & Farrington, 2011), suggesting that future anti-bullying initiatives should bring together experts from various disciplines and make the most of their expertise.

The four most evaluated anti-bullying programs (i.e., KiVA, NoTrap!, OBPP, and ViSC) incorporate quite similar intervention components (Gaffney et al. 2019). Specifically, the KiVA, OBPP, and ViSC programs are very similar in practice, while the NoTrap! program is the most different of the four programs. As the effectiveness of these anti-bullying programs varies, researchers argued that specific program components may be associated with a decrease in bullying perpetration and victimization, and it may be possible to analyze their different components in order to better inform future research, practice, and policy decisions (Gaffney et al., 2019). Interestingly, such common components, including school climate, teachers and peer

relationships, are also those which intervene in promoting students' positive school adjustment, and those which represent protective factors against bullying (see paragraphs above).

The Whole-School Approach

A "Whole-School" Approach to anti-bullying programs was first introduced and implemented by Dan Olweus in Norway (i.e., OBPP, Olweus 1991), and it is undeniably the most common approach to bullying prevention. Later on, programs such as KiVa and ViSC have implemented this approach and applied a Socio-Ecological theoretical Framework to explain any potential changes that occur as a result of the implementation. The Whole-School Approach to bullying prevention incorporates individuals involved in every aspect of students' lives: not only the students involved in bullying, but also their peers, parents, teachers, and the wider community.

In relation to effectiveness, the Whole-School Approach may be not always the most effective (Gaffney et al., 2019). The OBPP is very effective in reducing both bullying perpetration and victimization, but the KiVa program is only marginally effective, and the ViSC program has the undesirable effect of increasing both bullying perpetration and victimization. Moreover, the non-whole-school program NoTrap! is the most effective intervention in reducing bullying victimization, through creating an online forum where trained students acted as moderators, responding to participants' questions and concerns about bullying (Gaffney et al., 2019).

This suggests that, while school bullying is a complex social peer-group phenomenon, the Whole-School Approach might not be effective for every individual student (Gaffney et al., 2019). Kaufman et al. (2018) recently characterized participants into different trajectories of victimization in the context of the KiVa anti-bullying, finding that participants who experience severe victimization (i.e., those who reported high levels of peer rejection, internalizing problems, and lower quality parent-child relationships) reported lesser decreases in victimization following the intervention, in comparison to participants in the decreasing and low/no victimization. The universal approach commonly includes school- and class-level components that focus on raising awareness about bullying-related issues. However, by raising awareness, and highlighting bullying issues amongst students, the effect of anti-bullying programs may be influenced by a social desirability bias. This might explain why greater reductions are seen for whole-school programs for bullying perpetration, in comparison to decreases for bullying victimization (Gaffney et al., 2019).

Peer Involvement

Previous research have found that the intervention component "work with peers" is associated with an increase in bullying victimization (Gaffney et al., 2019a; Ttofi & Farrington, 2011), despite this finding is not widely accepted by other researchers (e.g., Smith et al., 2012). In the four most widely disseminated programs analyzed by Gaffney et al. (2019), the peer group is involved in intervention activities in various ways. The OBPP program provides for actively working with participants to engage bystanders in order to

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encourage them to prevent, or respond accordingly to, bullying situations in their daily lives. Moreover, the KiVA and ViSC programs, and the OBPP as well, involve in-class group exercises and discussions (Gaffney et al., 2019).

In turn, the NoTrap! program includes an online forum for participants to discuss bullying victimization experiences, and it shows the most effective results in reducing bullying victimization (Gaffney et al., 2019). It may be argued that the anonymity and protection of an online environment may encourage participants to truly open up about bullying victimization, whereas in classroom settings they may feel uncomfortable about disclosing their experiences (Gaffney et al., 2019). Previous research has shown that a number of factors, including trust and perceived privacy, can influence disclosure in online settings, in relation to sensitive issues (Joinson et al., 2010). Furthermore, since the factors involved in both online and traditional bullying regularly overlap (Tzani-Pepelasi et al., 2018), increasing amongst adolescents (Rooney et al., 2015), and the greatest risk factor for cyberbullying is represented by school bullying (Baldry et al., 2015), moving from the classroom to online peer-led forums may be a way in which practitioners can improve intervention programs to better reduce bullying victimization. This may also represent a practical and cost-effective method, to get students actively involved in anti-bullying work while also highlighting key issues (Gaffney et al., 2019).

Parents and teachers Involvement

As previously stated, the involvement of teachers and parents is a key feature of the Ecological Approach to anti-bullying programs (Bronfenbrenner, 1979; Swearer & Espelage, 2004). Among the four most widely disseminated programs (Gaffney et al., 2019), only the NoTrap! program does not formally include teachers or parents in prevention activities.

The OBPP, KiVa, and ViSC programs include the involvement of both parents and teachers. In both the KiVa and OBPP programs, parents receive leaflets or letters at home that provide them with information about bullying and about the intervention program and are also invited to information nights held at participating schools. In addition, the KiVA, OBPP, and ViSC programs train teachers to implement detailed anti-bullying curricula. In the KiVA program, teachers are trained to implement either the “Confronting Approach” or the “No Blame Approach” when dealing with bullies. Also, both in the KiVA and OBPP programs teachers are engaged with “hot-spot” supervision, which requires them to identify locations within the school where bullying occurs frequently, and to increase teacher presence in these areas. “Hot-spot” supervision has been found to be an effective intervention component (Farrington & Ttofi, 2009). These elements are missing in the NoTrap! and ViSC programs, and this may be one potential reason why the KiVa and OBPP programs are more effective in reducing bullying perpetration (Gaffney et al., 2019).

Anti-bullying interventions in students with disabilities

Malecki et al. (2020) have highlighted that, despite students having stigma-associated factors, including disabilities, are at higher risk for bullying involvement and more in need of protection and intervention, there is very little research on school-based bullying intervention efforts specifically focused on youth with disabilities. Also, the National Academies of Sciences, Engineering, and Medicine (NASEM, 2016) reported that most bullying programs lack specific intervention components for youth with disabilities, suggesting that priority should be placed on program evaluations of interventions targeting stigma and bias-based bullying, including bullying of individuals with disabilities. However, reviewing literature, Earnshaw et al. (2018) have found that stigma-based bullying interventions are becoming more numerous over years, starting from a theoretical framework drawn on well-established theories from education and social psychology, including those of social and emotional learning and intergroup contact.

Almost all stigma-based bullying interventions involve education or skill building, and several facilitate contact between youth in stigmatized groups, among which students with disabilities, and non-stigmatized groups. These intervention strategies address individual-level stigma manifestations, including stereotypes and prejudice. Most interventions focus on the individual level by targeting youth who perpetrated or were at risk of perpetrating bullying. Further, several interventions focus on the interpersonal level by targeting the adults and peers surrounding youth, while few interventions focus on the structural level by implementing policies regarding stigma-based bullying (Earnshaw et al., 2018).

Rose and Gage (2017) have stated that many interventions and prevention approaches have proved promising, especially for students with disabilities. Espelage et al. (2016) have demonstrated that a school-wide social and emotional learning curriculum could reduce bullying behaviors, increase willingness to intervene in bullying situations, and increase academic outcomes for youth with disabilities over a 3-year period. Also, Mulvey et al. (2020) have highlighted the importance of group, and in particular of active bystanders, in contrasting bullying against children and adolescents with disabilities, finding that intervention likelihood is related to evaluations of the acceptability of the act of bullying. This reveals that students are more likely to intervene when they understand that bullying against students with disabilities is morally unacceptable (Mulvey et al., 2020).

Further, programs teaching specific bully prevention techniques or abilities, such as Expect Respect (Nese et al., 2014) and Stop/Walk/Talk (Ross & Horner, 2009), have also produced promising results in skill acquisition and reductions in bullying involvement among youth with disabilities and peer bystanders. Perhaps the most effective approach to reducing bullying involvement among youth with disabilities is direct instruction interventions focused on social and communication skill acquisition (Rose & Espelage, 2012; Rose & Gage, 2017). For instance, Cognitive Behavioral Therapy has been demonstrated to be effective in reducing bullying among students with learning disorders (Abdulkader, 2017). Also, proactive participation of students with

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speech disabilities is recommended in anti-bullying interventions, as it will empower bullying victims to make their peers aware in how they feel when they are being teased or bullied, and create a united effort that could break the endless cycle of bullying (Bagai & Erratt, 2019).

Based on literature review, Hernandez et al. (2017) have provided 20 recommendations that may help educational professionals and researchers in promoting bullying prevention for all students, not just those who have disabilities.

- 1) A Whole-School Approach or district-based response to bullying with effective leadership is needed to help teachers stem school bullying.
- 2) A response to school bullying can begin with a needs assessment or survey, including students with disabilities.
- 3) Make available in-service training and professional education of all teachers, administrators, and staff on the various aspects of disability.
- 4) Build awareness that disability harassment and bullying are prevalent in schools.
- 5) Recognize the importance of and need for advocacy, disability awareness, and acceptance of disability.
- 6) Create a school environment that is aware of and supportive of disability concerns and harassment.
- 7) Implement an effective school monitoring program.
- 8) Modify anti-bullying programs already in place to encompass students with disabilities.
- 9) Enhance student engagement, effective leadership, and team building. Establish and encourage positive interactions among students with and without disabilities. Develop a program to increase understanding, awareness, and sensitivity.
- 10) Involve teachers, administrators, staff, and students, as well as parents, and other community members.
- 11) Offer counseling services for victims, as well as perpetrators.
- 12) Monitor programs to follow-up on resolved issues to see if they remain effective and continue to be resolved.
- 13) Prevention programs need to include training on the importance of respecting others, accepting differences, and building empathy.
- 14) Emphasize holding schools accountable for severe, persistent, and pervasive bullying and harassment.
- 15) Create a shared vision as a foundation to an integrated Whole-School Approach.
- 16) Cultivate a culture which prevents bullying.
- 17) Develop a detailed protocol for school supervision to create and/or maintain safety.
- 18) Focus on student engagement and safety, both on and within the immediate area of campus, including the school bus system and afterschool programs.
- 19) Require parental notification of incidents of bullying.
- 20) Understand the power of bystanders to acts of bullying and encourage peer intervention.

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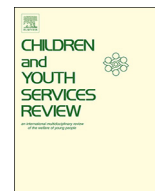
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ANNEXES

Martina Berchiatti

Annex 1: Study 1. School adjustment in children who stutter: The quality of the student-teacher relationship, peer relationships, and children's academic and behavioral competence



School adjustment in children who stutter: The quality of the student-teacher relationship, peer relationships, and children's academic and behavioral competence



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ABSTRACT

Introduction: The aim of this study was to investigate the quality of the student-teacher relationship, peer relationship, emotional and behavioral outcomes and academic performance in school adjustment of children who stutter.

Methods: The convenience sample consisted of 536 children – 62 affected by stuttering and 474 in the control group – and 36 prevalent teachers from six primary and secondary schools in Northwest Italy. Children were assessed with a sociometric questionnaire. Teacher evaluations were also used to assess their perception of their relationships with the student (Student-Teacher Relationship Scale), children's behavior (Strengths and Difficulties Questionnaire), and children's academic competence. Chi-squared tests, t tests, bivariate correlations, and Multivariate Analysis of Variances (MANOVAs) controlling for the students' social status in the peer group were used to analyze the data.

Results: The chi-squared test showed that children who stutter were more unpopular and rejected by peers than expected. The results of several MANOVA 2 (presence of stuttering in children) × 5 (students' social status in the peer group) tests performed on study variables showed greater difficulty on the teacher's part to establish a relationship based on affective closeness with mainstream students that are unpopular and rejected by classmates, but not with children who stutters. Children who stutter also showed high levels in Hyperactivity and low academic outcomes.

Conclusions: Findings suggest to teachers the need to meditate on school well-being of children who stutter in order improve their social inclusion in the classmates group, and provide researchers with an in-depth knowledge about the effect of stuttering on children's school adjustment.

1. The student-teacher relationship quality in students who stutter

1.1. Stuttering

Stuttering is a complex and multifaceted developmental disorder within which linguistic, speech-motor, physiological, cognitive, and emotional factors all play significant roles (e.g., Conture & Walden, 2012). Common symptoms of stuttering are recurrent prolongations, reverberations, or blocks of sounds, syllables, phrases, or words, while simultaneous manifestations can include facial grimacing, tremors of muscles used in speech, and eye blinks, in addition to the evasion of

words or circumstances that aggravate stuttering episodes (Maguire, Yeh, & Ito, 2012).

Around 5% of children are affected by stuttering, also known as childhood-onset fluency disorder (American Psychiatric Association, 2013) or stammering. Overall, approximately 80–90% of stuttering starts at the age of 6 (Maguire et al., 2012), with an average age at onset of 30–36 months and a lifetime incidence of 5–8% (Erdemir, Walden, Jefferson, Choi, & Jones, 2018).

Repeated communicative difficulties can have a negative influence on the lives of children who stutter (CWS; McAllister, 2016). CWS often appear to be shy, introverted, and not outgoing, as a result of the fear of being mocked by others, and they may be victims of aggression as a

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result of being unable to express anger openly (Yaruss, Coleman, & Quesal, 2012). Social anxiety associated with stuttering may be influenced by a host of interrelated factors, including fear of negative evaluation, negative social-evaluative cognitions, attentional biases, self-focused attention, safety behaviors, and anticipatory and post event processing (Iverach, et al., 2016), that might affect their school participation.

1.2. The student–teacher relationship

The teacher is not only a manager of social relations in class, but also an attachment figure who has an important role in the students' development process (Schwab & Rossmann, 2020). Research on the role of the student–teacher relationship (STR) has been inspired by extended attachment theory (Bowlby, 1982; Hamre & Pianta, 2001), based on the idea that warm relationships between children and teachers might promote emotional security in students (Sabol & Pianta, 2012). The Student–Teacher Relationship Scale (STRS; Pianta, 2001), the most frequently used measure of teachers' perceived relationship quality with children, identifies three distinct dimensions of teacher–child relationships: closeness, which is the degree of warmth and positive affect; conflict, which is negativity or the lack of rapport; and dependency, which is the clinginess or possessiveness that a child displays with the teacher (Sabol & Pianta, 2012). Like responsive parents, teachers provide children with a secure base from which they can explore their learning environment and a safe haven to which children can maintain proximity in cases of stress or when they feel the need (Hamre & Pianta, 2001).

The bioecological model assumes that individuals influence each other through their behavior in a context (Bronfenbrenner & Kiesler, 1977). Specifically, four principal components are in an interactive relationship: the process (i.e., forms of interaction between the organism and the environment), the person, the contexts, and the time: human development takes place through progressive reciprocal interaction between the individual and the environment (Bronfenbrenner & Morris, 2006).

In this way, the quality of student–teacher relationships has a positive influence on primary school students' emotion regulation and peer relationships (Hughes & Im, 2016). For instance, children experiencing positive relationships with their teachers develop interest in school activities, are more motivated and willing to learn (Prino, Pasta, Gastaldi, & Longobardi, 2016), and show higher academic achievement (Hughes, 2011; Longobardi, Prino, Marengo, & Settanni, 2016; Pasta, Mendola, Longobardi, Prino, & Gastaldi, 2013). In addition, a warm student–teacher relationship in early adolescence is positively associated with autonomous motivation to defend victims in case of bullying episodes (Jungert, Piroddi, & Thornberg, 2016; Longobardi, Prino, Fabris, & Settanni, 2019).

In contrast, conflictual student–teacher relationships have been associated with increased passive by standing (Jungert et al., 2016) and higher levels of peer victimization (Longobardi, Prino, Fabris, & Settanni, 2019; Lucas-Molina, Williamson, Pulido, & Pérez-Albéniz, 2015). Furthermore, an increase in the level of perceived conflict with teachers significantly predicted an increase in conduct problems and hyperactivity/inattention symptoms (Longobardi, Settanni, Prino, Fabris, & Marengo, 2019; Marengo et al., 2018) and can compound the risk of school failure, especially for at-risk children.

1.3. Student-teacher relationships in children with Special educational Needs

Previous studies showed that, in general, children with Special Educational Needs (SEN) tend to have a poorer student–teacher relationship than their peers (Prino et al., 2016). Also, negative student–teacher relationships seem to be associated with more depressive symptoms in children with SEN (Schwab & Rossmann, 2020).

Children with behavioral problems tend to have less positive teacher–student relationships (e.g., Baker, Grant, & Morlock, 2008). Children with ADHD generally feel less close to their teachers than their non-ADHD peers; at the same time, teachers experience less emotional closeness, less cooperation, and more conflicts with children with ADHD than with other students. In the case of children with ADHD or of those who suffer from Autistic Spectrum Disorders, relationships with teachers are characterized by a higher level of conflict and dependency, and the closeness dimension is hampered (Prino et al., 2016).

Children with Special Learning Difficulties (SpLD) also suffer an increase in the dependency dimension in their relationships with teachers (Prino et al., 2016). Although teachers feel less frustration and greater levels of sympathy for students with SpLD than for students without SpLD, it was also found that the same teachers have a higher expectancy of future failure for students with SpLD than for those without: Teachers view SpLD as a stable but uncontrollable cause of students' failure and lower achievement.

Regarding children with selective mutism, teachers perceive more closeness in their relationship with children without selective mutism than with children with selective mutism (Longobardi, Badenes-Ribera, Gastaldi, & Prino, 2019).

1.4. The relationship with teachers in children who stutter

Despite teachers might be an important part of the intervention process with CWS in primary school, little research has indicated the student–teacher relationship in CWS. These studies investigated teachers' beliefs, knowledge, and attitudes about stuttering in different cultures (Abdalla & St. Louis, 2012; Abrahams, Harty, St. Louis, Thabane, & Kathard, 2016).

There is a general consensus from primary school teachers that CWS have the potential to lead successful lives both socially and economically and that they can be productive members of society (Abrahams et al., 2016). Many teachers believe in their intelligence (academic performance) and ability to make friends and lead normal lives (Abdalla & St. Louis, 2012). Instead of this, teachers still have misconceptions about personality stereotypes and the causes of stuttering (Abrahams et al., 2016). Although some agreed with a genetic causal component as supported in the literature and the belief that CWS can recover spontaneously, the majority of the teachers attributed stuttering to psychological problems or a very frightening event (Abdalla & St. Louis, 2012). Moreover, personality stereotypes are still evident (i.e., CWS are shy and/or fearful or nervous and/or excitable; Abrahams et al., 2016). Confusion about the etiology of stuttering is one of the most consistent findings relating to negative stereotypes toward CWS, such as them being seen as “nervous or excitable” and “shy or fearful.” Between 31% and 48% of teachers consider CWS as being “not likeable,” “unsociable,” “hostile,” of “weak character,” and “unemployable” (Abdalla & St. Louis, 2012).

Primary school teachers report a lack of perceived knowledge about stuttering as compared to other human attributes (i.e., intelligence, left-handedness, mental illness, and obesity; Abrahams et al., 2016). Teachers are also not significantly different from the general public in their levels of knowledge/experience, accommodating/helping, or sympathy/social distance. Although many of the teachers knew a person who stutters and were sensitive in their interactions with CWS, inadequate knowledge about the disorder still remains (Abdalla & St. Louis, 2012). Many teachers would try to act like the person was talking normally and speak calmly and slowly to the person. Teachers also indicated that they would not feel impatient and would never punish a student for stuttering (Abrahams et al., 2016), but approximately half of the teachers say they would not feel comfortable or relaxed when interacting with CWS (Abdalla & St. Louis, 2012).

1.5. Peer relationships and social status of children who stutter among peers

The advantages of close peer relationships are well described in different research (e.g., García-Bacete, Marande-Perrin, Schneider, & Blanchard, 2014; Schwab & Rossmann, 2020). At school, a good relationship with peers positively affects academic performance, helps to develop social skills and competencies, and reduces stress and anxiety. Social interaction and close relationships have important implications for both physical and mental health (García-Bacete et al., 2014).

In addition, students' social status in the peer group has also been linked to better scholastic adjustment in terms of academic performance, the teacher-student relationship quality, and the children's emotional and behavioral competence (e.g., Mercer & DeRosier, 2008; Roseth, Johnson, & Johnson, 2008; Rytioja, Lappalainen, & Savolainen, 2019). It seems that students who are more accepted by classmates have better performance in terms of school subjects (Andrei, Mancini, Mazzoni, Russo, & Baldaro, 2015; Roseth et al., 2008), are more preferred by their teachers (Hughes & Chen, 2011; Mercer & DeRosier, 2008), and show more emotional and behavioral competence (Rytioja et al., 2019).

The peer interaction of CWS has been the subject of past research focusing on the adverse effects of stuttering on social functioning at school. Stuttering is perceived by CWS as an obstacle in participating in social activities, and it could lead to preferred school activities that do not involve talking and feeling ashamed when introducing oneself (Klompas & Ross, 2004). Impaired social development in CWS begins as early as age three; CWS at age of five report lacking the ability to form successful relationships with peers. At age eleven, CWS find it harder to deal with the pressures of forming relationships with peers (McAllister, 2016).

Negative social experiences could have consequences in terms of self-doubt about their ability to be competent communicators and lower self-esteem. In this regard, students who perceived their stuttering as more severe scored lower on the specific domains of self-esteem, social acceptance, and the ability to make close friends (Adriaensens, Beyers, & Struyf, 2015), and lower stuttering frequency was associated with greater perceived social acceptance (Hertsberg & Zebrowski, 2016).

Also, analyzing sociometric data inside classrooms, CWS tend to be more stringent or more careful in nominating acceptance, which leads to fewer reciprocated friendships (Adriaensens, Van Waes, & Struyf, 2017). CWS could be perceived by peers as shy or withdrawn and, because of this, could be less accepted by the group (Davis, Howell, & Cooke, 2002). Also, stuttering could cause mimicking and name-calling by peers and increase the risk of exclusion (Rose, Swearer, & Espelage, 2012). CWS are less popular than their more fluent peers and are at increased risk of being rejected and bullied by their classmates (Blood et al., 2011; Erickson & Block, 2013; Yaruss et al., 2012). The lingering effects of childhood victimization, common in some children who stutter, may contribute to the reported psychosocial problems in adulthood (Blood & Blood, 2016).

1.6. Hyperactivity and emotional symptoms in children who stutter

Studies of behavioral, emotional, and social well-being have demonstrated greater problems among CWS relative to their non-stuttering peers (Briley, O'Brien, & Ellis, 2019; McAllister, 2016) when comparing their scores on the Strengths and Difficulties Questionnaire (SDQ), a measure of behavioral, emotional, and social well-being. CWS seem to be more worried, unhappy, or depressed; get along better with adults than with children; and have difficulty with emotions or concentration. In contrast, CWS are less likely to be well-behaved, have good attention spans, and be able to complete tasks in a timely manner (Briley et al., 2019). Negative emotional factors play a critical role in speech-motor execution (Erdemir et al., 2018).

There are salient associations between temperament, speech-language development, and childhood stuttering. Literature suggests that

CWS present with high levels of Hyperactivity traits. Approximately half of the CWS present elevated Hyperactivity symptoms (Druker, Hennessey, Mazzucchelli, & Beilby, 2019). Also, anxiety is more common among CWS than among children who do not stutter, and 24% of stuttering children meet the criteria for social anxiety disorder (Iverach et al., 2016). Related to anxiety, communication apprehension has also been reported in CWS, probably as a consequence of negative peer reactions to difficulties with communication (Briley et al., 2019).

The presence of anxiety among CWS is noteworthy because stuttering is a complex condition that produces anxiety both internally and externally (Briley et al., 2019). For instance, when faced with communicative situations, they may increase avoidance behavior related to people, places, and social situations. Furthermore, the presence of stuttering can produce negative peer responses even in preschool-age children and contributes to high levels of anxiety (Langevin, Packman, & Onslow, 2009). The presence of anxiety has an additive negative effect on the stuttering experience and is a precursor to avoidance behaviors. In addition, the presence of anxiety and subsequent avoidance behaviors is indicative of non-optimal responses to the experience of stuttering (Langevin et al., 2009).

1.7. Academic performance in children who stutter

CWS may perform poorly in school because of being unable to express themselves in class, work well in groups, and do all that may be expected of them academically-speaking (Yaruss et al., 2012). In this way, as soon as at preschool age, CWS have more difficulty with executive functions (EFs) in everyday life, thus, they may experience early delays in their ability to integrate aspects of attention and EFs compared to children who do not stutter (Ntourou, Anderson, & Wagovich, 2018). Indeed, CWS have more difficulty maintaining concentration and need more adult direction to keep on task. CWS are characterized by atypical attentional processing in terms of stimulus evaluation, response selection, and execution (Costelloe, Davis, Cavenagh, & Doneva, 2018).

1.8. Aim of the study

Attachment-based research on the student-teacher relationship has recently started to include classmates' perspectives (e.g., Hughes, 2011), according to social referencing theory: children's views of teachers' relationships with classmates are based on social cues regarding how teachers behave and act toward individual children in their classes (Hendrickx, Mainhard, Boor-Klip, & Brekelmans, 2017). This means that by observing teachers' differential treatment of individual students in their classes children make inferences about their classmates' social traits and academic competencies and teachers' relationship perceptions (e.g., Hughes, Im, & Wehrly, 2014). A large body of literature has shown the importance of student-teacher relationships (e.g., Hughes & Im, 2016; Prino et al., 2016) and peer relationships (e.g., García-Bacete et al., 2014; Schwab & Rossmann, 2020) on emotional and behavioral development and academic outcomes in mainstream primary and secondary school children populations.

Conversely, at the present time, literature investigating this relationship in CWS is scarce. For this reason, the aim of this study was to investigate the quality of the student-teacher relationship, peer relationships, emotional and behavioral outcomes, and academic performance in the school adjustment of children who stutter. This study analyzes the relationship between the presence of stuttering in children and the following: 1) their social status in their peer groups; 2) their teachers' perceptions of their own relationships with these students; 3) their behavior; and 4) their academic performance. And it tries to answer to the following research questions:

Are there differences between CWS and students who do not stutter regarding their social status in the peer group?

Are there differences between CWS and students who do not stutter

regarding the teachers' perceptions of their own relationships with these students?

Are there differences between CWS and students who do not stutter regarding the behaviors?

Are there differences between CWS and students who do not stutter regarding the academic performance?

2. Method

2.1. Participants

This investigation was undertaken with 536 primary and secondary school students recruited from six Italian mainstream primary (40.5%) and secondary schools (59.5%). The schools were selected through convenience sampling. Both children who stutter and children who do not stutter were recruited from the same school. Within the schools, 36 classes were selected; there was at least one child who stuttered per class.

The students were aged between 8 and 17 years old ($M = 11.42$; $SD = 1.55$), of whom 50.2% were male. The mean age for children who stutter ($n = 62$) was 11.72 ($SD = 1.72$) and for children who do not stutter ($n = 474$) was 11.39 ($SD = 1.53$). The percentage of males was 58.1% for children who stutter and 49.2% for children who do not stutter. There were no statistically significant differences in age ($t_{(503)} = -1.53$, $p = .128$, *Cohen's d* = -0.21, 95% CI [-0.47, 0.06]) or in gender distribution ($\chi^2 [1] = 1.17$, *Phi coefficient* = -0.06; $p = .187$) between children who stutter and children who do not stutter.

In addition, the data of 36 teachers also were analyzed. The teachers were a mean age of 46.63 years old ($SD = 8.71$, $\min = 25$, $\max = 64$) and a mean teaching experience of 19.23 years ($SD = 9.77$, $\min = 2$, $\max = 40$). Of them, 92.2% were female, and 84.5% were employed.

2.2. Instruments

2.2.1. Socio-demographic characteristics

Both teachers and students were asked to report on the socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to report Number of years of teaching, and Number of hours per week teaching in the class. Data about students' migration backgrounds and the socioeconomic status of their families were not available.

2.2.2. Presence of stuttering in children

Teachers were asked to report on the presence of stuttering in each student. The item used was "The child has difficulty in articulating words" (yes or no). Teacher answers were based on stuttering diagnosis made by speech therapist in medical centers. All CWS have been enrolled in formal speech therapy services in the past or in the present. We did not obtain information about the specific type of therapy/treatment received and/or whether students have other diagnoses together with the presence of stuttering (e.g., anxiety). Please note that formal diagnoses of stuttering take place outside of the school curriculum and are based on national guidelines and protocols. The diagnoses are made by speech therapist, not by school teachers themselves. However, teachers usually work closely together with speech therapist, who inform them about students' diagnosed disabilities. Moreover, these diagnostic labels are registered in the school's administration system and form the basis of Individual Education Plans. Hence, even though teachers obviously do not diagnose the children themselves, they are well informed about these diagnoses and as such can relatively reliably report on the prevalence of CWS in their class.

2.2.3. Peer nomination technique

This is a peer nomination questionnaire that allows researchers to plot a graphic representation of the interpersonal relationships present in a class group. It was inspired by *Moreno's sociogram techniques*

(1934) and Coie, Dodge, and Coppotelli's (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions (three positive and three negative) in which children have to nominate three of their peers. The questions are the following: (i) "Who would you want as a table partner?" (ii) "Who would you want as a schoolwork partner?" (iii) "Who would you want as a field trip buddy?" (iv) "Who would you NOT want as a table partner?" (v) "Who would you NOT want as a schoolwork partner?" and (vi) "Who would you NOT want as a field trip buddy?" For each child, the sum of the positive nominations received from all peers represented their liking (L) scores. In the same way, the sum of negative nominations received by each child represented their disliking (D) scores. The L and D scores were standardized within each class (L_z and D_z) and used to compute a social preference (SP) score ($L_z - D_z$) and a social impact (SI) score ($L_z + D_z$) for each child. Thereafter, following the formula developed by Coie et al. (1982), children were categorized into one of five peer-status groups as follows: (a) popular ($SP > 1.0$; $D_z < 0$; $L_z > 0$); (b) neglected ($SI < -1.0$; $L_z < 0$; $D_z < 0$); (c) rejected ($SP < -1.0$; $D_z > 0$; $L_z < 0$); and (d) controversial ($SI > 1.0$; $L_z > 0$; $D_z > 0$), where L_z and D_z stand for standardized liking scores and standardized disliking scores, respectively. Children who did not fit into any of the previous categories were considered average.

2.2.4. The Student-Teacher relationship scale

(STRS; Fraire, Longobardi, Prino, Sclavo, & Settanni, 2013; Pianta, 2001; Settanni, Longobardi, Sclavo, Fraire, & Prino, 2015). The STRS assesses "a teacher's feelings about his or her relationship with a student, the student's interactive behavior with the teacher, and a teacher's beliefs about the student's feelings toward the teacher" (Pianta, 2001, p. 1). This scale is a self-report instrument consisting of 28 items developed with reference to attachment theory, especially the attachment Q-set (Waters & Deane, 1985). Items are evaluated on a 5-point Likert scale, ranging from 1 (definitely does not apply) to 5 (definitely applies). The scale presents three factors, identified as the Conflict, Closeness, and Dependency subscales. The original instrument by Pianta has been adapted and validated for the Italian context (Fraire et al., 2013). This study used the STRS Short Form validated for the Italian context (Settanni et al., 2015), which consisted of 14 items and 2 factors: Closeness (6 items) and Conflict (8 items). The Conflict dimension assesses the negative aspects in the relationship (e.g., discordant interactions and the absence of a satisfying teacher-pupil relationship). Closeness assesses a warm affective relationship with a teacher, capable of promoting positive attitudes toward school, open communication, involvement, and engagement. The score for each of the two subscales was generated by summing the scores for the items that make up that scale. Reliability for this study was adequate, with Cronbach's alpha values equal to 0.87 and 0.93 for Conflict and Closeness, respectively.

2.2.5. The Strengths and difficulties questionnaire

(SDQ; Goodman, 1997; Tobia, Gabriele, & Marzocchi, 2011). The SDQ is a well-validated behavioral screening questionnaire, which was developed on the basis of nosological concepts that underpinned the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1994) and ICD-10 (World Health Organization, 1993) classifications of childhood psychopathology, as well as factor analyses. The SDQ consists of 25 items and 5 subscales, which are as follows: Conduct Problems, Hyperactivity, Emotional Symptoms, Peer Problems, and Prosocial Behavior. The items are evaluated on a 3-point Likert scale (0 = not true, 1 = partially true, 2 = absolutely true). The score for each of the five subscales was generated by summing the scores for the five items that make up that scale. Reliability for this study was adequate, with Cronbach's alpha values equal to 0.75, 0.73, 0.85, 0.70, and 0.86, respectively for the Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems, and Prosocial Behavior subscales.

2.2.6. Academic performance

Teachers were asked to report the average grade obtained by each student across all the school subjects. Each school subject was graded on a 1–10 scale. Then, for parsimony the school subject was organized into two areas: Humanity subject (i.e., Italian language, History, Geography, English language, art, Music, and Religion) and Sciences subject (i.e., Mathematic, Sciences and Technology). Please note that in Italian primary school classes there are two teachers: one for humanity subjects and one for science subjects. Moreover, the decision to combine humanity and science subjects was supported by previous research that explored literacy and numeracy development in children with speech and language disorders (McLeod, Harrison, & Wang, 2019).

2.3. Procedures

The data were collected from six primary and secondary schools in Northwest Italy. The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the IRB of the University of XXX (approval number: 118643). The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

Phase 2 involved the prevalent teacher for each classroom that included at least one child who stutter and the rest with typical development, understanding that the teacher spent at least 18 h per week in that classroom. Each teacher completed a questionnaire about students from his/her class; the questionnaire was formed by 5 surveys, i.e., socio-demographic information, the presence of stuttering in each student, STRS, SDQ, and academic performance, for whom parental consent was received. The teachers completed the questionnaires in their free time during the school day, and the average time taken to complete all 5 surveys was 50 min per each student.

In phase 3, the children completed anonymous questionnaires (i.e., socio-demographic information and Peer nomination technique) during regular class hours. Before completing the survey, students were asked to give their written assent to participate in the study. With respect to the use of peer nominations, in order to minimize their potential influences on students, participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

2.4. Data analysis

The data were double entered and checked for accuracy. All of the values for univariate skewness and kurtosis for all the variables analyzed were satisfactorily within the conventional criteria for normality (−3 to 3 for skewness and −10 to 10 for kurtosis), according to the guidelines suggested by Kline (2015). In addition, a maximum of 0.2% of the cases was missing per variable. Given that missing values were < 1% for each of the variables, they are not considered to cause bias in the estimates (Graham, 2009). Therefore, no adjustments were made to the scores for the variables measured in our study.

First, descriptive statistics (means and standard deviations) were computed on the socio-demographic and study variables, both in the overall sample and by group (CWS or students who do not stutter). Then, to investigate whether there are differences between CWS and students who do not stutter on socio-demographic variables, independent sample *t*-tests were performed for the continuous variables, and chi-squared tests were carried out for the categorical variables. As effect size measure was used, the Cohen's *d* index for continuous variables and the *phi* coefficient for categorical variables (Cohen, 1988; Cumming & Calin-Jageman, 2017).

To investigate bivariate relationships between the study measures, Pearson's correlation coefficients were computed on the study variables by group (CWS or those who do not stutter). Then, to investigate whether there are differences between CWS and those who do not stutter regarding their social status in the peer group, a chi-squared test was performed, and Cramer's *V* coefficient was used as a measure of effect size.

Next, to determine if the presence of stuttering in children affects the investigated variables, it is necessary to control for the students' social status in the peer group because sociometric status groups differ in terms of teacher-student relationship quality, children's behavioral and emotional competence, and academic performance, 3 multivariate analyses of variance (MANOVAs) 2 (presence of stuttering) × 5 (social status) were performed, one of them on the STRS dimension scores, other on the SDQ dimension scores, and another one on academic performance. The most robust criterion, Pillai's criterion, was used (Tabachnick & Fidell, 2007), and partial eta squared (η^2) was estimated. Subsequently, if the overall *F* test showed mean differences, a post hoc univariate ANOVA was used to determine which means were statistically different from the others.

All analyses were performed using SPSS version 26.0 for Windows, and all statistical tests were interpreted assuming a significance level of 5% ($\alpha = 0.05$), using 2-tailed tests.

Table 1

Inter correlations among all variables and Mean (Standard Deviation) scores for stuttering groups (Students who stutter and Students who do not stutter).

	1	2	3	4	5	6	7	8	9	10	M(SD)
1. Closeness (STRS)	–	-0.25	-0.10	-0.28*	-0.20	-0.43***	0.55***	0.32*	0.41**	0.40**	38.09(7.45)
2. Conflict (STRS)	-0.36***	–	0.42***	0.62***	0.42***	0.25	-0.36**	-0.28*	-0.31*	-0.29*	18.30(8.11)
3. Emotional Symptoms (SDQ)	-0.04	0.27***	–	0.45***	0.37**	0.32*	-0.13	0.12	-0.09	0.07	7.88(2.27)
4. Behavior Problems (SDQ)	-0.21***	0.59***	0.28***	–	0.66***	0.27*	-0.62***	-0.32*	-0.41**	-0.38**	4.94(2.11)
5. Hyperactivity (SDQ)	-0.19***	0.53***	0.37***	0.71***	–	0.17	-0.55***	-0.26*	-0.44***	-0.34**	5.11(2.80)
6. Peer Problems (SDQ)	-0.23***	0.33***	0.50***	0.30***	0.30***	–	-0.38**	-0.30*	-0.38***	-0.37**	3.20(2.08)
7. Prosocial Behavior (SDQ)	0.52***	-0.43***	-0.22***	-0.48***	-0.47**	-0.47***	–	0.33*	0.55***	0.46***	11.34(2.58)
8. Academic performance (Humanity)	0.33***	-0.27***	-0.26***	-0.44***	-0.52***	-0.25***	0.41***	–	65***	0.91***	7.07(0.79)
9. Academic Performance (Sciences)	0.30***	-0.23***	-0.23***	-0.39***	-0.46***	-0.20***	0.35***	0.89***	–	0.90***	6.73(0.92)
10. Academic performance (Total)	0.34***	-0.26***	-0.25***	-0.43***	-0.50***	-0.25***	0.40***	0.97***	0.96***	–	7.03(0.74)
M(SD)	40.48(7.11)	16.51(8.18)	6.75(1.96)	4.26(1.78)	3.51(2.47)	2.62(1.80)	12.20(2.50)	7.75(0.99)	7.40(1.15)	7.67(0.97.)	
M(SD) for all sample	40.21(7.18)	16.71(8.18)	6.89(2.03)	4.33(1.83)	3.69(2.56)	2.68(1.84)	12.11(2.53)	7.68(0.99)	7.33(1.14)	7.60(0.97)	

Note. All Variables with Results for Students who stutter in the Top Diagonal and for Students who do not stutter in the Bottom Diagonal **p* < .05. ** *p* < .01. *** *p* < .001. STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire

3. Results

Table 1 presents descriptive statistics of the study variables for both the whole sample and for the stuttering groups (children who stutter and those who do not stutter) and the correlations among all study variables. Overall, for both groups, most of the variables were inter-correlated, and they showed similar relationship patterns. Although, for the CWS group, some relationships between variables did not reach statistical significance, they showed small to moderate relationships (Cohen, 1988), for example, the link between the closeness and conflict dimensions ($r = -0.25$), the association of closeness with peer problems ($r = -0.20$), or the relationship between conflict and peer problems ($r = 0.25$). Finally, for CWS, there was no association between emotional symptoms and peer problems or academic performance.

3.1. Social status in the peer group

Pearson's chi-squared and Cramer's V tests were performed to evaluate the relationship between the presence of stuttering in students and their social status in their peer groups. The results of the Pearson's chi-squared and Cramer's V tests showed a statistically significant association between the presence of stuttering in students and their social status in their peer groups ($\chi^2(4) = 19.19$; Cramer's $V = 0.19$, $p = .001$). Therefore, there were statically significant differences between CWS and students who do not stutter in terms of their social status in the peer group. Specifically, CWS were less popular ($z = -3.2$, $p < 0.01$) and more rejected ($z = 3.4$, $p < .001$) in the peer group than expected. In the rest of the categories related to social status in the peer group, there were no statistically significant differences between CWS and those who do not stutter (Neglected: $z = 0.3$; Controversial: $z = 1.5$; and Average status: $z = -0.8$).

3.2. Teacher's perception of his/her relationship with the student

A MANOVA 2 (presence of stuttering) \times 5 (social status group) test was performed to determine if the presence of stuttering in students and their social status in the peer group affect the student-teacher relationships assessed on the Conflict and Closeness dimensions (in the STRS). Previously, the assumption of homogeneity of covariance was examined using Box's M test (57.93 , $F = 2.00$, $p < .001$) and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate statistical significance of the main effects and interactions. The MANOVA did not show a statistically significant effect for the presence of stuttering in students (Pillai's trace = 0.003, $F[2, 524] = 0.79$, $p = .455$, $\eta^2 = 0.003$) and for their social status in the peer group (Pillai's trace = 0.021, $F[8, 1050] = 1.40$, $p = .192$, $\eta^2 = 0.011$), but it did for the interaction between both (Pillai's trace = 0.029, $F[8, 1050] = 1.94$, $p = .051$, $\eta^2 = 0.015$). Subsequent univariate ANOVAs revealed that the interaction effect was only statistically significant for the conflict dimension ($F[4, 525] = 2.67$; $p = 0.31$, $\eta^2 = 0.020$) and not for the closeness dimension ($F[4, 525] = 0.61$, $p = .655$, $\eta^2 = 0.005$). Finally, post hoc tests showed that for the CWS the conflict with teachers did not differ among students with different social statuses in the peer group. However, the conflict dimension presented statistically significant differences among social status groups for students who do not stutter ($F[4, 525] = 2.68$, $p = .031$, $\eta^2 = 0.042$). Post hoc comparisons showed that among students who do not stutter, conflict was higher for Rejected students ($M = 18.51$, $SD = 9.38$) than for Popular ones ($M = 14.85$, $SD = 6.59$); for Rejected students than for Neglected ones ($M = 15.14$, $SD = 6.50$), and for Controversial students ($M = 19.68$, $SD = 11.73$) than for Popular ones, while no differences emerged among the rest of the students with different social statuses (Average status: $M = 17.38$, $SD = 8.27$).

3.3. Teachers' perceptions of students' behavior

A MANOVA 2 (presence of stuttering) \times 5 (social status group) test was performed to determine if the presence of stuttering in students and their social status in the peer group affect teachers' perceptions of students' behavior in terms of the following: Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems, and Prosocial Behavior. Previously, the assumption of homogeneity of covariance was examined using Box's M test (305.10 , $F = 2.20$, $p < .001$) and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate significance of the main effects and interactions. The MANOVA showed a statistically significant effect for the presence of stuttering in students (Pillai's trace = 0.022, $F[5, 521] = 2.32$, $p = .042$, $\eta^2 = 0.022$) and for the students' social status in the peer group (Pillai's trace = 0.081, $F[20, 2096] = 2.15$, $p = .002$, $\eta^2 = 0.020$), but not for the interaction between both (Pillai's trace = 0.028, $F[20, 2096] = 0.741$, $p = .786$, $\eta^2 = 0.007$). Subsequent univariate ANOVAs revealed that CWS showed statistically significant higher values in Emotional Symptoms ($F[1, 525] = 6.29$, $p = .012$, $\eta^2 = 0.012$) and Hyperactivity ($F[1, 525] = 7.46$, $p = .007$, $\eta^2 = 0.014$) than students who do not stutter (see Table 1). Statistically significant differences were also observed in the students' social status in the peer group related to the following: Hyperactivity ($F[4, 525] = 2.88$, $p = .022$, $\eta^2 = 0.021$), Peer Problems ($F[4, 525] = 8.18$, $p < .001$, $\eta^2 = 0.059$), and Prosocial Behavior ($F[4, 525] = 2.49$, $p = .043$, $\eta^2 = 0.019$). Post hoc comparisons revealed that Rejected students showed statistically significant higher values in Hyperactivity ($M = 5.03$, $SD = 2.41$) than Popular students ($M = 2.73$, $SD = 2.11$). They also revealed that Rejected students showed statistically significant higher values in Peer Problems ($M = 3.92$, $SD = 2.39$) than Popular students ($M = 2.05$, $SD = 1.26$), Neglected students ($M = 2.61$, $SD = 1.74$), and students with the Average status ($M = 2.45$, $SD = 1.56$). Finally, Rejected students showed statistically significant lower values in Prosocial Behavior ($M = 10.98$, $SD = 2.74$) than Popular students ($M = 12.82$, $SD = 2.17$).

3.4. Academic performance

A MANOVA 2 (presence of stuttering) \times 5 (social status group) test was performed to determine if the presence of stuttering in students and their social status in the peer group affect academic achievement in humanity and science subjects. Previously, the assumption of homogeneity of covariance was examined using Box's M test (44.55 , $F = 1.43$, $p = .039$) and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate significance of the main effects and interactions. The MANOVA showed a significant effect for the presence of stuttering in students (Pillai's trace = 0.026, $F[2, 488] = 6.53$, $p < .001$, $\eta^2 = 0.026$) and for their social status in the peer group (Pillai's trace = 0.037, $F[8, 978] = 2.28$, $p = .020$, $\eta^2 = 0.018$), but not for the interaction between both (Pillai's trace = 0.014, $F[8, 978] = 0.89$, $p = .526$, $\eta^2 = 0.01$). Subsequent univariate ANOVAs revealed that students who do not stutter showed statistically and significantly higher values in academic performance related to Humanity subjects ($F[1, 489] = 12.67$, $p < .001$, $\eta^2 = 0.025$; $M = 7.70$, $SD = 1$ vs $M = 7.03$, $SD = 0.81$) and Science subjects ($F[1, 489] = 7.23$, $p = .008$, $\eta^2 = 0.015$; $M = 7.42$, $SD = 1.64$ vs $M = 6.73$, $SD = 0.89$) than CWS (see Table 1). Moreover, statistical and significant differences were also observed in the students' social status in the peer group related to academic performance: humanity subjects ($F[4, 489] = 2.95$, $p = .020$, $\eta^2 = 0.024$) and science subjects ($F[4, 489] = 4.49$, $p = .001$, $\eta^2 = 0.035$). Regarding academic performance related to humanity subjects, post hoc comparisons revealed that Popular students showed statistically significant higher grades ($M = 8.03$, $SD = 0.86$) than Rejected students ($M = 7.13$, $SD = 0.91$), while no differences emerged among the rest of the students with different social statuses in both variables. Concerning academic

performance related to science subjects, post hoc comparisons also revealed that Popular students and students with the Average status showed statistically significant higher grades ($M = 7.70$, $SD = 1.02$ and $M = 7.46$, $SD = 1.13$, respectively) than Rejected students ($M = 6.65$, $SD = 1.02$), while no differences emerged among the rest of the students with different social statuses in both variables.

4. Discussion

The main objective of this study was to investigate the quality of the student–teacher relationship, peer relationships, emotional and behavioral outcomes, and academic performance in the school adjustment of children who stutter. Bivariate correlation tests showed that for both groups (children who stutter and children who do not stutter), most of the variables were intercorrelated, and they showed similar relationship patterns in both groups. For instance, the teacher’s perception of their relationship with the student as being close or conflictive was correlated with all dimensions of the SDQ and academic performance in the expected direction. Also, the dimensions of children’s emotional and behavioral competence, assessed by the SDQ, were associated with academic performance in the expected direction. Although, for the CWS group, some relationships between variables did not reach statistical significance, possibly given the small size of the sample, which affects the statistical power to detect statistically significant associations among variables, small to moderate relationships were shown to exist (Cohen, 1988). Finally, for CWS, there was no association between emotional symptoms and peer problems or academic performance. This result seems to indicate that, despite the presence of emotional symptoms, stuttering in children might affect social status and academic outcomes, and this confirms previous research highlighting peer problems and poor academic performance in CWS (e.g., McAllister, 2016; Yaruss et al., 2012).

In addition, the results showed that the children’s relationship with the peer group was affected by suffering from stuttering. Specifically, CWS were more unpopular and rejected by peers than expected, comparing with students who do not stutter. This finding is consistent with the study of Davis et al. (2002), which found that CWS could be less accepted by the group because they are perceived by peers as withdrawn or shy. It is also consistent with evidence that CWS are less popular than their classmates who do not stutter and are at increased risk of being rejected by their peer group (Blood et al., 2011; Yaruss et al., 2012). Considering that the risk of social isolation or exclusion is common among CWS (Briley et al., 2018; Rose et al., 2012), this finding should be taken into consideration by teachers and educators in order to carry out strategies to improve the social well-being of CWS in peer groups.

In addition, from the teacher’s point of view and with regard to the teacher’s perception of his/her relationship with students, the revealed that there was no difference in the teacher’s perception of stuttering in the children results and the students’ social status in the peer group on the Conflict and Closeness dimensions. But, there was an interaction effect between both variables (the presence of stuttering in children and students’ social status in the peer group) on the Conflict dimension scores. Specifically, among students who do not stutter, the perception of conflict in the relationship with the teacher is affected by the students’ social status in the peer group. That is, teachers perceived a higher conflict level in their relationships with Rejected students compared to in those with Popular and Neglected students, and with Controversial students compared to Popular students. No differences emerged among the rest of the students who do not stutter with different social statuses. This means that for the teachers it may be easier to build positive relationships with students well accepted by their group of peers, which is in accordance with previous research findings that a warm student–teacher relationship is positively associated with good peer relationships (Hughes & Im, 2016). Nevertheless, the perception of conflict in the relationships of teachers with CWS was not

affected by the students’ social status in the peer group, which indicates that the teacher’s perception of his/her relationship with CWS presents similar levels of conflict for all students. This means that, differently than with other communicative disorders related to anxiety, like selective mutism (Longobardi et al., 2019), the presence of stuttering may not affect the teacher’s perception of his/her relationship with students. Finally, as we said earlier, the perception of closeness in the relationship with teachers was not affected by stuttering in the children nor by the students’ social status in the peer group, indicating that closeness levels in the relationships between teachers and students as perceived by teachers were similar for all students. This means that, also in the case of closeness, the presence of stuttering may not affect the perception that teachers have of their relationship with students. This result is encouraging, and it is in contrast with previous research in the study by Abdalla and St. Louis (2012). Abdalla and St. Louis, with a sample of 262 in-service public school teachers (mean age in years = 36.6, range = 19–59; 47.3% females) and 209 pre-service teachers (mean age in years = 19.6, range = 19–30; 99% females) recruited from elementary, intermediate, and secondary schools in an Arabic context, explored Arab teachers’ knowledge of and attitudes toward stuttering, as well as the strategies they adopt to cope with class problems. They found that teachers still have negative stereotypes toward CWS and do not feel comfortable with them. Differences in the results could be explained by the different cultural contexts of previous studies and may be the object of future research.

Regarding the Emotional Symptoms, Hyperactivity, Peer Problems, and Prosocial Behavior dimensions, the results showed a statistically significant effect for the presence of stuttering and for the students’ social status in the peer group, but not for the interaction between both. Specifically, CWS showed higher Emotional Symptoms and Hyperactivity scores than students who do not stutter. This relationship was expected and already evidenced by previous research, which reported negative emotional symptoms and high levels of Hyperactivity traits among CWS (Briley et al., 2019; Langevin et al., 2009; McAllister, 2016). Druker et al. (2019) found that one-half (50%) of children who stutter exhibit elevated hyperactivity symptoms. Because hyperactivity and anxiety disorders frequently occur in the same individual (Tannock, 2000) and children with social anxiety disorders often show disinterest in social situations (Iverach & Rapee, 2014), we could hypothesize that the presence of anxiety, associated with stuttering, makes subjects more vulnerable and sensitive to the stimuli within a relationship with peers in a school context, resulting in hyperactive behaviors. With regard to the students’ social status in the peer group for children who do not stutter, the findings also revealed that Rejected students showed higher values in Hyperactivity than Popular students. This result was expected and confirms previous research, finding that, in comparison with Rejected students, Popular children have many behavioral and emotional strengths, and fewer difficulties and behavioral problems (Rytioja et al., 2019). Rejected students also showed higher values in Peer Problems than Popular students, Neglected students, and students with the Average status. Finally, Rejected students showed lower values in Prosocial Behavior than Popular students. These findings were also expected and are in line with previous studies that showed that students reporting Behavioral Problems are correlated with a higher level of social rejection as well as with lower social acceptance by peers (Kruhl, Wilbert, & Hennemann, 2018).

Regarding academic performance, the findings showed a statistically significant effect for the presence of stuttering and for the students’ social status in the peer group, but not for the interaction between both. Specifically, CWS presented lower grade scores in humanity and science subjects than students who do not stutter. These findings could mean that CWS obtain lower academic achievements than their peers because of their difficulty communicating, which could affect their ability to express themselves and to work in groups (Yaruss et al., 2012). A previous study also demonstrated that CWS have an overall poorer performance in all three abilities of attention: selective,

sustained, and switching attention (Costelloe et al., 2018); such attention difficulties could compromise academic achievements. Concerning the social status of students who do not stutter in the peer group, the results also showed that Popular students presented higher grades than Rejected students in humanity and science subjects. In addition, students with the Average status achieved higher grades than Rejected students in science subjects. This finding is confirmed by previous research, which demonstrated that there is a significant connection between the sociometric status of students and academic achievement. In comparison with the Rejected status group, Popular children experience higher achievement, as assessed by teachers (Rytioja et al., 2019). Students that have higher academic performance may appear more desirable as friends to their peers and, because of this, may receive more preferences and be more popular among their peers.

4.1. Implication for practice

Findings from the study highlighted the profound impact of stuttering on children, as well as the effect of this disorder on their adjustment in school context. These results suggest a need for teachers and people in educational community to increase their awareness and understanding of stuttering and to meditate on school well-being of CWS, in order improve their social inclusion in the classmates group. Moreover, at the light of the results, this study could be an opportunity for teachers and educators to meditate also on the way to enhance the social status and academic performance of students who do not stutter. It is important to provide schools with information and literature about practical classroom management strategies. Awareness programs within the school setting should not only be directed towards teachers but also towards classmates, in order to prevent negative perceptions and stereotypes in the group of peers. Among the various teaching approaches available, cooperative learning has been reported in the scientific literature as having beneficial effects upon the socio-affective relations within a group (Soponaru et al., 2014) and may be taken into consideration by teachers in order to improve relational and academic levels among their students.

4.2. Implication for research

Findings from the study offer an in-depth knowledge the school experiences of children who stutter, adding informations to the body of research focused on the role of peer and student–teacher relationships at school on emotional, behavioral, social and academic achievements.

4.3. Limitations and future directions

Some limitations of the present work should be discussed. The characteristics and size of the sample could also be drawbacks. The mono-cultural setting may have limited the generalization of our findings. In this way, it is not possible to generalize the findings to children and teachers located in cities or from different cultural backgrounds. Cross-cultural studies, comparing different cultural groups and school settings using similar measures and variables, may improve the accuracy and generalization of these findings. Also, we were not able to examine some important factors due to the unavailability of such data, such as family socioeconomic status, students' migration backgrounds, and the presence of other diagnoses together with stuttering (e.g., anxiety). Future studies may be conducted to gain greater understanding of the roles of these factors in students' social status in the peer group, the teacher-student relationship quality, students' emotional and behavioral competence, and academic performance. In addition, the majority of the teachers examined in this study were females. The proportion of male teachers was rather small. This difference in gender distribution could bias our findings. Future studies should explore the generalizability of the present findings by using samples with more equal gender distribution. Finally, the size of the

sample, specifically the small subsample of children who stutter, could affect the ability to detect statistically significant results (i.e., statistical power) and, thus, the accuracy and generalization of these findings.

Another limitation of this work is the lack of measurement regarding the shyness of the children. Shy children generally tend to have difficulties in terms of communicative skills. For future research, it is important to collect such data so as to tease apart the effects of shyness in children versus stuttering in children on the analyzed variables. Thus, future studies should evaluate the shyness of children and control the statistical analysis of their data for this variable given that it might affect the results. In the same way, social desirability may have biased the results and also our findings. Measurement of this variable through an appropriate questionnaire would make it possible to introduce it into the analyses as a control variable, for example, as a covariate.

Finally, the data are cross-sectional, and, therefore, it is not possible to draw inferences about cause and effect relationships. Thus, future researchers could use a longitudinal design to test the causal relations among variables, which might help us understand how relationships between them unfold over time.

5. Conclusion

In conclusion, this study explored the presence of stuttering in children and its effects on the quality of the student–teacher relationship, students' social status in the peer group, emotional and behavioral outcomes, and academic performance. Results showed that children who stutter were unpopular and rejected by peers and that teachers had great difficulty to establish a relationship based on affective closeness with mainstream students that are unpopular and rejected by classmates, but not with children who stutters. Children who stutter also showed high levels in Hyperactivity and low academic outcomes. These findings would appear to have important implications for teachers and education community awareness, and for the advancement of theory and research.

Compliance with Ethical Standards

Ethical Approval. This article does not contain any studies with human participants or animals performed by any of the authors.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.chilgyouth.2020.105226>.

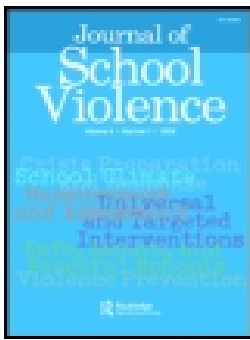
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**Annex 2: Study 2. Bullying in Students Who Stutter:
The Role of the Quality of the Student–Teacher
Relationship and Student’s Social Status in the Peer
Group**



Bullying in Students Who Stutter: The Role of the Quality of the Student–Teacher Relationship and Student’s Social Status in the Peer Group

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Bullying in Students Who Stutter: The Role of the Quality of the Student–Teacher Relationship and Student’s Social Status in the Peer Group

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ABSTRACT

Children who stutter are at risk of being excluded, rejected, or bullied at school because of their impairment. The aim of the current research is to assess the relationship between students and teachers and students’ social status in their peer group and bullying dimensions in children who stutter. A total of 536 children – 62 affected by stuttering and 474 in the control group – participated in the study, with a mean age of 11.42 ($SD = 1.55$), and 50.2% of whom were male. Among the tested models, model 2 showed better fit with statistically significant relations: $\chi^2 = 109.02$, $df = 38$, $p < .01$; $CFI = .94$; $RMSEA = .06$ [90% $CI = .05, .07$]; and, thus, it was retained as the best representation of the data. This study offers preliminary evidence about the role of the presence of stuttering in students as a predictor of bullying.

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KEYWORDS

Student-teacher relationship; peer nomination; social status; stuttering; bullying; structural equation modeling

Introduction

Stuttering

Stuttering, also known as childhood-onset fluency disorder (American Psychiatric Association, 2013) or stammering, is a speech motor social disorder in which fluency disruptions (e.g., sound and syllable repetitions, prolongations) may interfere with functional communication (Blood & Blood, 2016). It is a multidimensional communication disorder, which includes cognitive, affective, and social components (Boyle & Blood, 2015).

Around 5% of children suffer from stuttering, and approximately 80%–90% of these start it at the age of six (Maguire et al., 2012). Repeated communicative difficulties often have a negative influence on the social life of children who stutter (CWS) (McAllister, 2016). Social experiences play a role in the progression and maintenance of stuttering: negative stereotypes and related stigma may interfere with building and maintaining strong peer networks and social skills (Blood & Blood, 2016). CWS are often perceived as shy or withdrawn and because of this they are less accepted by peers (Davis et al., 2002). Also, stuttering could cause mimicking, name-calling, and increase the risk of exclusion (Rose et al., 2012).

Stuttering and bullying

Similar to other disabilities, individuals who stutter experience higher rates of victimization than individuals who do not stutter (Rose et al., 2015). CWS are less popular than their classmates and suffer a higher risk of being rejected and bullied (Erickson & Block, 2013).

There is a complex interaction between stuttering, bullying at school, and psychosocial problems in adulthood, such as social anxiety, fear of negative evaluations, and low satisfaction with life (Blood & Blood, 2016). Cook and Howell (2014) assessed bullying of children and teenagers who stutter, founding a relationship between bullying and children's self-esteem, as well as between bullying and anxiety in teenagers. The effects of childhood victimization persist into adulthood: nearly 88% of adults who stutter and who show high anxiety scores were bullying victims during their school years (Blood & Blood, 2016). The majority of teachers identify bullying as a problem in their schools and have observed bullying of children who stutter (Plexico et al., 2013).

Bullying

Empirical research on bullying dates back to the 1970s in Scandinavia (see Hymel & Swearer, 2015). Bullying is defined as a form of violence characterized by recurring acts of aggression by one or more subjects toward a victim, customarily within an asymmetrical power relationship (Olweus, 1994).

Research on school violence has primarily focused on students as both victims and perpetrators (Longobardi et al. 2017; Longobardi, Prino et al., 2019; Longobardi, Settanni et al., 2018). A lot of research has demonstrated links between victimization and the negative psychological, social, academic, and physical effects of bullying in children and adolescents. Some of these include poorer academic performance; the increased likelihood of depression, personality problems, and social anxiety; digestive- and respiratory-related health problems; lower self-confidence and self-esteem; and poorer peer relationships (Hymel & Swearer, 2015).

Within a group, the role of the person who enacts bullying behaviors is most often played by an individual without special needs (Kozmus & Pšunder, 2018), while individuals with special educational needs (SEN) suffer higher levels of victimization and bullying compared to their peers (Andreou, Didaskalou, Vlachou, 2015). Moreover, students with disabilities (i.e., specific learning disability, another health impairment, intellectual disability, emotional behavioral disability, autism spectrum disorder, speech, or language impairment, deafness, orthopedic impairment, visual impairment, or traumatic brain injury) display higher rates of online victimization, relational victimization, bullying, fighting, and aggression when compared with students without disabilities (Rose et al., 2015).

Peer relationships at school

The impacts of close peer relationships at school are well described in the literature. A good relationship with peers is positively associated with higher academic outcomes, social skills, and competencies, and lower levels of stress and anxiety. Social interaction and close relationships have important influences on both physical and mental health (García-Bacete et al., 2014). Also, social preference scores are negatively related to changes in children's levels of peer victimization (Elledge et al., 2016).

Students with SEN show poorer peer integration than their peers without SEN (e.g., ; Schwab & Rossmann, 2020) and are more likely to be socially rejected (Bossaert et al., 2015). Children with SEN experience high levels of victimization, including physical, verbal, and relational bullying (Andreou et al., 2015). A majority of people who stutter experienced bullying at school, leading to both immediate and long-term effects. Moreover, the likelihood of being bullied is related to reported difficulties in terms of making friends (Hugh-Jones & Smith, 1999).

The student-teacher relationship

The teacher is not only a manager of social relations in the class but also an attachment figure, which has an important role in children's development process (Schwab & Rossmann, 2020). The quality of affective relationships with significant caregivers, such as schoolteachers, impacts the child's socio-emotional adaptation, directly, or by mitigating or exacerbating the child's vulnerabilities (Hymel & Swearer, 2015; Longobardi et al., 2016).

Research shows the positive influence of a good student–teacher relationship on children’s emotion regulation and peer relationships (Hughes & Im, 2016). In contrast, a conflictual student–teacher relationship can intensify the risk of school failure, especially for at-risk children, and increases levels of conduct problems and hyperactivity/inattention symptoms (Longobardi, Settanni et al., 2019).

There is an association between the teacher–child relationship quality and bullying roles (Camodeca & Coppola, 2019). Children are generally less victimized when their teacher–student relationship is viewed as positive. Also, children’s social preference scores are directly related to the quality of their relationship with the teacher, replicating the common finding that socially marginalized children are at greater risk from peer victimization. In addition, internalizing problems and social education needs status predict decreased closeness with teachers (Elledge et al., 2016).

Generally, teachers demonstrate insight into the causes and characteristics associated with stuttering, but little awareness of or misperceptions about ways to manage it (Plexico et al., 2013). Nearly one-half of teachers report being unaware of the bullying of CWS (Hugh-Jones & Smith, 1999). However, studies on the student–teacher relationship and CWS are scarce. This means that teachers need an increased knowledge of stuttering, as well as information about how to best accommodate students who stutter in the classroom. Given the high incidence of bullying episodes concerning CWS (Berchiatti et al., 2020; Hugh-Jones & Smith, 1999) and the association between bullying and the student–teacher relationship (Camodeca & Coppola, 2019) and peer status (Elledge et al., 2016), it seems that it is necessary to investigate the bullying of CWS. This will help parents, teachers, educators, and clinicians make decisions regarding when to take action to protect CWS against the negative effects of bullying.

Aims

The aim of the current research is to assess the relationship between students and teachers and students’ social statuses in their peer groups and bullying dimensions in children who stutter. For that purpose, two models hypothesizing partial and complete mediation have been tested (see Figure 1).

Model 1 or the partial mediation model: A direct relation between bullying dimensions (victimization and perpetration) and the quality of the relationship between students and teachers (closeness, conflict, and negative expectations) and students’ social status in the peer group (social preference and social impact), and a direct one between bullying dimensions and the presence of stuttering in the students, mediated by the quality of the relationship between students and teachers and students’ social status in the peer group.

Model 2 or complete mediation model: A direct relation between bullying dimensions (victimization and perpetration) and the quality of the relationship between students and teachers (closeness, conflict, and negative expectations) and students’ social status in the peer group (social preference and social impact), and an indirect one between bullying dimensions (victimization and perpetration) and the presence of stuttering in the students, mediated by the quality of the relationship between students and teachers and students’ social status in the peer group.

Method

Participants

This investigation was undertaken with 536 school students recruited from six primary (40.5%) and secondary schools (59.5%) in Northwest Italy. The schools were selected through convenience sampling. Both students who stutter and students who do not stutter were recruited from the same school. Within the school, 36 classes were selected; there was at least one child who stuttered per class. The students were between the ages of 8 and 17 years old ($M = 11.42$; $SD = 1.55$), 50.2% were male, and 74.3% lived with a traditional family (two parents who are married to one another and who are both biological parents to all the children in the family).

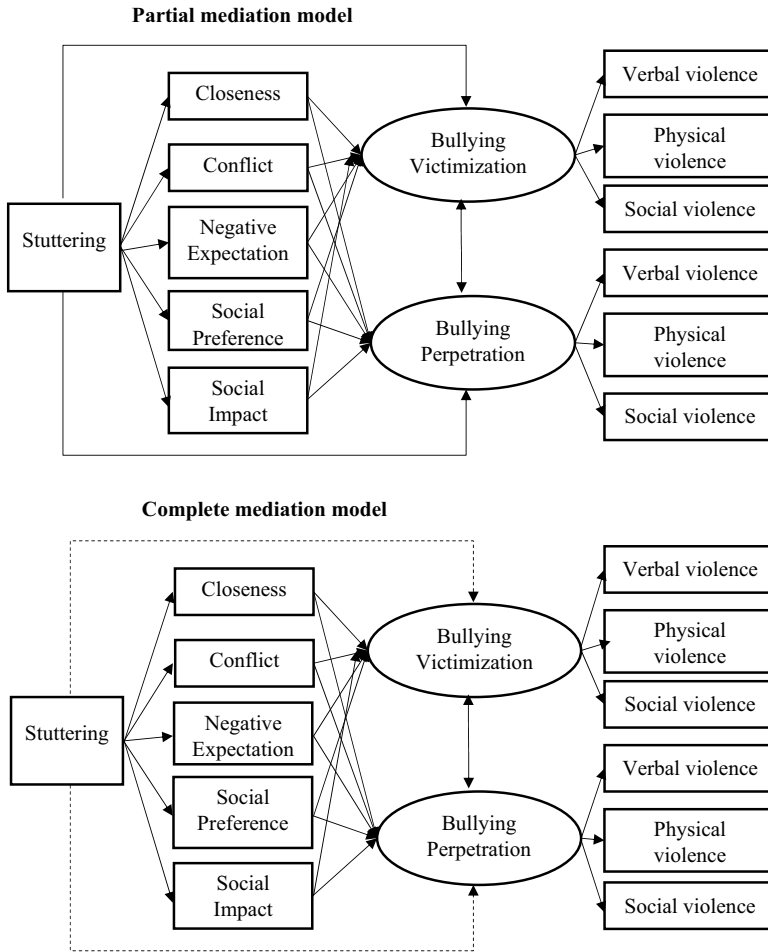


Figure 1. Competitive models testing partial and complete mediation of stuttering in the students on bullying dimensions. Correlations between bullying dimensions and among Closeness, Conflict, Negative expectations, Preference, and Impact were estimated in both models. Discontinued arrows showed indirect effects; continued arrows for direct effects. For the shake of clarity, standard errors are not shown.

The students who stutter group consisted of 62 children (58.1% males) with an average age of 11.72 years old ($SD = 1.72$). Of them, 66.1% lived with a traditional family. And, the students who do not stutter group was made up of 474 children (49.2% males) with an average age of 11.39 years old ($SD = 1.53$). Of them, 79.2% lived with a traditional family. There were no differences in age ($t_{(503)} = -1.53, p = .128$, Cohen's $d = -0.21$, 95% CI $[-0.47, 0.06]$), in gender distribution ($\chi(1) = 1.17, Phi\ coefficient = -.06, p = .187$), or in the families' status distribution ($\chi(5) = 7.91, Cramer's\ V = .12, p = .161$) between the students who stutter and those who do not stutter.

In addition, the data of 36 teachers were also analyzed. The teachers had a mean age of 46.63 years old ($SD = 8.71$, min = 25, max = 64) and a mean teaching experience of 19.23 years ($SD = 9.77$, min = 2, max = 40). Of them, 92.2% were female, and 84.5% were employed.

Measures

Socio-demographic characteristics

Both teachers and students were asked to report their socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to report their number of years teaching, the

number of hours per week that they spent teaching the class, and the children's family statuses. Data about students' migration backgrounds and the socio-economic statuses of families were not available.

Presence of stuttering in students

Teachers were asked to report on the presence of stuttering in each student. The item used was "The child has difficulty in articulating words" (yes or no). Teacher answers were based on stuttering diagnoses made by speech therapists in medical centers. All CWS are presently enrolled in formal speech therapy services or have been in the past. We did not obtain information about the specific type of therapy or treatment received.

Adolescent peer relations instrument (APRI; Parada, 2000)

The APRI is a self-report instrument consisting of 36 items with a Likert-type response scale (1 = never to 6 = every day) which measures three types of behaviors used to bully others (physical, verbal, and social) and three ways of being targeted (physical, verbal, and social). The higher the score, the greater the frequency amounts of bullying or being bullied. The score for each subscale was generated by summing the scores for the items that made up it. For this study, the reliabilities (Cronbach's alpha) of each of the three ways of being targeted were adequate: .85, .80, and .83 for verbal, physical, and social victimization, respectively. And, the reliabilities (Cronbach's alpha) of each of the three types of behaviors used to bully others were adequate: .85, .78, and .65 for verbal, physical, and social victimization, respectively.

Student perception of affective relationship with teacher scale (SPARTS; Koomen & Jellesma, 2015)

The SPARTS is a self-report instrument of 25 items with a Likert-type response scale (1 = no, that is not true to 5 = yes, that is true), designed for children aged 9 to 14 years, which measures a perception of conflict (10 items), closeness (8 items), and negative expectations (7 items) with regard to a specific teacher. When compiling the SPARTS in our study, the students were asked to refer to their "prevalent teacher" (i.e., the teacher with whom they spent the most hours per week, which, in the Italian education system, is the Italian language or science teacher). The score for each subscale was generated by summing the scores for the items that made up it. The reliability for these subscales in the present study was adequate, with Cronbach's alpha values equal to .81, .73, and .55 for the closeness, conflict, and negative expectations, respectively.

Peer nomination technique (Italian version)

This is a peer nomination questionnaire that was inspired by Moreno's sociogram techniques (1934) and Coie et al.'s (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions in which children have to nominate three of their peers. The questions are the following: (i) "Who would you want as a table partner?" (ii) "Who would you want as a schoolwork partner?" (iii) "Who would you want as a field trip buddy?" (iv) "Who would you NOT want as a table partner?" (v) "Who would you NOT want as a schoolwork partner?" and (vi) "Who would you NOT want as a field trip buddy?" For each child, the sum of the positive nominations received from all peers represented their liking (L) scores. In the same way, the sum of negative nominations received by each child represented their disliking (D) scores. The L and D scores were standardized within each class (Lz and Dz) and used to compute a social preference (SP) score ($Lz - Dz$) and a social impact (SI) score ($Lz + Dz$) for each child.

Procedures

The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with

the ethical code of the Italian Association for Psychology (AIP), which was approved by the Institutional Review Board (IRB) of the University of XXX. The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

Phase 2 involved the prevalent teacher for each classroom that included children who stuttered, meaning the teacher who spent at least 18 hours per week in that classroom. Each teacher completed a questionnaire about students from his or her class who he or she had received parental consent for: at least one student who stuttered and the rest with typical development. The teachers completed the questionnaire (i.e., socio-demographic information and the presence of stuttering in each student) in their free time during the school day.

In phase 3, the children completed anonymous questionnaires (i.e., socio-demographic information, APRI, SPARTS, and Peer nomination technique) during their regular class hours. Before completing the survey, students were asked to give their written assent to participate in the study. With respect to the use of peer nominations, in order to minimize their potential influences on students, participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

Data analysis

The data were double-entered and checked for accuracy. All the values for univariate skewness and kurtosis for all the variables were satisfactory (Kline, 2015). Missing values were less than 1% for each of the variables (maximum = 0.2% per variable); then, they were not considered to cause bias in the estimates (Graham, 2009). Therefore, no adjustments were made to the scores for the variables measured in our study.

First, descriptive statistics were computed. Then, independent samples t-tests were performed to investigate whether there were differences between the two groups (students who stuttered and those who did not stutter) regarding the investigated variables. Cohen's *d* was used as an effect size measure (Cohen, 1988). Also, Pearson's correlation coefficients were computed to get an overall view of the relations among the variables in the model for both the students who stuttered and those who did not stutter samples. These analyzes were performed using SPSS version 22.0 for Windows.

Additionally, a set of two structural equation models were hypothesized, tested, and evaluated using Mplus 7.4. Both of them included a sequence in which stuttering affected students' relations with teachers and students' status, and these variables, in turn, explained bullying victimization and perpetration (see Figure 1). However, whereas the first model (partial mediation) tested the direct effects of the presence of stuttering in students on bullying dimensions, the second one (complete mediation) only hypothesized an indirect effect of stuttering in students on bullying dimensions mediated by relations with teachers and students' status, but not a direct one. After comparing models' fit, an additional third model was tested. In this model, only the statistically significant effects in the best fitting model were retained.

The goodness of fit for each model was assessed with several fit indexes (Kline, 2015; Tanaka, 1993), specifically, (1) The χ^2 statistic, which is a test of the difference between the observed covariance matrix and the one predicted by the specified model; (2) the Comparative Fit Index (CFI), which assumes a non-central chi-square distribution with cutoff criteria of .90 or more (ideally over .95; Hu & Bentler, 1999) as indicating adequate fit; and (3) the root-mean-square error of approximation (RMSEA) and its 90% confidence interval. Values higher than 0.90 for the CFI or lower than 0.08 in the RMSEA are considered a reasonable fit (Kline, 2015), although values of .95 for the CFI and of .06 for the RMSEA are considered to be an appropriate model fit (Hu & Bentler, 1999).

Finally, the fits of the models were assessed comparatively. The chi-square difference test has traditionally been used to test for fit differences between nested models (Byrne, 2012). However, there is an increasing tendency to use subjective criteria to make inferences about differences between the CFIs of the models tested. Whereas some authors argue that a difference of .05 or less between two CFIs could be considered negligible (Little, 1997), others suggest that this difference value should not

exceed .01 (Cheung & Rensvold, 2002). Whenever these differences between competing models of varying parsimony are negligible, the most parsimonious model is chosen because it allows testing (as explained) for moderation effects.

Results

Table 1 presents descriptive statistics and the results of independent t-tests. Results from mean comparisons only revealed statistically significant differences between groups in social preference scores. Specifically, students who did not stutter were preferred by the peer group than students who stuttered ($p < .001$). There were no statistically significant differences between groups for the rest of the variables.

Table 2 shows the correlations among all the variables. As can be seen, for students who stuttered, overall, their perceptions of their relationship with the teacher were not associated with bullying dimensions. Only one positive and statistically significant relationship between the conflict dimension and the perpetration of verbal violence emerged, indicating that the students who perceived their relationship with the teacher as more conflictive committed more verbal violence.

However, for students who did not stutter, the student’s perception of his or her relationship with the teacher with reference to the conflict dimension and the negative expectations about this relationship were positive and statistically related to the three types of behaviors used to bully others (verbal, physical, and social) and the three ways of being targeted (physical, verbal, and social). Moreover, the perception of closeness was negative and statistically linked to verbal violence perpetration. In addition, a negative and statistical association emerged between social preference and the three ways of being targeted (physical, verbal, and social) and two of the types of behaviors used to bully others (verbal and physical). Finally, the social impact was positive and statistically related to verbal perpetration.

Stuttering in students predicts bullying: a structural equation model

Table 3 shows the fit indices and the comparison of the models tested. Both models showed excellent general fit. When they were compared, no statistically significant chi-square differences were found

Table 1. Mean (SD) scores for whole sample and stuttering groups and t-test.

	Range	Total Sample	Students who do not stutter	Students who stutter	t	p	Cohen’s d (95% CI)
		M (SD)	M(SD)	M (SD)			
Closeness (SPARTS)	8–40	28.57(6.95)	28.75(6.72)	27.24(8.47)	1.33	.183	0.18 (–0.08, 0.43)
Conflict (SPARTS)	10–50	17(6.12)	16.83(5.98)	18.28(7)	–1.75	.080	–0.23 (–0.49, 0.03)
Negative Expectations (SPARTS)	7–35	14.44(4.61)	14.38(4.58)	14.94(4.84)	–0.90	.368	–0.12 (–0.38, 0.14)
Verbal Victimization (APRI)	6–36	10.52(5.20)	10.44(5.06)	11.14(6.19)	–1.00	.319	–0.13 (–0.39, 0.13)
Physical Victimization (APRI)	6–36	8.21(3.55)	8.17(3.56)	8.54(3.49)	–0.77	.444	–0.10 (–0.36, 0.16)
Social Victimization(APRI)	6–36	9.16(4.45)	9.08(4.39)	9.81(4.95)	–1.22	.222	–0.16 (–0.42, 0.10)
Verbal Perpetration (APRI)	6–36	8.72(3.66)	8.71(3.64)	8.76(3.86)	–0.10	.918	–0.01 (–0.27, 0.25)
Physical Perpetration (APRI)	6–36	7.76(2.93)	7.79(3)	7.55(2.34)	0.60	.555	0.08 (–0.18, 0.34)
Social Perpetration(APRI)	6–36	9.84(3.64)	9.86(3.69)	9.66(3.20)	0.41	.685	0.05 (–0.21, 0.32)
Social Preference (Z scores)	–	0.00 (1.67)	0.11(1.63)	–0.85(1.73)	4.32	<. 001	0.57 (0.31, 0.84)
Social Impact (Z scores)	–	0.00 (0.97)	0.00(0.98)	–0.001(0.96)	0.11	.992	0.01 (–0.25, 0.28)

CI = Confidence Interval for effect size. SPARTS = Student Perception of Affective Relationship with Teacher Scale. APRI = Adolescents Peer Relations Instrument

Table 2. Intercorrelations between all variables with results for students who stutter in the top diagonal and for students who do not stutter in the bottom diagonal.

	1	2	3	4	5	6	7	8	9	10	11
1.Closeness (SPARTS)	–	–.28*	–.09	.03	.01	.23	.09	.19	–.22	–.06	–.07
2.Conflict (SPARTS)	–.31***	–	.52***	.004	.15	–.003	.13	.04	.36***	.22	.24
3.Negative Expectation (SPARTS)	–.21***	.528***	–	.09	–.01	.11	.17	.20	.13	.23	.03
4.Social Preference	.04	–.12**	–.04	–	–.13	.01	.10	–.03	.07	.03	–.14
5.Social Impact	.05	.05	–.03	.02	–	.13	.10	.07	–.04	–.02	.06
6.Verbal Victimization (APRI)	–.02	.37***	.25***	–.23***	.06	–	.69***	.69***	.11	.07	.31*
7.Physical Victimization (APRI)	–.05	.42***	.28***	–.14***	.03	.70***	–	.54***	.22	.35**	.18
8.Social Victimization (APRI)	–.03	.37***	.27***	–.24***	.08	.74***	.65***	–	.30***	.27***	.31***
9.Verbal Perpetration (APRI)	–.10*	.45***	.20**	–.17***	.09*	.41***	.43***	.30***	–	.57***	.35**
10.Physical Perpetration (APRI)	–.05	.41***	.21***	–.13***	.09	.32***	.49***	.27***	.66***	–	.11
11.Social Perpetration (APRI)	–.09	.39**	.28***	–.05	.08	.37***	.39***	.31***	.60***	.46**	–

* $p < .05$. ** $p < .01$. *** $p < .001$. SPARTS = Student Perception of Affective Relationship with Teacher Scale. SDQ = Strengths and Difficulties Questionnaire. APRI = Adolescents Peer Relations Instrument

Table 3. Models' general fit.

	χ^2	df	p	CFI	RMSEA	RMSEA 90% IC	$\Delta\chi^2$	Δdf	p	ΔCFI
Model 1: Partial mediation model	99.54	32	<.01	.95	.06	[.05,.08]	–	–	–	–
Model 2: Complete mediation model	101.02	34	<.01	.95	.06	[.04,.08]	1.63	2	.44	.00
Model 3: Complete mediation model with statistically significant relations	109.02	38	<.01	.94	.06	[.05,.07]	–	–	–	–

df = degrees of freedom

between them. As regards the analytical fit, the direct effects of the presence of stuttering in students on bullying in the partial mediation model were not statistically significant. Therefore, the most parsimonious model, the complete mediation model, was the best representation of the data. As some of the relations were not statistically significant neither in the partial nor the complete mediation models, a third model was tested. This model only included the statistically significant relations and, as displayed in Table 3, showed excellent fit again. This latest and most parsimonious model was, therefore, retained. The explained variance of victimization in this model was 21%, while for perpetration, it was 25%. The parameter standardized estimations are shown in Figure 2.

The presence of stuttering had one negative and direct effect on social preference, and one indirect effect on bullying victimization (verbal, physical, and social) through social preference. And, social preference had a negative and direct effect on bullying victimization. In addition, there was a positive and direct effect of the dimensions of the student's perception of his or her relationship with the teacher (conflict, closeness, and negative expectations) on bullying victimization. Finally, there was a positive and direct effect of the student's perception of his or her relationship with the teacher with reference to the conflict dimension on bullying perpetration (see Table 4).

Discussion

The aim of this study was to test the relationship between the presence of stuttering in students, social status, and the quality of the relationships with the teacher and the bullying dimensions (victimization and perpetration). The results only showed significant differences between students who stuttered and those who did not stutter on social preference scores, which indicates that CWS were less preferred by their peer group than children who did not stutter. This result was expected and confirms previous research showing that students with SEN report poorer peer integration than their peers without SEN (Schwab & Rossmann, 2020) and are more likely to be rejected by their group of peers (Bossaert et al., 2015). Stuttering is perceived by CWS as an obstacle in participating in social activities; probably because of their behaviors related to communicational difficulty, CWS are perceived as shy or

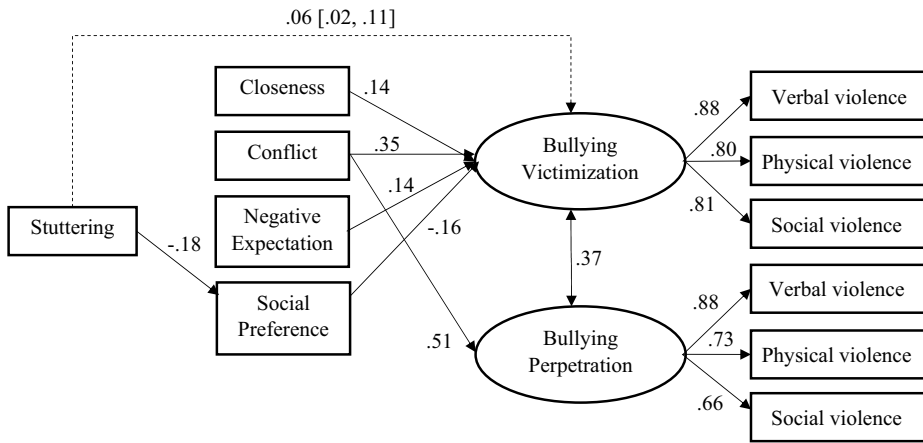


Figure 2. Standardized coefficients of the most parsimonious structural equation model that tests model of mechanisms of bullying. Stuttering was coded as: 1 = Students who stutter, 0 = Students who do not stutter. Correlations among Closeness, Conflict, Negative expectations, Preference Social, and Impact Social were estimated and can be consulted in Table 4.

Table 4. Correlations among closeness, conflict, negative expectations, preference, and impact in the retained model.

	1	2	3	4	5
1.Closeness (SPARTS)	–				
2.Conflict (SPARTS)	–.31**	–			
3.Negative Expectations (SPARTS)	–.19**	.53**	–		
4.Social Preference	.04	–.10*	–.02	–	
5.Social Impact	.06	.05	–.01	.01	–

* $p < .05$; ** $p < .01$

withdrawn and are less accepted by peers (Davis et al., 2002). No difference was found among the three dimensions of relationships with teachers, the three types of behaviors used to bully others, or the three ways of being targeted scores. This finding contributes to research on student–teacher relationships (STR) (Camodeca & Coppola, 2019) and shows that the relationship with significant caregivers is not influenced by episodes of bullying or victimization, but, conversely, the association between student–teacher relationships and school bullying may depend on the students’ social statuses in the classroom (Longobardi, Settanni et al., 2018).

Nevertheless, the findings from bivariate correlations suggest a different pattern in the relationships for the two groups (students who stuttered and those who did not stutter) among the analyzed variables (STR and social status) with bullying dimensions. For instance, in the sample of students who did not stutter, the student’s perception of conflict in the relationship with the teacher and the negative expectations regarding this relationship were associated with the three types of behaviors used to bully others and the three ways of being targeted. These relationships were not noted among CWS. In the same line, in the sample of students who did not stutter, social preference was linked to all types of bullying (victimization and perpetration), except social violence perpetration. Again, these relationships were not found in the sample of CWS. This could be because, in the relationship with bullying variables, the presence of stuttering plays a key role and has an influence on the relationships with teachers and peers: stuttering in students seems to be a component that introduces changes in terms of the relationships between bullying mechanisms (victimization and perpetration).

This finding is important and adds to the existing literature about stuttering (Blood & Blood, 2016; Erickson & Block, 2013) by showing how repeated communicative difficulties may have a negative influence on the social life of CWS, and, because of this, bullying affects a majority of CWS (McAllister, 2016). Consequently, school teachers should be aware of the high possibility of CWS

being bullied by classmates because of their communicative difficulties, in order to be prepared to face, and eventually prevent, this phenomenon successfully.

However, given the unbalanced sample size between groups (474 students who did not stutter versus 62 students who stuttered), it was not possible to estimate multi-sample path analyses to evaluate the possible moderating role of the stuttering variable in the relationships between the student–teacher relationship and students’ peer status and the bullying dimension. Consequently, a series of multi-sample path analyses should be performed in the future.

Regarding the retained structural equation model, bullying victimization was negatively predicted by students’ social preference and positively predicted by the dimensions of the student’s perception of his or her relationship with the teacher (conflict, closeness, and negative expectation). That is, having a low social preference is linked to experiencing bullying. At the same time, a student’s perceptions of his or her relationship with the teacher as being conflictive or as having negative expectations means more of a risk of suffering from bullying. However, a close relationship with the teacher is not a factor that protects from bullying. The findings point out that closeness to the teacher is associated with bullying victimization and complete previous research: higher conflict with teachers is related to lower social statuses, but higher scores of closeness are not always linked to a student’s standing among his or her peers (Hughes & Im, 2016), probably because it is the students’ social status among peers that makes the difference in the link between student–teacher relationships and bullying (Longobardi, Iotti et al., 2018).

In addition, the presence of stuttering had an effect on bullying victimization mediated by social preference. That is, students who stuttered were less socially preferred by the peer group, and this low preference is related to bullying victimization. This result contributes to research on the social status of CWS (e.g., Blood & Blood, 2016; McAllister, 2016) and confirms that CWS tend to be less popular than their more fluent peers and are at increased risk of being rejected and bullied (Erickson & Block, 2013). Similar to other students with SEN (Andreou et al., 2015), a correlation exists among children’s social competence and their bullying/victimization experiences. Because there is also a link between bullying/victimization and loneliness, on the one hand, and perceived social efficacy, on the other (Andreou et al., 2015), the present study highlights how difficulties in communication may be an obstacle for CWS in building positive peer relationships and, consequently, how they can put them at a high risk of being bullied.

Finally, the student’s perception of his or her relationship with the teacher as conflictive predicted bullying perpetration. In other words, the perpetration of bullying was not linked to students’ social status in the peer group nor to the student’s perception of closeness or the negative expectations of relationship with teacher. This finding contributes to research on student–teacher relationships (Camodeca & Coppola, 2019) by showing that conflictual student–teacher relationships are not only associated with an increased risk of school failure, conduct problems, and hyperactivity/inattention symptoms (Longobardi et al., 2016), but are also linked to higher levels of peer victimization (Lucas-Molina et al., 2015) and positively correlated to both active bullying and pro-bully behaviors (Longobardi, Iotti et al., 2018).

Limitations and future research

Some limitations of the present work should be discussed. The data are cross-sectional, and, therefore, it is not possible to draw longitudinal correlations, examining to what degree variables predict other variables over time, as well as directionality in terms of the associations between variables. Moreover, several studies have pointed to some biases that can stem from the use of mediation within a cross-sectional framework (Maxwell et al., 2011). Thus, future researchers could use a longitudinal design to test these longitudinal relations and their directionality, which might help us understand how relationships between them unfold over time. In addition, social desirability may have biased the results and also our findings. The measurement of this variable through an appropriate questionnaire

would make it possible to introduce it into the analyses as a control variable, for example, as a covariate.

On the other hand, the limited nature of the presence of stuttering in student's measure also might condition our findings. The measure consists of one item that assesses the presence or absence of stuttering in child. However, it does not differentiate between child with high levels of difficulty in articulating words and those with lesser difficulty. Severity of stuttering and different causes of difficulty in articulating words might have an effect moderator on the relationships analyzed in this study. Therefore, it is necessary to develop more research on this topic that includes the stuttering in students variable taking into account different levels of severity in articulating words and different causes.

Moreover, it should be considered that the "prevalent teacher" may not be the individual who has the strongest relationship with any particular student, especially for children who experience difficulties with bullying, even if the teacher spends most of his or her school time with the students. Children with communication deficits may seek support from any adult in their environment (e.g., band/music teacher, art teacher, special education teacher). The relationship with a designated teacher can be difficult to define as children age. This needs to be considered more thoroughly and discussed in future research.

Another limitation of this study relates to the Cronbach's alpha value of the verbal victimization ($\alpha = .65$) dimension of the APRI and of the negative expectation ($\alpha = .55$) dimension of the SPARTS. Consequently, the findings must be verified in other samples in which the quality of their measurement is improved.

Finally, the characteristics and size of the sample could also be drawbacks. The size of the sample, specifically the subsample of children who stutter, could affect the significance of the results found and their generalization, too. Also, it is not possible to generalize the findings to children and teachers located in cities or from different cultural backgrounds. Thus, the use of other samples in future research would be recommended. Thereby, it would test the generalizability of our findings in the future.

Practical and policy implications

This study offers preliminary evidence about the role of the presence of stuttering in students as a predictor of bullying. The findings could be important for teachers and educational researchers in different ways. For teachers, the results could highlight peculiarities of CWS and could represent an opportunity for them to meditate on, and eventually rethink, the pedagogical resources that educators provide, in order to enhance social inclusion and prevent bullying episodes at school. Our findings seem to suggest that social preference might play a key role in bullying episodes concerning CWS. As research on interventions with regard to attitudes toward stuttering demonstrated, the high interest or involvement of the peer group is associated with more successful interventions (Louis et al., 2020). Regarding prevention, individual support, social supportiveness, and collaboration between educational figures seem to be the most important elements in dealing with bullying at school (Ubudiyah et al., 2020). Among the approaches available, focus groups could be useful in identifying the ways in which youths talk about bullying and other types of peer aggression, while cooperative learning has beneficial effects on the socio-affective relations within a group (Soponaru et al., 2014) and may be taken into consideration by teachers in order to improve relational levels among their students.

For educational researchers, in light of the results that have emerged, it would be interesting to focus any future research on other trajectories of bullying in CWS, in order to better understand the specificities of their adjustment in a mainstream education context.

Conclusion

This work represents the first study investigating the relationships between the presence of stuttering in students, social status, the quality of the relationship with the teacher, and the bullying dimensions (victimization and perpetration).

It is an exploratory approach of this phenomenon in a specific sample and provides insight into the patterns of relationships among the study variables. It is, therefore, the first exploration of reality, and it has been carried out in the simplest and sophisticated way, always based on the theory. Although bullying has received international attention, there is still a dearth of research on this topic for specific samples. We need to address violence across multiple perpetrators and multiple systems.

Disclosure statement

No potential conflict of interest was reported by the authors.

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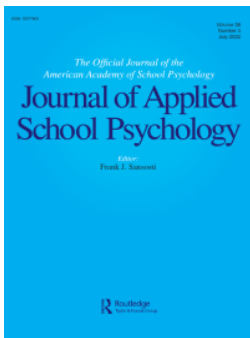
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Annex 3: Study 3. School Adjustments in Children with Attention-Deficit/Hyperactivity Disorder (ADHD): Peer Relationships, the Quality of the Student-Teacher Relationship, and Children's Academic and Behavioral Competencies



School Adjustments in Children with Attention Deficit Hyperactivity Disorder (ADHD): Peer Relationships, the Quality of the Student-Teacher Relationship, and Children's Academic and Behavioral Competencies

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School Adjustments in Children with Attention Deficit Hyperactivity Disorder (ADHD): Peer Relationships, the Quality of the Student-Teacher Relationship, and Children's Academic and Behavioral Competencies

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ABSTRACT

This study aimed to investigate how children with attention deficit hyperactivity disorder (ADHD) adjust to school when compared to typically developing students. The convenience sample consisted of 135 children—27 with ADHD and 108 in the control group—and 19 prevalent teachers from 6 primary and secondary schools in Northwest Italy. Children were assessed with a sociometric questionnaire. Evaluations were also used to assess teachers' perceptions of their relationships with their students, children's behaviors, and children's academic competencies. Chi-squared tests, independent sample t tests, bivariate correlations, and one-way multivariate analyses of variance (MANOVA) were used to analyze the data. The chi-squared test showed that children with ADHD were rejected by their peers and more unpopular than expected. The results of the one-way MANOVA tests showed greater difficulty on the teacher's part in establishing relationships based on affective closeness with children with ADHD than with typically developing children. Children with ADHD also showed higher levels in emotional symptoms, behavioral problems, hyperactivity, and peer problems than typically developing children. This study's findings suggest that teachers should consider the wellbeing of children with ADHD to improve their social and behavioral development on children's ability to adjust to school.

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peer nomination;
social status;
behavioral problem;
ADHD

Attention deficit hyperactivity disorder

Attention deficit hyperactivity disorder (ADHD) is a childhood-onset neurodevelopmental condition with multiple, controversial genetic and environmental etiology (Sciberras et al., 2017). While it was initially called

the hyperkinetic reaction of childhood, with a focus on excessive motor activity (APA, 1968), the term ADHD was first introduced in the *DSM-III-R* (American Psychiatric Association, 1987; Epstein & Loren, 2013). The *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* (American Psychiatric Association, 2013) defines ADHD as a mental disorder whose symptoms include developmentally inappropriate and impairing inattention (not being able to keep focus), hyperactivity (excess movement that is not fitting to the setting), and impulsivity (hasty acts that occur at the moment without thought). ADHD is one of the most common mental disorders, affecting 8.4% of children and 2.5% of adults. In addition, it is often initially identified in school-aged children, where it can lead to classroom disruptions, problems with academic activities, and difficulties in school adjustment (American Psychiatric Association, 2013).

School adjustment

The concept of adjustment refers to a consonance between individual characteristics and the demands and opportunities of a specific context. At school, it consists of a combination of social engagement, behavioral competence, and positive interpersonal relationships with peers and teachers (Wentzel, 2012). While positive school adjustment enhances constructive experiences, poor school adjustment can negatively impact children's self-esteem and their representation of their schools, teachers, and peers (for review, see Sánchez-Pérez & González-Salinas, 2017). Researchers agree on the presence of significant correlations between children's temperament, academic achievement, and their school adjustment. Children with ADHD encounter problems with adjustment at school more frequently than their peers (Sánchez-Pérez & González-Salinas, 2017). While a large body of studies has focused on the individual factors associated with the risk of poor adjustment in schools for children with ADHD (Sánchez-Pérez & González-Salinas, 2017), research on the connections among these variables and their impacts on the school adjustment of children with ADHD remains scarce.

The student-teacher relationship

School-age children spend a lot of time with their teachers. In Italy, school can amount to as much as eight hours per day, which is much greater than the waking time children spend with their parents. During this time, while the teacher is not the only person who manages learning activities, they do act as a reference point for children. A strong and supportive relationship with a teacher has been demonstrated to positively benefit learning outcomes, peer status in class groups, self-esteem, and students'

emotions in the classroom over time (Berchiatti et al., 2020; Berchiatti et al., 2021; Goetz et al., 2021; Pasta et al., 2013). The most frequently used measure for the quality of the perceived relationship between teachers and their students is the Student–Teacher Relationship Scale (STRS) (Pianta, 2001), which identifies the following three dimensions: closeness, conflict, and dependency. These dimensions of the student-teacher relationship are scored to demonstrate how the school adjustment of children can be influenced. While closeness between students and teachers is related to higher levels of behavioral and emotional engagement in children (Longobardi et al., 2016; Zee & Koomen, 2020), conflict in the student-teacher relationship is indicative of low social competence in children. Research has also highlighted that students with behavioral difficulties are at risk of experiencing negative relationships with their teachers. For this group of students, developing a positive student-teacher relationship appears to have both protective and predictive functions on both school-based outcomes and later in life.

The relationships between teachers and children with ADHD

A teacher's job can be particularly challenging when a student with ADHD is enrolled in their class. Problems related to conduct, which are typical of children with ADHD, predict poorer quality teacher-student relationships (Zendarski et al., 2020), and research shows that teachers who deal with children with ADHD report higher levels of stress than their colleagues. In general, teachers experience less emotional closeness, less cooperation, and more conflict with students with ADHD (Ewe, 2019). They also tend to interact more negatively with these students than with other pupils (Greene et al., 2002).

On the other hand, although students with ADHD generally report more difficult relationships with their teachers than their peers (Ewe, 2019), they frequently remain unaware of the high levels of conflict in their relationships with their teachers (Zee et al., 2020). For these children, attentional difficulties are closely related to social competency (Fernández-Jaén et al., 2012), and ADHD symptoms can have a significantly negative influence on their ability to adjust to school (Rushton et al., 2020). For children with ADHD, reducing conflict with their teachers can enhance their emotional engagement with school and improve their long-term outcomes (Rushton et al., 2020).

Peer relationships and social status of children with ADHD among peers

Research has highlighted that teachers' conflicted relationships with ADHD children can be reflected in the perceptions of those children's peers (Longobardi et al., 2019; Longobardi et al., 2021; Zee et al., 2020), who

may use their teachers' negative reactions as cues to interpret relationships within the classroom. Peer relationship problems appear to be particularly pervasive in children with ADHD, and more than half of them experience difficulty in friendships (Gardner & Gerdes, 2015). The reason for such problems in peer relationships is due to impairment in social functioning, as the intense symptoms of hyperactivity condition the social and leadership skills of children with ADHD, as well as their adaptive functions (Fernández-Jaén et al., 2012).

Problems in relationships expose children with ADHD to peer aggression, social isolation or rejection (Gardner & Gerdes, 2015), and victimization or episodes of bullying (Chou et al., 2018). As a consequence, these children risk developing psychosocial problems, may find it difficult to establish a sense of belonging in a group of their peers, or struggle to establish a stable personal identity, especially in adolescence.

Academic performance in children with ADHD

Students with ADHD frequently encounter significant academic difficulty. When compared to their peers, they show more problems in mathematical and language skills (Sánchez-Pérez & González-Salinas, 2017) and tend to perform worse in intelligence tests (Fernández-Jaén et al., 2012). Moreover, children with ADHD are at increased risk of a shorter education, dropping out of high school, psychological distress, and internalizing and externalizing their disorders during college. At the root of academic impairment, there exists a deficit in executive functions that are typical of individuals with symptoms of ADHD (Sánchez-Pérez & González-Salinas, 2017). Interestingly, although the academic performance of people with ADHD improves after treatment (for review, see Arnold et al., 2020), age also appears to play a mediating role between the symptoms of ADHD and school adjustment.

Aim of the study

While a large body of research has focused on the individual factors related to the risk of developing problems at school for children with ADHD (for review, see Sánchez-Pérez & González-Salinas, 2017), studies examining the relationship between these variables and their impact on school adjustment remain scarce.

This study aimed to investigate the quality of student-teacher relationships, peer relationships, emotional and behavioral outcomes, and academic performance and how these factors impact the ability of children with ADHD to adjust at school. Specifically, the study examined whether there

are differences in social status in peer groups, teachers' perceptions of their relationships with children, children's behavior, and academic performance between children with ADHD and children with typical development.

Method

Participants

The sample was made up of 135 primary and secondary school students recruited from six mainstream Italian primary (40.7%) and secondary schools (59.3%). The schools were selected through convenience sampling. Both children with ADHD and children without ADHD were recruited from the same schools. Within the schools, 19 classes were selected where there was at least one child with ADHD per class.

The children were between 9 and 15 years of age ($M = 11.37$; $SD = 1.25$), and 74.8% were male. The mean age for children with typical development ($n = 108$) was 11.35 years ($SD = 1.24$), and the mean age for children with ADHD ($n = 27$) was 11.48 years ($SD = 1.30$). The percentage of children with typical development who were male was 72.1%, and the percentage of children with ADHD who were male was 80%. There were no statistically significant differences between the groups in age ($t_{(121)} = -0.47$, $p = .637$, *Cohen's d* = -0.10 , 95% CI [-0.54 , 0.34]) or in gender distribution ($\chi^2 [1] = 0.80$, *Phi coefficient* = -0.08 ; $p = .372$).

The data of 19 teachers (89.4% females and 84.2 permanently employed) were also examined. The teachers had a mean age of 44.77 years ($SD = 4.96$, $\text{min} = 36$, $\text{max} = 53$) and a mean duration of teaching experience of 14.81 years ($SD = 7.58$, $\text{min} = 4$, $\text{max} = 40$).

Instruments

Sociodemographic characteristics

Both the teachers and children were asked to report on the following sociodemographic information: current age, gender, and school grade. Moreover, the teachers were asked to report on the number of years they had taught and the number of hours they taught in the classroom per week.

Presence of ADHD in Children. In Italian schools, students with ADHD are included in mainstream classes (cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca]). After families are deliver an official label by the local sanitary authority to a school, children with ADHD are eligible for additional educational resources at that school. Curricular teachers provide them pedagogical assistance in order to close

the gap between their and other students' behavioral and academic performance.

It is worth noting that formal diagnoses of ADHD take place outside of the school curriculum and are based on national guidelines and protocols. The diagnoses are made by certified psychologists and psychiatrists and not by school teachers themselves. However, teachers usually work closely with internal supervisors and school psychologists who inform them about students' diagnosed disabilities. In most cases, these diagnostic labels are registered in the school's administrative system and form the basis for the school's Individual Education Plans. Hence, although teachers do not diagnose the children themselves, they are well informed about their diagnoses and can often reliably report on the prevalence of children with ADHD in their classrooms.

As such, the teachers who participated in this study were asked to list all children in their classroom who had officially been diagnosed by the local sanitary authority to have ADHD according to the DSM-IV-TR diagnostic criteria and were also asked to report on the presence of ADHD in each student by answering the following question: "Does the student have ADHD?" (yes or no).

Peer nomination technique

This section describes a peer nomination questionnaire that enables researchers to plot a graphic representation of the interpersonal relationships that are present in a class group. The method was inspired by Moreno's sociogram techniques (1934) and Coie et al. (1982) sociometric strategy for assessing peer status in the classroom. It was made up of six questions (three positive and three negative), wherein children are required to nominate three of their peers. The questions are as follows: (i) "Who would you want as a table partner?" (ii) "Who would you want as a schoolwork partner?" (iii) "Who would you want as a field trip buddy?" (iv) "Who would you NOT want as a table partner?" (v) "Who would you NOT want as a schoolwork partner?" and (vi) "Who would you NOT want as a field trip buddy?"

For each child, the sum of the positive nominations received from all peers represented their liking (L) scores, and the sum of the negative nominations received represented their disliking (D) scores. The L and D scores were standardized within each class (L_z and D_z) and were then used to compute a social preference (SP) score ($L_z - D_z$) and a social impact (SI) score ($L_z + D_z$) for each child. Thereafter, following the formula developed by Coie et al. (1982), the children were categorized into one of five peer-status groups: (a) popular ($SP > 1.0$; $D_z < 0$; $L_z > 0$); (b) neglected ($SI < -1.0$; $L_z < 0$; $D_z < 0$); (c) rejected ($SP < -1.0$; $D_z > 0$);

$Lz < 0$); and (d) controversial ($SI > 1.0$; $Lz > 0$; $Dz > 0$), where Lz and Dz stand for standardized liking scores and standardized disliking scores, respectively. Children who did not fit into any of the previous categories were considered average.

The Student-Teacher relationship

The STRS (Fraire et al., 2013; Pianta, 2001; Settanni et al., 2015) is a self-reporting instrument based on the attachment theory and especially the attachment Q-set (Waters & Deane, 1985). It assesses “a teacher’s feelings about his or her relationship with a student, the student’s interactive behavior with the teacher, and a teacher’s beliefs about the student’s feelings toward the teacher” (Pianta, 2001, p. 1). The STRS consists of 28 items evaluated on a 5-point Likert scale, ranging from 1 “definitely does not apply” to 5 “definitely applies” and divided into three subscales: the conflict, closeness, and dependency. Pianta’s original instrument was adapted and validated to fit the Italian context (Fraire et al., 2013). This study used a short form STRS that had been validated to apply to an Italian context (Settanni et al., 2015) and consisted of 14 items divided into two subscales: closeness (6 items) and conflict (8 items). The conflict dimension measures the negative aspects in a relationship (e.g. discordant interactions or the absence of a satisfying teacher-pupil relationship). The closeness dimension assesses how warm and affective a student’s relationship is with their teacher and if the teacher is capable of promoting positive attitudes toward school, open communication, involvement, and engagement. The score for each of the two subscales was obtained through the sum of the scores of each item that make up that scale. For this study, the reliability, or internal consistency, was adequate ($\alpha = .92$ for conflict and $\alpha = .77$ for closeness).

The strengths and difficulties questionnaire (SDQ)

The SDQ (Goodman, 1997; Tobia, Gabriele, & Marzocchi, 2011) is a well-validated behavioral screening questionnaire that was developed on the basis of factor analyses and nosological concepts that underpinned the *DSM-IV* (American Psychiatric Association, 1994) and *ICD-10* (World Health Organization, 1993) classifications of childhood psychopathology. The SDQ consists of 25 items rated on a 3-point Likert scale, ranging from 0 “not true” to 2 “absolutely true” and divided into five subscales: conduct problems (5 items), hyperactivity (5 items), emotional symptoms (5 items), peer problems (5 items), and prosocial behavior (5 items). The score for each of the five subscales was obtained through the sum of the scores of each item that make up that scale. For this study the reliability, or internal consistency, was adequate ($\alpha = .72$ for emotional symptoms;

$\alpha = .80$ for conduct problems; $\alpha = .89$ for hyperactivity; $\alpha = .71$ for peer problems; and $\alpha = .85$ for prosocial behavior).

Academic performance

Teachers were asked to report the average grade obtained by each child across all school subjects. Every school subject was graded on a 1–10 scale. Then, the school subjects were organized into the following two areas to achieve parsimony: humanities subjects (i.e. Italian language, history, geography, English language, art, music, and religion) and science subjects (i.e. mathematics, sciences, and technology). It is worth noting that there are two types of teachers in Italian primary schools: those who teach humanities and those who teach the sciences. The decision to combine the humanities and sciences was supported by previous research that explored literacy and numeracy developments in children with speech and language disorders.

Procedures

The data were collected from six primary and secondary schools in Northwest Italy. The schools' principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology, which was approved by the IRB of the University of XXX. The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

Phase 2 involved the leading teacher of each classroom, or the teacher who spent at least 18 hours per week in that classroom. All classrooms included children with ADHD. Each teacher completed a questionnaire about five students from his or her class: one with a clinical diagnosis of ADHD and four with typical development. The five students in each classroom were randomly selected from those who participated in the research and represented about 20% of the students in the classroom. The questionnaire was formed by five surveys, including the STRS, the SDQ, a survey that gauged sociodemographic information, a survey that assessed the presence of ADHD in each student, and a survey that evaluated academic performance. Parental consent was received before students completed these surveys. The teachers finished the questionnaires in their free time during the school day, and the average time it took for each student to complete every survey was 50 minutes.

In phase 3, the children completed anonymous questionnaires (i.e. socio-demographic information and peer nomination technique surveys) during regular class hours. Before completing the questionnaires, students were asked to give their written consent to participate in the study. In order to minimize the potential influences of the peer nominations on students, participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

Data analysis

Preliminary analyses were performed. The values of kurtosis and skewness were calculated in order to check the normality of the data. Because the values of skewness and kurtosis were satisfactorily within the conventional criteria for normality (-3 to 3 for skewness and -10 to 10 for kurtosis), the data were considered to have a normal distribution (Kline, 2015). Following this, descriptive statistics (means and standard deviations) were computed on the sociodemographic and study variables, both in the overall sample and by group (students with ADHD or students with typical development). In addition, independent sample *t*-tests were performed for the continuous variables, and chi-squared tests were carried out for the categorical variables to analyze whether there were differences between the sociodemographic variables of both student groups. The Cohen's *d* index for continuous variables and the phi coefficient for categorical variables were used to measure effect size (Cohen, 1988; Cumming & Calin-Jageman, 2017).

To examine bivariate relationships between the study's measures, Pearson's correlation coefficients were performed on the study's variables and according to the groups (children with ADHD and children with typical development). Then, a chi-squared test was computed to investigate whether there were differences in social status within peer groups between children with ADHD and those with typical development, and Cramer's *V* coefficient was used as a measure of effect size. Cohen (1988) established a conventional interpretation of effect sizes, wherein $r < .10$ is considered a small effect, $r = .30$ is a medium-sized effect, and $r = .50$ is a large effect. These guidelines were used to interpret the results throughout this article.

Next, to analyze if the presence of ADHD in children affected the variables under study, several one-way multivariate analyses of variance (MANOVA) were performed on the STRS dimension, SDQ dimension, and academic performance scores. Pillai's criterion, the most robust criterion, was used (Tabachnick & Fidell, 2007), and partial eta squared (η^2)

was estimated as the effect size measure. Subsequently, if the overall F test statistically showed significant differences in the mean, a post hoc univariate ANOVA was used to determine which means were statistically different from the others. The data were double entered, checked for accuracy, and analyzed through the IBM SPSS 26.0 package program for Windows. All statistical tests were interpreted at a significance level of 5% ($\alpha = .05$).

Results

Table 1 presents the descriptive statistics for the variables of the ADHD groups (children with ADHD and those who have typical development) and the correlations amongst all the study's variables. Overall, most of the variables for both groups were intercorrelated and showed similar relationship patterns. Although some relationships between the variables in the ADHD group did not reach statistical significance, they did show small to moderate relationships (Cohen, 1988). These relationships included the association between closeness and conflict ($r = -.32$); the link between closeness and behavior problems ($r = -.36$); the associations between conflict and emotional symptoms ($r = .28$) and conflict and peer problems ($r = .30$); the connection between emotional symptoms and prosocial behavior dimensions ($r = -.26$); the relationships between behavior problems and peer problems ($r = .35$), behavior problems and prosocial behavior ($r = -.31$), and behavior problems and academic performance ($r = -.35$ for humanities subjects and $r = -.28$ for science subjects); the correlations between hyperactivity and prosocial behavior ($r = -.23$) and hyperactivity and academic performance in the humanities ($r = -.25$); or the link between prosocial behavior and academic performance ($r = .20$ for humanities subjects and $r = .27$ for science subjects). Finally, there was no association between emotional symptoms and academic performance for children with ADHD.

Social status in peer groups

Pearson's chi-squared and Cramer's V tests were performed to evaluate the relationship between the presence of ADHD in children and their social status in their peer groups. The results of the Pearson's chi-squared and Cramer's V tests revealed a statistically significant relationship between the presence of ADHD in children and their social status in their peer groups ($\chi^2(4) = 18.14$; Cramer's $V = .37$, $p = .001$). Consequently, there were statistically significant differences in social status within peer groups between children with ADHD and children with typical development.

Table 1. Inter correlations among all variables and Mean (Standard Deviation) scores for ADHD groups (Students with ADHD and Students without ADHD).

	1	2	3	4	5	6	7	8	9	10	M(SD)
1.Closeness (STRS)	—	-.25	-.10	-.28*	-.20	-.43***	.55***	.32*	.41**	.40**	38.09(7.45)
2.Conflict (STRS)	-.36***	—	.42***	.62***	.42***	.25	-.36**	-.28*	-.31*	-.29*	18.30(8.11)
3.Emotional Symptoms (SDQ)	-.04	.27***	—	.45***	.37**	.32*	-.13	.12	-.09	.07	7.88(2.27)
4.Behavior Problems (SDQ)	-.21***	.59***	.28***	—	.66***	.27*	-.62***	-.32*	-.41**	-.38**	4.94(2.11)
5.Hyperactivity (SDQ)	-.19***	.53***	.37***	.71***	—	.17	-.55***	-.26*	-.44***	-.34**	5.11(2.80)
6.Peer Problems (SDQ)	-.23***	.33***	.50***	.30***	.30***	—	-.38**	-.30*	-.38***	-.37***	3.20(2.08)
7.Prosocial Behavior (SDQ)	.52***	-.43***	-.22***	-.48***	-.47**	-.47***	—	.33*	.55***	.46***	11.34(2.58)
8.Academic performance (Humanity)	.33***	-.27***	-.26***	-.44***	-.52***	-.25***	.41***	—	.65***	.91***	7.07(0.79)
9.Academic performance (Sciences)	.30***	-.23***	-.23***	-.39***	-.46***	-.20***	.35***	.89***	—	.90***	6.73(0.92)
10.Academic performance (Total)	.34***	-.26***	-.25***	-.43***	-.50***	-.25***	.40***	.97***	.96***	—	7.03(0.74)
M(SD) for all sample	40.48(7.11)	16.51(8.18)	6.75(1.96)	4.26(1.78)	3.51(2.47)	2.62(1.80)	12.20(2.50)	7.75(0.99)	7.40(1.15)	7.67(0.97)	
M(SD) for all sample	40.21(7.18)	16.71(8.18)	6.89(2.03)	4.33(1.83)	3.69(2.56)	2.68(1.84)	12.11(2.53)	7.68(0.99)	7.33(1.14)	7.60(0.97)	

Note. All Variables with Results for Students with DHD in the Top Diagonal and for Students without ADHD in the Bottom Diagonal

* $p < .05$. ** $p < .01$. *** $p < .001$. STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire

Specifically, children with ADHD were less popular ($p < .05$) and rejected more ($p < .05$) in their peer groups than expected. In the remaining categories for social status in peer groups, there were no statistically significant differences between the observed and expected values of either group.

Teachers' perceptions of their relationships with students

A one-way MANOVA test was performed to determine if the presence of ADHD in children affected the conflict and closeness dimensions (in the STRS) of student-teacher relationships. The MANOVA test showed that ADHD in children statistically and significantly affected these relationships (Pillai's trace = 0.20, $F[2, 131] = 15.86$, $p < .001$). The results reflected a small association between the presence of ADHD in children and the combined dependent variables ($\eta^2 = .20$).

Subsequent univariate ANOVAs revealed that the effect of the presence of ADHD in children was statistically significant for the dimension of conflict ($F[1, 132] = 19.76$; $p < .001$, $\eta^2 = .13$) but not the dimension of closeness ($F[1, 132] = 1.30$, $p = .257$, $\eta^2 = .01$). Consequently, although children with ADHD showed higher values in the dimension of conflict than children with typical development, there were no differences in either group's dimension of closeness (see Table 1).

Teachers' perceptions of student behavior

A one-way MANOVA test was performed to determine if the presence of ADHD in children affected teachers' perceptions of student behavior in the following areas: emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behavior. The MANOVA test showed a statistically significant effect for the presence of ADHD in children (Pillai's trace = 0.39, $F[5, 128] = 16.51$, $p < .001$). The results reflected a moderate association between the presence of ADHD in children and the combined dependent variables ($\eta^2 = .39$).

Subsequent univariate ANOVAs revealed a statistically significant effect for the presence of ADHD in children on the dimension scores for emotional symptoms ($F_{(1, 132)} = 9.03$, $p = .003$, $\eta^2 = .06$), conduct problems ($F_{(1, 132)} = 32.44$, $p < .001$, $\eta^2 = .20$), hyperactivity ($F_{(1, 132)} = 68.73$, $p < .001$, $\eta^2 = .34$), and peer problems ($F_{(1, 132)} = 9.21$, $p = .003$, $\eta^2 = .07$), but not for the dimension scores of prosocial behavior ($F_{(1, 132)} = 3.09$, $p = .081$, $\eta^2 = .02$). Specifically, children with ADHD showed higher values than children with typical development for emotional symptoms, conduct problems, hyperactivity, and peer problems, but no differences were noted between either group's prosocial behavior scores (see Table 1).

Academic performance

A one-way MANOVA test was performed to determine if the presence of ADHD in children affected academic achievement in humanities and science subjects. The MANOVA did not show a statistically significant effect for the presence of ADHD in children on the combined dependent variables (Pillai's trace = 0.04, $F[2,115] = 2.53$, $p = .084$, $\eta^2 = .04$). Consequently, there were no statistically significant differences between children with ADHD and those with typical development on academic performance.

Discussion

This study's primary objective was to examine how children with ADHD symptoms adjust to school by analyzing the quality of their peer relationships, student-teacher relationships, emotional and behavioral outcomes, and academic performances. The results showed that ADHD affected children's relationships with their peer groups. Specifically, children with ADHD were more unpopular and were rejected by their peers more frequently than expected when compared to children with typical development.

The ADHD symptoms of attention deficiency and hyperactivity may play a role in the development of children's social relationships. This finding has been confirmed by a large body of research about the social status of children with ADHD. A high percentage of children with ADHD find it difficult to form friendships and are at risk of social isolation, rejection (Gardner & Gerdes, 2015), peer aggression, and involvement in episodes of bullying (Chou et al., 2018). Research in this field has highlighted decreased adaptive function in the social skills of children with ADHD when compared to their peers and that the symptoms of hyperactivity negatively impact their social and leadership skills (Fernández-Jaén et al., 2012). Alarming, peer rejection in children with ADHD is associated with later negative outcomes, such as anxiety, involvement in delinquency, heavy smoking, and general impairment during adolescence (Mrug et al., 2012). For these reasons, enhancing their relationships with their peers is particularly important to their future wellbeing.

According to teachers' points of view, and, more specifically, their perceptions of their relationships with their students, the results revealed that there were no differences in the dimension of closeness between teachers' perceptions of children with ADHD and children with typical development. This result was not expected and contrasts with existing studies of the student-teacher relationship between teachers and children with ADHD, which have posited that it can be more difficult for teachers to build close and warm relationships with students with ADHD than their classmates

(Ewe, 2019; Prino et al., 2016). Nurmi (2012) argued that students' who externalize behaviors may negatively influence their relationships with their teachers, resulting in decreased closeness. By comparison, Zendarski et al. (2020) found only a small difference between the closeness levels of children with ADHD and their peers and that children with ADHD tended to form poorer relationships. These varying results can be explained and identified through the characteristics of the settings where the present study was conducted. In the Italian school system, children with ADHD are integrated into the same classrooms as children with typical development. Due to their special needs and the symptoms of attention deficiency and hyperactivity, some teachers may form closer relationships with these children in order to help them improve their behavioral, academic, and social skills. Further research is needed to better explore the dimension of closeness in the relationships between teachers and children with ADHD in different settings.

Nonetheless, the results also revealed differences in the dimension of conflict and between teachers' perceptions of their relationships with children with ADHD and children with typical development. Specifically, teachers perceived their relationships with children with ADHD to have more conflict than their relationships with normally developing children. This means that teachers' perceptions of conflict may be affected by the presence of ADHD in children. This result is in line with previous studies that have reported that student-teacher relationships with children with ADHD are characterized by high levels of conflict and lower warmth than those experienced with their typically developing peers (Prino et al., 2016; Zendarski et al., 2020). Research also shows that teachers tend to interact more negatively with children with ADHD than with other students (Greene et al., 2002) and report higher conflict and lower cooperation in their relationships with them (Ewe, 2019). Rushton et al. (2020) noted that although ADHD symptoms can negatively impact children's emotional engagement with school, reducing conflict in the student-teacher relationship can also help mediate their feelings toward school. In other words, conflict in the relationship between students and teachers may play a critical role in how children with ADHD adjust to school, and reducing levels of conflict may promote positive long-term results (Rushton et al., 2020). To clarify how conflict and closeness between teachers and students impact social, academic, and behavioral outcomes, future research should focus on how student-teacher relationships influence children with ADHD.

For the SDQ dimensions of emotional symptoms, hyperactivity, and peer problems, the results showed a statistically significant effect for the presence of ADHD in children. Specifically, children with ADHD showed high levels in their emotional symptoms, hyperactivity, and peer problems

scores. These results indicate that the ADHD symptoms of attention deficiency and hyperactivity may affect children's behavioral and emotional developmental pathways, leading to difficulties in self-regulation and issues related to internalizing or externalizing problems. These results are consistent with previous studies that have reported that children with ADHD present heightened risks of externalizing or internalizing problems. Research has also highlighted that peer problems can mediate the associations between attention symptoms, externalized problems, and internalized problems (Yip et al., 2013), such as depression, in children with ADHD. Follow-up studies have found that the long-term outcomes of ADHD include low self-esteem, poor social function, and an increased likelihood of recurrent depression in young adulthood.

Regardless, because no differences were noted between either group's prosocial behavior scores, ADHD symptoms may not influence children's feelings of empathy or attitudes toward other people. This result is consistent with findings that hyperactivity and symptoms of inattention function as protective factors against difficulties in peer relationships. Moreover, children with ADHD frequently lack awareness about their classmates' negative feelings and beliefs about them (Zee et al., 2020). Put differently, this may lead them to engage more in prosocial behaviors with their peers and teachers since higher perceived social acceptance may protect them against any symptoms of depression. While Cristofani et al. (2020) highlighted the subtle complexities of empathy deficits in neurodevelopmental disorders, such as ADHD, subsequent research is needed to form a better understanding of how the symptoms of ADHD impact the development of prosocial behaviors in children.

In the measures of academic performance, the findings indicated that there were no differences between the academic performances of children with ADHD and those with typical development. In other words, the symptoms of inattention and hyperactivity did not impact learning outcomes in our sample. In contrast, previous research has shown academic impairment in children with ADHD, both in the subjects of math and language (Sánchez-Pérez & González-Salinas, 2017), and that educational performance can improve after ADHD has been treated (Arnold et al., 2020). These differences in results may be attributed to the specificity of the Italian school setting. Unlike other school systems (e.g. Swedish), where children with ADHD typically attend classes that have specifically been designed for them (Malmqvist & Nilholm, 2016), mainstream classes in Italian schools are inclusive, and curricular teachers provide children with ADHD pedagogical help in order to close the gap between the behavioral and academic performance of these students and their peers. As school inclusion has been demonstrated to enhance the academic performance

of students (Peetsma et al., 2001), we can hypothesize that these measures may also hold true for children with ADHD. To the best of our knowledge, literature in this field is scarce. Therefore, future research is needed to explore the role of school inclusion on the academic outcomes of students with ADHD.

Implications for practice

This study's findings revealed how the symptoms of ADHD impact children's ability to adjust to school and how attentional and hyperactivity problems affect social, emotional, and academic development. These results indicate the need for teachers, psychologists, clinicians, and those in the educational community to increase their awareness and understanding of ADHD so that they may improve children's capacity to adjust to school. Among the various teaching and clinical approaches available, recent studies have highlighted mindfulness and meditation as practices that can reduce the symptoms of ADHD (Saxena et al., 2020) and improve academic, social, and emotional variables. Teachers and clinicians should consider these approaches so that they may improve the wellbeing and relational and behavioral outcomes of students with ADHD at school.

Implications for research

This study's findings provide in-depth knowledge about the school experiences of children with ADHD and add information to the body of research focused on the impact of inattention and hyperactivity on emotional, behavioral, social, and academic achievements.

Limitations and future directions

This study's primary limitation was its small subsample of children with ADHD. Results from this study require caution in generalization to the mainstream children population, since the limited sample size of group of children with ADHD may have affected the ability to detect statistically significant results (i.e. statistical power), and thus, the accuracy and generalizability of these findings. Moreover, due to the small sample size, it was not possible to analyze the effect of students' social status in peer groups as a covariable. It is known that social status in peer groups may affect scholastic adjustment due to its relationship with teacher-student relationship quality, children's emotional and behavioral competencies, and academic performance (Rytioja et al., 2019). In this way, previous studies

have found that students who are accepted by their classmates are preferred by their teachers, show more emotional and behavioral competence (Rytioja et al., 2019), and perform better in their school subjects. Therefore, future studies should examine how students' social status and the presence of ADHD in students interact with the quality of teacher-student relationships, students' emotional and behavioral competencies, and academic performance.

The study was also limited by its characteristics sampling (e.g. the mono-cultural setting), which may limit the generalizability of its findings. As such, cross-cultural studies that compare different cultural groups and school settings with similar measures and variables may improve the accuracy and generalizability of these findings. It is also worth noting that it would be impossible to generalize these findings to children and teachers located in cities or from different cultural backgrounds.

This work was also limited because it did not measure social desirability, which may have introduced bias to its results and findings. Measuring this variable with the appropriate questionnaire could introduce social desirability to future analyses as a control variable or covariate.

Finally, because this study's data were cross-sectional, it was not possible to draw inferences about cause-and-effect relationships. Thus, future studies should apply a longitudinal design to test the causal relations among variables, which may help researchers to understand how these relationships unfold over time.

Conclusion

In conclusion, this study investigated the presence of ADHD in children and explored its effects on students' social status in peer groups, the quality of student-teacher relationships, emotional and behavioral outcomes, and academic performance. The findings revealed that in our sample size children with ADHD were unpopular, rejected by their peers, experienced greater degrees of conflict with their teachers, and had high emotional symptoms, hyperactivity, and peer problems scores. Due to the small sample size, results require caution in generalization to the mainstream children population. However, findings from this study might have important implications for clinicians, teachers, educational and community awareness, and the advancement of theory and research.

Disclosure statement

The authors declare no conflict of interest

Ethical approval

This article does not contain any studies with human participants or animals.

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Bullying and school adjustment in students with neurodevelopmental disorders and other special education needs within primary and lower secondary mainstream education

Annex 4: Study 5. Student–teacher relationship quality in students with learning disabilities and special educational needs



Student–teacher relationship quality in students with learning disabilities and special educational needs

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Student–teacher relationship quality in students with learning disabilities and special educational needs

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ABSTRACT

Despite the clear importance of the student-teacher relationship, few studies have focused on children with special education needs (SEN) and learning disabilities (LD). The purpose of this study was to examine the quality of the student-teacher relationship and its effects on the behavior, work, and social and relational skills of students with any type of SEN and LD. The sample consisted of 320 children-55 with LD, 46 with SEN, and 219 in the control group and 40 teachers. The chi-square test showed that students with SEN were more disliked in the peer group. MANCOVAs controlling for student age revealed that the presence of SEN in students did not affect perceptions of the teacher-student relationship, but did affect emotional and hyperactive symptomatology and academic performance. Students with LD showed higher levels of emotional and hyperactive symptomatology compared to typically developing students. In addition, students with SEN showed higher levels of hyperactivity symptomatology compared to students with typical development. Students with typical development showed better academic performance in humanity and science compared to students with SEN, and better performance in science subjects than students with LD. Students with LD showed better academic performance in intellectual subjects compared to students with SEN.

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Introduction

Student–teacher relationship

Over the past three decades, considerable research has focused on the importance of the relationships between students and teachers in shaping the quality of students' motivation and classroom learning experiences; teachers bring to the relationship resources to support children's intellectual, social, and emotional development. Empirical research on the role of the student–teacher relationship (STR) has been inspired by extended attachment theory (Hamre and Pianta 2001). This theory is based on the idea that a

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warm relationship between children and teachers might promote emotional security in students; like responsive parents, teachers provide children with a secure base from which they can explore their learning environment and a safe haven to which children can maintain proximity in the case of stress or need (Hamre and Pianta 2001).

The extent of the support and emotional security that teachers provide to children depends on the degrees of closeness, conflict, and dependency in this dyadic relationship (e.g. Pianta 2001). Relationships with teachers indirectly predict academic outcomes through motivation (Longobardi et al. 2019; Scales et al. 2020); specifically, a high level of closeness in the STR is significantly associated with advances in academic performance (Valiente et al. 2019) and improvements in attentional behavior, via the mediating role of emotion regulation. Additionally, a high level of closeness with the teacher is associated with behavioral outcomes, such as, for instance, greater autonomous motivation in children to defend victims in case of bullying episodes (Iotti et al. 2020; Longobardi et al. 2020); conversely, children with high rates of conflict with the teacher might present bullying behaviors. Furthermore, a warm STR and a higher level of school well-being might reduce students' intentions to leave school early (Schwab 2015), and, combined with a positive relationship with peers, might facilitate children's adjustment at school (e.g. Demirtaş-Zorbaz and Ergene 2019).

Recently, attachment-based research on the STR has started to include classmates' perspectives (e.g. Hughes, Im, and Wehrly 2014), according to social referencing theory; children's views of teachers' relationships with classmates are based on social cues regarding teachers' behaviors and actions toward individual children in the class (Hendrickx et al. 2017). This means that, by observing teachers' differential treatment of individual students in the class, children make inferences about their classmates' social traits and academic competencies and teachers' relationship perceptions (e.g. Hughes, Im, and Wehrly 2014).

Inclusion of children with SEN and LD at school

During the last decades, several countries have started to adopt inclusive education in their school systems, and the social participation of students with disabilities has become an important focus of research. A large quantity of literature highlights the challenging inclusion of children with disabilities and the importance of warm and emotionally secure relationships with their teachers and with their peers (Murray and Pianta 2007).

Research has mostly focused on students with autism, ADHD and intellectual disability (Zendarski et al. 2020), showing the clear relevance of meaningful relationships with teachers in terms of behavioral and academic achievements. In addition, other studies have explored the protective role of social status and difficulties in peer relationships regarding children with autism and those with ADHD (e.g. Powell et al. 2020).

In contrast, research has rarely encompassed subjects with special educational needs (SEN). Few studies existing in this field emphasize the challenging social participation of students with SEN at school; regarding the relationship with their peers, this group of children tends to have fewer or no friends, compared with their classmates (Schwab 2015). Additionally, difficulties in terms of social skills might be correlated with problems of closeness and conflict with the teacher (Freire, Pipa, Aguiar, Vaz da Silva, & Moreira,

2020). Nevertheless, the SEN condition at school appears to be difficult to describe because it is often defined very differently in research, and the labeling processes are dissimilar depending on the countries.

Among SEN, learning disabilities (LD, that is, reading, writing, and mathematics deficits) are one of the most frequently diagnosed neurodevelopmental disabilities. Previous studies have shown that children with LD tend to have a higher level of dependency in the STR (Pasta et al. 2013) and greater dissatisfaction in their relationships with teachers (Longobardi et al. 2016; Murray and Greenberg 2001) than their classmates with typical development. Regarding the relationship with peers, students with LD might present lower friendship quality, higher levels of conflict, more problems with relationship repairing, and less stable relationships than children without LD (Wiener and Schneider 2002), as well as significantly higher levels of perceived school danger than their classmates (i.e. the students' perception of the school setting as dangerous; Murray and Greenberg 2001). In addition, a recent study has highlighted the fact that in children with LD, self-esteem, bullying victimization, emotion regulation, social skills, and peer problems might be salient and correlate with externalizing and internalizing problems (Berchiatti, Ferrer, Galiana, et al. 2022; Berchiatti, Ferrer, Badenes-Ribera, et al. 2022; Boyes et al. 2020).

Although the literature shows that children with LD, and SEN in general, might present difficulties in relationships with teachers (Freire et al., 2020; Pasta et al. 2013) and peers (Boyes et al. 2020; Schwab 2015; Wiener and Schneider 2002), these students tend to present milder problems in STR than children who suffer from other specific disabilities (i.e. autism, ADHD; stutter; Prino et al. 2016; Berchiatti et al. 2020; Berchiatti et al. 2022; Zee et al. 2020) and no significant difference in school well-being, compared with their classmates with typical development (Schwab 2015). On one hand, this could be considered a strength for the inclusion of children with SEN and LD at school; on the other hand, because their social participation appears less problematic than other groups of students, teachers might give less importance to enhancing the inclusion of children with SEN and LD, who could be at risk of lower social, behavioral, and academic achievements.

At the moment, literature in this field of research appears scarce and specifically focused on single aspects of the school inclusion of students with SEN or LD, such as their relationships with teachers (Freire et al., 2020; Pasta et al. 2013) or peers or their psycho-social adjustment (Boyes et al. 2020; Schwab 2015; Wiener and Schneider 2002).

Aims of this study

Given the lack of literature, the aim of this study was to examine in-depth the inclusion at school of children with SEN and LD, in order to provide an extensive view of the quality of the STR and the effects of this relationship on the students' behavioral and academic outcomes and on their social and relational skills.

In this study, we analyze the relationship between the presence of SEN and LD in students and (1) their social status in their peer groups; (2) the teachers' perceptions of their relationships with these students; (3) their behavior; and (4) their academic performance.

Method

Sample

The sample was composed of 320 students (59.7% males) recruited from seven Italian primary and secondary schools. The schools were selected through convenience sampling. The average age of the students was 11.04 ($SD = 1.42$, Min. = 8, Max. = 14). Of them, 68.4% were students with typical development ($n = 219$), 17.2% were students with LD ($n = 55$), and 14.4% were students with SEN ($n = 46$). The average age of the students with typical development was 10.75 ($SD = 1.40$), and it was 11.68 ($SD = 1.25$) for students with LD and 11.66 ($SD = 1.28$) for students with SEN. There were statistically significant differences in the mean age of students ($F_{(2, 311)} = 15.34$, $p < .001$; $\eta^2 = .08$). Specifically, a post hoc comparison showed that the mean ages of students with SEN and students with LD were higher than the mean age of students with typical development ($p < .001$ in both cases). There was no statistically significant difference between the mean age of students with LD and that of students with SEN. The percentage of males for the students with typical development was 58.5%, and it was 56.4% for students with LD and 69.6% for students with SEN. There were no statistically significant differences in gender distribution ($\chi^2(2) = 2.26$, *Cramer's V* = .08; $p = .323$) among the three groups of students. In addition, it analyzed the data of 40 teachers with a mean age of 46.06 ($SD = 7.59$, Min. = 30, Max. = 65), 95.9% of whom were females. The average number of years of teaching experience was 19.78 ($SD = 9.57$, Min. = 2, Max. = 42), and the average number of teaching hours in the class per week was 10.55 ($SD = 5.31$, Min. = 2, Max. = 22).

Measures

Socio-demographic characteristics

Participants (teachers and students) were asked to report their socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to provide their years of teaching experience and their number of teaching hours in the class per week.

Presence of SEN and LD in students

In the Italian school context, 'students with SEN' are defined as children who, permanently or temporarily, have some difficulties because of socio-economic, linguistic, or cultural reasons. All students with SEN are included in mainstream schools. Within the students with SEN group, the sub-category of students with LD exists (cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca] 2018). Students with SEN and LD do not present cognitive impairment that affects their general intelligence, and, for this reason, they are not considered to need special education teachers. For students with SEN and LD, curricular teachers provide pedagogical help in order to close the gap between their and the other students' behavioral and academic performance. While, in general, students with SEN do not have a medical diagnosis, students with LD need an official label from the local sanitary authority in order to be eligible for additional educational resources at school.

Please note that formal diagnoses of LD take place outside of the school curriculum and are based on national guidelines and protocols. The diagnoses are made by certified psychologists and psychiatrists, not by school teachers themselves. However, teachers usually work closely together with internal supervisors and school psychologists, who inform them about students' diagnosed disabilities. In most cases, these diagnostic labels are registered in the school's administration system and form the basis of Individual Education Plans. Hence, even though teachers obviously do not diagnose the children themselves, they are well informed about these diagnoses and, as such, can relatively reliably report on the prevalence of LD, and SEN, in their classes.

Thus, for our study, class teachers were asked to list all the children in their classes who had SEN and who were officially labeled by the local sanitary authority as having LD. Teachers were asked to report on the presence of SEN and LD in each student. Three items were used: (1) 'Does the student have special educational needs?' (yes or no), (2) 'If yes, which type of SEN (SEN, LD, etc.)?' and (3) 'Does the student have a medical diagnosis?'

Peer nomination technique (Italian version)

This is a peer nomination questionnaire that allows researchers to plot a graphic representation of the interpersonal relationships present in a class group. It was inspired by Moreno's sociogram techniques (1934) and Coie, Dodge, and Coppotelli's (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions (three positive and three negative) in which children have to nominate three of their peers. The questions are the following: (i) 'Who would you want as a table partner?' (ii) 'Who would you want as a schoolwork partner?' (iii) 'Who would you want as a field trip buddy?' (iv) 'Who would you NOT want as a table partner?' (v) 'Who would you NOT want as a schoolwork partner?' and (vi) 'Who would you NOT want as a field trip buddy?' For each child, the sum of the positive nominations received from all peers represented their liking (L) score. The sum of the negative nominations received by each child represented their disliking (D) score. The L and D scores were standardized within each class (L_z and D_z) and used to compute a social preference (SP) score ($L_z - D_z$) and a social impact (SI) score ($L_z + D_z$) for each child. Thereafter, following the formula developed by Coie, Dodge, and Coppotelli (1982), the children were categorized into one of five peer status groups as follows: (a) popular ($SP > 1.0$; $D_z < 0$; $L_z > 0$); (b) neglected ($SI < -1.0$; $L_z < 0$; $D_z < 0$); (c) rejected ($SP < -1.0$; $D_z > 0$; $L_z < 0$); and (d) controversial ($SI > 1.0$; $L_z > 0$; $D_z > 0$), where L_z and D_z stand for standardized liking scores and standardized disliking scores, respectively. Children who did not fit into any of the previous categories were considered average.

Student-teacher relationship scale (STRS; Pianta 2001)

The STRS assesses 'a teacher's feelings about his or her relationship with a student, the student's interactive behavior with the teacher, and a teacher's beliefs about the student's feelings toward the teacher' (Pianta 2001, 1). This study used the STRS Short Form validated for the Italian context (Settanni et al. 2015), which consisted of 14 items evaluated on a 5-point Likert scale (1 = definitely does not apply, 5 = definitely applies) and two factors: closeness (6 items) and conflict (8 items). The conflict dimension assesses the negative aspects in the relationship. Closeness assesses a warm affective relationship

with the teacher, capable of promoting positive attitudes toward school, open communication, involvement, and engagement. Reliability for this study was adequate, with Cronbach's alpha values equal to .90 for the closeness dimension and .89 for the conflict dimension.

Strengths and difficulties questionnaire (SDQ; Goodman 1997)

The SDQ is a well-validated behavioral screening questionnaire, which was developed on the basis of nosological concepts that underpin the Diagnostic and Statistical Manual of Mental Disorders, DSM-IV (APA 1994), and ICD-10 (World Health Organization 1993) classifications of childhood psychopathology, as well as factor analyses. The SDQ consists of 25 items evaluated on a three-point Likert scale (0 = not true, 1 = partially true, 2 = absolutely true) and 5 subscales: conduct problems, hyperactivity, emotional symptoms, peer problems, and prosocial behavior. Reliability for this study was adequate, with Cronbach's alpha values equal to .69 for emotional symptoms, .74 for conduct problems, .86 for hyperactivity, .67 for peer problems, and .84 for prosocial behavior.

Academic performance

Teachers were asked to report the average grade obtained by each student across all the school subjects. Each school subject was graded on a 1–10 scale.

Procedures

The data were collected from seven primary and secondary schools in Northwest Italy. The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the Institutional Review Board (protocol no. 118643) of the University of XXX. The forms stated that data confidentiality would be assured and that participation in the study was voluntary.

Phase 2 involved the prevalent teacher for each classroom that included children who stuttered, meaning the teacher who spent at least 18 h per week in that classroom. Each teacher completed a questionnaire about the students from his/her class (i.e. socio-demographic information, the presence of SEN or LD in each student, the STRS, the SDQ, and academic performance) who he/she had received parental consent for: at least one student who stuttered and the rest with typical development. The teachers completed the questionnaire in their free time during the school day.

In phase 3, the children completed anonymous questionnaires (i.e. socio-demographic information and the peer nomination technique) during their regular class hours. Before completing the survey, students were asked to give their written assent to participate in the study. With respect to the use of peer nominations, in order to minimize their potential influences on students, participants were told that their answers were private and that they should not talk about them with other schoolmates. No incentives for participation were provided.

Data analysis

First, a series of preliminary analyses, which examined the descriptive statistics of scores for all study variables and the normality of their distribution, were conducted. These analyses were computed for the overall sample and for student groups (students with typical development, students with L,D and students with SEN).

Then, several multivariate analysis of covariance (MANCOVA) were performed to examine the effect of the presence of any type of SEN (i.e. SEN and LD) in students and their social status in the peer group on the STRS dimension scores, the SDQ dimension scores, and academic performance. The age of students was added as a covariate to control the influence that this variable may have on the STRS scores, SDQ scores, and academic performance, since the one-way ANOVA showed statistically significant differences between students with SEN (SEN and LD) and students with typical development. Pillai's criterion (the most robust criterion) was used (Tabachnick and Fidell 2007), and the effect size was estimated using partial eta squared (η^2). Subsequently, if the overall F test showed mean differences, a post hoc univariate ANOVAs were used to determine which means were statistically different from others. According to Cohen (1988), a guideline for interpreting an eta squared value (η^2) is that .01 indicates a small effect, .06 indicates a moderate effect, and .14 indicates a large effect. The data were double entered and checked for accuracy, and they were analyzed using SPSS version 26.0 for Windows.

Results

Preliminary analysis

Table 1 shows descriptive statistics of the study variables for both the whole sample and for the three student groups. The skewness and kurtosis statistics were used to determine the normality of the data. There is no consensus on an acceptable level of non-normality, but the data can be considered normal if the skewness is between -2 and $+2$ and the kurtosis is between -7 and $+7$ (Finney and DiStefano 2006). Table 1 shows that only for the group of normal students, the variables conflict and behavior problems > had a skewness of 2.00 ($Sk = 2.38$ and $Sk = 2.13$, respectively). Thus, the data had an acceptable normal distribution (Finch, West, and MacKinnon 1997) and were all considered suitable for use in the parametric. In addition, there were only missing data for academic performance variables (1.6% for humanity subjects and 8.4% for science subjects). Therefore, no adjustments were made to the scores for the variables measured in our study.

Social status in the peer group

Pearson's chi-squared and Cramer's V tests were performed to evaluate the relationship between the presence of SEN (i.e. SEN and LD) in students and their social status in their peer groups. The results of Pearson's chi-squared and Cramer's V tests showed a statistically significant association between the presence of some types of SEN (i.e. SEN and LD) in students and their social status in their peer groups ($\chi^2(8) = 32.93$; $p < .001$, Cramer's $V = .23$, $p < .001$). Specifically, students who have SEN and LD were less popular ($z = -2.2$, $p < .050$) and more rejected ($z = 4$, $p < .001$) in the peer group than expected. Moreover, students with typical development were less rejected ($z = -2.2$, $p < .050$) in the peer

Table 1. Descriptive statistics of study variables for all sample and for student groups (students with normal development (ND), students with learning difficulties (LD) and students with special education needs (SEN)).

	All sample (N = 320)				ND (n = 219)				LD (n = 55)				SEN (n = 46)			
	Range	M (SD)	Sk	Kr	Range	M (SD)	Sk	Kr	Range	M (SD)	Sk	Kr	Range	M (SD)	Sk	Kr
Closeness (STRS)	15–55	40.42 (9.49)	−0.55	−0.318	15–55	41.24 (10.27)	−0.75	−0.27	24–55	38.62 (6.98)	0.18	−0.62	17–51	38.67 (7.69)	−0.25	−0.08
Conflict (STRS)	11–51	15.85 (7.26)	2.04	4.19	11–51	15.22 (7.30)	2.38	5.87	11–34	16.19 (5.79)	1.37	1.56	11–42	18.45 (8.13)	1.25	0.73
Emotional Symptoms (SDQ)	5–13	6.62 (1.83)	1.12	0.61	5–13	6.30 (1.61)	1.30	1.42	5–13	7.29 (2.20)	0.77	−0.35	5–12	7.30 (1.95)	0.60	−0.76
Conduct Problems (SDQ)	5–14	6.33 (1.84)	1.74	2.85	5–14	6.17 (1.84)	2.13	4.56	5–12	6.27 (1.62)	1.52	2.12	5–12	7.20 (1.95)	0.67	−0.35
Hyperactivity (SDQ)	5–15	7.80 (2.64)	0.97	0.32	5–15	7.19 (2.35)	1.27	1.42	5–15	8.56 (2.59)	0.82	0.44	5–15	9.81 (2.81)	0.26	−1.10
Peer Problems (SDQ)	5–13	6.67 (1.79)	1.23	1.51	5–13	6.42 (1.74)	1.57	2.80	5–11	7.09 (1.52)	0.40	−0.53	5–13	7.31 (2.09)	0.77	0.14
Prosocial Behavior (SDQ)	5–15	11.69 (2.55)	−0.21	−0.89	5–15	11.97 (2.55)	−0.40	−0.75	5–15	11.07 (2.58)	0.04	−0.77	7–15	11.13 (2.28)	0.44	−0.84
Academic performance (Humanity)	4.60–10	7.88 (1.18)	−0.20	−0.65	4.60–10	8.26 (1.10)	−0.57	0.004	5.57–9.14	7.28 (0.82)	0.06	−0.63	5–9	6.71 (0.87)	0.22	−0.09
Academic Performance (Sciences)	4.33–10	7.45 (1.27)	−0.03	−0.89	5–10	7.86 (1.15)	−0.23	−0.75	5–8.67	6.77 (0.97)	0.09	−1.13	4.33–9	6.35 (1.06)	0.72	0.25

Note. ND = Normal development. LD = Learning difficulties, SEN = Special Education Needs. M (SD) = Mean (Standard Deviation), SK = Skewness, Kr = Kurtosis. STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire.

group than expected. In the rest of the categories regarding social status in the peer group, there were no statistically significant differences between the observed and expected values in the three groups of students (i.e. students with typical development, students who have SEN and students who have LD).

Teachers' perceptions of their relationships with the students

A MANCOVA test was performed to determine if, controlling for the age of students, the presence of any type of SEN (i.e. SEN and LD) in students and their social status in the peer group affected student–teacher relationships measured as the conflict and closeness dimensions (of the STRS). Previously, the assumption of the homogeneity of covariance was examined using Box's M test (142.70 , $F = 3.63$, $p < .001$), and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate statistical significance of the main effects and interactions. The multivariate results showed that age was statistically significant as a covariate: Pillai's trace = 0.21 , $F(2, 297) = 40.32$, $p < .001$, $\eta^2 = 0.21$. A main effect was found for the students' social status in the peer group: Pillai's trace = 0.09 , $F(8, 596) = 3.51$, $p = .001$, $\eta^2 = 0.05$; however, the presence of SEN in students was not: Pillai's trace = 0.01 , $F(4, 596) = 0.46$, $p = .768$, $\eta^2 = 0.003$. Thus, there were no statistically significant differences between students with normal development, students with SEN, and students with LD on the dimensions of conflict and closeness (student-teacher relationships). No effect was found for the interaction between these variables: Pillai's trace = 0.05 , $F(16, 596) = 1.04$, $p = .414$, $\eta^2 = 0.03$.

Table 2 presents the results of the univariate ANCOVAs of the main effect on the scores of the different dependent variables in terms of the presence of SEN and LD in the students and the social status of the students within the peer group.

Subsequent univariate ANCOVAs of the main effect on the students' social status in the peer group revealed statistically significant results for the conflict dimension scores ($F(4, 298) = 7.03$, $p < .001$, $\eta^2 = .09$) but not for the closeness dimension scores ($F(4, 298) = 1.08$, $p = .367$, $\eta^2 = .01$; see Table 3). Post hoc comparisons showed that conflict was higher for rejected students ($M_{adjusted} = 20.20$) compared to popular students ($M_{adjusted} = 13.43$) and neglected students ($M_{adjusted} = 13.21$), while no statistically significant differences emerged for the conflict dimension among the rest of the students with different social statuses (see Table 3).

Table 2. Results of the ANCOVAs by presence of any type SEN: adjusted means (i.e. controlling for age), F -values, significance levels and effect size for the scores of the different DVs.

	ND	LD	SEN			
	M	M	M	F	p	η^2
Closeness (STRS)	39.33	40.40	40.92	0.37	.693	.002
Conflict (STRS)	16.05	15.72	17.09	0.33	.721	.002
Emotional Symptoms (SDQ)	6.54	7.66	6.66	5.08	.007	.03
Conduct Problems (SDQ)	6.39	6.10	6.75	0.80	.452	.01
Hyperactivity (SDQ)	7.58	8.80	9.28	6.31	.002	.04
Peer Problems (SDQ)	6.62	6.62	6.83	0.12	.884	.001
Prosocial Behavior (SDQ)	11.70	11.62	11.93	0.09	.913	.001
Academic performance (Humanity)	7.91	7.57	6.95	9.87	<.001	.07
Academic Performance (Sciences)	7.70	7.08	6.62	11.91	<.001	.08

Note. ND = Normal development. LD = Learning difficulties, SEN = Special Education Needs. STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire.

Table 3. Results of the ANCOVAs by students' social status in the peer group: adjusted means (i.e. controlling for age), *F*-values, significance levels and effect size for the scores of the different DVs.

	Popular <i>M</i>	Rejected <i>M</i>	Neglect <i>M</i>	Controversial <i>M</i>	Average <i>M</i>	<i>F</i>	<i>p</i>	η^2
Closeness (STRS)	42.70	38.58	40.58	39.02	40.21	1.08	0.367	.01
Conflict (STRS)	13.43	20.20	13.21	17.35	17.26	7.03	<.001	.09
Emotional Symptoms (SDQ)	5.74	7.36	6.88	7.86	6.91	4.47	.002	.06
Conduct Problems (SDQ)	5.56	7.37	5.78	6.69	6.68	6.94	<.001	.09
Hyperactivity (SDQ)	6.92	9.78	7.71	9.75	8.60	8.76	<.001	.11
Peer Problems (SDQ)	5.75	7.84	6.75	6.41	6.69	8.36	<.001	.10
Prosocial Behavior (SDQ)	12.93	10.44	12.26	11.75	11.38	5.70	<.001	.07
Academic performance (Humanity)	8.04	7.07	7.55	7.34	7.38	5.87	<.001	.08
Academic Performance (Sciences)	7.91	6.66	7.19	6.87	7.02	7.72	<.001	.10

Note: STRS = Student-Teacher Relationship Scale. SDQ = Strengths and Difficulties Questionnaire.

Teachers' perceptions of students' behavior (the SDQ)

A MANCOVA test was performed to determine if, controlling for the age of students, the presence of any type of SEN (i.e. SEN and LD) in students and their social status in the peer group affected teachers' perceptions of students' behavior: emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behavior. Previously, the assumption of the homogeneity of covariance was examined using Box's *M* test (356.49, $F = 2.04$, $p < .001$), and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate statistical significance of the main effects and interactions. The multivariate results showed that age was statistically significant as a covariate: Pillai's trace = 0.08, $F(5, 294) = 5.03$, $p < .001$, $\eta^2 = 0.08$. A main effect was found for the presence of SEN and LD in students: Pillai's trace = 0.13, $F(10, 590) = 3.97$, $p < .001$, $\eta^2 = 0.06$, and also for the students' social status in the peer group: Pillai's trace = 0.20, $F(20, 1188) = 3.06$, $p < .001$, $\eta^2 = 0.05$. No effect was found for the interaction between these variables: Pillai's trace = 0.16, $F(40, 1490) = 1.26$, $p = .127$, $\eta^2 = 0.03$.

Subsequent univariate ANCOVAs revealed statistically significant differences for the presence of SEN and LD in the students related to the following: emotional symptoms [$F(2, 298) = 5.08$, $p = .007$, $\eta^2 = .03$] and hyperactivity [$F(2, 298) = 6.31$, $p = .002$, $\eta^2 = .04$] (see Table 2). Post hoc comparisons revealed that students with LD showed statistically significant higher values in terms of emotional symptoms ($M_{adjusted} = 7.66$) than students with typical development ($M_{adjusted} = 6.54$). There was no statistically significant difference between students who have SEN ($M_{adjusted} = 6.66$) and those with typical development. Post hoc comparisons also revealed that students with SEN and students with LD showed statistically significant higher values in terms of hyperactivity ($M_{adjusted} = 9.28$; $M_{adjusted} = 8.80$, respectively) than students with typical development ($M_{adjusted} = 7.58$; see Table 2). There was no statistically significant difference between students who have SEN and those who have LD.

Statistically significant differences were also observed in the subsequent univariate ANCOVAs for the students' social status in the peer group on all SDQ dimension scores: emotional symptoms [$F(4, 298) = 4.47$, $p = .002$, $\eta^2 = .06$]; conduct problems [$F(4, 298) = 6.94$, $p < .001$, $\eta^2 = .09$]; hyperactivity [$F(4, 298) = 8.76$, $p < .001$, $\eta^2 = .11$], peer problems [$F(4, 298) = 8.36$, $p < .001$, $\eta^2 = .10$], and prosocial behavior [$F(4, 525) = 5.70$, $p < .001$, $\eta^2 = .07$] (see Table 3). Post hoc comparisons revealed that rejected students and students with an average status showed statistically significant higher values in

terms of emotional symptoms ($M_{adjusted} = 7.36$; $M_{adjusted} = 6.91$, respectively), conduct problems ($M_{adjusted} = 7.37$; $M_{adjusted} = 6.68$, respectively), and hyperactivity symptomatology ($M_{adjusted} = 9.78$; $M_{adjusted} = 8.60$, respectively), than popular students ($M_{adjusted} = 5.74$; $M_{adjusted} = 5.56$; $M_{adjusted} = 6.92$, respectively). Moreover, rejected students showed statistically significant higher values concerning conduct problems and hyperactivity symptomatology than neglected students ($M_{adjusted} = 5.78$; $M_{adjusted} = 7.71$, respectively). Also, rejected students showed statistically significant higher values in terms of hyperactivity symptomatology than students with an average status ($M_{adjusted} = 8.60$).

Moreover, rejected students ($M_{adjusted} = 7.84$) showed statistically significant higher values for peer problems than popular students ($M_{adjusted} = 5.75$), neglected students ($M_{adjusted} = 6.75$), and students with an average status ($M_{adjusted} = 6.41$). Finally, popular students ($M_{adjusted} = 12.93$) and neglected students ($M_{adjusted} = 12.26$) showed statistically significant higher values in terms of prosocial behavior than rejected students ($M_{adjusted} = 10.44$; see Table 3), while no differences emerged among the rest of the students with different social statuses regarding either variable.

Academic performance

A MANCOVA test was performed to determine if, controlling for the age of students, the presence of any type of SEN (i.e. SEN and LD) in students and their social status in the peer group affected academic achievement in terms of humanity and science subjects. Previously, the assumption of the homogeneity of covariance was examined using Box's M test (35.50 , $F = 0.90$, $p = .645$). The multivariate results showed that age was statistically significant as a covariate: Pillai's trace = 0.28 , $F(2, 272) = 53.64$, $p < .001$, $\eta^2 = 0.283$. A main effect was found for the presence of SEN and LD in the students: Pillai's trace = 0.09 , $F(4, 546) = 6.63$, $p < .001$, $\eta^2 = 0.046$; and also for the social status of the students in the peer group: Pillai's trace = 0.11 , $F(8, 546) = 3.79$, $p < .001$, $\eta^2 = 0.053$. No effect was found for the interaction between these variables: Pillai's trace = 0.07 , $F(16, 546) = 1.23$, $p = .241$, $\eta^2 = 0.035$.

Subsequent univariate ANCOVAs of the main effect of the presence of any type of SEN (i.e. SEN and LD) in the students revealed statistically significant differences in terms of academic performance in humanity subject scores [$F(2, 273) = 9.87$, $p < .001$, $\eta^2 = .07$] and science subject scores [$F(2, 273) = 11.91$, $p < .001$, $\eta^2 = .08$] (see Table 2). Post hoc comparisons revealed that students with typical development showed statistically significant better academic performance in humanity and science subjects ($M_{adjusted} = 7.91$; $M_{adjusted} = 7.70$, respectively) than students with SEN ($M_{adjusted} = 6.95$; $M_{adjusted} = 6.62$, respectively). Moreover, popular students also showed statistically significant better performance in science subjects than students with LD ($M_{adjusted} = 7.08$). In addition, students with LD ($M_{adjusted} = 7.57$) showed better academic performance in humanity subjects than students with SEN (see Table 2). There was no statistically significant difference in academic performance in terms of science subject scores between students with SEN and students with LD ($p = .331$).

Subsequent univariate ANCOVAs of the main effect of the students' social status in the peer group revealed statistically significant differences for academic performance in terms of humanity subject scores [$F(4, 273) = 5.87$, $p < .001$, $\eta^2 = .08$] and science subject scores [$F(4, 273) = 7.72$, $p < .001$, $\eta^2 = .10$] (see Table 3).

Regarding academic performance related to humanity subjects, post hoc comparisons revealed that popular students showed statistically significant higher grades in humanity and science subjects ($M_{adjusted} = 8.04$; $M_{adjusted} = 7.91$, respectively) than rejected students ($M_{adjusted} = 7.97$; $M_{adjusted} = 6.66$, respectively) and students with an average status ($M_{adjusted} = 7.38$; $M_{adjusted} = 7.02$, respectively), while no differences emerged among the rest of the students with different social statuses in either variable (see [Table 3](#)).

Discussion

The main objective of this study was to analyze the effect of SEN and LD on students' social status in the peer group, teachers' perceptions of their relationships with these students, and behavioral and academic achievement.

The results showed that the students' relationship with the peer group was affected by having SEN or LD. Students with SEN and LD were more unpopular and rejected than expected, and students with typical development were more popular than expected. This result is in line with previous studies conducted in other countries, reporting that children with SEN present problems in terms of integration and have limited meaningful contact with peers, difficulties regarding friendship, and low levels of social acceptance (Schwab 2015), as well as a high probability of having no friends or just one friend. In addition, within the group of students with SEN, children with LD have been demonstrated to have difficulties with peer relationships and social functioning, and most of them are rejected by peers with typical development.

As regards the teacher's perception of his/her relationship with students, controlling for the age of the students, the results revealed that there was no difference in the teacher's perception of the presence of SEN and LD in the students, nor an interaction effect between the presence of any type of SEN (i.e. SEN and LD), and the social status of students in the peer group in terms of their closeness and conflict dimension scores. This means that the teachers' perception of their relationships with students is not related to the presence of SEN and LD in children, that is, that the relationships with children with SEN and LD are perceived to be equally close or conflictive by their teacher regardless of whether the children have learning difficulties or not. In addition, the perception of closeness in the relationship with the teacher was not affected by students' social status in the peer group, indicating that the closeness levels in the STR perceived by the teacher were similar for all students, regardless of the children's status in the peer group. This finding is encouraging for schools' inclusion of children with SEN and LD. It is interesting to note, also, that teachers, when asked to compare with students with other disabilities, report less conflict and more closeness in their relationships with students with LD (Zee et al. 2020); these students probably tend to be perceived by teachers as less problematic than others, and, because of this, their SEN or LD do not affect their relationships with adults at school.

However, the teachers' perception of the relationship with their students as conflictive was affected by students' social status in the peer group. The teachers perceived higher levels of conflict in their relationships with rejected students, compared to those with popular and neglected students. No differences emerged among the rest of the students with different social statuses. This result confirms that an interaction exists between the STR and social status, as highlighted by research showing that, when the levels of children

being disliked by their peers increase, conflict with their teachers also tends to increase (e.g. Gülay Ogelman 2021). Children's social preference scores are directly related to the quality of their relationships with their teachers, and the relation between social risk and poor TSRQ is particularly strong for children rejected by their peers. Moreover, a link exists between a conflictual STR and active bullying that is reported to be significantly stronger for rejected students than for students with other social statuses (Longobardi et al. 2018). Additionally, rejected children enjoyed a supportive STR score that was lower in terms of self-reported peer victimization, compared to rejected children who have a poorer STR than their peers. Our finding adds to the body of research focused on the role played by the relationship with teachers in contrasting or favoring at-risk behaviors in students, especially in those who experience peer rejection (Wang et al. 2016).

Regarding the SDQ dimensions, the findings showed that there was an effect of the presence of SEN and LD in the students and of the students' social status in the peer group on their SDQ dimension scores, but not for the interaction between both, controlling for the age of the students. Specifically, students with LD showed higher values in terms of emotional symptoms than students with typical development, while no statistically significant differences emerged between students with SEN and students with typical development. This finding is consistent with literature focused on behavioral and psychological assessment in students with LD. In previous studies, children with LD showed lower levels of psychosocial health, concerning emotional and school functioning, compared to children from the general population, reporting symptoms of generalized anxiety, school-related anxiety, depressed moods, lower school self-esteem, and peer problems, salient correlated of externalizing and internalizing problems (Boyes et al. 2020). In addition, internal symptoms, such as emotional symptoms, predict academic and social failure and success; because of their attributional style, students with LD tend to explain these failures with internal stable and uncontrollable factors, such as low ability and chance (Emam 2018). Moreover, students with LD and students with SEN showed higher levels of hyperactivity than students with typical development. This finding adds to the research focused on neurodevelopmental disorders, reporting a high percentage of comorbidity between LD and attention deficit and hyperactivity disorder (ADHD), which might be attributable to common causal influences that are genetic or environmental (for a review, see Moreau and Waldie 2016). Both disorders, LD and ADHD, are classified as SEN in the Italian school context (cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca] 2018). Thus, the high levels of hyperactivity registered in children with LD and SEN could be explained by a possible presence of subjects who also suffer from ADHD in our sample. Additionally, previous studies have demonstrated that hyperactivity and inattentive behaviors have a predictive role in terms of reading problems in the early years of school (Moreau and Waldie 2016), something which affects most children with LD. Finally, no difference was noted among students who have SEN or LD and students with typical development regarding the rest of the SDQ dimension scores (conduct problems, peer problems, and prosocial behavior). This result partially confirms previous research, showing that a SEN status does not influence school well-being significantly (Schwab 2015). Further research is needed for an in-depth exploration of the behavioral and psychological adjustment of children with SEN and LD at school.

With regard to the effect of the students' social status in the peer group on SDQ dimension scores, the findings revealed that rejected students and children with an average status showed higher levels of emotional symptoms, conduct problems, and hyperactivity symptoms than popular students. A previous study also found that, in comparison with the rejected status group, popular children showed fewer behavioral problems. Sociometrically, popular children are typically described by teachers as prosocial, well-adjusted, and academically competent; conversely, the behavioral profile of rejected children seems to be the opposite of that of popular children (Rytioja, Lappalainen, and Savolainen 2019). Also, rejected students showed higher values in terms of conduct problems and hyperactivity symptoms than neglected students. Moreover, rejected students showed higher levels of hyperactivity than students with an average status. In addition, rejected students showed higher values concerning peer problems than popular students, neglected students, and students with an average status. These results confirm that students who complain of conflicts with peers, and who perceive unfair treatment by friends, are likely to experience high levels of tension and, consequently, are more likely to manifest problematic behavior (Bae 2016). As described in the literature, higher satisfaction with peer relationships is associated with better behavioral outcomes: peer support and good relationships with friends can help to prevent behavioral problems (Bae 2016). Finally, popular students and neglected students showed higher values in terms of prosocial behavior than rejected students. These findings were expected and are confirmed by previous research, which observed that sociometrically popular children tend to have many behavioral and emotional strengths and fewer difficulties compared to other sociometric groups (Rytioja, Lappalainen, and Savolainen 2019).

Concerning academic performance, controlling for the age of the students, the findings showed an effect of the presence of SEN and LD in the students and of their status in the peer group, but not for the interaction between both. As expected, students with LD and SEN showed lower grade scores in science subjects than those who have typical development, and no difference in academic performance was noted between students with LD and students with SEN. Also, as expected, students with SEN presented a lower grade score in humanity subjects than those who have typical development. The findings regarding academic outcomes confirm previous research showing that students with LD tend to score lower in terms of performance than students with typical development, probably because of their specific intellectual style (Inacio, Oliveira, and Santos 2018), which might compromise their academic outcomes. Children with LD are likely to experience difficulties in executive functioning and motivation, and both aspects are fundamental for academic performance (for a review, see Graham 2017). Moreover, students with SEN also presented lower academic performance in humanity subjects than students with LD. No difference in academic performance was noted between students with LD and students with typical development. This finding could be explained by the positive effect of pedagogical help that curricular teachers provide to children with LD in order to close the gap between their and the other students' academic performance. Please note that these results might be specific for the Italian school context, where, while students with SEN in general do not have a medical diagnosis, students with LD need an official label from the local sanitary authority in order to be eligible for additional educational resources at school. Probably, pedagogical facilitations provided by teachers for

children with LD tend to be more effective than those provided for students with SEN in general, in terms of academic outcomes.

Concerning the effect of students' social status in the peer group on academic performance, controlling for the age of the students, the results also showed that popular students presented higher grades in humanity and science subjects than rejected students and those with an average status. This finding is consistent with previous research that focused on the relationship between social status and academic performance, showing that peer social acceptance is related significantly and positively to academic achievement (for a review, see Wentzel, Jablansky, and Scalise 2020). Moreover, there is an association, especially in primary school, between unpopularity and peer rejection and poor academic outcomes.

Study limitations

Some limitations of the present work should be discussed. Given the nature of the study sample (convenience sample), it is not possible to generalize the findings for children and teachers located in cities or from different cultural backgrounds. Therefore, diverse samples should be used to test the generalizability of our findings in the future. In addition, social desirability in teachers' responses might have biased the results and also our findings. Measuring this variable through an appropriate questionnaire would allow it to be included in the analyses as a control variable, for example, as a covariate. Moreover, the data are cross-sectional, and therefore, it is not possible to draw inferences about cause-and-effect relationships. Thus, future researchers could use a longitudinal design to test the causal relations among the variables, which might help us understand how relationships between them unfold over time. In addition, social desirability may have biased the results and also our findings. The measurement of this variable through an appropriate questionnaire would make it possible to introduce it into the analyses as a control variable, for example, as a covariate.

Conclusions

Relationships with teachers are important for school well-being, especially for at-risk children. To the best of our knowledge, literature that focuses on the school inclusion of children with SEN and LD is scarce. This study offers an in-depth exploration of the role of the student-teacher relationship in students with SEN and LD, and its effect on school inclusion, in terms of behavior and work, and on social and relational skills.

Students with SEN tend to be unpopular and rejected by the peer group, but, fortunately, the SEN condition does not affect the relationship with the teacher. Students with SEN and LD, compared to students with typical development, presented higher levels of emotional and hyperactivity symptoms, and poorer academic outcomes.

The findings of this study could be important for teachers and educational researchers in different ways. For teachers, The results of our study show that students with SEN and LD have higher levels of hyperactivity and emotional symptoms and perform worse in school compared to their peers. They may also be more unpopular and more likely to be rejected among their peers. These results could highlight peculiarities of children

with SEN and LD and could represent an opportunity for teachers to meditate, and eventually rethink, the pedagogical resources that they provide to children with LD and SEN, in order to help these students to achieve improvements in behavioral and academic outcomes, and to enhance their social inclusion. To this end, it is important to provide schools with information and literature on practical classroom management strategies. In the scientific literature, cooperative learning is said to have a positive effect on socio-affective relationships within a group (Soponaru, Tincu, and Iorga 2014). We believe it should be considered by teachers to improve the relational, emotional, and academic levels of all their students. For educational researchers, in light of the results that have emerged, it would be interesting to focus any future research on other trajectories of children with SEN and LD, in order to better understand their specificities.

What this paper adds

Despite the clear relevance of the student–teacher relationship, few studies have focused on children with special educational needs (SEN) and learning disabilities (LD). This study offers an in-depth exploration of the inclusion of students with SEN and LD and adds to the knowledge of the role of student–teacher relationships in school adjustment. Although the results of the present work cannot be generalized, they provide educational experts and researchers with an overview of the situation and potential risks of students with SEN and LD in an inclusive school context. The results illustrate the different paths that students with SEN and LD take in adjusting to school in terms of peer status in the group, relationship with the teacher, emotional and hyperactive symptoms, and academic outcomes. They may provide a starting point for future research and educational interventions to improve inclusion of students with SEN and LD.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Annex 5: Study 6. Bullying in Students with Special Education Needs and Learning Difficulties: The Role of the Student–Teacher Relationship Quality and Students' Social Status in the Peer Group.



Bullying in Students with Special Education Needs and Learning Difficulties: The Role of the Student–Teacher Relationship Quality and Students’ Social Status in the Peer Group

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Abstract

Background Children with Special Education Needs and Learning Difficulties are at risk of being excluded, or bullied because of their impairments. Within the bullying literature, two variables have been shown to be key in terms of its predictions: student–teacher relationship and students’ social status among peers.

Objective The aim of this research was to assess the association between the student–teacher relationship and students’ social status in the peer group and bullying dimensions in children with SEN, LD, and typical development.

Method A total of 320 children—55 with LD, 46 with SEN, and 219 in the control group – participated in the study, with a mean age of 11.04 ($SD=1.42$), and 59.7% of whom were male. The model tested showed a good fit: $\chi^2(40)=102.395$, $p<.001$, CFI=.940, RMSEA=.070 [90% CI=.054, .088].

Results Main findings show that children with SEN and LD had more difficulties in social participation and might be at higher risk of being bullied, compared with their classmates.

Conclusions This study offers evidence on bullying in children with SEN and LD and its association with both relationship with teacher and students’ social status. For teachers, results highlight peculiarities and possible problems of school inclusion of children with SEN and LD. For educational researchers, findings add knowledge on literature focused on bullying in children with difficulties.

Keywords Special education needs · Learning difficulties · Student–teacher relationship · Peer nomination · Social status · Bullying · Structural equation modeling

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Introduction

Since the 1970s, school inclusion of children with disabilities has received increased interest, both from educational professionals and researchers (for a review, see Guralnick, 2010). Models for inclusive contexts have been developed in many countries, the benefits of which have largely been demonstrated, both for children with disabilities and those without (Odom et al., 2011). Italy was the first country in the world to abolish special schools for children with disabilities and to include them in mainstream education contexts (Cornoldi et al., 1998). Despite the great efforts for inclusion made by education systems in many countries (Odom & Diamond, 1998), children with developmental delays may show vulnerability in terms of difficulties with social competence (Guralnick, 2010) and are at risk of social exclusion (Rose et al., 2011). Moreover, children with disabilities in inclusive educational contexts may be involved in bullying episodes, experiencing significantly higher rates of victimization than their peers without disabilities (Rose & Gage, 2017; Rose et al., 2011) because they have less social power (Malecki et al., 2020) and fewer social and communication skills necessary to avoid victimization (Guralnick, 2010; Rose & Gage, 2017), and because they are perceived as deviant from the norm group (Rose & Gage, 2017). Research has explored the elevated risk of bullying victimization in children with autism (Jackson et al., 2019), attention deficit disorder, and/or hyperactivity disorder (Fite et al., 2014; Prino et al., 2016), as well as in those affected by intellectual disabilities (Lorger et al., 2015). However, research on bullying among children with Special Education Needs (SENs) and Learning Difficulties (LDs) appears to be scarce at the present time.

Definitions of SENs and LDs

The definition of children with SENs varies widely between countries, as do the policies for their assessment (Barow & Östlund, 2020). In the Italian school system, “students with SENs” are defined as those who, temporarily or permanently, have some difficulties because of socio-economic, linguistic, or cultural reasons, or because of specific developmental disorders; the term represents a wide classification, including children with behavioral and emotional difficulties, such as Attention Deficit and Hyperactivity Disorder (ADHD) (cf. Ministero dell’Istruzione dell’Università e della Ricerca [MIUR]). Of SENs, LDs, that is, reading, writing, and math deficits, are among the most frequently diagnosed specific developmental disorders (Cainelli & Bisiacchi, 2019; MIUR). All students with SENs and LDs are included in the mainstream Italian school system, in which curricular teachers provide them with pedagogical support in order to improve both their behavioral and academic performance.

School Adjustment in Children with SEN and LD

Research has shown that children with SEN and LD have difficulties in social skills (Freire et al., 2019; Wiener & Schneider, 2002). Compared to their classmates, children with SEN tend to have lower levels of prosocial behaviors (Dasioti & Kolaitis, 2018), are less accepted (Broomhead, 2019) and have fewer or no friends (Banks et al., 2018; Pinto et al., 2019). Also, students with LD present lower friendship quality, higher levels of conflict,

more problems with relationship repair, and less stable relationships than their peers (Wiener & Schneider, 2002).

In addition, children with SEN present problems in terms of closeness and conflict with teachers (Freire et al., 2019) and children with LD have higher levels of dependency (Pasta et al., 2013) and greater dissatisfaction in their relationships with teachers (Murray & Greenberg, 2001) than their classmates. Children with LD tend to perceive significantly high levels of school danger (Murray & Greenberg, 2001) and in both in children with SEN and LD, the presence of internalizing and externalizing problems, such as emotional symptoms and hyperactivity, seems to be correlated with bullying victimization (Boyes et al., 2020; Dasioti & Kolaitis, 2018).

Bullying

Empirical research on bullying is relatively recent: the earliest studies on this topic emerged in the late 1970s in Scandinavia, with the pioneering work of Olweus (1978). Since then, bullying has received attention both from the media and academia (for a review, see Hymel & Swearer, 2015). Bullying is defined as an interpersonal aggressive behavior characterized by intentionality, repetition, and an imbalance of power between subjects; the literature distinguishes between direct bullying, with open attacks carried out by physical contact or by words, and indirect bullying, which is less visible and includes social isolation and exclusion (Olweus, 1991).

The prevalence of bullying varies greatly across studies, with 10% to 33% of students reporting victimization by peers and 5% to 13% admitting to bullying others (Hymel & Swearer, 2015). School bullying episodes affect both mental health and academic outcomes, since severe victims of school bullying show higher levels of depression, emotional symptoms, and hyperactivity/inattention (Marengo et al., 2018); lower levels of school liking (Stefanek et al., 2017); and lower achievement scores (Konishi et al., 2010) than their not-involved classmates. As research into bullying highlights the interaction of individual vulnerabilities, context effects, and experiences, a social-ecological model can be useful for understanding this phenomenon as a systemic problem, impacting the contexts in which such behaviors occur (Hymel & Swearer, 2015).

Protective Factors Against Bullying: The Role of Peers and Teachers

Relationships with peers and teachers are widely recognized as protective factors against bullying (e.g., Iotti et al., 2020; Longobardi et al., 2019a, 2019b; Marengo et al., 2018; Saracho & Spodek, 2007). Building relationships with peers is at the core of children's development, providing them with social competences required to master social challenges (Guralnick, 2010).

Bullying can be considered a group process that involves not only a bully and a victim but also the entire group of peers (Salmivalli et al., 1996). This group of peers has a fundamental role in promoting or hindering bullying episodes in childhood (Saracho & Spodek, 2007) and social status among peers is a protective factor against school bullying (Iotti et al., 2020; Longobardi et al., 2019a, b). There is also a large body of literature indicating an association between relationships with teachers and behavioral outcomes in students (e.g., Sointu et al., 2017). A conflictual student–teacher relationship represents a risk

factor for active bullying behaviors (Longobardi et al., 2018) or victimization (Marengo et al., 2018) and could lead to disruption and coercion escalations in students (Jalón Díaz-Aguado & Arias, 2013). By contrast, a warm and close student–teacher relationship is a protective factor against bullying (Iotti et al., 2020). This relationship, especially in the first years of school, has been pointed to as key to the future adaptation and development of students (Pianta et al., 1995; Wanders et al., 2020). However, because of their impairment, students with SEN and LD may have difficulties with social participation (Banks et al., 2018; Freire et al., 2019; Wiener & Schneider, 2002) and their relationships with teachers (Freire et al., 2019; Murray & Greenberg, 2001), being at higher risk of victimization and exclusion (Boyes et al., 2020; Dasioti & Kolaitis, 2018).

Purpose of this Study

Challenging aspects of school participation and inclusion of children with SEN and LD (Broomhead, 2019; Freire et al., 2019; Pinto et al., 2019) might expose these students as at risk of bullying. To the best of our knowledge, research on bullying in children with SEN and LD and its association with both the relationship with the teacher and students' social status in the peer group are scarce. Studies on school inclusion of students with SEN and LD are mainly focused on single variables, such as their relationships with teachers (Freire et al., 2019; Pasta et al., 2013) or peers (Boyes et al., 2020; Pinto et al., 2019).

Therefore, the aim of the current research is to assess the relationship between these two variables (i.e., the student–teacher relationship and peer status) and bullying, testing the following:

- if there is a direct relationship between bullying dimensions (i.e., victimization and perpetration) and the quality of the relationship between students and teachers (closeness, conflict, and negative expectations) and students' social status in the peer group (social preference and social impact);
- if there is a direct relationship between bullying dimensions and the presence of SEN and LD in the students, mediated by the quality of the relationship between students and teachers and students' social status in the peer group, as shown in Fig. 1.

Method

Participants

The sample was composed of 320 students (59.7% males) recruited from seven primary and secondary schools in Northwest Italy. The schools were selected through convenience sampling, with the school directors, teachers, families and children being asked about their availability to participate in the research before the data collection.

The average age of the students was 11.04 ($SD = 1.42$, Min. = 8, Max. = 14). Of them, 68.4% were students with typical development ($n = 219$), 17.2% were students with LD ($n = 55$), and 14.4% were students with SEN ($n = 46$). The average age of the students with typical development was 10.75 ($SD = 1.40$, Min. = 8, Max. = 14), and it was 11.68 ($SD = 1.25$, Min. = 9, Max. = 14) for students with LD and 11.66 ($SD = 1.28$, Min. = 10, Max. = 14) for students with SEN. There were statistically significance

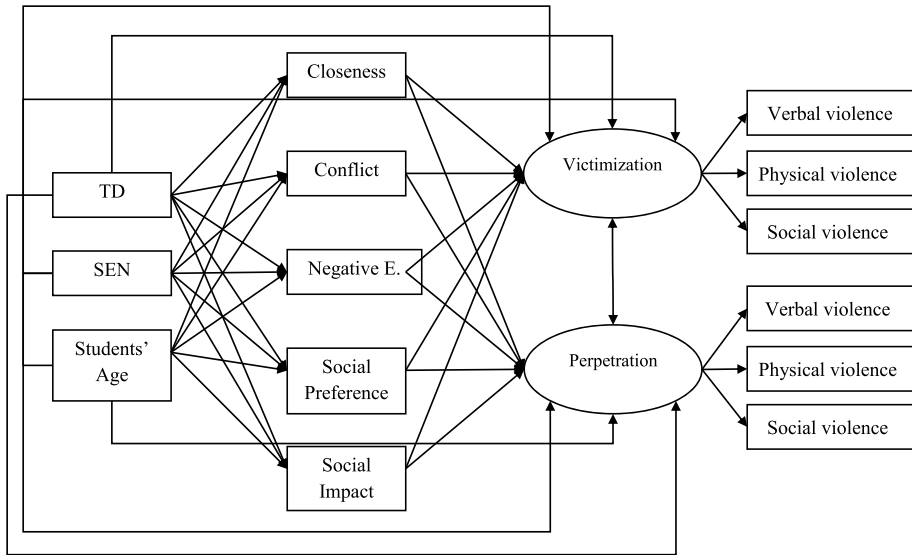


Fig. 1 Hypothesized structural equation model predicting bullying victimization and perpetration in SEN, LD and Typical Development students. TD=Students with Typical Development. SEN=Student with Special Education Needs

differences in the mean ages of students ($F_{(2, 311)} = 15.34, p < 0.001; \eta^2 = 0.08$). Specifically, the mean ages of students with SEN and students with LD were higher than the mean age of students with typical development ($p < 0.001$, in both cases). There was no statistically significance difference between the mean ages of students with LD and students with SEN. The percentage of males for the students with typical development was 58.5%, and it was 56.4% for students with LD and 69.6% for students with SEN. There were no statistically significance differences in gender distribution ($\chi^2(2) = 2.26, Cramer's V = 0.08; p = 0.323$) among the three groups of students.

In addition, the data of 40 teachers with a mean age of 46.06 ($SD = 7.59$, Min. = 30, Max. = 65) and 95.9% of whom were females were analyzed. The average of the years of teaching experience was 19.78 ($SD = 9.57$, Min. = 2, Max. = 42), and the average of the hours spent teaching the class per week was 10.55 ($SD = 5.31$, Min. = 2, Max. = 22).

Measures

Socio-Demographic Characteristics

Participants (teachers and students) were asked to report on their socio-demographic information: current age, gender, and school grade. Also, the teachers were asked to report their years of teaching experience and hours spent teaching the class per week.

Presence of SEN and LD in Students

In the Italian school context, “students with SEN” are defined as those who, temporary or permanently, have some difficulties because of socio-economic, linguistic, or cultural reasons, or because of specific developmental disorders. SEN represents a large classification that includes also children with behavioral and emotional difficulties (e.g., ADHD; and specific developmental disorders (cf. MIUR [Ministero dell’Istruzione dell’Università e della Ricerca]). Within the group of students with specific developmental disorders, the subcategory of students with LD exists (cf. MIUR [Ministero dell’Istruzione dell’Università e della Ricerca]). All students with SEN are included in mainstream schools. Neither of the groups of students with SEN and LD present cognitive impairment that affects general intelligence; for this reason, they are not considered to need a special education teacher. For students with SEN and LD, curricular teachers provide pedagogical help in order to close the gap between their and the other students’ behavioral and academic performance. While, in general, students with SEN do not have a medical diagnosis, students with LD need an official label by the local sanitary authority in order to be eligible for additional educational resources at school.

Please note that formal diagnoses of LD take place outside of the school curriculum and are based on national guidelines and protocols. The diagnoses are made by certified psychologists and psychiatrists, not by school teachers themselves. However, teachers usually work closely together with internal supervisors and school psychologists, who inform them about students’ diagnosed disabilities. In most cases, these diagnostic labels are registered in the school’s administration system and form the basis of Individual Education Plans. Hence, even though teachers obviously do not diagnose the children themselves, they are well informed about these diagnoses and, as such, can relatively reliably report on the prevalence of LD and SEN in their classes.

Thus, for our study, class teachers were asked to list all children in their classes who had SEN and who were officially labeled by the local sanitary authority as having LD. Teachers were asked to report on the presence of SEN and LD in each student. Three items were used: (1) “Does the student have special education needs?” (yes or no), (2) “If yes, which type of SEN (SEN, LD, etc.)?” and (3) “Does the student have a medical diagnosis?”.

Student Perception of Affective Relationship with Teacher Scale (SPARTS; Koomen & Jellesma, 2015).

The SPARTS consists of 25 items with a Likert-type response scale (1=no, that is not true to 5=yes, that is true). It measures the perception of conflict, closeness, and negative expectations with regard to a specific teacher in children aged 9 to 14 years old. The closeness subscale (8 items) reflects the degree of openness, warmth, and security that the students perceive in the relationship; the conflict subscale (10 items) refers to the degree to which a student perceives teacher-student interactions as negative, discordant, and unpredictable; and the negative expectations subscale (7 items) reflects a lack of confidence experienced by students in relationships with their teachers. When compiling the SPARTS in our study, the students were asked to refer to their “prevalent teacher” (i.e., the teacher with whom they spent the most hours per week, which, in the Italian education system, is the Italian language or science teacher). Prior investigators have provided evidence for the reliability and construct validity of the SPARTS dimensions (Jellesma et al., 2015;

Longobardi et al., 2019a, b). The score for each subscale was generated by summing the scores for the items that made up that scale. For this study, the reliabilities (McDonald's ω) for these subscales were adequate: 0.86 for closeness, 0.77 for conflict, and 0.58 for negative expectations.

Adolescent Peer Relations Instrument (APRI; Parada, 2000).

The APRI consists of 36 items with a Likert-type response scale (1 = never to 6 = every day). It measures three types of behaviors used to bully others (physical, verbal, and social) and three ways of being targeted (physical, verbal, and social). The higher the score, the greater the frequency of bullying or of being bullied. Prior investigators have demonstrated that the APRI is an instrument with solid psychometric proprieties (reliability and validity) for measuring bullying and victimization among preadolescents and adolescents (e.g., Balan et al., 2020). The score for each subscale was generated by summing the scores for the items that made up that scale. For this study, the reliabilities (McDonald's ω) of each of the three ways of being targeted were adequate: 0.85 for verbal victimization, 0.85 for physical victimization, and 0.81 for social victimization. And, the reliabilities (McDonald's ω) of each of the three types of behaviors used to bully others were adequate: 0.84 for verbal perpetration, 0.75 for physical perpetration, and 0.71 for social perpetration.

Peer Nomination Technique (Italian Version)

This is a peer nomination questionnaire inspired by Moreno's sociogram techniques (1934) and Coie et al. (1982) sociometric strategy for assessing peer statuses in the classroom. It consists of six questions in which children have to nominate three of their peers. The questions are the following: (i) "Who would you want as a table partner?" (ii) "Who would you want as a schoolwork partner?" (iii) "Who would you want as a field trip buddy?" (iv) "Who would you NOT want as a table partner?" (v) "Who would you NOT want as a schoolwork partner?" and (vi) "Who would you NOT want as a field trip buddy?" For each child, the sum of the positive nominations received from all peers represented their liking (L) score, and the sum of the negative nominations received represented their disliking (D) score. The L and D scores were standardized within each class (L_z and D_z) and used to compute a social preference (SP) score ($L_z - D_z$) and a social impact (SI) score ($L_z + D_z$) for each child.

Procedures

The school principals gave permission for their teachers to participate in the study, and consent was obtained from each teacher who participated. Prior to data collection, phase 1 included obtaining parental consent to participate and describing the nature and objective of the study in compliance with the ethical code of the Italian Association for Psychology (AIP), which was approved by the Institutional Review Board (IRB) of the University of Turin (Italy). The forms stated that data confidentiality would be assured and that participation in the study was voluntary. Adherence to the legal requirements of the study country was followed and 'informed consent' has been appropriately obtained. No potential conflict of interest existed for either author in the form of grants, employment by, consultancy for, shared ownership in, or any close relationship with, an organization whose interests, financial or otherwise, may be affected by the publication of the paper.

Data Analysis

First, descriptive statistics were calculated for the participants' characteristics (means and standard deviations for continuous variables and frequencies and percentages for categorical variables). Then, to examine whether there were significant differences in sociodemographic characteristics between three children's groups (SEN, LD, and typical development), a Chi-squared test was performed on the gender distribution, while a one-way ANOVA test was used for the children's age. When the one-way ANOVA test was used, the equality of variance was checked by Levene's test. As the three groups analyzed had equal variance, no corrections to the one-way ANOVA test were required.

Second, descriptive statistics (means, deviation standard, and range) were computed on the main study variables (SPARTS, APRI, and students' social status). The calculation of skewness and kurtosis values was carried out to check the normality of the data. As Table 1 shows, all the values for univariate skewness and kurtosis for all the variables analyzed in the groups of children with SENs and LDs fell within the conventional criteria for normality (-3 to 3 for skewness and -10 to 10 for kurtosis; Kline, 2015); they were thus considered to have a normal distribution and therefore no data transformation was performed. However, in children with typical development and for the whole sample, the values for univariate skewness and kurtosis for physical and social victimization and verbal and physical perpetration did not meet these conventional criteria for normality. Consequently, these variables were transformed using the square root transformation, since this is one of the best transformations for dealing with asymmetric distributions (Rodríguez-Ayán & Ruiz, 2008).

Third, separate multivariate analyses of covariance (MANCOVA) on dimensions of SPARTS, APRI and students' social status were performed in order to examine the effect of the presence of SEN, LD, and typical development in students. In these multivariate analyses, the student's age was added as a covariate to control the influence that this variable may have on the analyzed variables, since the one-way ANOVA showed statistically significant differences between students with SEN and LD and students with typical development in terms of age. The Pillai's trace criterion (the most robust criterion) was used (Tabachnick & Fidell, 2007) to examine significant difference in multivariate analysis and an effect size was estimated using partial eta squared (η^2). Subsequently, if the overall F test showed mean differences among children's groups, a post hoc univariate ANCOVA test was used to determine which means were statistically different from others.

Fourth, Pearson correlation coefficient test were carried out to examine the relationships between the research variables. All these analyses were performed using SPSS version 26.0 for windows.

Lastly, a structural equation model was hypothesized, tested, and evaluated using Mplus 7.4. The model included a sequence in which the presence of SEN/LD in the children affected students' relations with teachers and students' statuses and bullying victimization and perpetration, and also included the effect of students' relationships with teachers and students' statuses in terms of bullying. In order to include the three groups in the model (SEN, LD, and typical development), two dummy variables were created: SEN, where students with special education needs = 1 and the rest of the participants = 0; and TD, where students with typical development = 1 and the rest of the participants = 0. Therefore, students with LD were used as the reference group. Also, it included the students' ages as a covariate to control the influence that this variable

Table 1 Descriptive statics of study variables for all sample and for student groups (students with typical development (TD), students with learning difficulties (LD) and students with special education needs (SEN))

	All sample (N= 320)			TD (n= 219)			LD (n= 55)			SEN (n= 46)			
	Range	M (SD)	Sk	Kr	M (SD)	Sk	Kr	M (SD)	Sk	Kr	M (SD)	Sk	Kr
Closeness (SPARTS)	8 to 40	26.88 (7.79)	-0.38	-0.51	26.84 (7.36)	-0.28	-0.46	27.47 (8.20)	-0.64	-0.30	26.39 (9.29)	-0.39	-0.92
Conflict (SPARTS)	10 to 42	17.73 (6.37)	1.02	0.81	17.53 (6.57)	1.17	1.13	17.61 (5.98)	0.91	0.42	18.82 (5.82)	0.37	-0.21
Negative expectations (SPARTS)	7 to 30	14.62 (4.76)	0.47	-0.13	14.42 (5)	0.60	-0.01	15.07 (4.37)	0.04	-0.74	15.03 (4.01)	0.30	-0.30
Verbal victimization (APRI)	6 to 34	10.57 (5.06)	1.91	4.05	10.25 (4.83)	1.96	4.16	9.89 (3.91)	1.53	2.65	12.90 (6.56)	1.50	2.02
Physical victimization (APRI)	6 to 32	8.02 (3.51)	3.86	19	7.81 (3.12)	4.09	21.90	7.45 (1.93)	1.70	2.59	9.70 (5.64)	2.51	6.86
Social victimization (APRI)	6 to 29	8.95 (4.01)	2.52	7.29	8.64 (3.67)	2.95	10.90	8.36 (2.66)	1.82	4.15	11.10 (5.84)	1.27	0.62
Verbal perpetration (APRI)	6 to 29	8.54 (3.46)	2.85	11.67	8.27 (3.34)	3.22	14.40	8.45 (2.84)	1.44	2.33	9.89 (4.35)	2.31	7.70
Physical perpetration (APRI)	6 to 25	7.39 (2.43)	3.56	17.93	7.21 (2.34)	4.27	25.20	7.19 (1.73)	2.16	5.36	8.53 (3.19)	2.10	5.98
Social perpetration (APRI)	6 to 28	9.36 (3.40)	2.24	7.46	9.20 (3.43)	2.65	10.30	9.68 (3.33)	1.37	1.49	9.73 (3.37)	1.42	2.19
Social preference (Z scores)	- 5 to 4	0.03 (1.63)	-0.47	0.53	0.34 (1.55)	-0.70	0.69	-0.22 (1.40)	0.02	0.10	- 1.13 (1.67)	0.11	-0.30
Social impact (Z scores)	- 2 to 3	-0.01 (0.97)	0.31	0.09	-0.01 (0.97)	0.21	-0.03	-0.21 (0.87)	0.26	-0.50	0.19 (1.07)	0.58	-0.44

M (SD)= Mean (Standard Deviation), SK=Skewness, Kr= Kurtosis, SPARTS= Student Perception of Affective Relationship with Teacher Scale, APRI= Adolescents Peer Relations Instrument

may have on the analyzed variables (see Fig. 1). The estimation method was maximum likelihood with robust corrections (MLR) for the estimates to accommodate the non-normality nature of the data (e.g., Finney & DiStefano, 2013; Satorra & Bentler, 1994). Full information maximum likelihood was used to deal with missing data, a procedure adequate for data missing completely at random and missing at random; this is the most recommended method for structural models (Finney & Di Stefano, 2013).

The goodness of fit for each model was assessed with several fit indexes (Kline, 2015; Tanaka, 1993): (1) The χ^2 statistic, which is a test of the difference between the observed covariance matrix and the one predicted by the specified model; (2) the comparative fit index (CFI), which assumes a non-central chi-square distribution with cut-off criteria of 0.90 or more (ideally over 0.95; Hu & Bentler, 1999) indicating adequate fit; and (3) the root mean square error of approximation (RMSEA) and its 90% confidence interval. Values higher than 0.90 for the CFI or lower than 0.08 in the RMSEA are considered a reasonable fit (Kline, 2015), and values of 0.95 for the CFI and of 0.06 for the RMSEA are considered excellent (Hu & Bentler, 1999).

Results

The descriptive statistics for the variables studied are presented in Table 1.

Differences Between the Groups of Children Regarding the Analyzed Variables

Separated MANCOVA tests were performed to determine if, controlling for the ages of the students, the presence of SEN, LD, or typical development in students affects the main study variables. Previous to running the MANCOVA tests, the assumption of homogeneity of covariance was examined using Box's M test (SPARTS 32.87, $F=2.67$, $p=0.001$; APRI 211.18, $F=4.79$, $p<0.001$; Student's social status 21.31, $F=3.49$, $p=0.002$), and, consequently, Pillai's trace was used instead of Wilk's lambda to evaluate the multivariate statistical significance of the main effects in each case.

Regarding the student–teacher relationship, measured in terms of the conflict, closeness, and negative expectations dimensions (SPARTS), the multivariate results showed that age was statistically significant as a covariate [Pillai's trace=0.04, $F(3, 308)=4.00$, $p=0.008$, $\eta^2=0.04$], but not effect was found for the presence of SEN in students [Pillai's trace=0.01, $F(6, 618)=0.26$, $p=0.956$, $\eta^2=0.002$]. Table 2 presents the results of the univariate ANCOVAs of the main effects in terms of the scores for the different dependent variables in the groups of children.

Concerning the violence victimization and perpetration dimensions (APRI), the multivariate results showed that age was statistically significant as a covariate: Pillai's trace=0.06, $F(6, 304)=3.04$, $p=0.007$, $\eta^2=0.06$. A main effect was found for the presence of SEN in students: Pillai's trace=0.08, $F(12, 610)=2.22$, $p=0.010$, $\eta^2=0.04$. Subsequent univariate ANCOVAs revealed statistically significant differences for the presence of SEN in the students related to the following: verbal violence victimization [$F(2, 309)=5.38$, $p=0.005$, $\eta^2=0.03$], physical violence victimization [$F(2, 309)=5.85$, $p=0.003$, $\eta^2=0.04$], social violence victimization [$F(2, 309)=7.29$, $p=0.001$, $\eta^2=0.05$], and physical violence perpetration [$F(2, 309)=5.49$, $p=0.005$, $\eta^2=0.03$] (see Table 2). Post hoc comparisons revealed that students with SEN showed statistically significantly higher values in terms of all types of violence victimization than students with typical development

Table 2 Results of the ANCOVAs by presence of any type SEN: adjusted means (i.e., controlling for age), F-values, significance levels and effect size for the scores of the different DVs

	TD	LD	SEN			
	<i>M</i>	<i>M</i>	<i>M</i>	<i>F</i>	<i>p</i>	η^2
Closeness (SPARTS)	26.67	27.73	26.25	0.51	.598	.003
Conflict (SPARTS)	17.80	17.23	18.27	0.33	.717	.002
Negative expectations (SPARTS)	14.57	14.67	14.61	0.01	.991	.00
Verbal victimization (APRI)	3.14	3.08	3.49	5.38	.005	.03
Physical victimization (APRI)	2.76	2.70	3.02	5.85	.003	.04
Social victimization (APRI)	2.90	2.85	3.24	7.29	.001	.05
Verbal perpetration (APRI)	2.86	2.81	3.03	2.81	.062	.02
Physical perpetration (APRI)	2.67	2.63	2.86	5.49	.005	.03
Social perpetration (APRI)	3.00	3.03	3.05	0.20	.819	.001
Social preference (Z scores)	0.36	-0.32	-1.23	20.02	<.001	.11
Social impact (Z scores)	-0.01	-0.18	0.12	1.23	.295	.01

TD=Students with Typical Development, LD=Students with Learning Difficulties, SEN=Students with Special Education Needs, SPARTS=Student Perception of Affective Relationship with Teacher Scale, APRI=Adolescent Peer Relations Instrument

(Verbal: $p=0.008$, Physical: $p=0.007$, and Social: $p=0.001$) and students with LD (Verbal: $p=0.010$, Physical: $p=0.005$, and Social: $p=0.002$). There was no statistically significant difference between students with LD and those with typical development regarding these variables. In addition, post hoc comparisons revealed that students with SEN showed statistically significantly higher values in terms of physical violence perpetration than students with typical development ($p=0.008$) and students with LD ($p=0.009$). Again, there was no statistically significant difference between students with LD and those with typical development concerning this variable.

With regard to students' social status measured as the effect of social preference and social impact, the multivariate results also showed that age was marginally statistically significant as a covariate [Pillai's trace=0.02, $F(2, 309)=2.80$, $p=0.062$, $\eta^2=0.02$]. Moreover, a main effect was found for the presence of SEN in students [Pillai's trace=0.12, $F(4, 620)=10.13$, $p<0.001$, $\eta^2=0.06$]. Subsequent univariate ANCOVAs revealed statistically significant differences for the presence of SEN in the students related to social preference [$F(2, 310)=20.02$, $p<0.001$, $\eta^2=0.11$], but not for social impact [$F(2, 310)=1.23$, $p=0.295$, $\eta^2=0.01$] (see Table 2). Post hoc comparisons revealed that students with typical development showed statistically significantly higher values in terms of social preference than students with SEN ($p<0.001$) and students with LD ($p=0.015$). In addition, students with LD showed statistically significantly higher values regarding social preference than students with SEN ($p=0.011$).

Intercorrelations Between the Variables Under Study

Table 2 shows the correlations between all the variables. As can be seen from Table 2, most of the variables showed statistically significant relationships among them. The conflict and negative expectations dimensions of SPARTS showed positive relationships with all types of

violence (victimization and perpetration) and the student's age, indicating that a higher level in terms of the student's perception of his/her relationship with the teacher as conflictive and the student's negative expectations regarding his/her relationship with the teacher were associated with higher levels of all types of violence (victimization and perpetration) and with being older. However, the closeness dimension showed a negative and statistically significant association with the perpetration of types of violence and with the student's age, indicating that a higher level of the student's perception of his/her relationship with the teacher in terms of closeness was related to lower levels of all types of violence perpetration and with being younger. Also, the closeness dimension showed a positive relationship with social preference, indicating that a higher level of the student's perception of his/her relationship with the teacher in terms of closeness was related to higher levels of social preference. In addition, all types of violence (victimization and perpetration) were negatively related to social preference, indicating that higher levels of violence were associated with lower levels of social preference, except regarding social perpetration. In addition, only verbal and physical violence perpetration showed a positive association with social impact and the student's age, indicating that higher levels of verbal and physical violence perpetration were linked to social impact and to being older. (Table 3)

Predicting Bullying: A Structural Equation Model

The model showed a good fit: $\chi^2(40)=102.398$, $p<0.001$, CFI=0.940, RMSEA=0.070 [90% CI=0.054, 0.088]. In addition, the explained variance of victimization in this model was 31.1%, while for perpetration it was 27.5%. Figure 2 shows the structural model parameters' standardized estimations.

As can be seen in Fig. 2, the presence of SENs in students had a positive direct effect on bullying victimization, whereas typical development had a negative one. As the reference group was LD students, these relationships mean that levels of bullying victimization were higher for LD students when compared to typical development students, while SEN students showed higher levels of bullying victimization when compared to LD students. In addition, a positive direct effect of typical development in students was found on social preference compared to students with LDs, and a negative effect for SEN students. That is, students with LDs showed lower levels of social preference when compared to typical development students but higher social preference when compared to SEN students. In turn, social preference had a positive direct effect on bullying victimization.

The student's age had a positive direct effect on bullying perpetration, social preference, and the conflictive and negative expectations dimensions of the student's perception of his/her relationship with the teacher, and it had a negative direct effect on the closeness dimension. In turn, social preference and the dimensions of the student's perception of his/her relationship with the teacher (conflict, closeness, and negative expectations) had a positive effect on bullying victimization. Finally, there was a positive and direct effect of social impact and the student's perception of his/her relationship with the teacher with reference to the conflict dimension on bullying perpetration.

Table 3 Inter correlations between all variables under study

	1	2	3	4	5	6	7	8	9	10	11
1. Closeness (SPARTS)	-										
2. Conflict (SPARTS)	-.39***	-									
3. Negative expectation (SPARTS)	-.20***	.47***	-								
4. Verbal victimization (APRI)	-.06	.41***	.31***	-							
5. Physical victimization (APRI)	-.04	.36***	.27***	.70***	-						
6. Social victimization (APRI)	-.04	.38***	.30***	.75***	.67***	-					
7. Verbal perpetration (APRI)	-.12*	.38***	.21***	.45***	.44***	.37***	-				
8. Physical perpetration (APRI)	-.14*	.34***	.21***	.33***	.54***	.31***	.62***	-			
9. Social perpetration (APRI)	-.15*	.34***	.39***	.45***	.44***	.44***	.59***	.46***	-		
10. Social preference	.11*	-.12*	-.07	-.25***	-.19**	-.22***	-.17**	-.15**	-.09	-	
11. Social impact	.02	.09	.07	.08	.03	.06	.16**	.14*	.08	.01	-
12. Age of students	-.12*	.16**	.17**	.09	.05	.10	.24***	.17**	.15*	.04	.02

SPARTS = Student Perception of Affective Relationship with Teacher Scale, APRI = Adolescents Peer Relations Instrument

* $p < .05$. ** $p < .01$. *** $p < .001$

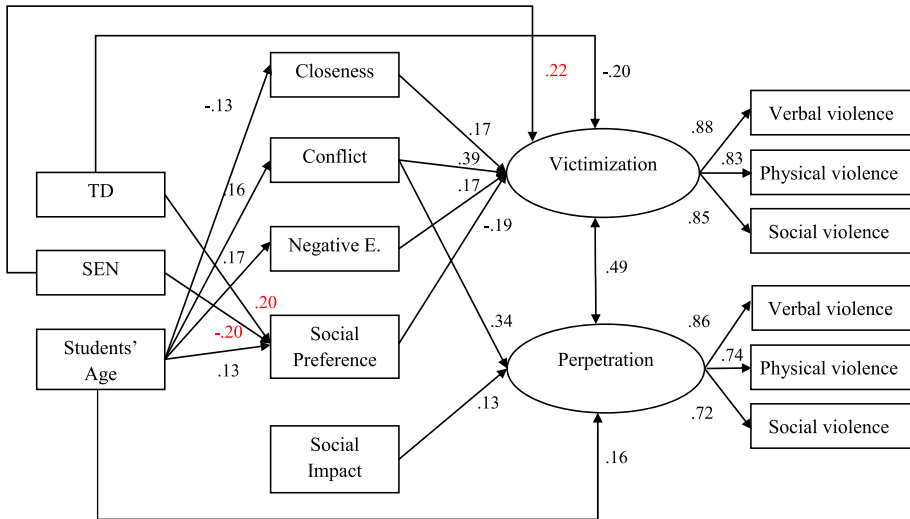


Fig. 2 Results of the structural equation model predicting bullying victimization and perpetration in SEN, LD, and Typical Development students. Standardized coefficients of the model. TD = Students with Typical Development. SEN = Student with Special Education Needs

Discussion

The purpose of the study was to assess the quality of the relationships with teachers from students' viewpoints and their social status in the peer group in relation with bullying dimensions (victimization and perpetration). First, we explored the role of student–teacher relationship in the whole group class (i.e. in students with typical development, SEN and LD); second, we analyzed the association between peer status and bullying in the whole group class; finally, we compared the association of these variables in three groups of students: children with typical development, SEN and LD.

Student–Teacher Relationship

The findings from the bivariate correlations found relationships among most of the analyzed variables.

Conflict with Teacher, Negative Expectation and Bullying

In the whole group class, the student's perception of the relationship with the teacher as conflictual, and negative expectations about this relationship, were positively related to all the ways of being targeted (verbal, physical, and social), the three types of behaviors used to bully others (physical, verbal, and social), and the student's age. These findings might indicate that the student's perception of a conflictual relationship with the teacher, and negative expectations in terms of this relationship, are associated with high levels of victimization and perpetration, and the student's age. That is, students with perceived conflictual and

negative relationships with their teachers may also be those who tend to be more involved in bullying episodes. In addition, the possibility of taking part in bullying episodes, as a bully or victim, seems to be higher when students are older.

These findings confirm a large body of literature indicating the association between relationships with teachers and behavioral outcomes in students (e.g., Sointu et al., 2017). A conflictual student–teacher relationship represents a risk factor for active bullying behaviors (Longobardi et al., 2018) or victimization (Marengo et al., 2018) and could lead to disruption and coercion escalations in students (Jalón Díaz-Aguado & Arias, 2013). Moreover, taking into account age, the direction of the relationship between teacher acceptance and students' perceptions of teacher support is age-specific (Košir & Tement, 2014): as they get older, students develop less positive relationships with teachers (McGrath & Van Bergen, 2015). Our results seem to confirm that early adolescence could represent a critical moment for students, especially for those at risk regarding social and emotional factors (McGrath & Van Bergen, 2015), taking also into account that older children experience a decline in physical victimization, and a shift toward verbal forms of victimization (Marengo et al., 2019), which is less visible for teachers.

Closeness with Teacher and Bullying

In the whole group class, the closeness dimension was negatively related to the three types of behavior used to bully others (physical, verbal, and social) and to the student's age. These results indicate that a higher level of student perception of a close relationship with a teacher may be associated with lower levels of all types of violence perpetration, and with being younger. That is, students with perceived warm and close relationships with their teachers may also be those less likely to bully others. In addition, the possibility of taking part in bullying episodes as a bully seems to be lower when students are younger. Our results highlight the positive impact of the student–teacher relationship on children's behavior (Espelage & Swearer, 2003) and the protective role of this relationship against bullying (Jungert et al., 2016). In addition, the results confirm the developmental trajectory of bullying behaviors, being less frequent in younger children and increasing with age (Cook et al., 2010; Ladd et al., 2017).

Closeness with Teacher and Social Preference Among Peers

Also, in the whole group class the closeness dimension was positively linked to social preference, indicating that a higher level of student's perception of a close relationship with teacher was associated with higher levels of social preference. That is, students sharing warm and positive relationships with teachers might be more accepted by their groups of peers. This result confirms the important role of a warm and close student–teacher relationship in the first years of school for students' future adaptation and development (Pianta et al., 1995; Wanders et al., 2020).

Student's Age, Relationship with Teacher and Bullying Behaviors

The student's age was found to have a direct effect on the three dimensions of the student's perception of the relationship with the teacher (i.e., conflict, closeness, and negative expectations) in the whole group class. Specifically, older students showed higher levels

of conflict and negative expectations, and lower levels of closeness in their relationship with teachers. In turn, the three dimensions of the student–teacher relationship positively predicted bullying victimization, and the student’s perception of a conflictual relationship with the teacher and the student’s social impact within the peer group predicted bullying perpetration. That is, a positive relationship with teachers is protective against bullying victimization, consistent with previous literature (Iotti et al., 2020). In turn, difficulties in the relationships with teachers and peers might expose students to higher risk of exhibit bullying behaviors (Pianta et al., 1995; Wanders et al., 2020). Taking into account the age-specificity in the relationship between teachers’ support and students’ perceptions, that tend to decrease with age (Košir & Tement, 2014; McGrath & Van Bergen, 2015), these results confirm the influence of early positive relationships with teachers on the long-lasting school well-being of students (Pianta et al., 1995; Wanders et al., 2020).

Peer Status, Bullying and Age

Considering the whole group class, the results show that student age predicted peer status, with older students showing higher levels of social preference among peers. In addition, a link seems to exist between bullying victimization and perpetration and social status among peers. Specifically, we have found the following results.

The three pathways of being targeted (verbal, physical, and social) and the types of behaviors used to bully others (physical, verbal, and social) were negatively related to social preference, except in the case of social perpetration. This finding may indicate that higher levels of violence in students, both in victimization and perpetration, are associated with lower levels of social preference among peers. That is, students who suffer from or act out bullying are less preferred by their peers. Only verbal and physical violence perpetration showed a positive association with social impact and the student’s age. That is, older students who exhibit higher levels of verbal and physical violence perpetration might have a higher social status among peers. The student’s age had a positive direct effect on bullying perpetration. This finding seems to indicate that older students may exhibit higher levels of bullying behaviors.

Considering these results together, findings are in line with previous research, showing that in older students reported rates of bullying are higher, and bullying behaviors are related with an increase in social status (Van der Ploeg et al., 2020). In turn, younger students report higher rates of victimization (Scheithaue et al., 2006) and tend to sanction bullying behaviors with a decrease in peer status. Bullying behaviors are characterized by a developmental trajectory (Cook et al., 2010) and increase over the years from childhood, with a peak during early adolescence (Hymel & Swearer, 2015; Menesini & Salmivalli, 2017). In addition, research has shown that, starting from middle childhood, bullying and victimization start to be group processes (Monks et al., 2021) and are driven by status goals (Salmivalli, 2010). Older students might turn to bullying more than younger students because this could lead to an improvement in their social status.

Children with SEN, LD, and Typical Development

Finally, we compared the results of the associations between bullying variables, student–teacher relationship, peer status, and the presence of SEN, LD, or typical development in children.

Bullying in Children with SEN, LD and Typical Development

The results showed significant differences between students with SEN, LD, and typical development in terms of the three types of behaviors used to bully others (physical, verbal, and social) and physical violence perpetration. Specifically, students with SEN showed higher values for all types of violence victimization, and in the perpetration of physical violence, than students with typical development and students with LD. It is interesting to note that no difference was found between students who have LD and those with typical development regarding these variables when studied in the analysis of variance context. When modeled using the structural equation model, the presence of LDs in students had a direct effect on bullying victimization, indicating that students who had LDs were bullied more than students with typical development but less than SEN students.

These findings are in line with previous research, showing that children with SEN tend to report more bullying victimization and perpetration than their peers (Dasioti & Kolaitis, 2018; Rose & Gage, 2017; Rose et al., 2011). As suggested by other research (Fink et al., 2015), we could hypothesize that probably the presence of behavioral and emotional problems might predict bullying behaviors in children with SEN. Literature has shown that children with SEN tend to report high levels of behavioral problems (Dasioti & Kolaitis, 2018), and this could make their impairments more visible than the difficulties of children with LD. Moreover, in the Italian school context, SEN is a large classification that also includes children with behavioral and emotional difficulties (e.g., ADHD; cf. MIUR [Ministero dell'Istruzione dell'Università e della Ricerca]). Thus, the different results in terms of bullying variables (victimization and perpetration) registered in children with SEN and LD, and in children with typical development, could be explained by the presence of behavioral and emotional problems in the children with SEN in our sample. As confirmed by previous studies, bullying seems to be part of a continuum of interpersonal relationships that exist within the peer group, and there could be an association between social skills problems and bullying (Mauder & Crafter, 2018).

Social Preference in Children with SEN, LD and Typical Development

Results showed significant differences between students with SEN, students with LD, and those with typical development in terms of social preference scores. Specifically, students with typical development showed higher values regarding social preference than students with LD, and this finding was supported also by the results of the structural equation model. Also, students with LD showed higher social preference than students with SEN. This result confirms the large body of literature showing that children with disabilities or difficulties at school score lower in terms of levels of popularity and are at risk of social exclusion (Rose et al., 2011). In particular, Pinto et al. (2019) found that children with SEN have more problems in peer relationships, score lower in terms of peer acceptance, have fewer reciprocated friendships, and experience less integration into peer groups.

When comparing social preference with regard to SENs and LDs, students with LDs showed higher values in terms of social preference than did students with SENs. To the best of our knowledge, previous studies comparing the social status of students with SENs and LDs at school do not exist, and this finding adds to the previous literature focusing on school inclusion and the adjustment of children with disabilities. Research has documented the social skill difficulties in both children with SENs and with LDs

and their consequent problems in peer relationships. When compared with their typical development classmates, children with SENs have lower levels of peer acceptance and are generally less integrated into peer groups (Pinto et al., 2019), scoring lower in social participation. In particular, students with SENs showing emotional and behavioral difficulties are more likely to have fewer friends and to experience negative peer relationships (Banks et al., 2018). In sum, our results may be explained by SEN students' problems with peer acceptance and integration into peer groups, which may lead to lower social preference when compared to children with LDs.

Student–Teacher Relationship and Bullying in Children with Sen, Ld and Typical Development

Finally, no differences among student groups (SEN, LD and typical development) were found concerning the three dimensions of relationships with teachers and two ways of being targeted (verbal, and social). This finding is encouraging and seems to indicate that the existing association between bullying victimization and the relationship with the teacher (Marengo et al., 2018), measured in terms of the conflict, closeness, and negative expectations dimensions, might be independent from the SEN or LD status. With regard to the structural equation model, neither there was an effect of belonging to the group of student with SEN, LD, or typical development concerning the three dimensions of the student's perception of the relationship with the teacher (conflict, closeness, and negative expectations), probably because relationships between students and teachers is not influenced by the presence of SEN or LD in children.

Study Limitations

Some limitations of the present work should be discussed. The data were obtained through convenience sampling, and through students' self-reports, which may incorporate the effect of social desirability, and there is also a risk of self-selection. Therefore, it is not possible to generalize the findings to people located in cities or from different cultural backgrounds. A more representative sample from different areas of Italy would have allowed for the better generalization of the results. Thus, the use of other samples in future research would be recommended. Thereby, it would test the generalizability of our findings in the future. In addition, the data are cross-sectional, and, therefore, it is not possible to draw inferences about cause-and-effect relationships. Moreover, several studies have pointed to some biases that can stem from the use of mediation within a cross-sectional framework (Cole & Maxwell, 2003; Maxwell et al., 2011). Thus, future researchers could use a longitudinal design to test the causal relationships among variables, which might help us understand how the connections between them unfold over time.

Another limitation of this study is related to the McDonald's omega value of the negative expectations ($\omega = 0.58$) dimension of the SPARTS. Consequently, the findings must be verified in other samples in which the quality of their measurement is improved. Finally, some variables that could also affect bully behaviors, such as children's temperament, were not assessed, and therefore its influence could not be studied. Future research on this regard would also be welcomed.

Conclusion

This work represents the first study investigating the relationships between the presence of SEN and LD in students, the quality of the relationship with the teacher from the student's viewpoint, the social status of the student, and bullying dimensions (victimization and perpetration). This study provides insight into the patterns of relationships among the study variables. This is the first time the interrelations of such a group of variables have been studied, and we have tried to do it in the simplest and most sophisticated way, always based on theory. Although bullying has received international attention, there is still a dearth of research on this topic for specific samples. We need to address violence across multiple perpetrators and multiple systems. Further research is needed to provide an in-depth understanding of the role of behavioral and emotional problems in the development of bullying behaviors of children with SEN and LD.

The findings of this study could be important for teachers and educational researchers in different ways. For teachers, the results could highlight peculiarities of children with SEN and LD and could represent an opportunity for them to meditate on, and eventually re-think, the pedagogical resources educators provide, in order to enhance these children's social inclusion and prevent bullying episodes at school. Our results point to higher levels of bullying victimization for LD and SEN students, especially for the latter. As this victimization has been predicted both by teacher attitudes and group dynamics, specifically regarding social preference, teachers' actions could reduce bullying victimization of LD and SEN students in two ways: through their own behavior toward students, by reducing conflict and negative expectations, and through the improvement of SEN and LD students' social skills and peer relationships. For educational researchers, findings add knowledge on the association between bullying student–teacher relationship and peer status in children with SEN and LD. In light of the results that have emerged, it would be interesting to focus any future research on other trajectories of bullying in children with SEN and LD, in order to better understand the specificities of their adjustment in a mainstream education context.

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Data Availability Data will be available on request at University of Turin.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with animals performed by any of the authors.

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