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Injury prevention in male youth soccer: Current practices and perceptions of practitioners working at elite English academies

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ABSTRACT

Forty-one practitioners inclusive of physiotherapists, sports scientists and strength and conditioning coaches from the academies of elite soccer clubs in the United Kingdom completed an on-line questionnaire which examined their: (1) background information; (2) perceptions of injury occurrence and risk factors; (3) screening and return to play; and (4) approach to designing and delivering injury prevention programmes with a response rate of 55% (41/75). Contact injuries were the most common mechanism reported and players between 13–16 years of age were perceived to be at the greatest risk. Pertinent risk factors included: reduced lower limb and eccentric hamstring strength, proprioception, muscle imbalances, and under developed foundational movement skills. Joint range of motion, jump tests, the functional movement screen, overhead and single leg squats were the most utilised screening methods. Training modalities rated in order of importance included: resistance training, flexibility development, agility, plyometrics and balance training. Training frequency was most commonly once or twice per week, during warm-ups, independent sessions or a combination of both. Injury prevention strategies in this cohort appear to be logical; however, the classification of injury occurrence and application of screening tools to identify "at risk" players do not align with existing research. The frequency and type of training used may also be insufficient to elicit an appropriate stimulus to address pertinent risk factors based on current recommendations.

ARTICLE HISTORY
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KEYWORDS
Screening; risk factors; coaches; risk reduction

Introduction

Soccer is the leading sport for participation in male youths, where young players are predisposed to an elevated risk of injury (Emery & Meeuwisse, 2010). This is likely due to high intensity actions and elevated forces and joint loads (Daniel et al., 1994). The incidence rate in elite male youth soccer is 0.40 injuries per player per season, corresponding to a 21.9 days average length of absence and 2.31 matches per injury (Price, Hawkins, Hulse, & Hodson, 2004). In-spite of a linear increase in the number of injuries with age (Price et al., 2004); a period of heightened risk has been indicated during peak height velocity (PHV) (Van der Sluis et al., 2014), which refers to the time of the maximal rate of growth during the adolescent growth spurt (Lloyd, Oliver, Faigenbaum, Myer, & Croix, 2014b). Recent data also show that injury rates are highest in players who are aged 15 (80 injuries/ 1000 hours of practice) (Renshaw & Goodwin, 2016).

Valid and reliable methods used to screen players for their level of risk, in conjunction with the implementation of training programs that target pertinent risk factors should be considered an effective strategy to minimize the negative impact associated with injury in youth soccer players (Price et al., 2004; Read, Oliver, Croix, Myer, & Lloyd, 2016b; Read, Oliver, De Ste Croix, Myer, & Lloyd, 2016a). Previous studies have reported growth rates and stage of maturation (Kemper et al., 2015; Van der Sluis et al., 2014), movement skill (Atkins, Bentley, Hurst, Sinclair, & Hesketh, 2016), neuromuscular fatigue (Oliver, Croix, Lloyd, & Williams, 2014) and previous injury (Hägglund, Waldén, & Ekstrand, 2006) as pertinent injury risk factors in male youth soccer players. Practitioners working with this cohort should consider known risk factors in order to implement effective preventive strategies, including the selection of appropriate assessment tools to aid in the identification and training of players at a heightened risk of injury (Read et al., 2016b; Read, Oliver, De Ste Croix, Myer, & Lloyd, 2015; Read et al., 2016a). Furthermore, while existing research suggests the implementation of neuromuscular training interventions is an effective strategy to prevent injuries in youth populations (Myer, Lloyd, Brent, & Faigenbaum, 2013; Read et al., 2016b), data to describe their use in elite male youth soccer players are sparse.

The injury prevention practices among elite adult soccer teams has recently been examined (McCall, Carling, et al., 2015; McCall, Davison, et al., 2015; O'Brien & Finch, 2016). The results of these studies showed that despite practitioners following a coherent approach, a number of the practices implemented with adult male professional soccer players are not well supported by research evidence (McCall, Carling, et al., 2015; McCall, Davison, et al., 2015; O'Brien & Finch,

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2016). While field-based work should consider both research and practice-based evidence, where possible, those working within elite sport environments should preferentially adopt strategies to align evidence-based interventions with the demands of professional settings (Bishop, 2008).

To the knowledge of the authors, no published research is available to describe the practices of those responsible for the the delivery of injury prevention screening and training in male youth soccer. Further research is warranted to examine more closely how the perceptions and practices of those working in the field align with the current body of evidence (Bishop, 2008; McCall, Carling, et al., 2015). The aim of this study was to examine the current practices and perceptions of a sample of practitioners responsible for the delivery of injury risk reduction strategies at elite male academy soccer clubs.

Methods

Participants

Invitations to participate were sent to representatives of the sports science and medicine teams of male academy soccer academies in the United Kingdom who were either category 1, 2 or 3 academies as indicated by their status in the Elite Player Performance Plan (EPPP). Clubs in these categories were selected as no formalised medical, physiotherapy, sports science or strength and conditioning support is a fundamental requirement for players younger than 16 years of age in category 4 clubs as indicated by the EPPP (EPPP, 2011). Inclusion criteria required participants to be responsible for the delivery of injury risk screening and prevention training programmes at a professional male soccer academy. Ethical approval was granted by the ethics committee at the research institution.

Experimental design

This study utilised a quantitative research design in the form of an online survey to examine the current practices and perceptions of practitioners involved with the implementation of injury risk reduction strategies in a sample of male academy soccer clubs in the United Kingdom. Participants were recruited by contacting the heads of department at professional soccer clubs to invite relevant staff within the academy who were responsible for injury prevention screening and training to participate in this study. The survey was emailed to, and completed remotely by, each practitioner at their respective soccer clubs.

Procedures

An online questionnaire (appendix 1) was designed by a panel of experts including practitioners and researchers for the purpose of this study. The questionnaire was pilot-tested on an advisory group of practitioners involved in injury prevention delivery which is in accordance with the methods used in previous research (Duehring & Ebben, 2010; Ebben & Blackard, 2001; Ebben, Carroll, & Simenz, 2004; Ebben, Hintz, & Simenz, 2005; Read et al., 2017; Simenz, Dugan, & Ebben, 2005) and divided into four sections: (1) participant background information; (2) perceptions of injury occurrence and risk factors; (3) screening and return to play criteria; and (4) injury prevention programs. These four sections were extracted in consultation with the expert panel, and were in line with previous studies (Duehring & Ebben, 2010; Ebben et al., 2004, 2005; Read et al., 2017; Simenz et al., 2005). All data were collected between June 2015 and May 2016.

Statistical analysis

All data were collected using an online questionnaire (British Online Surveys, Bristol, UK). The survey consisted of a combination of multiple choice and open-ended questions. Data analysis procedures were descriptive in nature with frequency counts and percentages calculated. In addition, some of the questions were scored using a 5-point Likert Scale set as 1 (strongly disagree), 2 (disagree), 3 (neither agree nor disagree), 4 (agree) and 5 (strongly agree) with the frequency count of each response reported.

Results

Respondents

Forty-one participants (37 males, 4 female) completed the survey with a response rate of 55% (41/75). The majority of the respondents were male (90.2%) and working at category one (41.5%) or two (39%) football academies registered in the EPPP. Role delineation included strength and conditioning coaches (48.8%), sport scientists (24.4%) and physiotherapists (12.2%). Players between 15 and 18 years old were the most often supported group by practitioners (25.8%), however, a third of those surveyed (33.9%) reported working with youth players across all age groups (<11–21 years of age). The remainder of participants indicated that they worked within more narrow age groups; the distribution of these is presented in Figure 1.

Overall injury occurrence, anatomical location and risk factors

Players aged between 13–16 years old were identified as the group with the highest risk of injury (49%) (Figure 2). Contact mechanisms were indicated as the most common cause of injury (29%), closely followed by overuse (28%) and non-contact mechanisms (25%). Other responses (18%) included growth related conditions, faulty movement patterns, fatigue and previous injury. Additionally, overuse injuries (31.9%), muscular strains (26.8%) and ligament strains (24.4%) were considered the most common injuries in academy football, occurring most frequently at the knee (31.7%) and ankle (41.5%).

The vast majority of responders (74.4%) classified increased lower limb strength as a very important factor to reduce injury risk. Furthermore, enhanced proprioception, fundamental movement skills and eccentric hamstring strength were also generally accepted as important physical components for injury risk reduction (Table 1).

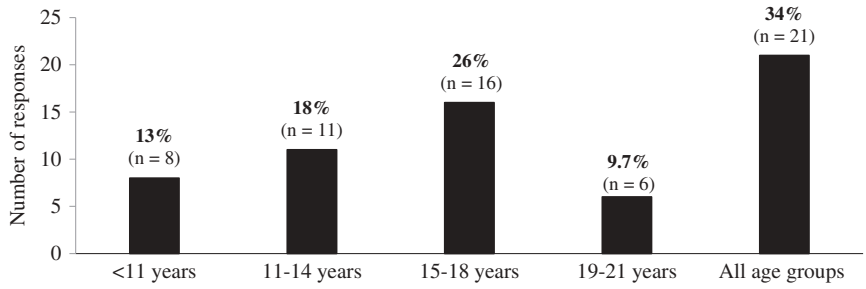

Figure 1. Reported players age groups in which participants were involved.

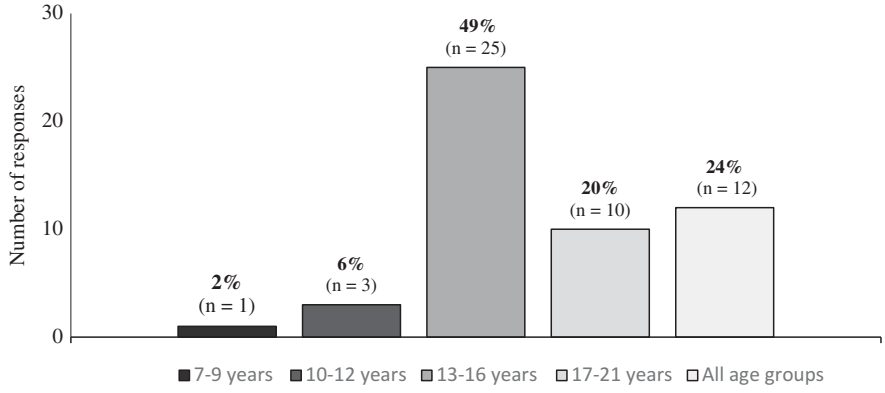

Figure 2. Players at specific risk of injury.

Table 1. Perceived importance of physical related components to prevent injuries.

	Very important	Important	Moderately important	Of little importance	Unimportant
Physical Components	**%**	**%**	**%**	**%**	**%**
Increased Lower limb strength	74	18	8	-	-
Enhanced Propioception	51	27	20	2	-
Enhanced Fundamental movement skill	46	49	2	2	-
Increased Eccentric Hamstring Strength	44	41	15	-	-
Optimal Mobility	38	35	23	5	-
Greater Glute Activation	30	48	15	5	3
Reduced Limb Asymmetry	27	39	32	2	-
Increased Core Stability	21	51	29	-	-
Optimal Muscle Balance Strength Ratios	20	50	28	3	-

Injury screening

Formalised injury screening is most frequently performed twice (17.1%) or three times (53.7%) per season, typically during pre-, mid- and at the end of the season (80.5%). Joint range of motion examination (75.6%), hop and jump tests (73.2%), functional movement screening (FMS) (63.4%), overhead squat (61%) and single leg squat (SLS) assessments (56.1%) were the most commonly used tests for injury screening (Figure 3).

Equipment used to perform injury screening assessments most frequently included jump/contact mats (87.8%), measuring tapes (92.7%) and video cameras (87.8%) (Figure 4). The majority of participants reported that the testing equipment available was adequate (46.3% agreed; 9.8% strongly agreed); however, approximately a third of responders did not agree (24.4%) or strongly disagreed (7.3%) with this assumption.

Injury prevention programs

The number of weekly sessions devoted specifically to injury prevention varied among participants (Figure 5). These sessions were commonly delivered through either warm-ups for football sessions (21%), independent sessions (26%) or via a combination of independent and warm-up sessions. (39%). The duration of these sessions varied; however, the vast majority of responders indicated a duration of 11–20 minutes (37%) or between 21 and 30 minutes (44%). Injury prevention sessions were commonly delivered in the gym (51%), on a grass football pitch (22%) or on an astroturf pitch (15%).

Delivery of an independent specific injury prevention program was most commonly reported (54.3%). Only two participants (4.3%) reported using the FIFA 11+, with four responders (8.7%) stating that they used a modified version of FIFA 11 + . Similarly, only two participants (4.3%) reported using the Prevent injury and Performance Enhancement (PEP)

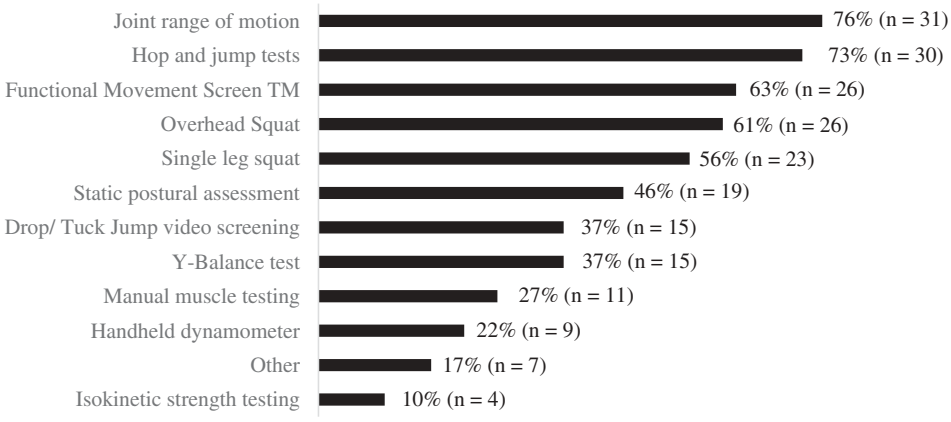

Figure 3. Most commonly utilized assessments for injury risk screening.

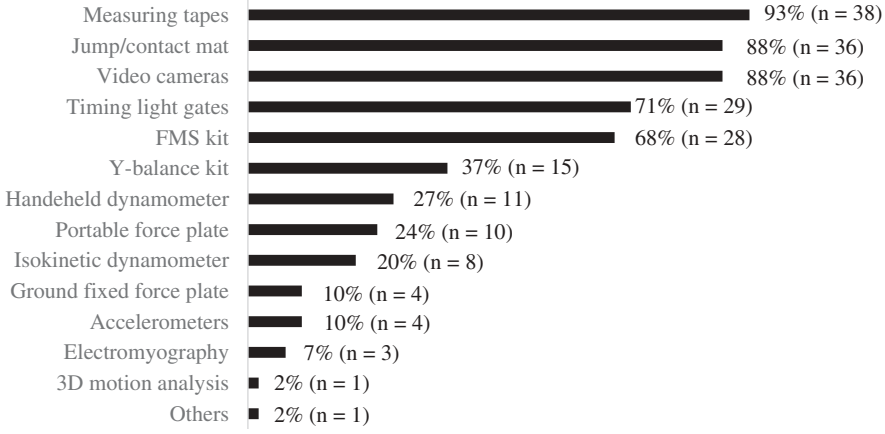

Figure 4. Most commonly utilized equipment for injury risk screening.
FMS = Functional Movement Screen

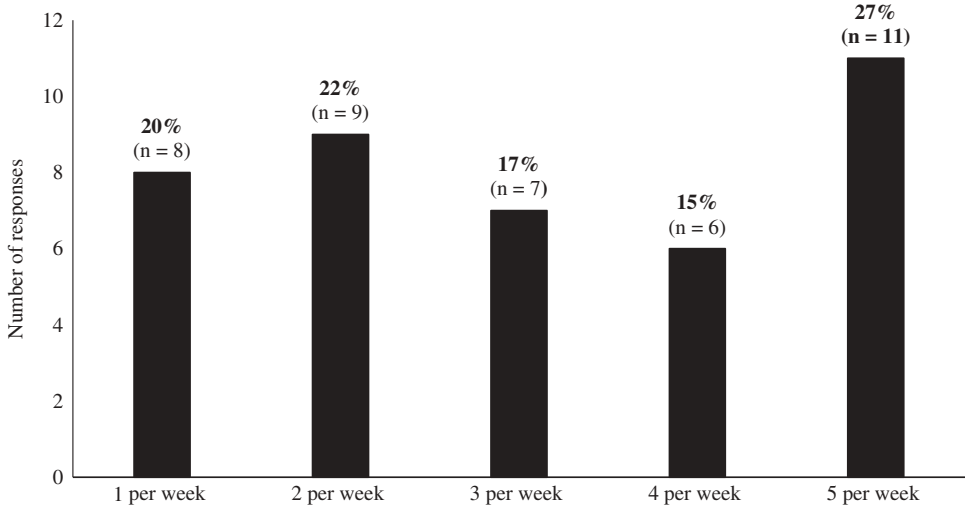

Figure 5. Reported number of injury prevention sessions delivered per week.

programme, with a further five responders (10.9%) indicating that they used a modified version of PEP program.

Most important exercise modalities for injury prevention

In terms of training modalities, participants reported using a wide variety of methods as part of their injury prevention programs (see Table 2 for stated order of most important). A large majority of respondents (73.2%) identified resistance training as the most important training method to aid injury prevention. Sixteen of the sample surveyed (39%) stated that flexibility training was the second most important element to include as part of an injury prevention program; whereas, fifteen subjects (36.6%) favoured balance training. Eleven participants (26.8%) reported agility and change of direction (COD) training as the third most important training modality. Plyometrics were listed as the fourth most important training method (17.1%) and five respondents (12.2%) listed balance training in fifth position (Table 2).

Return to play and monitoring

The majority of responders (80.5%) reported having specific return to sport criteria for relevant injuries. All but four participants (95.1%) monitored training load, with rating of perceived exertion (RPE) (42%), global positioning systems (GPS) (27.2%) and heart rate (25.9%) the most common methodologies.

Table 2. Perceived exercise importance for injury prevention.

Training modality	1 = Most important %	2 %	3 %	4 %	5 %	6 = Least important %
Resistance training	73	17	5	2	1	2
Core Stability training	29	32	22	12	3	2
Agility/COD training	22	29	27	5	5	12
Balance training	20	36	22	5	12	5
Flexibility training	20	39	22	7	2	10
Plyometrics training	17	32	24	17	7	3

*COD = Change of direction

Twenty subjects (48.8%) indicated that assessment of neuromuscular readiness was regularly performed and the main tests used included: countermovement jump, drop jumps (with measures of jump height and reacyove strength index), wellness questionnaires, six seconds cycle ergometer sprints and groin squeeze tests.

Adherence with injury prevention strategies and barriers for effective delivery

There was generally a positive perception that both players' (56.1% agreed; 17.1% strongly agreed) and coaches' (41.5% agreed; 29.3% strongly agreed) adherence towards injury prevention programmes was satisfactory (Figure 6). Time available (32.4%), staff to player ratios (25.4%) and facilities were indicated as the major barriers for injury prevention.

Discussion

Injury occurrence

Participant responses indicated that players aged 13–16 are at the greatest risk of injury. While older players display the highest incidence rate, likely due to increased contact time (Price et al., 2004); recent data which show a heightened period of risk around the time of peak height velocity (Van der Sluis et al., 2014), and the early stages of adolescence (Renshaw & Goodwin, 2016; Van der Sluis et al., 2014). Practitioners working within male youth soccer academies should therefore consider rapid growth as a key injury risk factor (Kemper et al., 2015; Read et al., 2015), and be cognizant of temporary changes in motor control that may also occur during these periods (Atkins et al., 2016; Lloyd et al., 2014b; Philippaerts et al., 2006). The findings of the current study demonstrate agreement between the perceptions of practitioners working in the field and the current epidemiological data in the identification of key target groups for injury risk reduction strategies.

The knee and ankle were the most frequently reported anatomical sites of injury by the respondents in the current

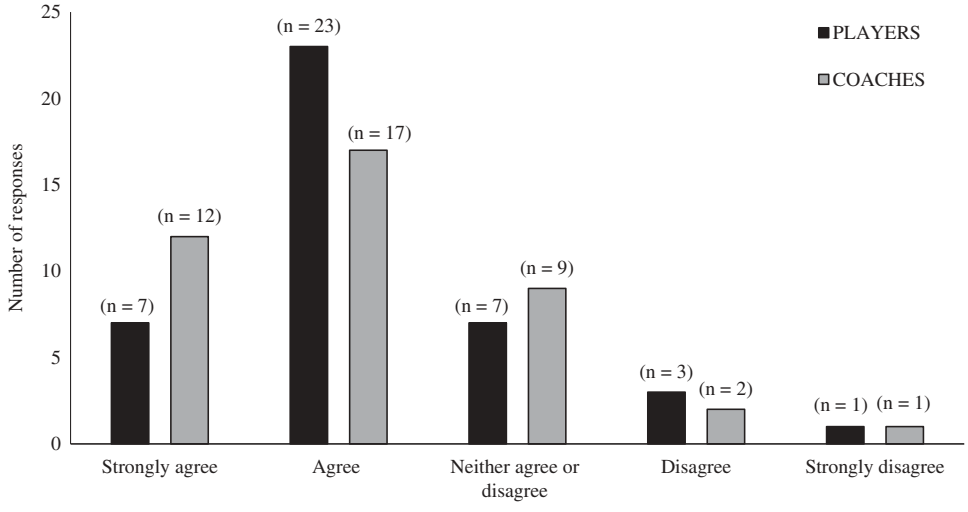

Figure 6. Practitioners' level of agreement with the statement that adherence from players and coaches towards injury prevention practices was good.

study and this is consistent with epidemiological research (Price et al., 2004; Rumpf & Cronin, 2012). Practitioners also specified that contact mechanisms were the most common cause of injury in elite male youth soccer. Available data do not support this notion, with a greater proprotion of injuries reported in this cohort attributed to non-contact mechanisms (Renshaw & Goodwin, 2016). This indicates a disparity between current perceptions and research evidence, and it would appear that a greater awareness of the frequency and type of non-contact injuries is required in academy soccer clubs to ensure relevant risk factors are being targeted in both screening and training to reduce injury occurrence.

Injury risk factors and screening

Risk factors

Reduced lower limb strength, proprioception, foundational movement skill, eccentric hamstring strength and sub-optimal muscle balance ratios were considered the most important injury risk factors. Previously it has been suggested that specific neuromuscular imbalances, including heightened quadriceps and leg dominance, reduced dynamic balance and greater knee valgus are prevalent injury risk factors for male youth soccer players (Read et al., 2016b, 2015). However, a paucity of empirical evidence is currently available to examine valid risk factors in this cohort. Other confounding factors such as fatigue and previous injury should also be considered when designing an injury prevention program (Read et al., 2016b). Epidemiological studies have also indicated that match injury incidence is highest at the end of both halves in elite academy male soccer players (Price et al., 2004) and fatigue has been shown to reduce neuromuscular control which may heighten injury risk in male youth soccer players (Oliver, Armstrong, & Williams, 2008; Oliver et al., 2014). Furthermore, the risk of of re-injury in young athletes is significantly greater after the occurrence of a first injury (Wiggins et al., 2016). Therefore, practitioners working with youth soccer players may wish to consider the role of a wider range of risk factors such as asymmetry and frontal plane knee control when selecting appropriate assessment tools to identify the most "at risk" players, in addition to the effects of fatigue on neuromuscular control.

Screening

The most commonly described frequency for formalized injury risk screening was three times per season (pre-, mid-, and at the end of the season). Practitioners reported using a wide range of testing protocols, with joint range of motion (ROM) examination, hop and jump tests, overhead and single leg squats and the FMS the most common modalities. Between-limb range of motion deficits have been identified in male youth soccer players (Daneshjoo, Rahnama, Mokhtar, & Yusof, 2013) and active hip range of motion has been indicated as an injury risk factor for hamstring strains in adult male professional players (Henderson, Barnes, & Portas, 2010). Cumulatively, the findings of this study and those of previous research highlight the perceived importance of assessing and developing optimal ROM to reduce injury risk. However, further research is warranted to identify specific imbalances that heighten injury risk and to develop appropriate preventive strategies to correct lower-limb ROM imbalances.

The current body of literature suggests that hop and jump tests have limited validity as a tool to prospectively predict athletes who are at a greater risk of injury (Hegedus, McDonough, Bleakley, Baxter, & Cook, 2015; Hegedus, McDonough, Bleakley, Cook, & Baxter, 2014). Conversely, recent data show the single leg hop for distance to be a predictor of hamstring injury in Physical Education Teacher Students (Goossens, Witvrouw, Bossche, & Clercq, 2015). While, the reliability has been examined using these tests with players of different chronological ages and stages of maturation (Read, Oliver, De Ste Croix, Myer, & Lloyd, 2016c, 2016d); to the knowledge of the authors, no empirical research has examined the sensitivity of these measures in their ability to prospectively identify players who are at a greater risk of injury.

In the current study, practitioners reported that they frequently used movement screening protocols including the single leg and overhead squat and FMS. The single leg squat has been suggested as a practical tool to evaluate the function of the hip abductors and external rotators (Willson, Ireland, & Davis, 2006); however, there is currently not a validated scoring criteria or data to indicate that deficits identified during this test are associated with a greater injury risk. The majority of practitioners also used the FMS as an injury risk assessment. These results are in accordance with McCall, Carling, et al. (2015), whereby 66% of practitioners from the sample studied working at elite male soccer clubs indicated that they frequently used the FMS as an injury risk screening assessment. This modality was originally designed as a method to establish a foundational movement baseline (Cook, Burton, & Hogenboom, 2006) and its validity as an injury risk screening tool has recently been questioned (McCunn, Funten, Fullagar, McKeown, & Meyer, 2016). In male youth soccer players, no relationships between the performance on sub-tests and total FMS score have been reported, with the authors suggesting this screening tool should not be used for injury risk identification in this cohort (Newton et al., 2017). Similarly, Rusling et al. (2015) reported no relationship between total FMS score and injury incidence in English academy soccer players; however, two of the seven tests performed within the FMS (overhead squat and trunk stability push-up) were associated with non-contact injury. Interestingly, the overhead squat assessment has also been utilized in a sample of elite male youth soccer players, with between-limb asymmetries in vertical ground reaction force shown by players during periods associated with rapid growth (Atkins et al., 2016). This time-point has been indicated as a period of heightened risk (Van der Sluis et al., 2014). Based on the cumulative body of evidence, including the overhead squat as part of an injury risk screening battery which aligns with the current practice in academy soccer clubs appears valid. However, practitioners should consider the above limitations when selecting appropriate screening protocols for their young athletes.

Available equipment for screening

Jump or contact mats, measuring tapes and video cameras were the most frequently used tools for injury risk screening. This has important implications for future research, indicating that screening protocols need to be logistically viable to meet the demands of their environment (considering time and

budgetary constraints, minimal equipment and facilities available). Although the majority of practitioners in this study reported that the available equipment was adequate, this statement may be questioned since the sensitivity of these tools in their ability to prospectively identify players at greater risk of injury is limited (Hegedus et al., 2014). In addition, the data analysis in the current study did not examine if the academy status of the club had an effect on whether clubs were more or less satisfied with the equipment they had available. Thus, existing field-based protocols should be further examined to establish their validity and reliability, and new protocols should also consider their practical application for use with large numbers of athletes in an efficient manner.

Injury prevention programs

Format

Nearly half of the participants reported delivering injury prevention sessions only once or twice per week. Previous recommendations have indicated that injury prevention programs are most effective when performed at least two or three times per week (Hewett, Paterno, & Myer, 2002; Lloyd et al., 2014a). In the current study, practitioners also stated that the length of injury prevention sessions lasted between 11 and 30 minutes in most cases. Recent research has shown that landing mechanics can be acutely improved after a single session lasting only 12 minutes (Root, Trojian, Martinez, Kraemer, & DiStefano, 2015); however, available data to examine chronic adaptations to such interventions are sparse. Nonetheless, these short timeframes highlight the need to optimize training prescription in order to maximize the effectiveness of injury prevention programs. A recent study by Hewett, Ford, Xu, Khoury, and Myer (2016) has shown that anterior cruciate ligament (ACL) injury prevention programs for female athletes were more effective when training prescription was tailored for each player based on their specific injury risk profile. Therefore, practitioners working with male youth soccer players are encouraged to identify relevant risk factors for each individual player and implement targeted training strategies to optimize their effectiveness.

While the most commonly reported location for injury prevention training was in the gym, a large proportion of these sessions were delivered on the soccer pitch, either as part of the warm up, or a combination of warm up and independent sessions. This has implications for exercise selection and program design, indicating that methods used need to be practically viable for coaching large groups and require minimal equipment. Furthermore, in-spite of the reported high frequency of warm up-based interventions used by practitioners in the current study, a small number of participants stated that they used recommended injury prevention programs such as the FIFA 11+ or PEP, instead preferring to opt for independent specific injury prevention programs. The available literature has shown that the FIFA 11+ is an effective method to reduce injury incidence (Marshall, Lopatina, Lacny, & Emery, 2016; Owoeye, Akinbo, Tella, & Olawale, 2014; Silvers-Granelli et al., 2015; Soligard et al., 2008); however, this study suggests that practitioners working with elite players are not using these programs. In young soccer players, "the 11" (which is the original version of the 11+) injury prevention program was shown to increase jump and sprint performance following a 6-week training intervention performed 5 days per week (Kilding, Tunstall, & Kuzmic, 2008). However, compliance was 72% and the mean frequency was only 3.6 times per week with the players indicating that the program was beneficial but not enjoyable in the prescribed format and it was preferable to train less than 5 times per week suggesting the program should be modified to enhance engagement. Recent data from adult professional soccer teams has also shown that practitioners working with these players have a very low knowledge of the FIFA 11+ and generally believed that the program would need modification for use with their team (O'Brien & Finch, 2016). In the current study, no explanation was provided as to the respondents reasoning for omitting these recommended training protocols. Future research should critically analyse their effectiveness in this cohort and examine the factors responsible for this low adherence, with the goal of developing a more well-recognized and implemented approach to injury prevention.

Methods and exercise selection

Participants reported using a wide variety of training methods as part of their injury prevention programs, including; resistance training (18.8%), plyometrics (16.9%), balance training (16.3%), core stability (16.8%), flexibility (15.3%) and agility training (15.3%). These outcomes are in line with research evidence, supporting the effectiveness of multifaceted programmes for injury prevention (Fort-Vanmeerhaeghe, Romero-Rodriguez, Lloyd, Kushner, & Myer, 2016). In addition, the majority of respondents in the current study (73.2%) identified resistance training as the most important training method. The role of resistance training for injury prevention in youth athletes is well documented (Lloyd et al., 2016, 2014a) and is recommended for youth of all ages. However, the perceived importance of plyometric training should also be further promoted to youth soccer practitioners as they were listed as the fourth most important training modality. Previous data indicate that programs for youth athletes which included plyometrics show significantly better prevention effects than those without these types of exercises (Rössler et al., 2014).

Adherence with injury prevention and barriers for injury prevention

Both coaches and player's adherence to the implementation of injury prevention strategies was perceived positively. Previous investigations in female soccer players have shown that high adherence is a key factor in maximising the effectiveness of injury prevention programs (Steffen et al., 2013). Time available, staff to player ratios and facilities were also indicated as major barriers to effective injury prevention interventions in the current study. This further reinforces the need for time efficient and practically viable protocols to enhance adherence and optimize their effectiveness. Additionally, although the exact staff to player ratios were not reported in this study, practitioners working at male youth soccer academies may also

consider a wider range of strategies to enhance learning (i.e. peer observation, players education etc.) to help manage the disproportionate ratios of players to coaches.

When interpreting the data presented in the current study, practitioners should be cognizant that role delineation of the participants may have affected the results. The largest proportion of respondents were either strength and conditioning coaches or sports scientists, with fewer physiotherapists and sports therapists included. Formalized education programmes and levels of experience between professions will be different; however, the inclusion criteria for this study required participants to be responsible for the delivery of injury risk screening and prevention training programmes at a professional male soccer academy. Thus, the results of this study may indicate that strength and conditioning coaches and sports scientist play a prominent role in supporting medical practitioners in this area. Further research should examine the role delineation of practitioners working within sports science and medicine teams at academy soccer clubs as this will help to inform the required education and experiences for those delivering injury risk management strategies in this cohort.

Conclusion

This study investigated the practices and perceptions of practitioners responsible for injury prevention delivery at elite male youth soccer academies in the United Kingdom. While strategies appear to be logical and are largely supported by empirical evidence; some of the current practices did not align to the findings of existing research in this area. Most notably in the classification of injury occurrence and the application of screening tools to identify "at risk" players. In the majority of cases, the frequency and type of training used may also be insufficient to elicit an appropriate stimulus to address pertinent risk factors based on previous recommendations. Also, due to the time and logistical constraints that are present for practitioners working with elite male youth soccer players, screening and training strategies should seek to optimize the time available by adopting individualised training programs based on risk factor identification, using innovating approaches that are suitable for working with large groups.

Disclosure statement

No potential conflict of interest was reported by the authors.

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