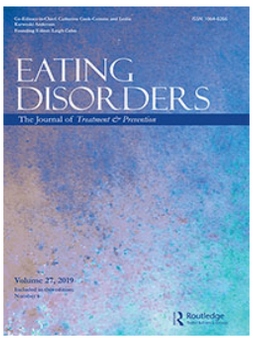

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Meaning in life is associated with the psychopathology of eating disorders: differences depending on the diagnosis

José H. Marco [a], Montserrat Cañabate[b], and Sandra Pérez[c]

[a]Departamento de Personalidad, Evaluación y Tratamientos Psicológicos, Universidad de Valencia, Valencia, España; [b]Escuela de doctorado, San Vicente Mártir, España, Facultad de Psicología, Magisterio y Ciencias de la Educación, Universidad Católica de Valencia, Universidad Católica de Valencia "San Vicente Mártir", Valencia, España; [c]Universidad Católica de Valencia "San Vicente Mártir", España. Facultad de Psicología, Magisterio y Ciencias de la Educación, Universidad Católica de Valencia "San Vicente Mártir", Valencia, España

ABSTRACT

Previous studies indicated that meaning in life was inversely associated with eating behaviors and a negative attitude toward food, body satisfaction, and borderline symptoms. However, research on the association between meaning in life and eating disorder psychopathology is scarce, and there are no studies on the association between meaning in life and the eating disorder psychopathology depending on the diagnosis. The aim of the present study is to verify whether meaning in life is differentially associated with a broad range of psychopathology symptoms commonly observed in people with ED, depending on the diagnosis, in a sample of 240 ED patients. We found that meaning in life was negatively associated with eating behaviors and a negative attitude toward food, body satisfaction, borderline symptoms, and hopelessness in all types of eating disorders, regardless of the specific diagnosis. Moreover, the association with meaning in life was different depending on the type of eating disorders. Specifically in the participants with Anorexia Nervosa Restrictive, meaning in life had a higher percentage of explained variance in the eating disorders psychopathology (between 30% and 65%). Therefore, these results seem to indicate that, although meaning in life is an important variable in all the eating disorders subtypes, it is especially relevant in participants with the Anorexia Nervosa Restrictive subtype.

Clinical Implications

- Meaning in life was associate with eating behaviors and negative attitude toward food, body satisfaction, borderline symptoms, and hopelessness in all types of ED, regardless of the specific diagnosis.
- In participants with AN Restrictive, meaning in life had a higher percentage of explained variance in the ED psychopathology. Meaning in life could be a

CONTACT José H. Marco jose.h.marco@uv.es Facultad de Psicologíam Departamento de Personalidad, Evaluación y Tratamiento Psicológico, Universidad de Valencia, Avda. Blasco Ibañez, 21, Valencia, CP 46010, España

protective factor against attitudes and behaviors that characterize ED, body satisfaction, borderline personality disorder symptoms, and hopelessness.
- High meaning in life could be a protective factor against attitudes and behaviors that characterize ED, body satisfaction, borderline personality disorder symptoms.

Meaning in life is a core facet of the positive psychology movement and a fundamental construct of the human condition (Schulemberg & Melton, 2010). Recent psychological literature has argued that the greatest consensus about the definition of meaning in life focuses on three facets: coherence (comprehensibility and making sense of one's life), purpose (one's core aims and aspirations for life and direction in life), and significance (having a life worth living and a sense of life's inherent value) (Martela & Steger, 2016). Therefore, people who experience meaning in life are better prepared to successfully deal with life's circumstances. They have a purpose in life, a strong sense of autonomy, self-determination (Steger, 2012), and greater positive affect (Steger, Kashdan, & Oishi, 2008).

Patients with eating disorders (ED) present high comorbidity with mood disorders (range from 60% to 82%) (Blinder, Cumella, & Sanathara, 2006), hopelessness (Robinson, Kukucska, Guidetti, & Leavey, 2015), and Borderline Personality disorder (BPD) (range from 3% to 21%) (Cassin & von Ranson, 2005; Utzinger et al., 2016). Consequently, participants diagnosed with ED present several characteristic symptoms of BPD, such as impulsivity, mood intolerance, interpersonal problems (Thompson-Brenner et al., 2016), emotional dysregulation (Ruscitti, Rufino, Goodwin, & Wagner, 2016), and important non-suicidal self-injury rates (Utzinger et al., 2016). Moreover, studies show that hopelessness (Klonsky & May, 2015) and some mental disorders, including ED (Chesney, Goodwin, & Fazel, 2014) and BPD (Schneider et al., 2008), are risk factors for suicide. In this regard, people diagnosed with ED have a higher risk of suicide than people without ED (Crow, Swanson, le Grange, Feig, & Merikangas, 2014).

In recent years, a broad consensus has emerged among researchers about the association between the experience of low meaning in life and psychopathology (Marco, Perez, & García-Alandete, 2016; Psarra & Kleftaras, 2013; Schulenberg, Strack, & Buchanan, 2011; Steger, Frazier, Oishi, & Kaler, 2006; Volkert, Schulz, Brütt, & Andreas, 2014). Thus, a low level of meaning in life is associated with higher levels of anxiety, apathy, addiction, depression, aggression, hopelessness, physical illness, and suicide, and lower levels of wellbeing (Sinclair, Bryan, & Bryan, 2016).

Research in clinical samples without ED diagnoses shows that meaning in life is negatively associated with the risk of suicide (Sinclair et al., 2016), hopelessness (Marco et al., 2016), and emotional and behavioral symptoms of

BPD (emotional dysregulation, suicide threats, suicide attempts, high-risk behaviors, drug overdose, and aggressive behaviors) (Marco, Pérez, García-Alandete, & Moliner, 2017), thus supporting the relationship between meaning in life and different correlates of ED. Although in previous studies meaning in life was found to be negatively associated with comorbid psychopathology with ED, such as anxiety (Park & Baumeister, 2017), depression (Volkert et al., 2014), and emotional dysregulation (Abeyta, Routledge, Juhl, & Robinson, 2015), meaning in life is a different higher-level construct composed of individuals' general orienting systems, consisting of beliefs, goals, and subjective feelings (Park, 2010).

In a study carried out to examine the association between meaning in life and psychopathology in participants diagnosed with ED, Marco, Cañabate, Perez, and Llorca (2017) found that participants diagnosed with ED had lower scores on the Purpose in Life test (Crumbaugh & Maholick, 1969) compared to a non-clinical sample. Moreover, participants diagnosed with ED who had low meaning in life had higher scores on attitudes and behaviors associated with ED, BPD symptoms, and suicide ideation. Finally, meaning in life was a significant predictor of ED psychopathology, BPD psychopathology, and suicide ideation in participants with ED diagnoses when body image was controlled.

Several authors suggest that the main ED symptoms (dietary restriction for an enhanced sense of self-control, hypervigilant body checking to control one's shape and weight, dysfunctional strategies in the pursuit of the thin ideal, and control over eating, shape, and weight for enhanced self-worth) give patients diagnosed with ED a sense of structure, consistency in their lives, and identity (Serpell, Treasure, Teasdale, & Sullivan, 1999). Studies indicate that people with ED often feel that the ED confirms their identity and conditions their global meaning (Fox & Leung; Serpell et al., 1999). In addition, some studies indicate that patients with ED have existential concerns, including the need to establish a new identity (Fox & Leung, 2009). However, in the medium and long term, this extreme control and the ED symptoms lead to creating a life with low meaning (Marco, Cañabate, et al., 2017) and depression (Robinson et al., 2015), thereby, potentially increasing the risk of suicide attempt (Klonsky & May, 2015; Pisetsky et al., 2015) and low quality of life. In this regard, Ackard, Richter, Egan, Engel, and Cronemeyer (2014) found that participants with an ED diagnosis had lower quality of life in several domains (Psychological, Physical/Cognitive, and Work/School) than patients without an ED diagnosis.

There is widespread agreement that Cognitive Behavioral Therapy (CBT) is the treatment of choice for ED (e.g., National Institute for Health and Clinical Excellence [NICE] 2017). CBT is an evidence-based treatment for ED, and it has been associated with sustained improvements after treatment

(e.g. Byrne et al., 2017). However, studies have suggested that not all individuals benefit from CBT (Keel, Dorer, Franko, Jackson, & Herzog, 2005); for example, in BN, 30%-50% of patients continue to have symptoms (Fairburn, 2008; Wilson, 2005). Knowing the role of meaning of life in the psychopathology of ED could help us to understand maintenance factors and, thus, improve current treatments. Therefore, a first step is to understand the relationship between meaning in life and other main variables in the psychopathology of ED.

Studies about the ED psychopathology depending on the diagnosis have indicated contradictory results. Herzog, Keller, Sacks, Yeh, and Lavori (1992) found that the percentage of psychiatric comorbidity is different depending on the patient's diagnosis; that is, 73% of patients with anorexia nervosa restricting type (AN Restrictive), 82% with anorexia nervosa binge-eating /purging type (AN Purgative), and 60% with bulimia nervosa (BN) had another comorbid diagnosis. However, other studies found no differences in the likelihood of having anxiety and mood disorders across EDs, but they found statistically significant differences between EDs in the likelihood of having comorbid substance use disorder (Blinder et al., 2006). In the same way, Weinbach, Sher, and Bohon (2017) found that the purging subtypes were associated with greater severity of emotion regulation deficits than the non-purging subtypes of ED. In a study about the treatment of body image, Marco, Perpiña, and Botella, (2013) found that to achieve a clinically significant change in participants with AN, it is necessary to treat the body image disturbance, but not in participants with BN. Therefore, it is necessary to analyze the associations between meaning in life and ED psychopathology across the ED diagnoses.

Despite the aforementioned studies, research on the association between meaning in life and ED psychopathology is scarce. To the best of our knowledge, there are no studies on the association between meaning in life and the ED psychopathology, depending on the diagnosis: AN Purgative, AN Restrictive, BN, Binge Eating Disorder (BED), and Other Specified Feeding or Eating Disorders (OSFED). Thus, analyzing whether low meaning in life is a factor associated with the psychopathology of the ED subtype will allow us to better understand the development of the specific ED.

Therefore, the aim of the present study is to analyze whether meaning in life is differentially associated with the psychopathology of ED, body image, borderline symptomatology, and hopelessness, depending on the diagnosis. Taking into account the previously discussed literature, we hypothesized that meaning in life would be negatively associated with all the examined forms of psychopathology across the ED diagnoses, and these associations would be stronger in participants with AN.

Method

Participants

The sample was composed of 240 participants diagnosed with ED from the outpatient units of two public mental health services in different cities in Spain. The inclusion criteria consisted of patients between 12–60 years old who met the DSM-5 criteria for ED. The exclusion criteria consisted of moderate or severe intellectual disability. Participants were European Whites. Participation was voluntary. Participants gave their informed consent, and they received no compensation. Ethical approval for carrying out this study was granted by the Hospital Ethics Committee. Regarding gender, 94.2% (n = 226) were women, and 5.8% (n = 14) were men. Regarding the ED diagnoses, 25.4% (n = 61) matched BN criteria; 32.5% (n = 78) AN restrictive; 12.9% (n = 31) AN purgative; 13.3% (n = 32) BED; and 15.8% (n = 38) OSFED. The participants' average age was 24.73 years (SD = 11.69).

Assessments and measures

Structured Clinical Interview for DSM-5–Clinician Version (SCID-5-CV; First, Williams, Karg, & Spitzer, 2016). This is an interview for making the major DSM-5 (APA, 2013) diagnoses.

Purpose in Life (PIL; Crumbaugh & Maholick, 1969). The PIL is a 20-item Likert-type scale with seven response categories (categories 1 and 7 have specific labels, and category 4 indicates neutrality). It offers a measure of different aspects of meaning in life (e.g., enthusiasm vs. boredom, excitement about living, presence of clear life goals, newness of each day, wishing for more lives, activity after retirement, good things in life, having a reason to be alive, capacity to find meaning, presence of goals/life purpose, etc.). The scores range between 20 and 140 points, and they identify three levels: scores below 90 indicate the absence of meaning in life; scores between 90 and 105 indicate uncertainty about meaning of life; and scores above 105 indicate the achievement of meaning in life (Noblejas de la Flor, 2000). We used the Spanish version of the original PIL-Part A (Noblejas de la Flor, 2000), which offers good psychometric properties and high reliability ($\alpha = .88$) and showed excellent internal consistency in our sample ($\alpha = .93$).

Multidimensional Body-Self Relations Questionnaire-Appearance Scales; (MBSRQ-AS; Cash, 2000). The MBSRQ-AS is a 34-item self-report inventory comprising five subscales with good psychometric properties in males and females. The subscales are: (a) Appearance Evaluation, which assesses feelings of satisfaction or dissatisfaction with one's appearance, with higher scores indicating greater feelings of satisfaction; (b) Appearance Orientation, which assesses the degree of investment in one's appearance; (c) Body Areas Satisfaction, which assesses satisfaction or dissatisfaction with

specific body areas, weight, height, and muscle tone, with higher scores indicating greater body satisfaction; (d) Overweight Preoccupation, which assesses fat anxiety, weight vigilance, dieting, and eating restraint; and (e) Self-Classified Weight, which assesses how the person perceives his or her weight. The items are rated on a 5-point Likert-type scale. For this study, we used the Spanish version of the MBSRQ-AS (Roncero, Perpiña, Marco, & Sanchez-Reales, 2015). The scores showed good internal consistency and reliability in the present sample (range α = .78 −.89).

Eating Attitudes Test (EAT-40; Garner & Garfinkel, 1979). The EAT-40 evaluates attitudes and behaviors associated with ED. The Spanish version has 40 items organized in three factors and responded to on a 6-point Likert scale: (a) Dieting and food preoccupation; (b) Perceived social pressure and eating distress; and (c) Psychobiological disorders. It has an internal consistency of .93 for AN and .92 for BN (Castro, Toro, Salamero, & Guimera, 1991). The scores showed good internal consistency and reliability in the present sample (α = .90).

Borderline Symptom List-23 (BSL-23; Bohus et al., 2008). The BSL-23 is a reliable and valid self-report instrument for assessing BPD symptomatology. It contains 23 items related to different BPD symptoms rated on a Likert scale with 5 response levels. Higher scores on the BSL-23 indicate more severe BPD symptoms. The Spanish version of the BSL-23 (Soler et al., 2013) offered good psychometric properties (α = .93) and showed excellent internal consistency in our sample (α = .96).

Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974). This is a 20-item dichotomous (true-false) scale designed to assess current negative expectations about the future. Hopelessness assessed by the Hopelessness Scale (BHS) is accepted as a measure of suicide risk in psychiatric patients and the general population (Beck, 2006; Klonsky, Kotov, Bakst, Rabinowitz, & Bromet, 2012). The scale was validated in the Spanish population (Viñas et al., 2004) and showed excellent internal consistency in our sample (α = .92).

Procedure

In one session, the ED diagnosis was established using the Module of Feeding and Eating Disorders from the SCID-5 (First et al., 2016), and all the participants completed the PIL, EAT-40, MBSRQ, BSL-23, and BHS questionnaires. The diagnoses were established on the same day the questionnaires were completed. Patients signed an informed consent before being evaluated, and they received no compensation for their participation. In the patients under the age of 18, the informed consent was previously obtained from the parents, and the assessment and diagnoses were carried out in a similar way to the one used for the adults. Participants were consecutively recruited between June 2015 and February 2016, and all the patients completed the questionnaires.

Statistical analysis

All the variables met the statistical assumptions (normal distribution of the data, a linear relationship between the dependent variable and each of the independent variables, homoscedasticity of residuals, etc.). First, zero-order correlations (Pearson coefficient) for the variables were carried out. Then, we performed 4 linear regression analyses with each ED subtype, taking meaning in life (PIL) as the predictor variable and the EAT, BAS, BSL-23, and BHS as the dependent variables. We found statistically significant differences between the diagnostic groups on Body Mass Index ($F_{(4, 239)} = 70.03$, $p < .001$) and Age ($F_{(4, 239)} = 7.75$, $p < .001$). Therefore, Body Mass Index and Age were introduced as control variables in the linear regression analysis. For the linear regression analysis, we used an adjusted p-value to test for significance. To calculate this using Bonferroni's method, we divided our desired p-value by the number of hypotheses proposed. In our study, we divided .05 by 20 (.05/20 = .0025), yielding our new significance threshold ($p < .0025$). Analyses were performed using the enter method. Data were analyzed using SPSS.20 (SPSS, Chicago, IL).

Table 1. Mean and zero order correlations between meaning in life and psychopathological variables in participants diagnosed with eating disorders subtypes.

	M(SD)	2	3	4	5
Bulimia Nervosa					
1. Meaning in life (PIL)	83.18 (22.73)	−.41*	.59**	−.71**	−.61**
2. Eating Attitude Test	45.91(21.00)	–	−.44**	.44**	.33*
3. Body Areas Satisfaction	2.42 (.62)		-	−.42**	−.30*
4. BSL	1.45 (.98)			–	.63**
5. SSI	6.18 (8.89)				–
Anorexia Nervosa Restrictive					
1. Meaning in life (PIL)	93.78(21.49)	−.48**	.68**	−.77**	−.33**
2. Eating Attitude Test	35.74(25.40)	-	−.33**	.56**	−.04
3. Body Areas Satisfaction	2.88 (.78)		-	−.62**	−.14
4. BSL	.92 (.85)				.33**
5. SSI	4.51 (9.55)				-
Anorexia Nervosa Purgative					
1. Meaning in life (PIL)	87.7(19.95)	−.45*	.60**	−.56**	−.81**
2. Eating Attitude Test	43.9(26.5)	–	−.78**	.55**	.49*
3. Body Areas Satisfaction	2.76 (.79)		–	−.74**	−.73**
4. BSL	1.19 (.92)			–	.60**
5. SSI	5.12 (6.74)				–
Binge Eating Disorder					
1. Meaning in life (PIL)	88 (26.59)	−.39*	.41**	−.70**	−.68**
2. Eating Attitude Test	27.53(14.53)	–	−.37**	.59**	.17
3. Body Areas Satisfaction	2.39 (.59)		–	−.27	−.19
4. BSL	0.95 (1.01)			–	.46*
5. SSI	4.82 (8.51)				–
Other Specified Feeding or Eating Disorders					
1. Meaning in life (PIL)	87.05 (24.96)	−.40**	.61**	−.72**	−.64**
2. Eating Attitude Test	39.84(24.30)	–	−.35**	.60**	.31*
3. Body Areas Satisfaction	2.76 (.76)		–	−.48**	−.30*
4. BSL	1.13 (1.01)			–	.70**
5. SSI	4.61 (7.62)				–

Note. PIL = Purpose in Life; BSL = Borderline Symptoms List; SSI = Scale for Suicide Ideation *$p < .05$, **$p < .01$

Results

The means and standard deviations and zero-order correlations of the variables, depending on the diagnosis, are presented in Table 1. As Table 1 reveals, in relation to the correlations between meaning in life and the psychopathological variables in participants diagnosed with BN, meaning in life was highly and inversely correlated with borderline symptoms and hopelessness and highly and positively correlated with body satisfaction (Cohen, 1988). Moreover, meaning in life was moderately and inversely correlated with eating attitudes and behaviors of ED (EAT). AN Restrictive and OSFED have similar strength in the association between the variables. However, in participants diagnosed with AN Purgative, the association between meaning in life and body satisfaction was moderate and positive, and in BED participants, meaning in life had a low and negative association with the EAT and a moderate and positive association with body satisfaction.

Results derived from linear regression analyses (Table 2) showed that in the subsample of participants diagnosed with AN Restrictive, meaning in life was a significant predictor of ED psychopathology (EAT), (R^2 = .30), body satisfaction (R^2 = .47), borderline symptoms (R^2 = .59), and hopelessness

Table 2. Regression analysis with meaning in life (PIL) as predictor variable with age and BMI controlled.

	B	SE B	β	R^2 adjusted	F	p
Bulimia Nervosa					$F_{(1,60)}$	
Eating Attitude Test	−.40	.11	−.41	.13	4.07	.010
Body Satisfaction Scale	.01	.01	.56	.43	16.90*	.001
Borderline Symptoms List	−.03	.01	−.73	.52	22.75*	.001
Hopelessness	−.18	.02	−.74	.53	23.04*	.001
Anorexia Nervosa Restrictive					$F_{(1,77)}$	
Eating Attitude Test	−.52	.11	−.47	.30	12.12*	.001
Body Satisfaction Scale	.02	.01	.69	.47	23.73*	.001
Borderline Symptoms List	−.03	.01	−.77	.59	37.39*	.001
Hopelessness	−.18	.01	−.79	.63	45.57*	.001
Anorexia Nervosa Purgative					$F_{(1,30)}$	
Eating Attitude Test	−.52	.21	−.43	.10	2.23	.108
Body Satisfaction Scale	.02	.01	.47	.18	3.48	.029
Borderline Symptoms List	−.03	.01	−.68	.42	8.39*	.001
Hopelessness	−.22	.03	−.79	.63	18.07*	.001
Binge Eating Disorder					$F_{(1,31)}$	
Eating Attitude Test	−.16	.09	−.29	.08	0.98	.156
Body Satisfaction Scale	.009	.01	.31	.10	2.17	.102
Borderline Symptoms List	−.03	.01	−.70	.47	10.22*	.001
Hopelessness	−.16	.02	−.78	.70	26.11*	.001
OSFED					$F_{(1,37)}$	
Eating Attitude Test	−.28	.16	−.28	.14	3.01	.086
Body Satisfaction Scale	.02	.01	.55	.41	9.64*	.001
Borderline Symptoms List	−.02	.01	−.57	.39	9.52*	.001
Hopelessness	−.17	.02	−.73	.68	28.37*	.001

Note. PIL = Purpose In Life; OSFED = Other Specified Feeding or Eating Disorders; BMI = Body Mass Index.
* $p < .002$. Bonferroni correction was applied. Age and BMI were controlled in all the analysis in the first step of the regression analysis.

(R^2 = .63). However, meaning in life was not a significant predictor of ED psychopathology (EAT) in participants with BN, AN Purgative, BED, and OSFED. In the sample with BN, meaning in life was a significant predictor of body satisfaction (R^2 = .43), borderline symptoms (R^2 = .52), and hopelessness (R^2 = .53). For participants diagnosed with OSFED, meaning in life was also found to be a significant predictor of body satisfaction (R^2 = .41), borderline symptoms (R^2 = .39), and hopelessness (R^2 = .68). In the AN purgative group, meaning in life significantly predicted borderline symptoms (R^2 = .42) and hopelessness (R^2 = .63). Finally, in participants with a BED diagnosis, meaning in life was a significant predictor of borderline symptoms (R^2 = .47) and hopelessness (R^2 = .70). The Variance Inflation Factors (FIV) for the variables were: EAT, FIV = 1.49; Body Satisfaction Scale (MBSRQ), FIV = 1.56; BSL FIV = 2.26; and BHS, FIV = 1.98. Thus, these results suggest the absence of multicollinearity.

Discussion

The aim of this study was to analyze whether meaning in life was differentially associated with the ED psychopathology, body image, borderline symptomatology, and hopelessness, depending on the subtype diagnosis.

The main result of this study was that meaning in life is associated with all the ED subtypes, and this result coincides with a previous study that found no statistically significant differences in meaning in life among participants diagnosed with AN, BN, BE, and OSFED (Marco et al., 2017).

The second important result was that the association with meaning in life is different depending on the type of ED. Specifically in the participants with the AN Restrictive subtype, meaning in life explained a higher percentage of variance in the ED psychopathology (30%), body satisfaction (47%), and BPD symptoms (59%) than in participants with the other ED subtypes. Moreover, the percentage of variance explained in hopelessness was also high (63%), but the highest percentage was shown by the participants with BED (70%). Taken together, these data could indicate that although meaning in life is an important variable in all the ED subtypes, it is especially relevant in participants with AN Restrictive. A possible explanation is that in patients with AN Restrictive the meaning and identity would be fully reached with the ED ("being thin and perfect"). However, in the other diagnoses (e.g., AN purgative o BN), purging is not associated with the ideal of identity in participants with ED. In the same way, in patients with BED the normal or overweight are not their ideal of identity. Thus, AN purgative, BN, and BED could need other sources of meaning (dysfunctional), such us: drug abuse (Nicholson et al., 1994) or high risk behaviors (Marco, Perez, et al., 2017) to find the identity and the meaning in life.

Our hypothesis was partially confirmed because in AN Purgative and BED, meaning in life was not associated with ED psychopathology or body satisfaction when Age and BMI were controlled. Nor was, meaning in life a significant predictor of ED psychopathology in participants with BN and OSFED. Thus, we can hypothesize that other variables such us emotional regulation (Ruscitti et al., 2016) could moderate the association between meaning in life and ED psychopathology or body satisfaction in these subtypes.

These results coincide with previous studies. For example, Fox and Leung (2009) found that participants diagnosed with AN reported lower scores on existential wellbeing than nonclinical controls, and they suggested that people with vulnerability to ED would have limited skills for dealing with existential anxiety. Serpell et al. (1999) suggested that pursuit of the thin-ideal, dietary restriction for an enhanced sense of self-control, control over eating, shape, and weight for enhanced self-worth, and hyper-vigilant body checking to control one's shape and weight are dysfunctional strategies that give people with ED a sense of structure, consistency in their lives, and identity in the short term, but in the long term, they cannot achieve goals related to the main sources of meaning. People with ED are more likely to have high levels of disability, lack positive interpersonal relationships, and become a significant burden to their families (Touyz & Hay, 2015). Therefore, this is a paradox because the ED could give patients an identity and meaning (dysfunctional), and this identity could be a maintenance factor in the ED psychopathology. Thus, ED patients have low meaning in life, which will perpetuate the problem (Marco, Cañabate, et al., 2017).

Regarding borderline symptoms, our results suggest that meaning in life was highly and negatively correlated with BPD symptoms in all the ED subtype diagnoses. In previous studies, meaning in life was negatively associated with emotional dysregulation (Abeyta et al., 2015) and BPD symptoms (Marco, Pérez, et al., 2017). Emotional dysregulation is a trans-diagnostic symptom of ED (Racine & Horvath, 2018) and a main characteristic of BPD (American Psychiatric Association, 2013). Thus, the emotional dysregulation in ED could lead to cognitive inconsistency, which along with the inability to establish coherent and meaningful goals or purposes, could impede the development of a stable self-concept, sense of identity, and meaningful life in participants with ED.

Hopelessness is a risk factor for suicide in psychiatric patients (Beck, 2006; Klonsky et al., 2012), and participants with ED have a high risk of suicide (Crow et al., 2014; Pisetsky et al., 2015). Thus, in this study, meaning in life was highly and negatively associated with hopelessness in all the ED subtypes. These results suggest that meaning in life could be an important variable in suicide risk prevention in participants with ED (Marco et al., 2016).

The main clinical application of these results is that psychotherapy with participants diagnosed with ED should not focus only on symptom reduction (dieting, binge eating, laxative abuse, purging, normal weight). Instead, a more global intervention should be used, including good general quality-of-life autonomy (Touyz & Hay, 2015). For example, Dialectical Behavioral Therapy has been found to be effective in treating people with comorbid ED and BPD (Navarro et al., 2018). One of the main objectives of this therapy is to create a life that is worth living through values-centered goals. Dialectical Behavioral Therapy is effective in reducing BPD symptoms, suicide risk, non-suicide self-injuries, and emotional dysregulation (Stoffers et al., 2012). In addition, Acceptance and Commitment Therapy has the primary objective of teaching patients to increase their ability to engage in committed, life-affirming action based on their values (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). ACT has been effective in reduce the eating pathology, and it reduces the rates of rehospitalization after treatment (Juarascio et al., 2013). Finally, interventions targeting meaning in life could be more acceptable to patients than those attempting to directly target and change eating and weight (where there is notorious ambivalence and difficulty), and they would focus on increasing motivation, adherence, and the rate of treatment progress.

The present study has some limitations. First, the results obtained should be considered in terms of correlates rather than causal risk factors because the study design was retrospective, and the fact that it is a cross-sectional study means that we cannot talk about causality between variables. Further research is needed to replicate this study using a longitudinal design. Although the overall sample size was adequate, when we separated the sample according to the ED subtypes, the sizes were very different, and in some cases small. Thus, in future research, comparisons of ED subtypes should be carried out with larger samples. We have not evaluated the presence of other ED, Pica, Rumination Disorder, or Avoidant/Restrictive Food Intake Disorders. Therefore, future investigations should include these diagnoses. We have not evaluated comorbidity with other disorders such as depression, PTSD, or BPD disorder diagnoses. Taking into account that meaning in life is negatively associated with depression (Volkert et al., 2014), BPD symptoms (Marco, Pérez, et al., 2017), and PTSD (Park, 2010), in patients with this comorbidity, meaning in life could have a greater protective value than in patients without comorbidity. Future research should evaluate the association between meaning in life and eating disorder symptomatology, controlling for psychiatric comorbidity.

Finally, in this study, we have only analyzed the relationship between two constructs, meaning in life and ED psychopathology. This simplification of the complexity of ED leaves out many other mediating or moderating variables that could also contribute to explaining the relationships found in

our study, for example, emotional dysregulation, PTSD symptomatology, or perfectionism, among others. Therefore, future research will have to control these mediating or moderating variables when analyzing the association between meaning in life and the ED psychopathology. Therefore, these limitations should always be taken into consideration when interpreting the results, which should be viewed as exploratory.

Conclusions

Although this is a preliminary study, it is the first to examine the differential association between meaning in life and the ED psychopathology, body image, borderline symptomatology, and hopelessness, depending on the ED diagnosis. Our results suggest that meaning in life is associated with attitudes and behaviors that characterize ED, body satisfaction, BPD symptoms, and hopelessness in all types of ED, and it is especially relevant in participants with the AN Restrictive subtype.

ORCID

José H. Marco http://orcid.org/0000-0002-1545-6452

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