



Psychosocial profile related to disordered eating attitudes in Spanish adolescents

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Abstract

Different psychosocial variables are related to disordered eating attitudes in adolescents, especially in girls. But some studies show that the variables involved in eating disorders may be different in boys and girls. The aim of this study was to analyse the psychosocial profile related to disordered eating attitudes in adolescents of both sexes, separately. Method: a cross-sectional study was conducted in 1630 Spanish adolescents, 890 of whom were girls with an average age of 14 (SD = 1.34) selected from secondary schools in the province of Alicante through random sampling stratified by school year. Results: The cluster analysis showed two profiles in both sexes. One profile presents high disordered eating attitudes, where the highest scores were in body dissatisfaction, perfectionism, pressure to lose weight and social comparison, and the lowest scores were for self-esteem. This contrasts with the other profile that presents low disordered eating attitudes. The logistic regression model showed that girls were 3.8 times more likely to have disordered eating attitudes if they dieted, experienced body dissatisfaction and compared themselves socially with their peers. Disordered eating attitudes in boys was 3.3 times greater when they experienced body dissatisfaction and pressure to lose weight. Conclusion: These results showed that both sexes present similar profiles. Girls and boys present disordered eating attitudes when they have low self-esteem, body dissatisfaction, self-oriented and socially prescribed perfectionism, comparison with peers, pressure to lose weight, or are on a diet. In future studies, it will be necessary to develop further longitudinal studies which could help to shed light on the risks and protective factors of eating disorders.

Keywords Eating disorders · Body dissatisfaction · Social comparison · Self-esteem · Adolescents · Cluster analysis

Introduction

Feeding and Eating Disorders (FEDs) are characterized by a persistent alteration in eating behaviours which have serious physical implications for the health of sufferers as well as causing important psychosocial alterations (American Psychiatric Association, 2013). Disordered eating attitudes and behaviours are common in young females and adolescent girls in Western countries. They are related to social pressure resulting from the standards of female beauty imposed by modern industrial society or Western culture. However, the

literature suggests that the prevalence of eating disorders has been rising among boys in western and non-western countries as well (Makino et al., 2004; Sweeting et al., 2015).

Although the aetiology of FEDs is not known, they are seen as “biopsychosocial” disorders. There is a consensus that a multi-factorial approach comprising biological, psychological and social factors is most valuable in explaining their development and maintenance (Culbert, Racine, & Klump, 2015; Stice, 2002). Among the psychosocial factors related to disordered eating attitudes, the literature has highlighted self-esteem, body satisfaction and perfectionism.

The literature shows self-esteem to be a factor that is consistently linked with disordered eating attitudes in adolescents (Colmsee et al., 2021; Sahlan et al., 2021). The extensive research in this field supports the hypothesis that self-esteem is associated with disordered eating attitudes as well as negative appearance-related cognitions in female adolescents, both of which seem to play a key role in the development and maintenance of FEDs (Sahlan et al.,

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2021; Silvera et al., 1998; Zamani et al., 2021). Girls with more disordered eating attitudes have been shown to have lower self-esteem than girls without such attitudes or with less severe disordered eating behaviour (Peck, & Lightsey, 2008). In studies on adolescent boys, low self-esteem is also found to be associated with more disordered eating attitudes (Cruz-Sáez et al., 2020). A recent meta-analysis study shows that this relationship is far more significant in females than in males (Colmsee et al., 2021).

Body dissatisfaction is another psychosocial variable that is consistently linked to disordered eating attitudes in adolescents and could be involved in the development and maintenance of FEDs (Cash, & Deagle, 1997; Stice et al., 2000). For example, Sheffield et al. (2005) confirmed that body dissatisfaction directly influenced eating disordered attitudes and mediated the effects of self-esteem in Australian adolescent girls. There are evident differences according to sex in the association between body dissatisfaction and disordered eating attitudes. Compared to boys, girls are more likely to describe themselves as fat, to weigh themselves often, and to diet frequently. They are also generally more dissatisfied with their physical appearance (Feingold, & Mazzella, 1998; Furnham et al., 2002). Boys who are underweight are most likely to be dissatisfied with their weight and many with normal weight wish to weigh more. Boys are less likely to choose dieting and purging over exercise as methods of weight control (Moore, 1993).

Perfectionism has been identified as a risk factor for the development of disordered eating attitudes or full FEDs in adolescents (Franco-Paredes et al., 2005; Vacca et al., 2021). Multidimensional evaluation of perfectionism presents the greatest empirical evidence in relation to disordered eating attitudes (Stoeber et al., 2016). Specifically, two dimensions of perfectionism can be highlighted: self-oriented perfectionism, characterized by excessively high personal standards and excessive self-criticism; and socially prescribed perfectionism, characterized by having an external motivation to be perfect for others (Hewitt & Flett, 1991). The former is a relevant predictor of disordered eating attitudes in females while the latter has been shown to be associated with disordered eating attitudes in both male and female adolescents (Bento et al., 2010; Macedo et al., 2007).

Other psychosocial variables that have aroused scientific interest in disordered eating attitudes are pressure from others to lose weight and comparison with peers about diet and physical appearance. The literature indicates that with respect to pressure to lose weight, messages from both parents and friends are an important influence on disordered eating attitudes and extreme weight control behaviour in adolescents (Quiles et al., 2013; Neumark-Sztainer et al., 2010; Shomaker, & Furman, 2009). A meta-analysis study assessing the relationships between disordered eating attitudes and peer and family influence showed that both peers

and family influence dieting behaviour, body dissatisfaction and bulimic symptoms in adolescent girls and boys (Quiles et al., 2013). Significant differences between sexes were only found in relation to peer group influence on dieting behaviour, showing that adolescent girls are more influenced by peer groups in comparison with adolescent boys.

In reference to social comparison with peers, comparisons regarding body (e.g., weight, shape), eating (e.g., amount eaten, food healthfulness), and exercise (e.g., amount/intensity of exercise) may be particularly relevant to disordered eating attitudes in adolescents (Fitzsimmons-Craft, 2017; Hamel et al., 2012). Most past research on the social comparison-disordered eating attitudes relation has focused on body comparisons (Arigo et al., 2014; Vartanian, & Dey, 2013). It is common among adolescents to compare their body with individuals perceived as more attractive, and this is associated with increases in body dissatisfaction and disordered eating, not only in girls but in boys as well (Pinkasavage et al., 2015). A study carried out in Spain on 17 boys and 119 girls with an average age of 13.78 showed that social appearance comparison had a positive and statistically significant relation with the presence of disordered eating attitudes in both girls and boys (Alcaraz, 2017). A meta-analysis study examining the relationship between social comparison and body dissatisfaction showed that the effect for social comparison and body dissatisfaction was stronger for women than men and inversely related to age (Myers, & Crowther, 2009).

Despite all the evidence and information available on psychosocial factors and disordered eating attitudes in adolescents, additional studies are required to identify the psychosocial profiles related to disordered eating attitudes in girls and boys. Although psychosocial correlates have often been studied in isolation, in this study we have analysed many of them simultaneously. The literature and etiological models show that in FEDs psychosocial correlates are usually presented together, and relations are usually established between them (Jacobi et al., 2004). Studying them together will allow us to obtain a more detailed and useful picture of the factors that are associated with disordered eating attitudes in adolescent girls and boys. Psychosocial correlates assessment related to FEDs constitute an important and necessary first step before testing specific psychosocial risk profiles in subsequent longitudinal studies.

This research should be carried out on both girls and boys since the percentage of boys with FEDs in community samples is 25% and in clinical samples it is 10% (Sweeting et al., 2015). Despite this, most research has focused on understanding FEDs in girls. FEDs in males have been described as “underdiagnosed, undertreated and misunderstood” (Strother et al., 2012), and their skewed sex distribution has often led to their construction as women’s issues (Bramon-Bosch et al., 2000). No studies have been found in

Table 1 Percentage of subjects classified by sex and school year

	SCHOOL YEAR			
	1 st	2 nd	3 rd	4 th
Boys	28.2	27.9	24.5	19.3
Girls	26.2	27.1	22.9	23.8

Table 2 Percentage of cases in each category of BMI

	BMI				
	Severely under-weight	Under-weight	Normal Weight	Overweight	Obesity
Boys	9.8	11.3	67.7	9.9	1.1
Girls	9.3	14.1	68.8	9.5	1.3

Spanish adolescents of both sexes that analyse disordered eating attitudes and their link with the following variables: self-esteem, body satisfaction, perfectionism, pressure from others to lose weight and comparison with peers about diet and physical appearance. Therefore, our goal is to provide new insights and contribute to the body of knowledge on this subject by focusing on boys as well as girls. It is vital to address these issues to improve efforts that will help populations that are vulnerable to FEDs, especially adolescents.

This cross-sectional study aimed to analyse the psychosocial profile related to disordered eating attitudes in adolescents of both sexes.

Method

Participants

Nine Secondary Schools in the province of Alicante were selected through random sampling stratified per school year. A sample of 1630 students was obtained comprising 896 girls and 734 boys. Ages ranged from 12 to 18, the average age in both cases being 14 ($SD = 1.34$). The distribution of students per school year are given in Table 1.

The BMI was obtained for girls and boys and was classified according to the indications by the World Health Organization (WHO). The percentages of adolescents in each of the categories established by the WHO are given in Table 2, reflecting that the majority of adolescents have normal weight.

Materials

Socio-demographic information form for information about age, sex and school year; and *Anthropometric variables*, for information like the *Body Mass Index (BMI)*, also known

as the Quetelet index, which is defined as the ratio obtained when dividing weight in kilogrammes (Kg) by height in square metres (m²). This measure is useful as a general indicator of adipose tissue and nutritional state. All participants were weighed and measured, dressed and without shoes. In this questionnaire, adolescents also had to answer question on how often they *diet* to lose weight (0 = Never and 3 = for more than a month).

The *Eating Attitude Test (EAT-40)* (Garner, & Garfinkel, 1979) was adapted to the Spanish population by Castro et al. (1991) and later validated as a FEDs screening test in the general population by Irala et al. (2008). It is a self-administered questionnaire designed to detect the presence of disordered eating attitudes, especially related to the fear of gaining weight, the urge to slim and the presence of restrictive eating patterns. This instrument permits evaluating three dimensions: eating restrictions and food preoccupation, social pressure and discomfort before intake, and psychobiological disorder. It comprises 40 items that are valued on a 6-point Likert scale for frequency, from “never” to “always” scored from 0 to 3. In this study, the reliability for this scale was $\alpha = 0.85$ for girls and $\alpha = 0.80$ for boys.

Body dissatisfaction was evaluated using the subscale of the *Eating Disorder Inventory 2 (EDI-2)* adapted to the Spanish population (Garner, 1998). The questionnaire consists of 91 elements answered on a six-point scale from “never” to “always”. The EDI-2 consists of 11 scales and different research studies about this instrument reveal that some of these scales can be used separately, one of which is Body Dissatisfaction. This scale has 9 items and evaluates a subject’s dissatisfaction with the general shape of their body or with those parts that most concern those who suffer a FED (stomach, hips, and buttocks), and ranges from 0 to 27. In this study, its reliability was $\alpha = 0.87$ in girls and $\alpha = 0.83$ in boys.

Rosenberg’s Self-esteem scale (Rosenberg, 1973) was validated in the Spanish population by Atienza et al. (2000). This instrument assesses global self-esteem based on 10 items that reflect general feelings about oneself: 5 are expressed positively and 5 negatively. The participants must respond to the items on a 4-point Likert scale (where 1 is “Strongly agree” and 5 is “Strongly disagree”). The reliability coefficient in this study was $\alpha = 0.83$ in girls and $\alpha = 0.78$ in boys.

The Child and Adolescent Perfectionism Scale (CAPS) (Flett et al., 1997) was adapted to the Spanish population by Castro et al. (2004). The questionnaire comprises 22 items answered on a 5-point Likert scale, from 5 “very true” to 1 “false” and consists of two scales. One is Self-Oriented Perfectionism (12 items), which refers to when people set unrealistic expectations for themselves, for example: “I try to be perfect in everything I do”. The scores on this subscale range from 1 to 60. The other scale is Socially Prescribed

Perfections, which refers to the pressure a person receives from others to achieve unrealistic goals. It consists of 10 items, for example: “There are people who expect me to be perfect”. The score for this subscale ranges from 1 to 50. In this study, Cronbach’s α for Self-Oriented Perfectionism was 0.77 in girls 0.72 in boys, and for Socially Prescribed Perfectionism, it was 0.82 in girls and 0.79 in boys.

Dieting Competitiveness Scale (DPC) by Huon et al. (2002). This scale comprises 9 items that evaluate comparison with peers, mainly in relation to physical appearance and eating habits, specifically in social situations. The adaptation to the Spanish population (Pamies-Aubalat et al., 2013), as used in this study, proposes two factors: one refers to affective social comparison and the other to neutral social comparison. The answers are given on a 5-point Likert scale, where 1 corresponds to “strongly disagree” to 6 “strongly agree”. In this study, it is explored internal consistency to the affective social comparison scale, whose score ranges from 6 to 35. It presented an internal consistency of $\alpha=0.74$ in girls and $\alpha=0.64$ in boys.

Pressure from significant others to lose weight was evaluated with an *ad-hoc* instrument consisting of 5 items answered on a response scale from 1 (“Strongly disagree”) to 5 (“Strongly agree”) validated for Spanish-speaking people. An example of an item would be “The people who are important to you think you should do physical exercise to lose weight”. The final score was calculated as the total of the scores obtained for each of the items. In this study, the reliability index for this scale was $\alpha=0.76$ in girls and $\alpha=0.77$ in boys.

Procedure

One-stage cluster sampling was used in order to obtain a sample of students in secondary education of general population from Alicante (71,334 students). After completing selection from all the public, private and ‘subsidized private’ secondary schools in the province of Alicante through random sampling stratified per school year, the school principals and members of the guidance departments were interviewed. Nine centres were randomly selected from the whole of the Alicante province and all of them agreed to participate in the study. A letter was sent to parents informing them about the research and requesting their informed consent for their children to participate. Students who provided informed consent signed by their parents and signed their own informed consent completed the instruments anonymously, individually and voluntarily in the classroom, accompanied by a member of the research team. Students that did not hand in the signed informed consent, did not complete the questionnaire correctly, refused to participate and those diagnosed with a FED were excluded from the

study. All ethical standards for evaluating adolescents in schools were met.

Statistical Analyses

The software SPSS 24.0 was used for the data analysis in this ex post-facto study. As normality was not met (Kolmogorov–Smirnov test), non-parametric tests were used.

Thus, sex differences were investigated using the Mann–Whitney U test, and effect size was calculated using the *r-Rosenthal* index (Rosenthal, 1991). Then, using the Ward method, hierarchical cluster analyses were performed to determine the different psychosocial profiles related to eating disorders attitudes, differentiating between boys and girls. Once the two profiles were established, we compared the mean values of the variables in each cluster and the effect size of these differences. Afterwards, each variable was dichotomized into high and low scores using the mean plus/minus one standard deviation, and the relations between the independent variables were analysed to identify possible interaction. Finally, a logistic regression analysis was carried out following the “introduce” method to explain adolescents’ behaviours and anomalous attitudes towards food, based on the variables included in both clusters. Through binary logistic regression, it is possible to identify the risk arising from a determined situation (in this case disordered eating attitudes). We used this method rather than linear regression since prevention is more relevant than knowing the increase in scores from eating behaviour questionnaires according to predictor variables.

Results

First, an analysis was made of the differences in the scores obtained for the study variables for girls and for boys as well as the effect size of these differences. As shown in Table 3, there were significant differences between boys and girls in all the variables, except for socially prescribed perfectionism, where the differences were not significant. Based on the results from the *r-Rosenthal* test, it should be noted that scores were higher in girls than in boys for the variables diet ($z=-8.63$, $p<0.001$, $r=0.21$), body dissatisfaction ($z=-10.11$, $p<0.001$, $r=0.25$) and affective social comparison ($z=-11.37$, $p<0.001$, $r=0.28$); however, effect size were low. Likewise, the girls had higher scores than the boys in disordered eating attitudes, evaluated through the instrument EAT-40 ($z=-4.34$, $p<0.001$, $r=0.11$).

Having found statistically significant differences according to sex, the rest of the analyses were carried out taking into account this differentiation between boys and girls (Table 4).

Table 3 Analysis of differences between boys and girls

Variables included	Boys (n = 734)		Girls (n = 896)		z	r
	Mdn	M (SD)	Mdn	M (SD)		
Disordered eating attitudes (EAT-40)	12	14.33 (9.40)	14	17.47 (12.40)	-4.34*	0.11
Diet	0	0.44 (0.88)	0	0.80 (1.09)	-8.63*	0.21
Body dissatisfaction	3	4.53 (4.80)	7	7.37 (5.84)	-10.11*	0.25
Self-esteem	31	31.09 (4.63)	30	29.93 (5.07)	-4.56*	0.11
Self-Oriented Perfectionism	35.5	35.55 (7.38)	24	34.53 (7.70)	-3.14*	0.08
Socially Prescribed Perfectionism	27	27.07 (7.29)	27	26.66 (7.58)	-1.57	-
Affective social comparison	10	10.86 (4.35)	14	13.88 (5.42)	-11.59*	0.29
Pressure to lose weight	9	9.06 (5.00)	10	9.67 (4.63)	-2.54*	0.06

*: $p < .05$

Table 4 Analysis of differences by cluster in girls

Study variables	Cluster 1	Cluster 2	Statistical significance	
	n = 676	n = 220	z	r
	Mdn	Mdn		
Disordered eating attitudes (EAT-40)	12	26	-13.66**	-.46
Food restriction	6	19	-14.42**	-.48
Social pressure	1	2	-4.28**	-.14
Psychobiological disorder	1	2	-6.63**	-.22

** : $p < .01$

First, a hierarchical cluster analysis was made using the Ward method, without limiting the number of clusters. We introduced the variables diet, self-esteem, body dissatisfaction, (self-oriented and socially prescribed) perfectionism, pressure to lose weight and affective social comparison, generating clusters for each group. For the girls, cluster 1 contained 676 students and cluster 2 contained 220 students. For the boys, cluster 1 contained 560 students and cluster 2 contained 174 students. For both boys and girls, cluster 1 “no disordered eating attitudes” is characterized by scores below the mean for diet, body dissatisfaction, self-oriented and socially prescribed perfectionism, and pressure to lose weight, and scores above the mean for self-esteem. In contrast, cluster 2 “disordered eating attitudes” had scores above the mean for diet, body dissatisfaction, perfectionism, pressure to lose weight and social comparison, except for self-esteem where scores were lower than the mean (see Figs. 1 and 2).

Next, the differences between each of the clusters were analysed with respect to the scores obtained in the EAT-40 and its dimensions. Boys and girls’ data (see Tables 5 and 6) confirmed that the adolescents from cluster 1 obtained lower scores than those from cluster 2 in “disordered eating attitudes”. These results are maintained on analysing the EAT-40 dimensions, except for the dimension of social pressure in the case of boys, where no significant differences were found between clusters.

After determining the profiles and the differences in relation to disordered eating attitudes, binary logistic regression

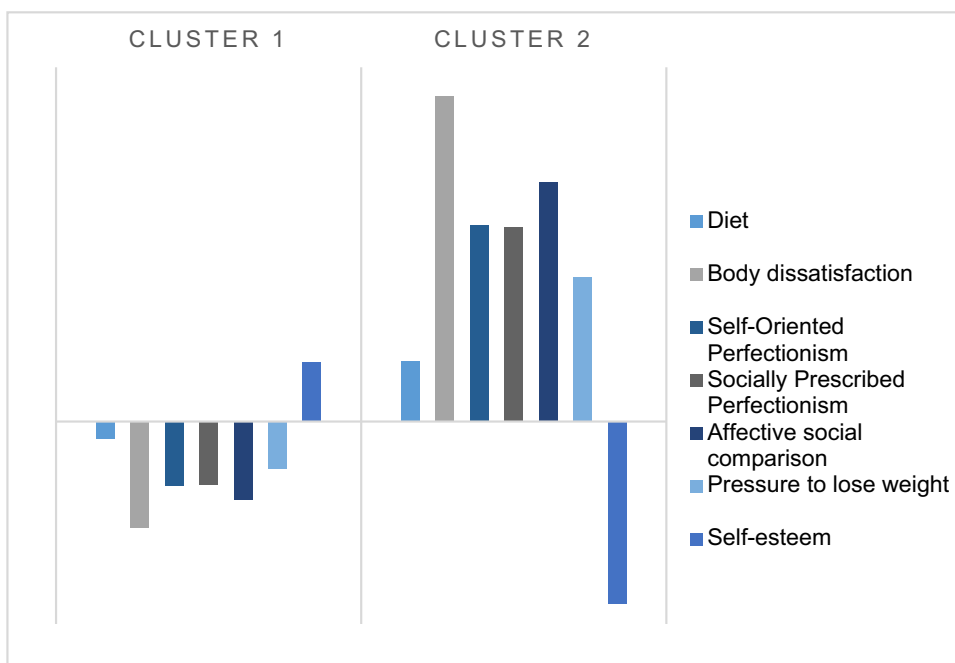
was used to understand the association between them. To do so, the disordered eating attitudes variable (EAT-40) was dichotomized into disordered eating attitudes (defined as the mean plus a standard deviation) and no disordered eating attitudes (defined as the mean minus a standard deviation). For the girls, disordered eating attitudes were estimated at a score equal to or higher than 29.87, (M = 17.47; SD = 12.40) and no disordered eating attitudes at a score equal to or lower than 5.07. For the boys, disordered eating attitudes were considered at scores higher than 23.73 and no disordered eating attitudes at a score lower than 4.93 (M = 14.33; SD = 9.40). Likewise, the independent variables were dichotomized using the mean value plus or minus a standard deviation. Since differences between sexes were found, the data presented in Table 3 was also considered for these dichotomizations.

Based on the data from the clusters and the previous literature, the variables that are most relevant to explaining disordered eating attitudes in girls and boys were included. Also, before carrying out the logistic regression, the relations between the variables included in the model were analysed to identify whether there were any relations between the independent variables and to control their effects. These previous analyses highlighted the existence of an interaction between the dieting, body dissatisfaction and social comparison variables for the girls, and between the body dissatisfaction and pressure to lose weight variables for the boys. In order to control these effects, a multiplicative term was used in the equation, permitting the interpretation of

Fig. 1 Graphical representation of the two clusters in girls



Fig. 2 Graphical representation of the two clusters in boys



each independent variable’s weight as well as the interaction between elements.

In the model identified for the girls, Nagelkerke’s R^2 was 74.2%, and the odds ratio (OR) obtained indicated that girls who experienced dieting, body dissatisfaction and social comparison together are 3.8 times more likely to have disordered eating attitudes. In the model for the boys, Nagelkerke’s R^2 was 48.4%, and the odds ratio indicated that

boys who experienced body dissatisfaction and the pressure to lose weight together are 3.3 times more likely to have disordered eating attitudes (see Table 6). Introducing the predictor variables independently and including them without regard to the modulating effects provided a lower explanatory value of the predictive models. It should be noted here that interpreting the interaction between variables is of great importance.

Table 5 Analysis of differences by cluster in boys

Study variables	Cluster 1	Cluster 2	Statistical significance	
	<i>n</i> = 560 <i>Mdn</i>	<i>n</i> = 174 <i>Mdn</i>	Z	r
Disordered eating attitudes (EAT-40)	11	18	-8.94**	-.33
Food restriction	5	12	-9.78**	-.36
Social pressure	0	1	-.88	-
Psychobiological disorder	0	1	-6.10**	-.22

** : *p* < .01

Table 6 Results derived from the binary logistic regression for disordered eating attitudes in both sexes

Variables	B	SE	Wald	df	p	OR	CI
GIRLS							
Diet x Body dissatisfaction x Affective social comparison	1.328	0.302	19.279	1	.000	3.772	2.08–6.82
Constant	-2.964	0.846	12.284	1	.000	0.052	
BOYS							
Body dissatisfaction x Pressure to lose weight	1.189	.267	19.749	1	.000	3.282	1.94–5.54
Constant	-2.439	.628	15.075	1	.000	.087	

Abbreviations: standard error (SE); degrees of freedom (df); significance(p); odd ratio (OR); 95% confidence interval (CI)

Discussion

The purpose of this study was to analyse the psychosocial profile related to disordered eating attitudes in adolescents of both sexes.

The results of this study showed that both sexes present similar profiles. Thus, both girls and boys present disordered eating attitudes when they have: high mean scores in body dissatisfaction, self-oriented and socially prescribed perfectionism, comparison with peers, pressure to lose weight, and dieting; and low mean scores in self-esteem. These results are similar to those found in previous literature which indicates that there are more similarities than differences between boys and girls with FEDs (Perko et al., 2019).

The results of the logistic regression analysis showed that the variables associated with disordered eating attitudes in girls were body dissatisfaction, dieting and social comparison. In boys, these variables were body dissatisfaction and pressure to lose weight. As can be observed, body dissatisfaction could be a key factor associated with disordered eating attitudes in both sexes. In girls, body dissatisfaction is usually more related to a desire to be slim, while in boys it is related to being lean and muscular, the typical “ideal” male body type (Feingold, & Mazzella, 1998; Furnham

et al., 2002). This result is consistent with previous literature which has indicated that body dissatisfaction is consistently linked to disordered eating attitudes in adolescents and could be involved in the development and maintenance of FEDs (Cash, & Deagle, 1997; Stice et al., 2000).

In addition to body dissatisfaction, social comparison and diet are associated with disordered eating attitudes in girls, while in boys, it is “pressure to lose weight”. Previous literature has shown how comparison with peers about appearance and diet is related to greater body dissatisfaction and a risk of developing FEDs (Fitzsimmons-Craft, 2017; Quiles, et al., 2013). As previously mentioned, during adolescence,

peers become a reference point for adolescents for comparing their own body and diet. They listen to what others say, criticize, and value positively. Such comparisons can lead adolescents to feel dissatisfied with their image and to initiate behaviours directed at achieving the slimness that everyone desires by following strict diets, doing physical activity, restricting food, etc., which will result in an increase in the risk of developing FEDs (Fitzsimmons-Craft, 2017; Quiles et al., 2013; Rodgers et al., 2015). Also, peers may influence body image and eating concerns simply through modelling behaviours and focusing their attention on conversation, so called “fat talk”, about these issues.

In boys, this study showed that the pressure perceived to lose weight together with body dissatisfaction are important psychosocial factors linked to disordered eating attitudes. This pressure could increase adolescents’ unhappiness about their body size, so they might consider that through dieting or other anomalous behaviours they will reduce the social pressure to be slim (Quiles et al., 2013). Stice et al. (2007) indicated that perceived pressure with respect to appearance can arise from different sources, such as the media, family and peers. Previous literature has shown that perceived pressure to lose weight has a direct effect on FEDs and also acts as a mediator, favouring body dissatisfaction and the consequent

development of behaviours to control weight (Ruisoto et al., 2015). An interesting result of this study was that pressure to lose weight was found to be a more important psychosocial variable for disordered eating attitudes in boys than in girls, this could be related to the differences found in previous literature between boys and girls with FEDs. Specially, boys with FEDs are more likely to have been overweight or obese prior to the development of their disorder compared to girls (Bramon-Bosch et al., 2000; Strother et al., 2012; Welch et al., 2009). Additionally, premorbid overweight or obesity may be a specific aetiological risk factor for the development of FEDs in men (Perko et al., 2019). The proportion of men with FEDs who were overweight prior to developing an eating disorder is approximately 45% compared with 15% among women (Fernández-Aranda & Turón, 2004). It is possible that for this reason boys may feel more pressure to lose weight than girls.

This study provides empirical evidence of a psychosocial profile related to disordered eating attitudes in both sexes. However, it does have some limitations, the first of which can be found in the use of EAT-40 to evaluate the risk of developing a FED. The general evaluation of disordered eating behaviours can be made using this scale, but symptoms specific to each type of FED cannot be evaluated. If this were included, it could be useful to detect cases unrelated to eating restriction and to evaluate anomalous behaviours in males or in adolescents with Binge Eating Disorder. Another limitation can be found in the conclusions drawn from the cross-sectional data since it is not possible to determine the causal relation and risk factors. Likewise, the use of self-reporting and scales as the evaluation method of the study variables are related to social desirability bias. Also, the use of non-parametric tests can be considered to have less power than parametric tests. Finally, the DPC questionnaire had original low internal consistency across boys and girls. It would have been appropriate to verify to remove some item, for driving the internal consistency high. In this study, it is deleted Item 9: “I am likely to buy low calorie things even when everyone else isn’t doing so”, after to is explore internal consistency to the affective social comparison scale.

Future research is necessary to develop further longitudinal studies with a double phase. In this way, we could shed light on what the psychosocial correlates in FED are as well as identify the risk and protective factors against them. Another characteristic of FEDs that has been increasingly documented among males is their drive for muscularity. Thus, in future studies it would be of interest to look at the drive for muscularity and compare sex differences among adolescents.

Conclusion

Despite the abovementioned shortcomings, this study improves our understanding of the psychosocial profile of

adolescent boys and girls associated with disordered eating attitudes. Unlike traditional studies, where psychosocial variables have been evaluated in isolation, we have been able to evaluate them together, thereby providing a psychosocial profile for both sexes. The psychosocial factors linked with disordered eating attitudes in boys are pressure to lose weight together with body dissatisfaction. In girls are these social comparison, body dissatisfaction and diet. Overall, these results are a preliminary step towards future research for testing specific psychosocial risk profiles related to FEDS in subsequent longitudinal studies.

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Data Availability All data generated or analysed during this study are included in this published article.

Declarations

Ethics Approval This study was approved by Ethical Research Office of the Miguel Hernández University.

Conflicts of Interest The authors have no conflicts of interest to declare that are relevant to the content of this article.

Consent to Participate Written informed consent was obtained from the parents and all individual participants included in the study.

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