

BODY DISSATISFACTION AND DISORDERED EATING ATTITUDES AMONG ADOLESCENTS FROM PORTUGAL AND SPAIN

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Abstract

Cross-cultural studies comparing eating attitudes among adolescents from southern-European countries are scarce. We aimed to compare body-dissatisfaction, disordered-eating attitudes, awareness and internalisation of the unrealistic-body-ideal, self-esteem, perfectionism and impulsivity among adolescents from Spain and Portugal. Participants were 249 Spanish and 206 Portuguese adolescents (51.2% girls) aged 12-15 ($M = 13.3$ years, $SD = 0.6$). A 2×2 (country $\times$ sex) MANOVA was conducted for each self-reported measure. Girls scored higher on awareness and internalisation of the unrealistic-body-ideal, body-dissatisfaction, disordered-eating attitudes and lower on self-esteem than boys did. Regarding the country, Portuguese adolescents scored higher than Spaniards on eating disorder attitudes, impulsivity and perfectionism. Our findings show significant differences between country and gender, highlighting the importance of specific gender-oriented prevention strategies.

KEY WORDS: *adolescents, body dissatisfaction, cross-cultural, disordered eating.*

Resumen

Las diferencias transculturales en la insatisfacción corporal y las actitudes alimentarias de riesgo en adolescentes han sido escasamente estudiadas en el sur de Europa. El objetivo de este estudio fue comparar la insatisfacción corporal, las actitudes alimentarias alteradas, la interiorización del ideal estético, la autoestima, el perfeccionismo y la impulsividad de adolescentes de España y Portugal. Participaron 249 adolescentes españoles y 206 portugueses (51,2% de chicas) de entre 12 y 15 años ($M = 13,3$ años; $DT = 0,6$). Se realizó un MANOVA considerando un diseño 2×2 (país $\times$ sexo) para cada medida autoinformada. Las chicas obtuvieron puntuaciones más altas en interiorización del ideal estético, insatisfacción corporal, conductas alimentarias alteradas y menor autoestima que los chicos. En cuanto al país, los adolescentes portugueses puntuaron más alto

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que los españoles en actitudes alimentarias alteradas, impulsividad y perfeccionismo. Nuestros hallazgos muestran diferencias significativas entre país y sexo, destacando la importancia de las estrategias de prevención específicas para cada sexo.

PALABRAS CLAVE: *actitudes alimentarias, adolescentes, insatisfacción corporal, transcultural.*

Introduction

Disordered eating attitudes and behaviours among adolescents have become an issue of worldwide concern (Chang, Lin, & Wong, 2011). This is especially worrying considering the paradox of the simultaneous existence of continued malnutrition and increasing rates of overweight, binge eating and obesity, as well as extreme weight-control behaviours, weight and shape concerns or full-syndrome eating disorders (ED) among children and adolescents (Anderson-Fye, 2009; Neumark-Sztainer et al., 2007). Several studies indicate that socio-cultural factors, as well as developmental, genetics and psychological ones, are implicated in the prevalence, aetiology and phenomenology of eating disturbances (Becker, Keel, Anderson-Fye, & Thomas, 2004). Factors such as nutrition and cultural transition, social changes, Westernisation, industrialisation, urbanisation, globalisation, the family environment, and the exposure to mass media all have a significant impact on eating attitudes and behaviours, particularly among young people (Anderson-Fye, 2009; Eapen, Mobrouk, & Bin-Othman, 2006).

In fact, adolescence is defined as a vulnerable period in human development characterised by numerous bio-psycho-social changes that may influence the involvement in health-related risk behaviours (Currie et al., 2010). The importance of body image increases as young people become more body-conscious with the physical changes associated with puberty. Several studies have shown that media has a powerful influence on the body image of young people and the overvaluation of the importance of physical appearance in western cultures, increasing the desire for the slim ideal among females and the muscular ideal among males. This sociocultural influence especially occurs when the unrealistic ideals are reinforced by peers and family (González et al., 2015; Salafia, Jones, Haugen, & Schaeferal 2015) which can lead young people becoming highly self-critical and potentially implement unhealthy weight-control behaviours in adolescents (Neumark-Sztainer et al., 2007).

There is evidence that men and women who are exposed to images of the aesthetic ideal restrict their intake (Dakanalis et al., 2015). However, women have been and still are more likely than men to develop a disordered eating (Hoek & van Hoeken, 2003), these gender differences in terms of susceptibility could be explained not only as a consequence of female biology but also as a result of the interaction between several factors including culture-specific gender differences in the life experiences and circumstances of both genders (Malson & Nasser, 2007). As Lin and Yeh (2009) mentioned, advertising can be powerful because promoting the internalization of the beauty ideals, when creating visual associations between signs and symbols to build a product image in order to motivate consumers,

creating 'what is needed', or what it means to be 'feminine' or 'masculine'.

There is also evidence that dietary restriction is mediated by the internalisation of the aesthetic ideal and body dissatisfaction among other variables (Mayer-Brown et al., 2016). Regarding low self-esteem, it predicts food restriction after viewing images of the esthetic ideal only in women (Mayer-Brown et al., 2016). The impact of perfectionism is also mediated by body dissatisfaction (Boone & Soenens, 2015)

Anderson-Fye (2009) noted that ED emerge in increasingly younger ages, adopting less severe forms, and that girls and young women account for the vast majority of those with ED. However, until recent years most studies in this field have been performed with samples from Western-European countries and to date few studies conducted in Southern-European groups have been published (Li-Wey & Walter, 2013). Although Portugal and Spain are two southern-countries of Europe that share part of their history and Western culture influences, a recent study among Portuguese and Spanish adolescents suggests there are socio-cultural differences that may influence on adolescent's body satisfaction and their eating related attitudes, even in "neighbouring" countries (Francisco et al., 2015). However, and despite some recent comparative studies among Portuguese and Spanish adolescents concerning substance use and health-related behaviours (Lima-Serrano, Lemos, & Nunes, 2013; Simões et al., 2012), no comparisons were made between the two countries regarding ED topic.

Results from the Health Behaviour in School-Aged Children (HBSC) study, conducted in 2010 with adolescents aged 11 to 18 years in 39 countries and regions across Europe and North-America, showed gender and age patterns in relation to body image that seem to be common. Specifically, 42% Portuguese and 39% Spanish 13-years-old girls reported considering themselves to be too fat contrasting with 28% of Portuguese and Spanish boys reporting it at the same age. Moreover, 12% of Portuguese and 17% of Spanish 13-year-old girls reported that they engaged in weight-reduction behaviours, while 8% of Portuguese and 11% of Spanish-boys reported it (Currie et al., 2010).

The aim of the present study was to compare body dissatisfaction, disordered eating attitudes, awareness and internalisation of the unrealistic body ideal, self-esteem, perfectionism and impulse-regulation among a sample of girls and boys from Portugal and Spain. We expected to find gender differences, with girls showing greater severe forms, whereas no hypothesis could be drawn regarding country differences.

Method

Participants

A sample of 455 adolescents were recruited from second-year compulsory secondary education at 11 urban-state and state-subsidised schools in the cities of Manresa (7 schools, 4 state-ones) in Catalonia (Spain) and of Lisbon (4 schools, 3 state-ones) Metropolitan Area (Portugal). The sample, selected by means of incidental (non-random) sampling, included 249 Spanish and 206 Portuguese

participants (233 girls and 222 boys), aged 12-15 ($M = 13.3$ years; $SD = 0.6$). Mean body mass index was 20.27 ($SD = 2.99$) for girls and 20.45 ($SD = 3.57$) for boys. Table 1 display the characteristics of each subsample by country and gender.

Table 1
Sample characteristics ($N = 455$) by gender and country

Variables	Boys		Girls	
	Portugal ($n = 102$)	Spain ($n = 120$)	Portugal ($n = 104$)	Spain ($n = 129$)
Socio economic status	n (%)	n (%)	n (%)	n (%)
Low	33 (32.4)	28 (23.3)	33 (32.7)	34 (26.4)
Medium/medium-low	28 (27.5)	46 (38.3)	25 (24.8)	58 (45.0)
High/medium-high	41 (40.2)	46 (38.3)	43 (42.6)	37 (28.7)
Type of school				
State	75 (73.5)	79 (65.8)	75 (72.1)	91 (70.5)
Menarche/voice				
Yes	94 (93.1)	96 (80.0)	90 (87.4)	104 (80.6)
Follow a diet				
Yes	13 (12.9)	13 (11.2)	17 (16.7)	22 (17.5)
Weight status				
Underweight	10 (9.8)	6 (5.3)	11 (10.6)	5 (3.9)
Normal weight	66 (64.7)	76 (66.7)	75 (72.1)	104 (80.6)
Overweight	22 (21.6)	26 (22.8)	17 (16.3)	17 (13.2)
Obesity	4 (3.9)	6 (5.3)	1 (1.0)	3 (2.3)
	M (SD)	M (SD)	M (SD)	M (SD)
Body Mass Index (kg/m^2)	20.3 (3.4)	20.6 (3.7)	20.3 (3.0)	20.2 (3.0)
Age (years)	13.6 (0.8)	13.4 (0.6)	13.7 (0.8)	13.4 (0.4)

Measures

- Ad hoc Socio-demographic Questionnaire*. Personal, family and social details were collected by a socio-demographic questionnaire *ad hoc*. Socioeconomic status (SES) based on the parents' educational level and occupation according to the Hollingshead's index (Hollingshead, 1975) was obtained.
- Body Mass Index (BMI)*. Measurements of weight were taken using Tefal sensitive Computer 100 body weight scale and height were taken using using a 'drop down' tape measure brand SECA and model 213 CE0123 with Spanish participants. In Portugal these measurements were self-reported by adolescents, in order to calculate the BMI.
- Eating Attitudes Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982)*. This 26-item self-report questionnaire assesses feelings, attitudes and behaviours that are characteristic of individuals with disordered eating. Higher scores are indicative of more dysfunctional eating attitudes. The EAT-26 is used in this study because of its wide accuracy in self-reported testing for the non-clinical population (Mintz & O'Halloran, 2000). The Portuguese (Francisco, Oliveira, Santos, & Novo, 2011; $\alpha = .91$) and the Spanish (Gandarillas, Zorrilla, Sepúlveda, & Muñoz, 2003; $\alpha = .86$) versions were used.

- d) *Sociocultural Attitudes Towards Appearance Questionnaire-R* (SATAQ-R; Cusumano & Thompson, 1997). We used a male and a female version containing 21 items adapted for each sex. The SATAQ-R consists of two subscales: awareness (11 items; knowledge that a standard of appearance exists) and internalisation (10 items; profound incorporation or acceptance of these values [reaching] affects one's attitudes or personal behaviour). Higher scores are indicative of a greater awareness and greater internalisation of sociocultural ideals of beauty. The Portuguese (Francisco, Santos, Oliveira, & Novo, 2011; $\alpha = .88$ for internalisation and $\alpha = .85$ for awareness) and the Spanish (Calado, 2008; $\alpha = .89$ for internalisation and $\alpha = .84$ for awareness) versions were used.
- e) *Rosenberg Self-Esteem Scale* (RSES; Rosenberg, 1965). This is a 10-item self-report measurement of overall self-esteem, in which higher scores indicate a higher self-esteem. The Portuguese (Azevedo & Faria, 2004; $\alpha = .89$) and the Spanish (Baños & Guillén, 2000; $\alpha = .86$) versions, validated with adolescent populations, were used.
- f) *Eating Disorder Inventory-2* (EDI-2; Garner, 1991). We applied two subscales of this self-report questionnaire to assess individual factors associated with the development of ED: Perfectionism (6 items; a tendency to strive for flawlessness and set excessively high performance standards) and impulsivity (8 items; a tendency towards impulsivity and recklessness). Higher scores indicate more perfectionism and more impulsivity. The Portuguese (Pocinho, 2000; $\alpha = .63$ for perfectionism and $\alpha = .76$ for impulsivity) and the Spanish (Garner, 1998; $\alpha = .76$ and split-half method $r = .54$ -.76 for perfectionism and $\alpha = .79$ and split-half method $r = .53$ -.75 for impulsivity) versions were used.
- g) *Contour Drawing Rating Scale* (CDRS; Thompson & Gray, 1995). The CDRS consists of nine drawings of a female figure or a male figure, depending on the sex of the respondent. Each drawing increases in size from extremely thin (1) to very obese (9). Participants are asked to rate their ideal figure and their current size. We used the discrepancy between the ideal and current size scores (Wertheim, Paxton, & Tilgner, 2004) as an index of body size dissatisfaction, which can range from 8 (extreme desire to lose weight) to -8 (extreme desire to gain weight). The Portuguese (Francisco, Narciso, & Alarcão, 2012) and an *ad hoc* version translated into Spanish were used, which present good convergent validity: correlations of the silhouette representing current body size with weight $r = .65$ and with BMI $r = .72$ for the Portuguese version and $r = .58$ and $r = .62$ for the Spanish version, respectively.

Table 2 presents the descriptives and range for each of the measurements considered (left), and internal consistency (right) for self-reported questionnaire scores in the study sample.

Procedure

The data are part of a larger project accepted by the Ethics Committee of our institutions and approved and mediated by the Municipal Institute of Health and

Social Welfare of the cities of Manresa and the Portuguese Ministry of Education. Informed written consent from parents and oral consent from adolescents were obtained in Spain, while informed written consent from parents and adolescents were collected in Portugal. *In situ* height and weight measurements were taken in Spain, individually and privately by two members of our team, while the rest of students were answering questionnaires, to ensure confidentiality. In Portugal these measurements were self-reported by adolescents.

Table 2
Descriptives and internal consistency ($n = 439$) by gender and country

Measures	Items (range)	Boys		Girls		Cronbach's α (mean inter-item r)			
		Port. ($n = 102$)	Spain ($n = 120$)	Port. ($n = 104$)	Spain ($n = 129$)	Boys		Girls	
		$M (SD)$	$M (SD)$	$M (SD)$	$M (SD)$	Port.	Spain	Port.	Spain
EAT-26 total score	26 (0 ÷ 78)	8.74 (8.85)	5.29 (8.29)	12.1 (11.1)	8.22 (9.21)	.84 (.21)	.90 (.28)	.90 (.27)	.89 (.26)
SATAQ-R Awareness	11 (1 ÷ 5)	3.32 (0.75)	3.35 (0.75)	3.57 (0.80)	3.62 (0.75)	.81 (.28)	.82 (.29)	.86 (.37)	.85 (.34)
SATAQ-R Internalisation	10 (1 ÷ 5)	2.61 (0.70)	2.56 (0.78)	2.94 (0.95)	2.92 (0.86)	.75 (.23)	.77 (.25)	.87 (.39)	.86 (.38)
RSES Self-esteem	10 (10 ÷ 40)	32.0 (5.12)	32.2 (4.82)	29.6 (6.68)	29.2 (5.33)	.79 (.27)	.79 (.28)	.86 (.39)	.83 (.33)
EDI-2 Perfectionism	6 (0 ÷ 18)	6.85 (3.88)	4.98 (3.44)	6.75 (3.87)	4.53 (3.69)	.69 (.27)	.58 (.19)	.68 (.27)	.71 (.29)
EDI-2 Impulsivity	11 (0 ÷ 33)	4.49 (4.87)	2.32 (3.22)	3.52 (4.34)	2.98 (3.49)	.74 (.21)	.63 (.13)	.78 (.25)	.62 (.13)
CDRS Body dissatisfaction	NA (-8 ÷ +8)	0.35 (1.17)	0.54 (1.21)	0.66 (1.35)	0.82 (1.50)	--	--	--	--

Note: Port. = Portugal.

Data analysis

Analyses were performed with Statistical Package for the Social Sciences (SPSS 24; IBM Corporation, 2016). Analysis of variance was conducted using a 2×2 (country $\times$ gender) two-way MANCOVA and listwise deletion to compare EAT-26, SATAQ-R (awareness and internalisation), RSES, EDI-2 (perfectionism and impulsivity) and CDRS scores adjusted by potential confounding variables age, BMI and SES. Its inclusion was evaluated by comparing the parameters between adjusted and crude models, since covariates may be included when the difference between parameter estimates between both models is $> 10\%$ (Maldonado & Greenland, 1993). Following this procedure, it was not necessary to control by age, whereas BMI and SES were maintained as covariates (the latter entered as two dummy variables). Levene's test for equality of variances was performed; when groups were found not to be homogeneous, the lower-bound estimate was applied by correcting degrees of freedom of the F -distribution $[(N - k)/k$ for degrees of freedom of the error term]. In addition, the normality assumption was evaluated

with the percentage of cases having out and far out (extreme) values. For hierarchical models like ours, the interaction effect was evaluated first. Main effects were then interpreted when the interaction was not statistically significant, whereas simple effects were conducted when it was statistically significant (α level set at .05).

Results

Based on Wilks' lambda multivariate test, MANCOVA results showed an overall effect of gender [$\lambda = 0.92$, $F_{(7, 426)} = 5.43$, $p < .001$] and country [$\lambda = 0.89$, $F_{(7, 426)} = 7.77$, $p < .001$], but not for the interaction term [$\lambda = 0.99$, $F_{(7, 426)} = 0.75$, $p = .629$]. Table 3 shows univariate tests for each of the dependent variables. Correction for lack of homogeneity based on Levene's test was applied to statistically significant terms for all measures ($p \leq .031$) except SATAQ-R Awareness ($p = .631$) and EDI-2 Perfectionism ($p = .587$). Percentage of outliers ranged from 0% (for SATAQ-R Internalisation and EDI-2 Perfectionism) to 4.1% (for EAT-26); given that all percentages were above 5% and that ANOVA analyses tolerate violations to normality assumption rather well, no correction was conducted.

Table 3

MANCOVA 2x2 (gender x country) adjusted by SES and BMI with list wise deletion ($n = 439$)

Measures	MANCOVA univariate tests (all adjusted by SES and BMI)						Statistically significant effects*			
	Interaction Gender x Country		Gender		Country		Gender (girls vs. boys)		Country (Portugal vs. Spain)	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>M</i> (95% CI)	<i>d</i>	<i>M</i> (95% CI)	<i>d</i>
EAT-26	0.076	.783 ^a	12.711	<.001^b	15.571	<.001^b	3.16 (1.42; 4.91)	0.31	3.54 (1.78; 5.31)	0.38
SATAQ-R A	0.072	.788 ^a	14.089	<.001^a	0.282	.596 ^a	0.27 (0.13; 0.41)	0.35		
SATAQ-R I	0.029	.865 ^a	20.501	<.001^b	0.241	.624 ^a	0.36 (0.20; 0.51)	0.43		
RSES	0.094	.759 ^a	27.065	<.001^b	0.012	.912 ^a	-2.66 (-3.66; -1.66)	0.50		
EDI-2 P	0.165	.685 ^a	0.519	.472 ^a	28.895	<.001^a			1.94 (1.23; 2.65)	0.56
EDI-2 I	4.273	.041^b	0.196	.658 ^a	10.777	.001^b			♂: 2.04 (0.97; 3.12)	0.53
CDRS BD	0.008	.928 ^a	9.915	.002^b	1.874	.172 ^a	0.34 (0.13; 0.55)	0.23		

Notes: EAT-26= Eating Attitudes Test (total score); SATAQ-R A= Sociocultural Attitudes Towards Appearance Questionnaire-Revised Awareness; SATAQ-R I= Sociocultural Attitudes Towards Appearance Questionnaire-Revised Internalisation; RSES= Rosenberg Self-Esteem Scale; EDI-2 P= Eating Disorder Inventory Perfectionism; ; EDI-2 I= Eating Disorder Inventory I; EDI-2 I= Eating Disorder Inventory Impulsivity; CDRS BD= Contour Drawing Rating Scale Body Dissatisfaction; BMI= Body Mass Index; SES= Socioeconomic Status (entered as two dummy variables). ^a*p*-value based on *F* ($df = 1, 432$); ^b*p*-value based on lower-bound corrected *F* ($df = 1, 108.75$); correction applied to statistically significant terms with $p < .05$ for Levene's test. *Only statistically significant mean differences (*M*) are shown. In bold: $p < .05$; *d*: Cohen's *d* effect size (in absolute value).

As expected, girls scored higher on EAT-26 ($p < .001$), SATAQ-R Awareness ($p < .001$), SATAQ-R Internalisation ($p < .001$) and CDRS Body dissatisfaction ($p = .002$), and lower on RSES Self-esteem ($p < .001$) than boys did. As regards comparisons across country, Portuguese participants scored higher (worse) on EAT-26 Total ($p < .001$) and EDI-2 Perfectionism ($p < .001$). An interaction effect (country $\times$ gender) was found to be statistically significant for EDI-2 Impulsivity ($p = .041$). Simple effects showed that Portuguese boys scored higher (worse) also for EDI-2 Impulsivity on average than Spanish boys did ($p < .001$), whereas no differences between the countries were found in girls ($p = .374$). Lastly, effect sizes (Cohen, 1988) can be considered between small and medium (d values ranging from 0.23 to 0.56).

Discussion

This cross-cultural study compared body dissatisfaction, disordered eating attitudes, awareness and internalisation of the unrealistic body ideal, perfectionism and impulsivity among Portuguese and Spanish adolescents of both genders. Regarding gender differences, our results confirming our hypothesis are in line with all the trends in global data, especially with Fredrickson and Robert's (1997) feminist Objectification Theory. Girls from both countries reported more disordered eating attitudes, body dissatisfaction, and internalisation of the unrealistic body ideal and lower self-esteem than boys. Similar results were found in the recent HBSC study, showing girls aged 13-15 in almost all countries and regions of Europe and North America were significantly more likely to report body image disturbances and weight reduction behaviours (Currie et al., 2010). The fact that body image and weight-related problems are strongly gender-dependent may be because of pubertal development patterns associated to adolescence in boys and girls and different socio-cultural expectations and reinforcements for them.

Gender differences were also found in self-esteem scores, but as in other studies there were no gender differences on perfectionism (Kaur & Kaur, 2012) and impulsivity punctuations scores (Lundahl, Wahlstrom, Christa, & Stoltenberg, 2015). As body dissatisfaction has been linked to a wide variety of experiences and feelings that undermine self-confidence, diminish self-esteem, and reduce the quality of life, societies in which body dissatisfaction is normative, such as ours, have a serious social and mental health problem (Jeffreys, 2005). In this sense, our findings highlight the importance of urgent gender-oriented prevention strategies.

Regarding country differences results suggested significant differences between adolescents from both countries in several of the measurements analysed in the direction we expected. Portuguese adolescents scored higher than Spanish ones on disordered eating attitudes and perfectionism. The interaction effect (country $\times$ gender) showed that Portuguese boys also scored higher than Spanish boys on impulse regulation. Part of the differences could have been influenced by different urban context of our sample. Although Manresa, Spain (76,570 people) cannot be associated with a rural context, since it displays significant urban development, it is clearly much smaller than the large metropolis and capital of Portugal, Lisbon (2.8 million people). Urban contexts appear to place adolescents

at an increased risk of both obesity and ED when compared with rural and less complex ones (Anderson-Fye, 2009; Penelo, Negrete, Portell, & Raich, 2013).

Socio-cultural differences seen on several Hofstede's National Culture Dimensions and important sociocultural and economic changes in recent history of both countries may have implications on adolescent's psychological health and well-being. According to The Hofstede Centre (2015), besides being considered a more collectivist country in Europe (27 vs. 51 Spain), Portugal shows a lower score on Masculine Dimension (31 vs. 42 Spain), which means that their dominant values are caring for others and quality of life rather than competition. The magnitude of the socio-economic crisis could have affected the protective foundation of the Portuguese nation. Portugal exhibits, as well, more economic inequality when compared to Spanish society (63 vs. 57 Spain) and with the recent deep economic crisis it seems that the distance between the 'haves' and 'have-nots' is growing wider and wider. A similar situation has been observed in countries with processes of economic and political transition, along with accelerated socio-cultural processes of change (Gordon, 2001), among which Latin American countries such as Argentina, Brazil, Chile, Colombia, Mexico and Venezuela (Espinoza, Penelo, & Raich, 2009; Mancilla & Gómez, 2006).

According to Fairburn, Welch, Doll, Davies, and O'Connor (1997), disordered eating attitudes are known to flourish at times when there is a need for self-change, when a sense of competence and effectiveness are lacking. Fishbein et al. (2006) mentioned that high amount of stress or cumulative stress will result in individual adaptations that decrease self-control and increase impulsivity. It could have altered non health-related behaviours and led to increased disordered eating attitudes in Portuguese adolescents, especially in the case of boys and their sense of cultural expectations for traditional masculine identity. A recent study with young adults also indicated that impulsivity is positively associated with several facets of unhealthy eating including overeating in response to external food cues and in response to negative emotional states (Jasinska et al., 2012).

Moreover, body dissatisfaction has been found to be a robust risk factor for disordered eating attitudes and is thought to be especially problematic in the presence of high levels of perfectionism (Wade & Tiggemann, 2013). The need to exert control over the environment may result in more extreme efforts to control body appearance and eating, which could explain the partially high scores of the Portuguese (both boys and girls) in the perfectionism scale and disordered eating attitudes. However, sociocultural-factors, such as collectivism and parenting-style, influence the expression of perfectionism (DiBartolo & Rendón, 2012). The actual mechanisms by which those individual and socio-cultural variables take effect are still relatively unknown around the world and would benefit from further in-depth ethnopsychological studies (Anderson-Fye, 2009).

Within the limitations of this study, there were some differences in the data collection procedure, specifically related to the measurements necessary for calculating the BMI. Data on weight-height in Portugal were self-reported, which could produce differences in the BMI estimates. However, several studies (e.g., Bulik et al., 2001) have revealed high correlations between self-reported weight and height, and the weight and height measured by the researchers (r from .90 to

.98). Another limitation concerns the sources of information: although we have used multiple measurements of body image and weight-related problems to better capture these multidimensional phenomena, like most cross-cultural studies, the results need to be replicated using different samples. In the same direction, multidimensional-scales of individual indicators such as self-esteem, perfectionism and impulse-regulation should be used to better explain these findings. Moreover, and despite most of the measures used showed adequate internal consistency in the present samples, with Cronbach's alpha values above .70 or mean inter-item correlations above .20 (Nunnally & Bernstein, 1994), some scale scores for EDI, such as perfectionism in Spanish males and impulsivity in the Spanish sample, showed poor indices. Further research should also focus efforts on the validation process of the Portuguese version of instruments used. Additionally, the sample size limits the reading of the results, making it necessary to replicate similar studies in larger samples.

One strength of our study is the inclusion of girls and boys in a cross-cultural study on disordered eating attitudes and associated attitudes in Portugal and Spain, which allows somehow to visualise Portuguese boys, so far scarcely considered in published studies related to ED and body image. In addition, this cross-cultural comparative study contributes to the posing of interesting questions about the multiple systemic-routes by which changes in the socio-economic-cultural context and society differentially affect body image and ED risk, among southern European adolescents.

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