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General bullying, appearance-related bullying and teasing and eating Psychopathology: The mediation effect of body shame in a sample of adolescent girls

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Abstract

Literature has placed emphasis on the role of body shame in the development and maintenance of eating disorders. Moreover, studies have emphasized the relationship between experiences of bullying and appearance-related teasing in the development of eating disorders in adolescents. However, research on body shame, bullying, appearance-related bullying and teasing, and their impact on eating psychopathology remains almost unexplored in adolescence.

The current study tests a model aimed at understanding the mediating effect of body shame on the relationship between general bullying and appearance-related bullying and teasing by peers and parents, and eating psychopathology. This study was conducted in a sample of 437 adolescent girls (ages ranging from 12 to 16 years) recruited from middle schools, who answered a set of self-report measures assessing experiences of general bullying, experiences of appearance-related bullying and teasing, body shame, eating psychopathology and general psychopathology.

Findings have confirmed that body shame partially mediates the relationship between tendency to be victimized for nonspecific reasons and global eating psychopathology, explaining 49% of its variance. Furthermore, body shame was found to equally mediate the relationship between appearance-related bullying and teasing by peers and eating psychology, explaining 53% of its variance.

Findings suggest that, in adolescent girls, higher levels of being bullied or teased regarding one's physical appearance may increase levels of eating psychopathology, partially via higher levels of body shame.

Keywords: eating psychopathology; bullying; appearance-related teasing; teasing by peers; teasing by parents; body shame; peers relationships; parental criticism; adolescence.

I – Introduction

Eating disorders represent a heterogeneous diagnostic category comprising anorexia nervosa, bulimia nervosa, binge eating disorder and eating disorders not otherwise specified (American Psychiatric Association [APA], 2013). Studies have estimated that both anorexia and bulimia nervosa affect between 1% and 4% of the general population (Hoek, 2006; Hudson, Hiripi, Pope, & Kessler, 2007), while binge eating disorder affects approximately 3% to 5% of the general population (Machado, Machado, Goncalves, & Hoek, 2007). The prevalence of anorexia nervosa and bulimia nervosa amongst girls between the ages of 10 and 19 (approximately 2% and 4%, respectively), places eating disorders amongst the most common chronic illnesses in adolescent girls (Machado et al., 2004; Stice & Agras, 1998).

In fact, literature has emphasized that adolescence is, par excellence, a period of prevalence when it comes to mental health problems (e.g., Cole, Tram, Martin, Hoffman, Ruiz, Jacquez, & Maschman, 2002). The adolescent is subject to a series of developmental changes, which imply, in addition to body and thinking transformations, an increase of concerns related to peer-group relationships, a movement of emancipation from parental tutelage, the adjustment to new relationships with peers and a self-representation related to a new subjectivity that will express itself into one's new identity (Salmela-Aro, 2011; Cunha, Matos, Faria & Zagalo, 2012). Such developmental features may contribute to adolescents' increased vulnerability to emotional difficulties related to self-presentation, fear of rejection and fear of being placed in an inferior social rank position (Gilbert, 2000). Actually, adolescents' social world focuses on peer-group relationships, so they become more perceptive of the emotions and images they are creating in their peers' minds. Consequently, they become more focused on self-other evaluations and on competition with peers for acceptance and social status (Wolfe, Lennox, & Cutler, 1986). So, being seen as unattractive in this context may result not only in feelings of shame (Gilbert & Irons, 2009), but also in peer rejection, bullying or teasing,

known to be linked to psychological problems (Cunha, et al., 2012; Gilbert & Irons, 2009; Hawker & Boulton, 2000; Smokowski, & Kopasz, 2005).

In fact, previous research has demonstrated that general bullying from peers have been related to negative outcomes amongst adolescents, including lowered self-esteem (Hodges & Perry, 1996; O'Moore & Kirkham, 2001), depression and anxiety (Brockenbrough, Cornell & Loper, 2002; Craig, 1998; Kaltiala-Heino, Rimpela & Rimpela, 2000), feelings of loneliness (Nansel et al., 2001), suicidal ideation (Bauman, Toomeyb, & Walkerc, 2013), and other indicators of maladjustment (e.g., school absence; Glew et al. 2005; Totura, Green, Karver & Gesten, 2009). Particularly in adolescent girls, bullying may contribute to the development of eating disorders (e.g., Bond et al., 2001).

Appearance-related teasing is a particular form of bullying focused on physical appearance aspect (e.g., weight, height, body shape). Recent research suggests that adolescents perceive and experience this type of bullying as the most common form of harassment (Haines et al., 2008; Neumark-Sztainer et al., 2002; Puhl & Luedicke, 2011), placing these experiences as extremely harmful to the victim. In fact, studies have shown that weight-based victimization by peers, poses serious consequences for adolescents, which include risk of depression, anxiety, poor body image, social isolation and suicidal ideation (Eisenberg, Neumark-Sztainer & Story, 2003; Griffiths & Page, 2008; Libbey, Story, Neumark-Sztainer & Boutelle, 2008; Neumark-Sztainer et *al.*, 2002). In particular, retrospective and cross-sectional studies have found strong positive correlations between appearance-related teasing by peers (amongst adolescent girls), body image and eating disordered symptoms (Cattarin & Thompson, 1994; Fabian & Thompson, 1989; Frisén, Lunde, & Hwang, 2009; Grilo Wilfley, Brownell, & Rodin, 1994; Haines, Neumark-Sztainer, Eisenberg & Hannan, 2006; Levine, Smolak & Hayden, 1994; Libbey et al. 2008; Menzel et al., 2010; Thompson, et al 1995; Wetheim, Koerner, & Paxton, 2002). Furthermore, a 5-year follow-up study found that weight-related teasing predicted the development of disordered eating behaviors in adolescence (Haines et al., 2006).

Negative comments regarding physical appearance may come not

only from peers, but also from parents, also leading to negative consequences for adolescents (e.g., Keery, Boutelle, Berg & Thompson, 2005). In fact, several studies showed that, among adolescent girls, parental put-downs regarding body image characteristics, are associated with the predisposition to experience shame and negative self-evaluation (Gilbert, Allan & Goss, 1996; Sweetingham, & Waller, 2008). Moreover, parental criticism related to physical appearance seems to be associated to subsequent body dissatisfaction, and attempts to control one's weight and body shape through pathological eating behaviours (Levine, Smolak & Hayden, 1994; Shisslack et al., 1998; Sweetingham, & Waller, 2008; Thompson & Sargent, 2000).

Nevertheless, not all adolescents who experience appearance-related teasing engage in disordered eating behaviors (e.g., Gardner, Stark, Friedman & Jackson, 2000). Thus, it seems important to understand which mechanisms underlie the relationship between physical appearance-related teasing and disordered eating behaviors.

Specific interactions within the family environment or social groups, which define what is socially reinforced in terms of attractiveness (Cunha et *al.*, 2012; Gilbert, 2007), seem to play an important role in this process. Particularly in western societies, due to the excessive focus on a thin body shape, women are pressured to achieve unrealistic standards regarding their appearance (Rodin, Silberstein & Striegel-Moore, 1984), which explains the high rates of body image dissatisfaction amongst women (Rodin et al,, 1984; Thompson & Smolak, 2001). Furthermore, recent research highlights how, for the feminine gender, physical appearance becomes a central self-evaluative dimension intended to estimate one's social position, compete for social status and to avoid perceptions of inferiority or of belonging to an unwanted and low social rank position, which are linked to feelings of shame (Ferreira et al., 2013; Gilbert, 2000; Pinto-Gouveia, Ferreira & Duarte, 2012).

Shame is a multifaceted self-conscious emotion (Gilbert, 2000, 2002) that depends on the skills of the individual to build the self as a social agent. Gilbert (2002) distinguishes two types of shame: external shame, related to the way we believe to exist on others minds and negative expectations about

how others will judge us (triggered when we feel that others see us negatively); and internal shame, related to internal attributions and affects spinning around negative self-evaluations (thus, arising when there is an internalization of that experience; Gilbert, 2003).

According to the evolutionary perspective (Gilbert, 2002), shame is intrinsically related to human's innate need for attachment, group belonging, and concern about one's social position (Cunha et al., 2012; Gilbert, 2000). Thus, the experience of shame is founded in social relations (Tangney & Fischer, 1995), being the need to be attractive and trigger positive feelings in other's minds a key issue for the survival and development of the individual, by allowing him/her to obtain important social resources (e.g., being selected for important social roles; Gilbert, 2002). As outlined by this approach, humans develop a series of specific cognitive competencies (e.g., symbolic representation, theory of mind and metacognition; Gilbert, 2002, 2003), destined to make us highly responsive about other's perceptions on the self. Thereby, when the individual faces certain personal characteristics (e.g., being lazy), attributes (e.g., physical aspects) or behaviors (e.g., impulsivity) as unattractive and as potential pull factors of rejection and ostracism by others (Gilbert, 2000; Pinto-Gouveia, Ferreira & Duarte, 2012; Tangney & Fischer, 1995), he/she may react by activating a set of basic defensive behaviors, built during a response of shame (Gilbert, 2000, 2002). In this context, shame arises in the dynamics of competition for social attractiveness, to avoid possible negative social outcomes, alerting the individual to the risk of being rejected (Cunha et al., 2012; Gilbert, 2007; Gilber & Andrews, 1998; Gilbert & Irons, 2009).

According to Gilbert & Thompson (2002), being poorly treated by others due to physical appearance works therefore, as a risk factor to develop body dissatisfaction and to experience shame, in the sense that this communicates a message to the teasing victim that her peer group finds her physically unattractive and therefore, inferior and target of rejection. When the reasons that lead to social rejection are internalized, children tend to implicate themselves as the source of the rejection, and are likely to become disappointed or distressed by their body aspects that elicit rejection, developing negative views about the self (Harder & Greenwald, 2000). The

fact that these dynamics occur in such an early life's stage, communicates to these girls the message that their appearance will most likely determine how their peers will treat them. In this context, weight-control strategies (e.g., eating restraint, physical exercise), are likely to emerge as a means of avoiding social threats and feelings of shame.

Shame, in all its dimensions, has consistently been associated with psychological impairment and the development and maintenance of mental health problems in adults (Ashby, Rice, & Martin, 2006; Cunha et al., 2012; Lourenço, Palmeira, Dinis & Pinto-Gouveia, 2010; Matos, 2012; Matos & Pinto-Gouveia, 2010; Matos, Pinto-Gouveia & Duarte, 2012; Pinto-Gouveia & Matos, 2011; Kim, Thibodeau, & Jorgensen, 2011). Also, recent studies suggest that shame and shaming experiences play a crucial role in adolescents' health and well-being and in the vulnerability to psychopathology (Äslund, Nilsson, Starrin, & Sjöberg, 2007; Cunha, et al., 2012), namely depression (Cunha, et *al.*, 2012; Rubeis & Hollenstein, 2009).

Furthermore, the notion that shame plays a key role in the development and maintenance of body image and eating-related difficulties has been well documented in the literature (Burney & Irwin, 2000; Cooper, Todd & Wells, 1998; Gee & Troop, 2003; Gilbert & Miles, 2002; Grabhorn, Stenner, Stangier, & Kaufhold, 2006; Hayakia, Friedmana, & Brownellb, 2002; Murray, Waller & Legg, 2000; Sanftner, Barlow, Marschall & Tangney, 1995; Swan & Andrews, 2003; Troop, Allan, Serpall & Treasure, 2008).

To sum up, because attractiveness is an essential component of female gender roles (e.g., Ferreira, Pinto-Gouveia & Duarte, 2011, 2013), girls and young woman may come to view their bodies as objects intended to achieve important social aims (e.g., belonging to a group, being appreciated or chosen for important roles, instead of being rejected or bullied; Lunde, & Frisén, 2011; McKinley, 1999). When individuals perceive that their physical appearance does not fit into society's unrealistic or even unreachable representation of the thinness ideal, and may be in the root of rejection or attack behaviors by others, they are likely to experience shame about their physical appearance – body shame. This focus of shame on the body has been highlighted as an important predictor of disordered eating

symptomology (Burney & Irwin, 2000; Fredickson & Noll, 1998).

In particular, this emotion can equally have a detrimental interference in the developmental milestone of adolescence (Rodin, Silberstein & Striegel-Moore, 1984), since this developmental stage implies a series of body transformations (e.g., increased body fat) that might fend off adolescent from the ideal of thinness and beauty. In fact, body shame has been associated with early maturation amongst adolescent girls (Attie & Brooks-Gunn, 1989; O'Dea & Abraham, 1999), with research suggesting that this emotion is likely to have profound effects on body image, eating behaviors and overall psychological functioning (Troop et al., 2008). In agreement, proneness to shame in relation to one's body is the strongest predictor of the severity of eating disorder symptomatology in female adolescents (Burney & Irwin, 2000).

Several studies have emphasized the relationship between bullying and appearance-related bullying and teasing (from peers and parents) and eating psychopathology (e.g., Haines, Neumark-Sztainer, Eisenberg & Hannan, 2006; Levine, Smolak & Hayden, 1994), as well as the relationship between shame and body shame and eating psychopathology (e.g., Swan & Andrews, 2003; Troop, Allan, Serpall & Treasure, 2008). Nonetheless, research on the role of early negative interactions from peers or parents on body shame in adolescence, a critical time period for the onset of eating psychopathology (Machado et al., 2004; Stice & Agras, 1998), remains scarce. Moreover, specially in adolescents, few studies have focused on the mechanisms underlying the relationship between physical appearance-related teasing and disordered eating behaviors (Sweetingham, & Waller, 2008). Furthermore, it also remains unexplored whether the more particular and focused on the body the bullying experience is, the more it relates to eating psychopathology.

To address some of these research gaps, the current study sought out to answer the aforementioned questions by exploring the relationship between peers' interactions (more particularly experiences of being bullied by peers for nonspecific reasons), appearance-related bullying and teasing, not only by peers but also by parents, eating psychopathology, and body shame in a sample of young adolescent girls. In this line of reasoning, this

study was designed to understand the means through which early negative interactions, such as being victim of bullying by peers or being teased regarding one's physical appearance by peers or by parents, impact on eating disordered symptoms. Thus, the mediator effect of body shame on the relationship between bullying and appearance-related bullying and teasing and eating psychopathology symptoms, was tested. Besides that, this study aimed at clarifying which is the best predictor of eating psychopathology, weather being victimized because of nonspecific reasons, or being teased or bullied regarding one's physical appearance, by peers or by parents.

Taken together the above theoretical and empirical accounts, we hypothesize that the more specifically focused on one's physical appearance the bullying is, the more it will relate to eating psychopathology. Moreover, we predict that appearance-related bullying and teasing from peers hold greater explanatory power on the severity of eating disordered symptomatology, rather than appearance-related teasing from parents. Moreover, it is expected that adolescents whose experiences of being bullied and teased in relation to their physical appearance are perceived as more frequent and intense, will show greater levels of eating disordered symptomatology through the effect of shame concerning their physical appearances, meaning body shame.

II - Method

Participants

Participants of this cross-sectional study are part of a wider investigation that is being conducted to longitudinally identify protective and vulnerability factors for eating psychopathology in young adolescent girls. Participants in this study were 437 female adolescents, from the Portuguese student population. They present ages ranging from 12 to 16. The participants' age mean is 13.75 (*SD* = 0.75) and all participants are single (*n* = 437). The years of education range between 8 (*n* = 226; 51.7%) and 9 (*n* = 211; 48.3%) with a mean of 8.48 (*SD* = 0.50). Participants were recruited from 13 middle schools (urban and rural areas) from Viseu, Coimbra and Castelo Branco districts, centro region, Portugal.

In this sample, 285 participants (65.2%) reported living with parents and siblings; 101 (23.1%) reported living with parents; and 51 (11.7%) reported living with parents, siblings and grandparents. Most of the sample (*n* = 188; 43%) reported belonging to a low socioeconomic level (determined by socioeconomic status of the father), while 30.7% (*n* = 134) reported belonging a medium socioeconomic level, and 26.3% (n = 115) reported a high socioeconomic level.

Height of participants ranged from 1.30 m to 1.80 m (Mheight = 1.61, *SD* = 0.06) and weight from 32 Kg to 98 Kg (Mweight = 52.98, *SD* = 8.58). The subjects calculated Body Mass Index (BMI) mean was 20.53 (*SD* = 3.03), with a minimum of 13.28 and a maximum of 35.14. Sixty-nine point three per cent (*n* = 303) of the sample have a BMI within normal range (18.5 kg/m2 < BMI < 25 kg/m2). One point four per cent (*n* = 6) are classified as very severely underweight, 2.3% (*n* = 10) are classified as "severely underweight", 20.1% (*n* = 88) are classified as "underweight", 6% (*n* = 26) are classified as "overweight" and 0.9% (*n* = 4) are "obese" (WHO, 1995).

Measures

Sociodemographic Data

Information included age, educational status, area of residence, household, caregivers' occupation, height, current weight and desired weight.

Body Mass Index (BMI) – Body Mass Index was calculated dividing current weight (in Kilograms) by height squared (in Meters): $kg/m^{2.}$

Figure Rating Scale (FRS, Thompson & Altabe, 1991; Portuguese version by Ferreira, 2003). FRS consists of a sequence of nine images of different body silhouettes, numbered from 1 to 9, destined to provide a measure of body image dissatisfaction. Respondents are asked to select the image that best indicates their current body image and size, their ideal body image, the silhouette they perceive to have most of the time, the most socially valued silhouette, and the most attractive silhouette to the opposite sex. This scale shows good test-retest reliability and convergent and

divergent validity (Thompson & Altabe, 1991).

Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994; Portuguese version by Machado et al., 2007). EDE-Q is a self-report questionnaire designed to identify and quantify clinical levels of eating psychopathology and to access aspects of eating disordered symptomatology. EDE-Q holds the format of the EDE, particularly in respect of four subscales: eating concern; shape concern; weight concern and restraint, as well as an overall score, which is the average of the four subscales. The EDE-Q focuses on the past 28 days and is scored using a 7-point Likert scale. This scale includes 36 items such as "Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?". Several studies show that the EDE-Q has good psychometric properties, particularly in studies with adolescents (Wade, Byrne, Bryant-Waugh, 2008; for a review see Fairburn, 2008).

Body Image – Bullying and Teasing scale – Adolescent version BI-BTS-A (Duarte & Pinto-Gouveia, 2012). This scale was projected to evaluate experiences of being target of teasing or aggressive behaviours related to physical appearance by peers (e.g., "my colleagues name-call me because of my weight or body shape), parents or other care givers (e.g., my mother made negative comments about my weight or body shape). The scale assesses two domains of body image-related teasing and bullying: frequency of the occurrence of the experiences; and intensity or emotional impact of the experiences. The scale is composed by 18 items and the subjects are instructed to answer using a 5-point Likert scale, in which 1 corresponds to 'never' and 'nothing', and 5 corresponds to 'very often' and 'very much' in the frequency and intensity domain, respectively. Preliminary evidence suggests that this scale presents good psychometric properties (Duarte & Pinto-Gouveia, 2012).

The Peers Relations Questionnaire for children (PRQ; Rigby & Slee, 1993; Portuguese version of Silva & Pinheiro, 2010). PRQ for children was designed to assess the tendency of children to relate to their peers. This is a

20-item self-report measure consisting of three subscales: "tendency to be victimized" that expresses a child with tendency to be a victim, regarding its submissive and insecure character ("I get picked on by other kids"); tendency to bully others which expresses a hostile personality and a tendency to act aggressively towards other children ("I like to make other kids scared"); prosocial tendency which assesses propensity to relate to others in a prosocial and cooperative way, valuing friendship and spirit of helpfulness ("I share things with others"); and 5 more filling items ("I like to play sports"). Items are rated in a 4-point Likert scale ranging from 1 (never) to 4 (very often). The original version of this measure shows an acceptable internal consistency with Cronbach's alpha values ranging from .75 to .78 for tendency to bully others (.78 in the Portuguese version); from .86 to .78 for tendency to be victimized (.84 in the Portuguese version), and from .71 to .74 for prosocial tendency (.68 in the Portuguese version), respectively. The Portuguese adolescent version shows good internal consistency for tendency to be victimized and an acceptable internal consistency for tendency to be victimized and Prosocial Tendency.

Body Image Shame Scale – Adolescents version (BISS – A; Duarte, Ferreira & Pinto-Gouveia, 2010). BISS is a 17-item scale designed to measure the body image shame, containing statements that address experiences or feelings of shame regarding one's body image. The scale assesses two domains of body shame: body image concealment (destined to assess the need to conceal the body perceived as unattractive/defective), and social evaluations avoidance (destined to assess fear and avoidance regarding social situations in which physical appearance might be perceived as unattractive, thus, criticised by others). Items are rated in a 5-point Likert scale ranging from 0 (never) to 4 (very often). In the original version examined in adults (Duarte, Ferreira & Pinto-Gouveia, 2010) the scale reveals a high internal consistency with Cronbach's alpha values ranging from .89 to .90 regarding body image concealment and social evaluations avoidance, respectively. The total scale revealed a Cronbach's alpha value of .92. Preliminary evidence suggests that this scale presents good psychometric properties regarding the adolescents' version (Duarte & Pinto-

Gouveia, 2012). In the present study, only the total BISS scale will be considered.

Depression Anxiety and Stress Scale – adaptada adolescentes (DASS-21; Lovibond & Lovibond, 1995*; Portuguese version by Apóstolo, Mendes, & Azeredo, 2006; adapted for adolescents by Pais-Ribeiro, Honrado, & Leal, 2004).* This is a short version of Depression Anxiety and Stress Scale (DASS-42; Lovibond & Lovibond, 1995). This measure is a 21-item self-report scale designed to assess three dimensions of psychopathological symptoms: anxiety ("I was aware of dryness of my mouth"), depression ("I felt down-hearted and blue") and stress ("I found it hard to wind down"), with each subscale comprising seven items. Subjects are instructed to report the frequency of each item regarding the last week in a 4-point Likert scale ranging from 0 (Did not apply to me at all) to 3 (Applied to me most of the time). The original version of the scale (Lovibond and Lovibond, 1995) shows high internal consistency: .91 for Depression (.85 in the Portuguese version), .84 for Anxiety (.74 in the Portuguese version), and .90 for Stress (.81 in the Portuguese version). The adolescents' version of DASS-21 reveals similar internal consistency values (e.g., Mahmoud, Hall, & Staten, 2010).

The internal consistency values for all study variables are reported in Table1.

Table 1

Means, Standard Deviations and Cronbach Alpha values of the study variables (N = 437)

Variable	*M*	*SD*	α
EDEQ			
Restraint	1.03	1.28	.83
Eating Concern	0.97	1.18	.77
Shape Concern	1.92	1.68	.92
Weight Concern	1.82	1.56	.84
Total EDEQ	1.43	1.28	.95
BI_BTS			
Peers Frequency	1.50	.69	.88
Peers Intensity	1.55	.87	.91
Parents Frequency	1.15	.50	.87
Parents Intensity	1.22	.67	.90
PRQ			
Tendency to Bully Others	7.36	2.24	.74
Tendency to be Victimized	6.76	2.28	.78
Prosocial Tendency	12.22	2.28	.62
BISS			
Total BISS	0.98	0.93	.96
DASS			
Depression	4.71	5.22	.91
Anxiety	3.99	4.47	.87
Stress	5.73	5.04	.90

Note. EDEQ = Eating Disorder Examination Questionnaire; BI_BTS = Body Image – Bullying and Teasing Scale; PRQ = Peers Relations Questionnaire for children; BISS = Body Image Shame Scale; DASS = Depression Anxiety and Stress Scale.

Procedures

Participants in this study were female students recruited from 13 middle and high schools from Viseu, Coimbra and Castelo Branco districts, centro region of Portugal.

The request for collaboration of the aforementioned institutions was officially issued by CINEICC (Cognitive-Behavioral Research Centre), headquartered at the Psychology Faculty, University of Coimbra. The authorization to proceed with the research from the relevant authorities

(DGI-DC [Directorate-general for Curriculum Innovation and Development] and National Commission for Data Protection) was obtained. After proper clarification about the research aims and the importance of cooperation to the scientific community, the consent of the involved education institutions' boards was obtained and they issued an authorization for the voluntarily participation of the subjects.

An informed consent form was delivered to the potential subjects containing full disclosure of the nature of the research and the participants' involvement and voluntary choice to participate. Since the research population included participants less than 18 years old, a parental permission form was attached so that caregivers could become aware of the research and authorize their children's collaboration, being the collection of this document a prerequisite for the participation of the subjects in the study.

All participants were given a battery of self-report questionnaires, administered in the same order, during a lecture previously scheduled with the respective educational institution board. In line with ethical requirements, before they filled in the measures, participants received previous clarification about the procedures and the study's general goals and it was again emphasized that their cooperation was voluntary, and that their answers were confidential and only used for the purpose of the study. The battery of questionnaires took approximately 35 minutes to complete.

Furthermore, anthropometric data (e.g., weight in Kilograms and height in Meters) was also collected. Weight was measured using a calibrated floor scale and a wall-mounted stadiometer standing was used to measure participants' height[1].

Data Analyses

Statistical analyses were conducted using SPSS (v.21; SPSS Inc., Chicago, IL, USA). Descriptive statistics were performed to describe the samples' demographic characteristics and variables' means and standard deviation values.

Product-moment Pearson correlation analyses were conducted to

[1] Ten percent of these data were obtained by self-report measures, due to the impossibility of collecting them at schools.

examine the relationship between the studied variables. Correlations around .10 were considered small or negligible, correlations higher than .30 were considered moderate, and correlations at or above .50 were considered large (Cohen, 1992).

A multiple regression model was conducted to identify the main global predictor of eating psychopathology (dependent, criterion variable). For such, tendency to be victimized (assessed by the PRQ; Silva & Pinheiro, 2010), frequency of being bullied or teased by peers and frequency of being bullied or teased by parents (as measured by the BI-BTS; Duarte & Pinto-Gouveia, 2012) were respectively entered as independent variables. A similar multiple regression analysis was conducted, in which the impact of being teased/bullied by peers, impact of being teased/bullied by parents, along with tendency to be victimized, were respectively entered as independent variables, to predict eating psychopathology.

Furthermore, linear regression models were used to test the effects of a mediator on the relationship between two variables. Thus, two mediator models were conducted, destined to explore the relationship between general bullying and appearance-related bullying and teasing, and eating psychopathology in young adolescent girls, mediated by body shame.

Analysis testing for the mediating effect of body shame followed the linear regression model by Baron and Kenny (1986). According to them, a variable functions as a mediator when it meets the following conditions: general bullying (on the first model) and appearance-related bullying and teasing (on the second model; predictor variables) significantly regress with eating psychopathology (dependent variable); general bullying, and appearance-related teasing (predictor variables in the two distinct models), significantly regress with body shame (mediator); and general bullying, and appearance-related teasing (predictor variables), and body shame (mediator) significantly regress on the outcome (eating psychopathology). The final step of the mediation should demonstrate a significant reduction in the predictive relation of general bullying, and appearance-related teasing on eating psychopathology, after accounting for the variance attributed to body shame, when it is added to each model. Further, Sobel Test was used to analyse the amount of mediation (indirect effect), which determines the

significance of the indirect effect of the predictor variables (general bullying on the first model, and appearance-related teasing, on the second model) on the outcome (eating psychopathology), through its effect on the mediator (body shame).

Effects with p <.050 were considered statistically significant (Cohen, Cohen, West, & Aiken, 2003).

III - Results

Preliminary data analyses

In order to examine the violation of test assumptions, preliminary data analyses were performed. The normality of the distribution was assessed by the values of Skewness and Kurtosis (|Sk |< 3 e |Ku| < 7), indicating values between the reference cut-points.

Tests destined to assess the adequacy of the data to conduct regression analyses revealed absence of multicolinearity, since the Variance Inflation Factor (VIF) values indicated the absence of ß estimation problems (VIF < 5). Furthermore, analyses of residuals scatter plots revealed normal distributions, linearity and homoscedasticity. Moreover, graphical inspection of distributions supported their acceptability (Tabachnick & Fidel, 2007). Finally, the independence of the errors was analysed and validated, with Durbin-Watson values between 1.705 and 1.959.

Therefore, results show that the data are suitable for regression analyses.

Pearson product-moment correlations

The Relationship between Eating Psychopathology, Peers Relations, Body Image – Bullying and Teasing, Body Shame, General psychopathology, BMI and Body Dissatisfaction Variables

Table 2 illustrates the *Pearson* product-moment correlations between eating psychopathology (restriction, eating concern, shape concern, weight concern, an overall score, and binge eating, measured by Eating Disorder Examination Questionnaire [EDE-Q]), peers relations (tendency to be

victimized, tendency to bully others and prosocial tendency, measured by the Peers Relations Questionnaire for children [PRQ]), body image-related bullying and teasing (frequency and impact of being teased and bullied regarding one's physical appearance, by peers or parents, measured by Body Image – Bullying and Teasing Scale [BI-BTS]), body shame (measured by Body Image Shame Scale [BISS]), depression, anxiety and stress (measured by Depression Anxiety and Stress Scale [DASS-21]), BMI (Body Mass Index), and body dissatisfaction (measured by Figure Rating Scale [FRS]).

EDEQ total scale revealed positive strong correlations with frequency and impact of being teased and bullied regarding one's physical appearance by peers (BI-BTS subscales) and with body shame (BISS). The total scale revealed moderated positive correlations with frequency and impact of being teased and bullied regarding one's physical appearance by parents (BI-BTS subscales) and tendency to be victimized (PRQ subscale). A positive negligible correlation was verified between EDEQ total scale and tendency to bully others (PRQ subscale). Results showed that binge eating was positively and moderately correlated with parents frequency and intensity of being teased (BI-BTS subscales), while the correlation was low regarding peers frequency and intensity (BI-BTS subscales).

Body dissatisfaction (measured by FRS) revealed low correlations with PRQ and BI-BTS scales. Regarding EDEQ subscales and body shame, body dissatisfaction revealed moderate to high correlations.

The tendency to be victimized revealed moderate to high positive correlations with BI-BTS subscales (except with parents intensity subscale, which reveals a low positive correlation), with body shame (BISS), and with all EDEQ subscales (excluding item 18 and restraint, which revealed positive low correlations). Tendency to bully others is significantly correlated with all BI-BTS subscales and with all EDEQ subscales (except restraint subscale). However, these correlations have a low magnitude. As expected, prosocial tendency subscale does not correlate significantly with any measure, excepting with tendency to bully others and binge eating (with a negative negligible significant correlation)

Frequency of being teased by peers (BI-BTS subscale) reveals a high positive correlation with the tendency to be victimized (PRQ subscale), with

body shame (BISS), and with shape and weight concern (EDEQ subscales). The same subscale shows moderated and positive correlations eating restraint and eating concern (EDEQ subscales). The subscale shows low positive correlations with the tendency to bully others (PRQ subscale), and with binge eating (assessed by the EDEQ). Regarding the Peers Intensity BI-BTS subscale, the results are similar, although slightly lower.

Concerning the Parents Frequency and Intensity BI-BTS subscales, results indicate correlations with a lower magnitude (although significant), standing out the positive and moderated correlations between the tendency to be victimized (PRQ subscale), body shame (BISS), and EDEQ subscales (although the magnitude of correlation was lower regarding the restraint subscale).

Finally, BMI and negative affect dimensions (depression, anxiety and stress) indicate negligible to moderate correlations with the remaining variables, respectively.

Regression Analyses

According to our main hypotheses and given the correlation analyses' results, further relationships between the study variables were explored, resorting to a series of linear multiple regression models.

Model 1 - The mediation effect of body shame on the relationship between tendency to be victimized and global eating psychopathology.

A series of regression analyses were conducted to test the theoretical model according to which we assumed that tendency to being victim of bullying (subscale of PRQ) indirectly affects global eating psychopathology in adolescent girls (assessed by EDEQ global score), through the mediating effect of body shame (assessed by the BISS).

Table 2

Pearson Product-moment Correlation Coefficients between Study Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. EDEQ_Total	—																		
2. EDEQ_Restraint	.79**	—																	
3. EDEQ_Eating	.90**	.65**	—																
4. EDEQ_Shape	.95**	.62**	.83**	—															
5. EDEQ_Weight	.94**	.60**	.79**	.92**	—														
6. Binge_Eating	.34**	.14**	.38**	.36**	.33**	—													
7. PRQ_Bully	.12*	.08	.16**	.10*	.11*	.12*	—												
8. PRQ_Victim	.39**	.24**	.37**	.41**	.35**	.22**	.35**	—											
9. PRQ_Prosocial	-.03	-.01	-.04	-.02	-.04	-.01**	-.25**	-.08	—										
10. BTS_Peers_F	.53**	.35**	.48**	.53**	.51**	.27**	.17**	.54**	-.04	—									
11. BTS_Peers_I	.52**	.35**	.46**	.53**	.51**	.27**	.11*	.49**	-.04	.88**	—								
12. BTS_Parents_F	.40**	.26**	.40**	.39**	.39**	.32**	.29**	.30**	-.09	.52**	.50**	—							
13. BTS_Parents_I	.43**	.27**	.41**	.41**	.44**	.36**	.19**	.27**	-.08	.45**	.56**	.86**	—						
14. BISS_Total	.71**	.41**	.64**	.76**	.71**	.35**	.09	.44**	-.07	.54**	.57**	.41**	.44**	—					
15. DASS_Dep	.53**	.33**	.52**	.54**	.51**	.26**	.23**	.45**	-.10*	.46**	.49**	.38**	.39**	.57**	—				
16. DASS_Anx	.48**	.30**	.49**	.48**	.45**	.18**	.21**	.46**	-.06	.49**	.49**	.36**	.34**	.52**	.77**	—			
17. DASS_Stress	.49**	.28**	.49**	.49**	.46**	.22**	.21**	.42**	.02	.49**	.50**	.34**	.35**	.52**	.82**	.83**	—		
18. BMI	.32**	.19**	.24**	.32**	.36**	.09	-.01	.05	-.06	.16**	.17**	.21**	.24**	.28**	.06	.07	.06	—	
19. B_Dissatisf	.55**	.43**	.46**	.53**	.54**	.11*	.04	.23**	-.07	.23**	.24**	.17**	.23**	.38**	.21**	.22**	.22**	.45**	—

Note. EDEQ_Total = Eating Disorder Examination Questionnaire Total Scale; EDE_Eating = Eating Concern; EDE_Shape = Shape Concern; EDE_Weight = Weight Concern; PRQ_Bully = Peers Relations Questionnaire for children - Tendency to bully others; PRQ_Victim = Tendency to be victimized; PRQ_Prosocial = Prosocial Tendency; BTS_Peers_F = Body Image - Bullying and Teasing Scale – Peers Frequency; BTS_Peers_I = Peers Intensity; BTS_ Parents_ F = Parents Frequency; BTS_Parents_I = Parents Intensity; BISS_Total = Body Image Shame Total Scale; DASS_Dep = Depression Anxiety and Stress Scale – Depression; DASS_Anx = Anxiety; BMI = Body Mass Index; B_Dissatisf = Body Dissatisfaction.
* $p < .05$. * * $p < .01$.

Firstly, we tested the aforementioned model entering tendency to be victimized as an independent variable and eating psychopathology as a dependent variable. Results showed that the tendency to be victimized was a significant predictor of eating psychopathology, explaining a total of 15% of its variance. Step 2 showed that the tendency to be victimized significantly predicted the mediator, body shame, explaining a total of 19 % of its variance. Finally, tendency to be victimized and body shame were entered as independent variables predicting eating psychopathology (dependent variable). Results revealed that body shame emerges as a partial mediator on the association between tendency to be victimized and eating psychopathology (β decreased from .39 to .10; $z = 8.77$; $p < .001$). This model explains 51 % of eating psychopathology variance. Further results are presented in Table 3.

Table 3

The mediation effect of body shame on the relationship between tendency to be victimized and global eating psychopathology

Measures	β	*t*	*p*	*F*	*p*	*Adjusted* R^2	ΔR^2
Tendency to be victimized (PRQ)	.39	8.77	.000				
D. V. - Eating psychopathology (EDE)				76.90	.000	.15	
Tendency to be victimized (PRQ)	.44	10.14	.000				
D. V. - Body shame (BISS)				102.90	.000	.19	
Tendency to be victimized (PRQ)	.10	2.54	.011	228.36	.000	.51	.51
Body shame (BISS)	.67	17.97	.000				
D. V. - Eating psychopathology (EDE)							

Note. EDEQ = Eating Disorder Examination Questionnaire; PRQ = Peers Relations Questionnaire for children; BISS = Body Image Shame Scale.
D. V. = Dependent Variable

Model 2 – Multiple regressions with tendency to be victimized, frequency/impact of being bullied or teased by peers and frequency/impact of being bullied or teased by parents entered as predictor variables of global eating psychopathology

Given the previous results and in order to understand if body image-related bullying and teasing had a higher explanatory power than general bullying in eating psychopathology, two multiple regression analyses were conducted.

The first multiple regression analysis was conducted with the tendency to be victimized and frequency of being bullied or teased by peers and parents as independent variables to predict global eating psychopathology.

Regression analyses' results revealed that frequency of being bullied or teased by peers subscale emerged as the best global predictor of eating psychopathology, followed by parents' frequency subscale, and, finally, by the overall tendency to be victimized (for nonspecific reasons) by peers. So, when the effect of the tendency to be victimized is controlled for, although it remains a significant predictor ($p < .001$), it loses explanatory power in the presence of other variables and the specific measure of bullying regarding physical appearance (by peers) emerges as the best global predictor of eating psychopathology in young adolescent girls.

The same multiple regression analysis was conducted but now considering the emotional impact of the experience of being bullied or teased about one's physical appearance. The tendency to be victimized and both peers and parents impact (body image – bullying teasing's subscales) were entered as independent variables (controlling each other effect) to predict global eating psychopathology, showing similar results, meaning peers impact subscale emerges as the best global predictor of eating psychopathology, followed by parent's impact subscale and the tendency to be victimized subscale.

Model 3 - The mediation effect of body shame on the relationship between frequency and impact of being teased or bullied by peers and global eating psychopathology

Given the previous findings and according to our main assumptions, a series of linear regression analyses were conducted to examine the associations between the frequency and impact of being teased or bullied by peers because of one's physical appearance (which emerged as the best predictor on the prior analyses) and eating psychopathology, mediated by feelings of shame about one's body.

In step 1, we tested the aforementioned theoretical model entering frequency of being teased or bullied by peers regarding one's physical

appearance as an independent variable and eating psychopathology as a dependent variable. Results showed that frequency of being teased or bullied by peers was a significant predictor of eating psychopathology, explaining a total of 28% of its variance. In step 2, it was confirmed that frequency of being teased or bullied by peers was a significant predictor of body shame, explaining a total of 29% of its variance. Finally, body image related-teasing frequency and body shame were entered as independent variables predicting eating psychopathology (dependent variable) and results indicated that body shame emerges as a partial mediator on the association between frequency of being teased or bullied by peers and eating psychopathology (β decreased from .53 to .20; $z = 10.13$; $p < .001$). This model explains 53% of eating psychopathology variance.

Table 4

The mediation effect of body shame on the relationship between frequency of being teased or bullied by peers and global eating psychopathology

Measures	β	*t*	*p*	*F*	*p*	*Adjusted* R^2	ΔR^2
Teasing frequency by peers (BI_BTS)	.53	12.89	.000				
D. V. - Eating psychopathology (EDE)				166.17	.000	.28	
Teasing frequency by peers (BI_BTS)	.54	13.44	.000				
D. V. - Body shame (BISS)				180.60	.000	.29	
Teasing frequency by peers (BI_BTS)	.20	5.10	.000	248.16	.000	.53	.53
Body shame (BISS)	.60	15.47	.000				
D. V. - Eating psychopathology (EDE)							

Note. EDEQ = Eating Disorder Examination Questionnaire; BI_BTS = Body Image – Bullying and Teasing Scale; BISS = Body Image Shame Scale.
D. V. = Dependent Variable

Finally, the same model was tested replacing frequency of being teased or bullied by peers' variable by the impact of being teased or bullied by peers. Therefore, the first step showed that the impact of being teased or bullied by peers was a significant predictor of eating psychopathology, explaining a total of 27% of its variance. Then, it was confirmed that the impact of being teased or bullied by peers was a significant predictor of body shame, explaining a total of 33% of its variance. Again, results indicated that body shame emerges as a partial mediator on the association between impact of being teased or bullied by peers and eating psychopathology (β decreased from .52 to .17; $z = 10.51$; $p < .001$). This

model explains 52% of eating psychopathology's variance.

Table 5

The mediation effect of body shame on the relationship between impact of being teased or bullied by peers and global eating psychopathology

Measures	β	*t*	*p*	*F*	*p*	*Adjusted* R^2	ΔR^2
Teasing impact by peers (BI_BTS)	.52	12.68	.000				
D. V. - Eating psychopathology (EDE)				160.85	.000	.27	
Teasing impact by peers (BI_BTS)	.57	14.53	.000				
D. V. - Body shame (BISS)				211.24	.000	.33	
Teasing impact by peers (BI_BTS)	.17	4.16	.000				
Body shame (BISS)	.62	15.24	.000	239.35	.000	.52	.52
D. V. - Eating psychopathology (EDE)							

Note. EDEQ = Eating Disorder Examination Questionnaire; BI_BTS = Body Image – Bullying and Teasing Scale; BISS = Body Image Shame Scale.
D. V. = Dependent Variable

IV – Discussion

Adolescence is a crisis period characterized by several developmental changes including, amongst others, a social world focus on peer-group interactions (Cunha et *al.*, 2012; Salmela-Aro, 2011). Whereby, as adolescents get more perceptive of the images they convey, they may become vulnerable to fear of rejection, thus, more willing to manipulate personal aspects that might be triggering negative evaluations among peers (e.g., physical appearance; Gilbert, 2002; Wolfe, Lennox, & Cutler, 1986). In this sense, adolescence represents a critical time in respect to the development of problems related to body shame, eating disorders, and proclivity to peer rejection, bullying or teasing (e.g., Gilbert, 2002; Gilbert & Irons, 2009; Haines et al., 2006).

The relationship between shame and eating disordered symptomology among adolescent girls has been recognized in literature (e.g. Burney & Irwin, 2000; Gilbert & Miles, 2002; Troop, Allan, Serpall & Treasure, 2008). Particularly, body shame seems to be a central emotion when it comes to eating psychopathology (e.g. Burney & Irwin, 2000; Gilbert, 2002; Goss & Allan, 2009; Fredickson & Noll, 1998). Moreover, experiences of bullying and teasing regarding one's physical appearance have been linked

to eating disordered patterns in adolescent girls (e.g. Bond et *al.*, 2001; Haines et *al.*, 2006; Libbey et al. 2008). Although the relationship between body shame and bullying or appearance-related teasing has been the target of theorization (Gilbert, 2002), empirical support remains scarce, as well as the research on potential mediators of the relationship between bullying or appearance-related teasing and disordered eating behaviors.

In this line of reasoning, the present study aimed at exploring the relationship between bullying and appearance-related teasing, body shame and eating psychopathology in a sample of adolescent girls.

In line with our predictions and consistent with previous considerations (e.g. Burney & Irwin, 2000; Gilbert, 2002; Goss & Allan, 2009; Fredickson & Noll, 1998) body shame was found to be positively and significantly correlated to eating disordered symptoms. Bullying and appearance-related teasing and body shame revealed moderate to high correlations, respectively. These results add to the scarce literature up to date on this respect, showing that adolescents subject to bullying and/or appearance-related teasing by peers and parents, are likely to become more vulnerable to feelings of body shame, which have been linked to eating psychopathology (e.g. Bond et *al.*, 2001; Haines et *al.*, 2006; Libbey et al. 2008).

Moreover, to be victimized about nonspecific reasons (general bullying) was significantly, positively correlated to disordered eating symptoms. This is consistent with previous research that showed that bullying and eating psychopathology are related to each other in adolescent girls (Bond et *al.*, 2001).

Furthermore, appearance-related bullying and teasing by peers was significantly and positively associated with eating disordered symptomatology. Although in a lesser degree, appearance-related bullying and teasing by parents was also significantly positively associated with eating disordered symptomatology. These findings corroborate previous research that have emphasized the relationship between eating psychopathology and appearance-related teasing by peers (e.g., Cattarin & Thompson, 1994; Haines et *al.*, 2006; Libbey et al. 2008; Wetheim, Koerner, & Paxton, 2002.) and parents (e.g. Levine, Smolak & Hayden, 1994;

Shisslack et al., 1998; Thompson & Sargent, 2000).

In particular, a trend worth highlighting is that intensity subscales of appearance-related teasing by peers and parents are associated in a higher degree with body shame, than the frequency subscales of appearance-related teasing by peers and parents. This suggests that, when it comes to experience feelings of body shame, the intensity felt during the experience of being teased regarding one's physical appearance, has a slightly higher impact on shame, though, not so significant that presupposes two different roles between frequency and intensity

In sum, results of current study add to the existent literature and research fields, revealing that being victim of bullying for nonspecific reasons and appearance-related bullying and teasing by peers and/or parents are associated to body shame, and that body shame is related to eating psychopathology, in adolescent girls. Indeed, correlation analysis have contributed significantly to the state of the art regarding the association between variables such as general bullying, appearance-related teasing by peers and parents, body shame, eating psychopathology.

Furthermore, this study aimed at understanding the means through which early negative interactions, such as being victim of bullying or being teased regarding one's physical appearance by peers or by parents, impact on eating disordered symptoms in young adolescent girls. The raised hypothesis focuses on the possibility of body shame performing a mediating role in the aforementioned relationships. Furthermore, and according to our predictions, even though general bullying has a significant impact upon overall levels of eating psychopathology, the more focused on the image the bullying is, the more it relates to eating psychopathology. Finally, it was predicted that appearance-related teasing from peers would hold greater explanatory power on the severity of eating disordered symptomatology, rather than appearance-related teasing from parents.

As such, the first series of regression analysis tested the mediation effect of body shame on the relationship between tendency to be victimized and global eating psychopathology. Results revealed, consistent with prior hypothesis, that higher levels of victimization may elicit higher levels of body shame and that bullying had a direct effect in global eating

psychopathology, but also an indirect effect, explaining eating psychopathology' variance partially through the presence of increased body shame. These results are in line with, and extend previous research that found associations between adolescents' eating psychopathology and bullying (Bond et *al.,* 2001) and shame (e.g. Burney & Irwin, 2000; Gilbert, 2002; Goss & Allan, 2009; Fredickson & Noll, 1998).

Furthermore, multiple regression analyses results showed that frequency and intensity of appearance related bullying and teasing (a more particular form of bullying focused on body image aspects) by peers emerged as the best predictors of eating psychopathology, immediately followed by frequency and intensity of being teased regarding one's physical appearance by parents, and tendency to be victimized (which reflects the perception of being bullied about nonspecific reasons), a general type of bullying, at last. Thus, our hypothesis were confirmed revealing that being a victim of appearance-related bullying and teasing by peers hold greater explanatory power on the severity of eating disordered symptomatology, rather than appearance-related bullying and teasing from parents. This can be understood in light of theoretical and empirical considerations that highlight that the period of adolescence comprises developmental tasks related to a movement of emancipation from parental tutelage, as well as an increase of focus of the social world on peer-group relationships (Cunha et *al.,* 2012; Salmela-Aro, 2011), with this social group gaining therefore a more preponderant role in the adolescents relationship regarding their physical appearance, in detriment of parental importance.

Hereupon, as an ultimate goal, this study aimed at understanding the mediator effect of body shame on the relationship between frequency and intensity of appearance-related bullying and teasing by peers (previously found to be the best predictors) and global eating psychopathology. Consistent with our predictions, results have shown a direct effect of both frequency and intensity of appearance-related teasing by peers in eating psychopathology. Moreover, this association was emphasized by the presence of body shame as a partial mediating variable. That is, being frequently teased or bullied by peers regarding one's physical appearance, with these experiences causing distress, lead to increased disordered eating-

related symptoms, partially via how such experiences increase a sense of shame in relation to one's body. These results seems to be in line with previous research that found associations between adolescents' eating psychopathology and appearance-related bullying and teasing by peers (e.g., Cattarin & Thompson, 1994; Haines et *al.*, 2006; Libbey et al. 2008; Wetheim, Koerner, & Paxton, 2002), and shame (e.g., Burney & Irwin, 2000; Gilbert, 2002; Goss & Allan, 2009; Fredickson & Noll, 1998).

Also, these resultant findings happen to be consistent to previous theorization and research (Gilbert, 2002; Sweetingham & Waller, 2008). In fact, being poorly treated by others is likely to work as a risk factor to experience shame, to the extent that chronic and severe appearance-related bullying and teasing (a common type of harassment among adolescent girls; Neumark-Sztainer et *al*., 2002; Puhl & Luedicke, 2011) conveys the message to the victim that her peer group finds her physically unattractive and that her appearance will most likely determine peers acceptance. This reading may elicit a negative view of the self as inferior and unattractive (cognitions theoretically linked to feelings of shame; Gilbert, 2000) and may increase the focus and distress about the body aspects that elicit rejection, that is, fueling body shame. Given these considerations, the adolescents' perception of being seen as unattractive as a social agent might trigger a set of eating disordered behaviors, in order to reverse the threat triggered by his/her physical unattractive features (such as belonging to an unfavorable social position; Gilbert, 2002).

To sum up, these findings suggest that, the more adolescent girls are target of appearance-related bullying and teasing by their social group, the more they become vulnerable to experience specific outcomes, such as body shame. Thus, higher the probability of engaging in eating disordered patterns. These findings seem to offer an important contribution respecting the association between appearance-related teasing and bullying and eating psychopathology, namely by clarifying the role of body shame on this association.

Some methodological limitations should be noted when interpreting our results. First, the cross-sectional nature of this study hinders to ascertain direction of causality. Thus, future studies should use a prospective design to

address the questions explored by the current study. Another limitation relates to the use of self-report measures to assess severity of eating psychopathology symptomatology, experiences of appearance-related teasing and bullying, and body shame, that may get compromised due to understanding and social desirability issues. However, at the beginning of each collection, detailed instructions were given to adolescents, emphasizing the assessment object of each measure and giving explanation about most complex items. Furthermore, during each collection, adolescents were always accompanied by the investigators, in order to answer to any issue. Moreover, measures included in this study were properly adapted to this population and reveal robust psychometric properties. In addition, given some adolescent features, such as emotional instability and the fact that they are going through a crisis phase, it can be that some of the states related by them are temporary or overrated. To circumvent these aspects, future research may privilege of prospective studies and other assessment methods, such as investigator-based interviews. Finally, this model should be tested in different samples (such as different genders, ages or clinical samples).

Notwithstanding the limitations above described, the study adds to the existing literature and has a series of clinical and research implications, regarding this developmental period. In sum, adolescents' in general could benefit of school-based preventive interventions intended to convey information about the perverse effects of bullying and teasing. In addition, appearance-related bullying and teasing should be assessed by health care providers, in order to identify adolescents at risk for body shame and eating disturbance. More particularly, adolescents' victims of bulling and teasing regarding their physical appearance should be tracked and forwarded to specific interventions. Besides this, it seems crucial to implement such interventions at familiar environments, aimed at promoting healthier relational styles between caregivers and adolescents.

The results of this study highlight the importance of shame in eating psychopathology, therefore support the need of a therapeutic focus on body shame issues, in adolescent girls (due to the vulnerability of this developmental stage in the development and maintenance of eating disorders). Perhaps, these interventions could benefit of insight about

deshaming and acceptance strategies regarding one's physical attributes, in order to attenuate the adverse effects of this construct. Moreover, and in order reduce the susceptibility to experience shame, adolescents' should be sensitized about the unrealistic nature of the ideals of beauty and thinness socially diffused, thus encouraged to view their bodies in a more compassionate way and accept their physical characteristics.

Finally, educational and health systems should, in cooperation, attempt to prevent and attenuate the prevalence of eating psychopathology problems amongst adolescents, through interventions focused on eating psychopathology risk factors, in order to promote their psychosocial health.

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