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Evaluating the effect of body dissatisfaction and body shame on eating psychopathology in young adolescence: The role of cognitive fusion, experiential avoidance and fear of self-compassion

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Dissertação de Mestrado em Psicologia na subárea de especialização em Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e da Saúde sob orientação do Professor Doutor José Augusto Pinto-Gouveia.

Evaluating the effect of body dissatisfaction and body shame on eating psychopathology in young adolescence: The role of cognitive fusion, experiential avoidance and fear of self-compassion.

Abstract

Over the years various studies have been conducted in order to investigate the impact and contribution of certain variables in the development of eating psychopathology, particularly among in the adolescent population. A wide range of studies associate shame and body image dissatisfaction with eating psychopathology, but few are those who use experiential avoidance, cognitive fusion and fear of compassion. Hence the relevance of these studies.

In order to investigate the effect of body image dissatisfaction in eating psychopathology mediated by body shame, experiential avoidance and cognitive fusion, model was examined through path analyses. On a second point, a mediation analysis was performed to study the role of fear of self-compassion on the relationship between body image dissatisfaction and body shame. The present studies were conducted in a sample of 437 young adolescent girls.

The findings suggested that body dissatisfaction increases eating psychopathology partially through increased levels of body shame, and through increased levels of cognitive fusion and experiential avoidance. Body shame was a significant predictor of eating psychopathology. Body shame arises as a result of increased body dissatisfaction and higher levels of fear of self-compassion.

Keywords: Body Image Dissatisfaction, Body Shame, Eating Psychopathology, Experiential Avoidance, Cognitive Fusion, Fears of Compassion, Adolescence.

Avaliação do efeito da insatisfação corporal e da vergonha corporal na psicopatologia alimentar na adolescência: O papel da fusão cognitiva, evitamento experiencial e medo da auto-compaixão.

Resumo

Ao longo dos anos, vários estudos têm sido realizados a fim de investigar o impacto e contribuição de algumas variáveis no desenvolvimento da psicopatologia alimentar, particularmente entre a população adolescente. Uma ampla gama de estudos associam a vergonha e insatisfação com a imagem corporal à psicopatologia alimentar, mas poucos são aqueles que usam o evitamento experiencial e a fusão cognitiva e o medo da compaixão. Daí a relevância desses estudos.

A fim de investigar o efeito da insatisfação com a imagem corporal na psicopatologia alimentar mediada pela vergonha corporal, evitamento experiencial e fusão cognitiva, o modelo foi analisado por meio de análises *path*. Num segundo momento, a análise de mediação foi realizada para estudar o papel do medo da auto-compaixão na relação entre insatisfação com a imagem corporal e vergonha corporal. Os presentes estudos foram realizados com uma amostra de 437 raparigas adolescentes.

Os resultados sugeriram que a insatisfação com a imagem corporal aumenta a psicopatologia alimentar parcialmente através do aumento dos níveis de vergonha corporal e de evitamento experiencial e fusão cognitiva. A vergonha corporal foi um preditor significativo da psicopatologia alimentar. A vergonha corporal surge como resultado do aumento da insatisfação corporal e de níveis mais elevados de medo da auto-compaixão.

Palavras-Chave: Insatisfação com a Imagem Corporal, Vergonha Corporal, Psicopatologia Alimentar, Evitamento Experiencial, Fusão Cognitiva, Medo da Compaixão, Adolescência.

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Evaluating the effect of body dissatisfaction on eating psychopathology in young adolescence: The role of body shame, experiential avoidance and cognitive fusion

Abstract

Research has been shown the importance that body shame and body dissatisfaction has on eating psychopathology. Also, recent studies have suggested that experiential avoidance and cognitive fusion plays a relevant role on eating psychopathology development and maintenance. However, research on shame, experiential avoidance and cognitive fusion, and their impact on psychopathology is scarce in adolescence.

The current study tests a model investigating whether young adolescent girls who feel dissatisfied with their body present increased eating psychopathology and whether this association is mediated by experiential avoidance, cognitive fusion and body shame. The predictions from the proposed model were examined through a path analysis, in a sample of 437 female adolescents. All participants were assessed on self-reported measures of shame, experiential avoidance and cognitive fusion, eating psychopathology severity and body image dissatisfaction. The 437 young adolescent girls were recruited from middle schools (urban and rural areas).

Results showed that the path model explained 62% of eating psychopathology variance and allowed us to confirm that body dissatisfaction increased eating psychopathology partially through increased levels of body shame, and although in a lesser degree, through increased levels of cognitive fusion and experiential avoidance.

The findings suggest that eating disorders' features arise as a result of higher body shame and in a lesser degree increased levels of cognitive fusion and experiential avoidance. High levels of body shame associated with high levels of cognitive fusion and experiential avoidance, before the perceived discrepancy between actual and ideal body image, predict higher levels of eating psychopathology.

Keywords: Body Dissatisfaction, Body Shame, Experiential Avoidance, Cognitive Fusion, Eating Psychopathology, Adolescence.

I – Introduction

Eating disorders are classified as the third most common chronic illness in adolescent females, with a lifetime prevalence of 0.8% for anorexia nervosa (AN), 2.6% for bulimia nervosa (BN), 3.0% for binge eating disorder (BED), 3.4% for purging disorder (PD), and combined prevalence of 13.1% (5.2% had AN, BN, or BED; 11.5% eating disorders not elsewhere classified; American Psychiatric Association, 2002). Katona and Robertson (2005) reported that 95% of people with AN are women and 85% have onset between 13 and 20 years old. Also, binge eating is common in adolescence, and the prevalence statistics of BN is 1-3%, with female predominance.

Adolescence is marked by a significant rise in the vulnerability to emotional difficulties that may be related to the variety of changes that characterize this transitional period. Such developmental changes encompass psychological, social and maturational processes initiated by the puberty biological changes, morphological transformations, as well as by complex models about the self and others, and that the ends with the formation of self-identity, concerns with peer-group relationships, and with the decrease of parents influence along with the increased use of peers as sources of support, values and sense of belonging, defined by the cultural context (Gilbert & Irons, 2009; McLean, 2005; McLean, Breen, & Fournier, 2010; Wolfe & Mash, 2006). Hence, in adolescence, there is an increased focus on competition for a place in the peers group, and a need for acceptance, approval and social status (Wolfe, Lennox, & Cutler, 1986). Such concerns may render one more vulnerable to difficulties linked with fear of rejection and of being assigned an inferior social rank position, all of which are linked to the experience of shame (Gilbert & Irons, 2009).

Adolescence is a critical period when changes occur in the subject's relation to his/her body (Dias, 2000) and research suggests that body is at the centre of most of adolescents' conflicts (e.g., body changes, new forms and sensations; Arnett, 2000; Gillen & Lefkowitz, 2009). Body image, a multidimensional construct that broadly describes the internal representations of the body structure and physical appearance in relation to ourselves and to others is, therefore, an important psychological and interpersonal aspect during adolescence (Banfield & McCabe, 2002; Damasceno et al., 2006; Gleaves et al., 2001).

Research suggests that the pressure to be thin that family members, peers and the media exerts, influences the adolescent to possibly get involved in behavioural practices (e.g., restrictive eating, purging, excessive exercising; Fairburn, 2008; Sands & Wardle, 2003; Tylka & Hill, 2004) associated with eating psychopathology (Peterson, Paulson, & Williams, 2007), by promoting the internalization of the thin ideal, and body image dissatisfaction (Stice, 2001b; Stice, Marti, & Durant, 2011; Thompson & Stice, 2001). In fact, studies reveal that in adolescence, especially among girls, there is a predominance of feelings of body dissatisfaction (Cash & Pruzinsky, 2002) and fear of fatness (Field et al., 1999; Furnham, Badwin, & Sneade, 2002; Janna & Esther, 2012).

The perceived discrepancy between one's current weight and body shape and a perceived ideal body seems to be an important factor for the current levels of body image dissatisfaction, reported by most women (e.g., Blowers et al., 2003; Ferreira, 2003; Pinto-Gouveia, 2000). Body image dissatisfaction, in turn, may precede a diet (Higgins, 1987; Verplanken & Tangelder, 2011), which is considered by Stice (2001b) as the main precipitant and one of the main risk factors for eating psychopathology, mediated by increased eating restriction behaviour and negative affect (Lawler & Nixon, 2011; Stice & Shaw, 2002). Specifically, dissatisfaction with one's body has been found to be the one of the strongest predictor of risk for onset of eating disorders in adolescent girls (Lawler & Nixon, 2011; McCabe & Ricciardelli, 2005; McCabe et al., 2009; Stice, Marti, & Durant, 2011; Tremblay & Lariviere, 2009).

However, recent studies have pointed out to the notion that body dissatisfaction alone does not explain the variability of the occurrence of eating psychopathology (Bellew et al., 2006; Ferreira, Pinto-Gouveia, & Duarte, 2011, 2013; Gatward, 2007, Gilbert, 2000a, 2005a, 2005b; Gilbert, Bailey, & McGuire, 2000) and research has suggested that perceptions of inferiority and shame plays an important role in the adoption of disturbed eating behaviours (e.g., diet) and in the vulnerability to and maintenance of eating psychopathology (Buote et al., 2011; Gilbert, Bailey, & McGuire, 2000; Goss & Gilbert, 2002; Gilbert 2002; Grabhorn et al., 2006).

Shame is a multifaceted and self-conscious emotion related to the way the self believes to exist negatively in the minds of others (Gilbert & McGuire, 1998). Several theoretical and empirical accounts suggest that

shame is linked to body image and eating difficulties (e.g., Burney & Irwin, 2000; Goss & Allan, 2009; Hayaki, Friedman, & Brownell, 2002; Masheb & Grilo, 2008; Murray, Waller, & Legg, 2000).

Particularly, studies show that in women, the perceived discrepancy between one's and others attractiveness, lead to greater negative evaluation of oneself (Jones, 2001) and body shame (Markham, Thompson, & Bowling, 2005), increasing the vulnerability to eating psychopathology (Blowers et al., 2003; Thompson, Coovert, & Stormer, 1999). Moreover, especially in females, there is a sense of shame associated with the perception of discrepancy between one's current and ideal body (Furnham, Badmin, & Sneade, 2002; Gilliard, Lackland, Mountford, Egan, 2007; Philips & Drumnond, 2001).

Body shame involves a state of self-consciousness when individuals perceive their body shape or physical appearance as inferior in relation to the ideal female body represented by the society (Gilbert, 2002; Gilbert & Thompson, 2002; Gilbert & Miles, 2002), which is many times impossible to accomplish. In this sense, shame focused on one's body is linked with the perception that others will find one's physical appearance unattractive, an object of negative scrutiny, that somehow diminishes oneself in relation to others, and that may be a cause for rejection (Fischer & Tangney, 1995; Gilbert, 1998). Theoretical and empirical accounts suggest that body shame can be connected to a number of psychological difficulties, including social anxiety and mood disturbances (Gilbert, 2002; Irons & Gilbert, 2005). Moreover, the existent research suggests that perceiving that one has failed in attempting to reach an ideal body fosters body shame (Fredrickson & Roberts, 1997; McKinley, 1999), which, in turn, can have a key role in eating psychopathology (Buote et al., 2011; Gilbert, 2002; Goss & Allan, 2009; Goss & Gilbert, 2002; Lawler & Nixon, 2011).

To sum up, the existent research highlight shame as a key aspect among eating disorders, corroborating the assumption that eating disorders are shame disorders, as Kaufman described (1989). Also, there has been a raising concern about the role of body shame on the onset and maintenance of eating psychopathology. However, the existent investigation on this matter is limited (namely there is a relative absence of specific measures of body shame), and research on these aspects in adolescence remains scant.

Possibly associated with the experience of body shame is an attitude of cognitive fusion and experiential avoidance of the experience and emotional states associated with one's body. According to Acceptance and Commitment Therapy (ACT; Hayes, 2004a, b; Hayes, 2005; Hayes, Strosahl, & Wilson, 1999) psychological inflexibility is a source of human suffering. Psychological inflexibility entails the rigid dominance of psychological reactions, over chosen values and contingencies, in guiding action (e.g., Wenzlaff & Wegner, 2000) and is produced by two interrelated processes: cognitive fusion and experiential avoidance (Bond et al., 2011; Hayes, Masuda et al., 2004; Hayes, Muoma et al., 2004; Hayes, Strosahl, & Wilson, 1999; Hayes Strosahl et al., 2004). Cognitive fusion refers to the entanglement with the content of private events; and responding to this content as if it was literally true (Hayes et al., 2004; Hayes, Luoma, & Bond, 2005; Hayes et al., 2006). In this sense, cognitive fusion gives rise to experiential avoidance, that is, the unwillingness to experience or remain in contact certain particular private events (e.g., bodily sensations, emotions, thoughts, memories, behavioural predispositions) and the attempts to avoid, manage, alter, or otherwise control their frequency, form, or situational sensitivity (Hayes & Gifford, 1997; Hayes et al., 1996).

Existing literature suggests that psychological inflexibility is likely to play a major role in eating psychopathology development and maintenance (Heffner & Eifert, 2004) via cognitive fusion, manifested as eating disorders' rigid cognitions and critical evaluations (e.g., the overevaluation of shape and weight as determinants of one's self-worth), and experiential avoidance, exhibited by extreme eating restraint, bingeing or by, compensatory behaviours, which allow one to avoid, in the short term, distressing cognitions related to one's body (Claes, Vandereycken, & Vertommen, 2001; Fairburn, Cooper, & Shafran, 2003; Heatherton & Baumeister, 1991; Paul, Schroeter, Dahme, & Nutzinger, 2002).

Several authors have suggested that acceptance-based methods for treating disordered eating merit increased attention (Hayes et al., 1996; Wilson & Murrell, 2004) and that ACT which aiming at psychological flexibility is a good theoretical match for eating disorders, conceptualized as disorders of control (with patients striving to control their shape, weight and eating behaviour (Hayes & Pankey, 2002; Heffner et al., 2002; Heffner & Eifert, 2004; Merwin & Wilson, 2009, Merwin et al., in press; Orsillo &

Batten, 2002). Thus, ACT has been applied to individuals with eating disorders (Hayes, Strosahls, & Wilson, 1999) reducing, effectively patients' eating disorders related behaviours (Baer, Fischer, & Huss, 2005; Heffner & Eifert, 2004; Safer, Telch, & Agras, 2001; Telch, Agras, & Linehan, 2001).

Despite recent empirical advances in adult populations, little is known about the nature and role of experiential avoidance and cognitive fusion in adolescents (Coyne, Cheron, & Ehrenreich, 2008). Nevertheless, existent research shows that cognitive fusion and experiential avoidance plays an important role on adolescents psychological adjustment (Burke, 2010; Cunha & Santos, 2011; Greco, Lambert, & Baer, 2008; Hayes & Greco, 2008). Nevertheless, no study has yet investigated how cognitive fusion and experiential avoidance interacts with eating psychopathology relevant constructs in such critical time period for the onset of eating psychopathology.

The current study presents a model that investigates the association between body dissatisfaction, body shame, cognitive fusion and experiential avoidance, and eating psychopathology in young adolescent girls. Specifically, this model examines through which paths body image dissatisfaction impacts on overall levels of eating psychopathology. It is hypothesized that body shame and cognitive fusion and experiential avoidance mediate the association between real and ideal body image perceived discrepancy and overall levels of eating psychopathology severity.

II- Method

Participants

Participants of this study are part of a wider longitudinal investigation that is being conducted to 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). The participants' years of education varies 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, equality distributed) from Viseu, Coimbra and Castelo Branco districts of the middle Region of 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. Forty-three percent (n = 188) reported belonging to a low socioeconomic level; 30.7% (n = 134) reported belonging to a middle socioeconomic level and 26.3% (n = 115) reported belonging to a high socioeconomic level (determined by socioeconomic status of the father).

In this sample, participants' height ranged from 1.30 m to 1.80 m (M_{height} = 1.61, SD = 0.06) and weight ranged from 32 Kg to 98 Kg (M_{weight} = 52.98, SD = 8.58). The subjects' calculated Body Mass Index (BMI) mean is 20.53 (SD = 3.03), with a minimum of 13.28 and a maximum of 35.14. Sixty-nine point three percent of the sample have a BMI within normal range (18.5 kg/m^2 < BMI < 25 kg/m^2). A point four percent are classified as "Very severely underweight", 2.3% classified as "Severely underweight", 20.1% classified as "Underweight", 6% classified as "overweight" and 0.9% classified as "obese" (WHO, 1995).

Measures

Participants completed a battery of self-report questionnaires designed to measure shame, body dissatisfaction, experiential avoidance, cognitive fusion and eating disorders' symptoms.

Demographic Data

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

Body Mass Index (BMI) – *Body Mass Index* was calculated as current weight (in Kilograms) divided by square height (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 body silhouettes, numbered 1 to 9 in which the lower numbers correspond to thinner silhouettes, which increases in accordance with the number. In order to evaluate the perception that the subject has regarding his/her real body image, and the discrepancy between this and the image that he/she wants or

perceives as ideal, five questions were added to the original version (Ferreira, 2003). Thus, respondents were asked to select the image that best indicates: (a) their current body image and size; (b) their ideal body image or desire, (c) the shape that he/she feels to have most of the time, (d) body image socially valued as "elegant", and (e) the more attractive image to the opposite sex. The discrepancy between the actual and the ideal body image gives a measure of body image dissatisfaction. This scale shows good test-retest reliability and convergent and divergent validity (Thompson & Altabe, 1991).

Eating Disorder Examination Questionnaire (EDE-Q, Fairburn et al., 2008; Portuguese version by Machado, 2007).

EDE-Q (Fairburn & Beglin, 1994; Fairburn & Cooper, 1993) is a self-report version of the Eating Disorder Examination (EDE), the well-established investigator-based interview (Fairburn & Cooper, 1993) designed to identify and quantify clinical levels of eating psychopathology and to access aspects of eating disordered symptomatology. Like the EDE, the EDE-Q has a 28-day time frame and it asks directly about the frequency of key attitudinal and behavioural features of eating psychopathology. This 36-item instrument generates four subscale scores: Eating Restraint, Eating Concern, Shape Concern and Weight Concern as well as a global score which is the average of the four subscales. Also the EDE-Q provides frequency data on key behavioural features of eating disorders. Fourteen of the items (item 8 and 16-28) relate specifically to the occurrence and frequency of key behavioural features of eating disorders, including binge eating, self-induced vomiting, laxative misuse and diuretic misuse (Cooper & Fairburn, 2003). Respondents rate each item on a 7-point rating scale (e.g., 0–6) indicating the number of days out of 28 on which particular behaviours, attitudes or feelings occurred.

There have been several studies that 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).

Avoidance and Fusion Questionnaire for Youth (AFQ-Y, Greco, Lambert, & Baer, 2008; Portuguese version by Cunha & Santos, 2011).

The AFQ-Y is a measure consisting of 17 items that aims at evaluating psychological inflexibility measured by cognitive fusion and

experiential avoidance. Items are based on ACT' model of human suffering; and influenced by the Acceptance and Action Questionnaire of Adults (AAQ; Hayes et al., 2004; Pinto-Gouveia, Gregório et al., 2012) and were generated to represent a theoretically cohesive conceptualization of psychological inflexibility fostered by *cognitive fusion* (e.g., "My thoughts and feelings mess up my life"), and *experiential avoidance* (e.g., "I push away thoughts and feelings that I don't like"; Greco, Lambert, & Baer, 2008). Participants are asked to rate how true each item is for them using a five-point rating scale (0 = Not at All True; 4 = Very True). The AFQ-Y presents a high internal consistency reliability both in the original (α = .90; Greco, Lambert, & Baer, 2008), and in the Portuguese population (α = .90; Cunha & Santos, 2011).

Body Shame Scale – Adolescent version (BISS-A; Duarte, Ferreira & Pinto-Gouveia, 2010).

This measure was designed to assess shame feelings and experiences towards one's body image, comprising the tendency to conceal and to avoid public scrutiny of the body perceived as unattractive. BISS-A is a 17- items self-report scale (e.g., "I prefer hiding some parts of my body") rated in a 5-point Likert scale ranging from (0 = never to 4 = very often). This 17-item instrument generates two subscale scores: *Body Image Concealment* (assesses the need to hide the body perceived as unattractive/defective) and *Social Evaluations Avoidance* (measuring the fear and avoidance of social situations in which physical appearance perceived as unattractive may be negatively evaluated/critiqued by others). 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).

Depression Anxiety and Stress Scales (DASS-21; Lovibond & Lovibond, 1995; Portuguese version by Apóstolo, Mendes, & Azeredo, 2006, adapted for adolescents by Pais-Ribeiro, Honrado, & Leal, 2004).

The *Depression Anxiety Stress Scales 21* (DASS-21) is a short form of Lovibond and Lovibond's (1995) 42-item self-report measure of depression, anxiety, and stress (DASS). This 21-item instrument generates three subscale scores: *Depression* (e.g., "I could not feel any positive feelings"); *Anxiety* (e.g., "I felt my mouth dry") and *Stress* (e.g., "Had difficulty in calming me"). Each item consists of a statement which refers to negative emotional symptoms. The DASS-21 consists of three 7-item self-report scales measures to extent to which each state has been experienced over the past week, rated in a 4-point Likert scale ranging from (0 = did not apply anything to me to 4 = very applied to me most often). In the original study of the scale, the *Depression* showed a Cronbach's Alpha values of .85; *Anxiety* exhibited a Cronbach's Alpha values of .74. At last, *Stress* revealed a Cronbach's Alpha values of .81.

The Cronbach's alphas for all study variables are reported in Table 1.

Procedure

To ensure a wide participation in the study, the Cognitive-Behavioural Research Centre (CINEICC), headquartered at the Faculty of Psychology, University of Coimbra, obtained authorisation from the relevant authorities: Directorate-general for Curriculum Innovation and Developmental (DGI-DC) and National Commission for Data Protection) to proceed with the research.

The request for collaboration of the aforementioned educational institutions was officially issued by the authors. After proper clarification about the research aims and the importance of cooperation to the scientific community, the consent of the involved institutions' boards was obtained and they issued an authorization for the voluntarily participation of the subjects.

An informed consent was delivered to the potential subjects containing full disclosure of the nature of the research and the participants' involvement and of the participants' voluntary choice to participate. Since the research population included who were less than 18 years old, a parental permission form was attached so that caregivers could become aware of the research and authorize the participation of their children, 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 time period previously scheduled with the educational institution board. Again, and in line with ethical requirements, before they filled in the measures, participants received clarification about the procedures and the study's general goals and it was emphasized that their cooperation was voluntary, and that their answers would be 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), and path analyses were examined using the software AMOS (v.18; SPSS Inc., Chicago, IL, USA).

To examine the relationship between body mass index (BMI), body image dissatisfaction (measured as the discrepancy between one's actual and ideal body image; FRS; Thompson & Altabe 1991), body shame (measured by the BISS; Duarte, Ferreira, & Pinto-Gouveia, 2010), cognitive fusion and experiential avoidance (measured by the AFQ-Y; Cunha & Santos, 2011) and eating psychopathology severity (measured by the EDE-Q subscales and by the scale global score; Machado et al., 2007) *product-moment Pearson correlation* analyses were conducted. The association between the study variables and general psychopathology indicators were also examined (measured by the DASS-21; Apóstolo, Mendes, & Azeredo, 2006). Correlations around .10 were considered small or negligible, correlations around .30 were considered moderate, and correlations at or above .50 were considered large (Cohen, 1992; Walsh & Betz, 2001).

Furthermore, *path analyses* were conducted to estimate the presumed relations among the variables in the proposed theoretical model (Figure 1). We examined whether body dissatisfaction would predict eating psychopathology severity, mediated by experiential avoidance and cognitive

[1] Ten percent of these data were only obtained by self-report measures, given the unwillingness from the schools.

fusion and body shame. Body dissatisfaction was considered to be the exogenous variable; experiential avoidance and cognitive fusion and body shame were hypothesized as the endogenous mediator variables; and eating psychopathology severity was the dependent endogenous variable. Path analysis it was used to assess theoretically expected causality, being a particular form of structural equation modelling. It is an appropriate statistical methodology that allows to simultaneously analyse structural relationships and direct and indirect effects between exogenous and endogenous variables controlling for error (Byrne, 2010; Kline, 1998; Maroco, 2010).

The significance of the direct, indirect and total effects was assessed by the Bootstrap resampling method, being considered one of the most reliable procedures to test mediation effects (Bolger & Laurenceau, 2013; Fritz et al., 2012; Hayes & Scharkow, 2013; Maroco, 2010; Valeri & VanderWeele, 2013). 2000 Bootstrap samples were used to create 95% bias-corrected confidence intervals around the standardized estimates of total, direct and indirect effects. The effects were considered as significantly different from zero ($p < 0.05$) when zero was not on the interval between the lower and upper bounds of the 95% bias-corrected confidence interval (Kline, 1998).

Effects with $p < .050$ were considered statistically significant (Cohen, 2003; Tabachnick & Fidell, 2007).

III - Results

Descriptives

The means and standard deviations and Cronbach's Alpha of the study variables are presented in Table 1. All scales showed high internal consistency. The means and standard deviations for these variables are similar to those obtained in previous studies: AFQ-Y (Cunha & Santos, 2011); BISS-A (Duarte, Ferreira, & Pinto-Gouveia, 2010); DASS-21 (Apóstolo, Mendes, & Azeredo, 2006); EDE-Q (Machado et al., 2007).

Table 1.

Means (M), Standard Deviations (SD) and Cronbach's Alpha coefficients (α; N = 437)

	M	*SD*	*α*
EDE_Total	1.43	1.28	.95
EDE_Restraint	1.03	1.28	.83
EDE_Eating	0.97	1.18	.77
EDE_Shape	1.92	1.68	.92
EDE_Weight	1.82	1.56	.84
AFQ_Y_Total	34.01	14.81	.91
BISS_Total	0.98	0.93	.96
BISS_ Concealment	1.24	1.09	.95
BISS_Avoidance	0.66	0.90	.92
DASS_Depression	4.71	5.22	.91
DASS_Anxiety	3.99	4.47	.87
DASS_Stress	5.73	5.04	.90

EDE_Total = Eating Disorder Examination Total Scale. EDE_Restraint = Eating Restraint. EDE_Eating = Eating Concern. EDE_Shape = Shape Concern. EDE_Weight = Weight Concern. AFQ_Y = Avoidance and Fusion Questionnaire for Youth. BISS_Total = Body Shame Total Scale. BISS_Concealment = Body Image Concealment Subscale. BISS_Avoidance = Social Evaluations Avoidance Subscale. DASS = Depression Anxiety and Stress Scales.

Table 2.

Pearson-moment correlation coefficients between the studied variables (N = 437)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Sil_Body_Dissatisfaction	1														
2.AFQ_Y	.11*	1													
3.BISS_Total	.38**	.44**	1												
4.BISS_Concealment	.38**	.42**	.98**	1											
5.BISS_Avoidance	.32**	.40**	.91**	.81**	1										
6.EDE_Total	.55**	.41**	.71**	.71**	.62**	1									
7.EDE_Restraint	.43**	.19**	.41**	.40**	.37**	.79**	1								
8.EDE_Eating	.46**	.44**	.64**	.62**	.60**	.90**	.66**	1							
9.EDE_Shape	.53**	.44**	.76**	.77**	.63**	.95**	.62**	.83**	1						
10.EDE_Weight	.54**	.38**	.71**	.72**	.60**	.94**	.60**	.79**	.92**	1					
11.Binge_Eating	.11*	.24**	.35**	.35**	.30**	.34**	.14**	.38**	.36**	.33**	1				
12.DASS_DEP	.21**	.58**	.53**	.52**	.59**	.53**	.33**	.52**	.54**	.51**	.26**	1			
13.DASS_ANX	.22**	.50**	.52**	.48**	.54**	.48**	.30**	.49**	.48**	.45**	.18**	.77**	1		
14.DASS_STRESS	.22**	.55**	.52**	.48**	.51**	.49**	.28**	.49**	.49**	.46**	.22**	.82**	.83**	1	
15.BMI	.48**	-.04	.28**	.27**	.27**	.33**	.21**	.25**	.33**	.36**	.09	.07	.07	.07	1

Note:

** $p < .001$.

* $p < .05$.

AFQ_Y = Avoidance and Fusion Questionnaire for Youth. BISS_Total = Body Shame Total Scale. BISS_Concealment = Body Image Concealment Subscale. BISS_Avoidance = Social Evaluations Avoidance. EDE_Total = Examination Eating Disorder Total. EDE_Restraint = Eating Restraint. EDE_Eating = Eating Concern. EDE_Shape = Shape Concern. EDE_Weight = Weight Concern. DASS_DEP = The Depression Anxiety Stress Scales-21_Depression Subscale. DASS_ANX = Depression Anxiety Stress Scales-21_Anxiety Subscale. DASS_STRESS = Depression Anxiety Stress Scales-21_Stress Subscale. BMI = Body Mass Index.

Preliminary analysis

The values of Skewness and Kurtosis were used to assess uni and multivariate normality of the data distribution and results indicated that all values were between the reference cut-points (|Sk |< 3 e |Ku| < 7) and, therefore, there was no severe violation of normal distribution (Kline, 2005). Also, the presence of multicollinearity or singularity amongst the variables (through linear regression analyses) was analysed and results indicated the absence of β estimation problems (VIF < 5). These findings confirmed that the data was adequate to proceed with the analyses.

Correlations

Product-moment correlation coefficients showed that body image dissatisfaction was positively and moderately correlated with eating restraint and eating concern subscales of EDE-Q, and, with lower magnitudes, with binge eating behaviours. Also, body dissatisfaction was positively and highly associated with shape and weight concern subscales of EDE-Q, as well as with eating psychopathology severity, measured by the total score of the EDE-Q and with body mass index. Body image dissatisfaction was also positively and moderately correlated with body shame (total score and subscales body image concealment and social evaluations avoidance). Finally, body image dissatisfaction showed a positive significant, in spite of being low in magnitude, correlation with experiential avoidance and cognitive fusion, subscales of AFQ-Y and with depression, anxiety and stress, subscales of DASS-21.

Body shame (total score and subscales) showed a positive moderate association with eating restraint and, with higher magnitudes, with eating, shape, and weight concern subscales of EDE-Q, as well as with the global measure of eating psychopathology severity. Also, it showed a positive and moderate significant association with binge eating behaviours and with body mass index. Furthermore, positive moderate correlations were also found between body shame and experiential avoidance and cognitive fusion, subscales of AFQ-Y. Body shame was positively and highly associated with depression, stress and anxiety, subscales of DASS-21.

Experiential avoidance and cognitive fusion showed positive moderate correlations with eating, shape and weight concern, as well as with global eating psychopathology severity. Furthermore, experiential avoidance and

cognitive fusion was linked, with lower magnitudes, with eating restraint EDE-Q' subscale and with binge eating behaviours. Experiential avoidance and cognitive fusion was positively and highly associated with depression, anxiety and stress, subscales of DASS-21.

Low correlations were found between variables, in study, with BMI (except the correlation with body image dissatisfaction which was higher), and moderate correlations with psychopathology, and higher magnitude with depressive symptoms.

Path Analysis

Given previous results and our main hypothesis, we tested the theoretical model according to which we assumed that body shame and experiential avoidance and cognitive fusion would mediate the association between real and ideal body image perceived discrepancy and overall levels of eating psychopathology severity in young adolescent girls.

We tested a saturated model (e.g., with zero degrees of freedom) with 14 parameters. Results indicated that the fully saturated model explained 62% of eating psychopathology severity variance and 14% of body shame variance with all the hypothesized associations resulting in statistically significant paths. Given that all the tested paths were significant, with this model remaining saturated and producing therefore a perfect fit to the data, model fit indices were not analysed.

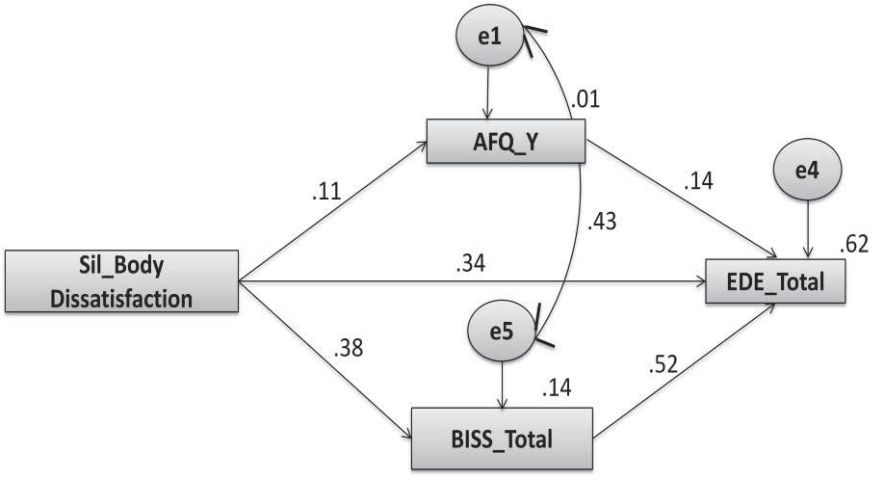

Figure 1. Tested model with path coefficients.

Results showed that body image dissatisfaction predicted eating psychopathology severity with a direct effect of .34 (b_{BD} = .46; SE_b = 0.04; Z

= 10.58; p <.001), body shame (b_{BD} = .37; SE_b = 0.04; Z = 8.46; p <.001; β = .38), and, although with a minor impact, experiential avoidance and cognitive fusion (b_{BD} = 1.75; SE_b = .74; Z = 2.38; p = .017; β = .11). Furthermore, it was found that body shame and experiential avoidance and cognitive fusion had a direct effect on eating psychopathology severity (b_{BS} = .72; SE_b = .05; Z = 14.75; p <.001; β = .52; and (b_{PI} = .72; SE_b = 0.05; Z = 4.19; p <.001; β = .14, respectively).

The indirect effect analyses revealed an indirect effect of body image dissatisfaction on eating psychopathology severity, with an effect of .21. Specifically, body image dissatisfaction predicted increased eating psychopathology severity, partially through increased levels of body shame, with an effect of .20 (.38 X .52), and although in a lesser degree, through increased levels of experiential avoidance and cognitive fusion, with an effect of .02 (.11 X .14). According to the Bootstrap method, results showed that these indirect effects of body image dissatisfaction on eating psychopathology severity, mediated by body shame and experiential avoidance and cognitive fusion, were significantly different from zero, with p = .001 (95% CI =.15 to .28). Furthermore, path analysis' correlations showed a positive moderate association between body shame and experiential avoidance and cognitive fusion (r = .43).

To sum up, these results showed that the perception that one's real body is discrepant from one's perceived ideal body had a total effect of .55 on eating psychopathology severity, with a significant direct effect of .34 and with a significant indirect effect mediated by body shame and by experiential avoidance and cognitive fusion, which, in turn, were moderately linked.

Figure 1 presents the mediation model with regression coefficients, standardized estimates and R^2 between the tested variables.

IV - Discussion

Adolescence is a time period marked by important developmental changes and tasks, where changes in body image occur. These characteristics turn it into a critical period for the development of problems related to body image and eating behaviour (Burney & Irwin, 2000; Goss & Gilbert, 2002; Sanftner et al., 1995). The relationship between shame, the perception of discrepancy between one's actual and ideal body (Markham, Thompson, &

Bowling, 2005), and eating psychopathology, namely among women (e.g., Gilbert, 2000a; Hayaki, Friedman, & Brownell, 2002; Murray, Waller, & Legg, 2000) has recognised for a long time. And, specifically, body shame has been highlighted as having a key role in eating psychopathology (Buote et al., 2011; Gilbert, 2002; Goss & Allan, 2009; Goss & Gilbert, 2002; Lawler & Nison, 2011; Stice, Marti, & Durant, 2011). Furthermore, research has shown that in eating disorders, there is an extreme focus in one's body and an engagement in behavioural practices that aim at avoiding distressing internal experiences (e.g., body shame; Heffner, et al., 2002; Keyser et al., 2009; Orsillo & Batten, 2002), contributing to experiential avoidance and cognitive fusion (Schmidt & Treasure, 2006).

Nevertheless, the relationship between body shame and cognitive fusion and experiential avoidance, and how these variables interact with body image dissatisfaction a well-known risk factor for eating psychopathology, namely in adolescence, remained to be explored. Therefore, the present study aimed at examining the suitability of a model to understand the impact of body image dissatisfaction, mediated by body shame and cognitive fusion and experiential avoidance, as predictors of eating psychopathology in early adolescence.

Consistent with prior research (Lawer & Nixon, 2011; McCabe et al., 2009; Presnell, Bearman, & Stice, 2004; Stice, Marti, & Durant, 2011; Tremblay & Lariviere, 2009) and our hypothesis, correlation analyses' results showed that high levels of body image dissatisfaction were associated with higher levels of eating psychopathology. In addition, body dissatisfaction was found to be positively correlated with body shame, which adds to the existent research showing the association between shame and body image dissatisfaction (Ferreira, Pinto-Gouveia, & Duarte, 2013; Pinto-Gouveia, Ferreira, & Duarte, 2012).

Furthermore, the current study contributed to a higher understanding of the role that body shame plays in eating psychopathology, namely in the critical time period of adolescence. In fact, results indicated that body shame, assessed by a newly developed self-report measure adapted to adolescents, was strongly associated with overall levels of eating psychopathology. This finding is in line with the existent evidence that has suggested the association between body shame, body image dissatisfaction and eating psychopathology severity both in community and clinical samples (Goss &

Allan, 2009; Grabhorn et al., 2006; Schork, Eckert, Halmi, 1994; Castellini, Lapi, Ravaldi, et al., 2008).

In addition, results indicated a link between body shame and cognitive fusion and experiential avoidance, which corroborates the assumption that the emotion of shame related to the dimension of body image emerges in the context of a tendency for the individual to merge with the content of his/her thoughts, emotions, body sensations and with attempts to avoid, alter their frequency, intensity or form, or escape them (AFQ; Cunha & Santos, 2011; Greco, Lambert, & Baer, 2008; Hayes, Pankey, 2002).

To sum up, correlation analyses results' extend research on the linkage between body dissatisfaction, body shame, cognitive fusion and experiential avoidance and eating psychopathology severity (Gilbert 2002; Gilbert, Bailey, & McGuire, 2000; Gee & Troop, 2003; Goss & Gilbert, 2002; Grabhorn et al., 2006; Murray, Waller, & Legg, 2000; Strahan et al., 2006) in adolescence. However, the question remained as to the mechanisms underlying the link between body image dissatisfaction and eating psychopathology, particularly the mediating role of body shame and those dimensions of psychological inflexibility (experiential avoidance and cognitive fusion). Thus, this study tested a mediator model in which we examined whether the perception that others will find one's physical appearance an object of negative scrutiny, as unattractive, that somehow diminishes oneself in relation to others, and that might result in rejection (e.g., body shame), and cognitive fusion and experiential avoidance, would emerge as mediators on the relationship between body image dissatisfaction and eating psychopathology.

In accordance with our predictions, path analysis' results indicated that body image dissatisfaction predicted eating psychopathology severity with a direct effect. That is, results indicated that the greater the perception that one's real body is discrepant from one's perceived ideal body the greater is the effect on eating psychopathology severity. These results are in line with studies that have pointed that of body image dissatisfaction may precede dieting behaviours (Higgins, 1987; Ferreira, Pinto-Gouveia, & Duarte, 2013; Verplanken & Tangelder, 2011) and impact on the development of eating psychopathology (Lawler & Nison, 2011; Stice & Shaw, 2002), specifically in adolescent girls (Lawler & Nixon, 2011; McCabe & Ricciardelli, 2005; McCabe et al., 2009; Stice, Marti, & Durant,

2011; Tremblay & Lariviere, 2009). Although our results have shown a direct effect of body image dissatisfaction in eating psychopathology severity, it was found that this association is influenced by the presence of the two proposed mediating variables.

Indeed, it was found that body image dissatisfaction predicted increased eating psychopathology severity partially through increased levels of body shame, and although in a lesser degree, through increased levels of cognitive fusion and experiential avoidance. Thus, results suggest that high levels of body shame are associated with cognitive fusion, for instance the fusion with negative perceptions of one's current body shape in relation to an ideal one, as if these were true, and with the unwillingness to experience such private events. Together, these seem to increase the impact of such perceptions on the severity of eating psychopathology. Thus, even though experiential avoidance and cognitive fusion had a small mediating effect, the fact that this variable was associated with body shame suggests that its impact on the relationship between body image dissatisfaction and eating psychopathology severity is transported by and emerge in the context of the effect of body shame.

These findings add to the growing body of research showing the link between shame and eating psychopathology (e.g., Gilbert, 2000a; Gilbert & Andrews, 1998; Hayaki, Friedman, & Brownell, 2002; Murray, Waller, & Legg, 2000; Sanftner, Barlow, Marshall, & Tangney, 1995) and offer empirical support to the theoretical claims that emphasise the role of body shame on the vulnerability and maintenance of eating disorders (Blowers et al., 2003; Goss & Gilbert, 2002).

Moreover, these data are partially in line with the literature suggesting that diminished experiential avoidance and cognitive fusion is likely to play an important role in eating disorders (Heffner & Eifert, 2004) via cognitive fusion, manifested as eating disorders cognitions and critical evaluations, and experiential avoidance exhibited by eating disorders behaviours (Claes, Vandereycken, & Vertommen, 2001; Fairburn et al., 2003; Heatherton & Baumeister, 1991; Paul et al., 2002). Also, these findings further clarify the association between those dimensions of psychological inflexibility (experiential avoidance and cognitive fusion) and body shame.

To sum up, these findings suggests that young adolescent girls reporting a greater perceived discrepancy between their current body and a

body perceived as ideal are more likely to get involved in eating psychopathology-related behaviours and attitudes. Nevertheless, the current data is in line with studies that have pointed to the notion that body dissatisfaction alone does not explain the variability of the occurrence of eating psychopathology (Bailey, 2000; Bellew et al., 2006; Ferreira, Pinto-Gouveia, & Duarte, 2011a; Gatward, 2007, Gilbert, 2000a, 2005a, 2005b; Gilbert, Bailey, & McGuire, 2000) and that important mechanisms underlie this relationship. In fact, it seems that it is when such perceptions of discrepancy lead to assumptions that one's body may be the target of negative judgements or a reason for social rejection and when one gets fused with such cognitions and simultaneously wants to avoid them, that a young adolescent girls, facing important physical and psychosocial changes, becomes more vulnerable to eating psychopathology.

Study limitations should be considered when interpreting these findings. First, the cross-sectional design of this study impairs the confidence in causality relationship between the variables under study. Even so, the use of path analysis enhances the strength of our conclusions. Another limitation relates to the fact of using self-report instruments since social desirability or understanding issues when using self-report questionnaires might have influenced adolescents' responses in shame and eating psychopathology measures. However, instruments appropriately adapted and validated for this population were used. Future research should attempt to overcome these limitations by using a prospective design and other assessment methods (e.g., investigator-based interviews). Also, it is necessary to test whether this model presents the same results in different age groups and in different genders, as well as in patient samples with eating disorders. Furthermore, future research should investigate the role of specific measures related to body (e.g., body image-related cognitive fusion and experiential avoidance measures).

Despite these limitations, the current study seems to have important research and clinical implications. In fact, the current findings highlight the importance of assessing and intervening in these variables, namely body shame, since this emotion seems to be particularly important in the understanding of eating psychopathology. Also, more attention should be paid to the role that cognitive fusion and experiential avoidance play in body and eating-related issues in adolescent girls. Likewise, given that these

relationships were tested in a sample of early adolescent girls, these findings point out to the importance of carrying out preventive work among this population. Namely it seems relevant to develop of prevention programs that focus on the role of body image dissatisfaction, body shame, and an importance of accepting one's physical features to protect against the adoption of disturbed eating attitudes and behaviours. Besides, these data offer support to the application of integrative interventions that promote compassion and psychological flexibility in eating psychopathology.

In conclusion this study tested a comprehensive model that incorporated body sham, body image dissatisfaction and experiential avoidance and cognitive fusion. This model was found to properly explain eating psychopathology in adolescence, contributing to the understanding of the role of these processes opening new possibilities for research and clinical interventions in this developmental period.

References

American Psychiatric Association. (2002). Diagnostic and statistical manual of mental disorders DSM-IV-TR. Washington: Author.

Baer, R. A., Fischer, S., & Huss, D. B. (2005). Mindfulness and acceptance in the treatment of disordered eating. *Journal of Rational-Emotive Cognitive-Behaviour Therapy, 23*(4), 281-300. doi:10.1007/s10942-005-0015-9

Banfield, S., & McCabe, P. (2002). An Evaluation of the Construct of Body Image. *Adolescence, 37*(146), 373-393.

Bellew, R., Gilbert, P., Mills, A., McEwan, K., & Gale, C. (2006). Eating attitudes and striving to avoid inferiority. *Eating Disorders, 14*, 313-322. doi:10.1080/10640260600796242.

Blowers, L. C., Loxton, N. J., Grady-Flesser, M., Occhipinti, S., & Dawe, S. (2003). The relationship between sociocultural pressure to be thin and body dissatisfaction in preadolescent girls. *Eating Behaviours, 4*(3), 229-244: doi:10.1016/S1471-0153(03)00018-7.

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., Waltz, T., & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: A revised measure of psychological flexibility and experiential avoidance. *Behaviour Therapy, 42*, 676-688. doi.org/10.1016/j.beth.2011.03.007.

Bolger, N., & Laurenceau, J. P. (2013). *Intensive longitudinal methods: An introduction to diary and experience sampling research*. New York: Guilford Press.

Buote, V. M., Wilson, A. E., Strahan, E. J., Gazzola, S. B., & Papps, F. (2011). Setting the bar: Divergent sociocultural norms for women's and men's ideal appearance in real-world contexts. *Body image, 8*, 322-334. doi:10.1016/j.bodyim.2011.02.002.

Burke, C. A. (2010). Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emergent field. *Journal of Child and Family Studies, 19*(2), 133-144. doi:10.1007/s10826-009-9282-x.

Burney, J., & Irwin, H. J. (2000). Shame and guilt in women with eating-disorder symptomatology. *Journal of Clinical Psychology, 56*(1), 51-61. doi:10.1002/(SICI)1097-4679(200001)56:1<51:;AID-JCLP5>3.0.CO;2-W.

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York: Routledge.

Castellini, G., Lapi, F., Ravaldi, C., Vannacci, A., Rotella, C. M., Faravelli, C., Ricca, V. (2008). Eating disorders psychopathology does not predict the overweight severity in subjects seeking weight loss treatment. *Comprehensive Psychiatry, 49*(4), 359-363. doi: 10.1016/j.comppsych.2008.01.005.

Claes, L., Vandereycken, W., & Vertommen, H. (2001). Self-injurious behaviours in eating-disordered patients. *Eating Behaviours, 2*, 263-272.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.

Cooper, Z., & Fairburn, C. G. (2003). Refining the definition of binge eating disorder and nonpurging bulimia nervosa. *International Journal of Eating Disorders, 34*, S89-S95.

Coyne, L., Cheron, D., & Ehrenreich, J. (2008). Assessment of acceptance and mindfulness processes in youth. In L. A. Greco & S. C. Hayes (Eds.), *Acceptance & mindfulness for children & Adolescents: A practioner Guide* (pp. 37-62). CA: Oackland: New Harbinger Publications, Inc.

Cunha, M., & Santos, A. M. (2011). Avaliação da Inflexibilidade Psicológica em Adolescentes: Estudo das qualidades psicométricas da versão

portuguesa do Avoidance and Fusion Questionnaire for Youth (AFQ-Y). *Laboratório de Psicologia, 9*(2), 135-149. Retrieved from http://hdl.handle.net/10400.12/131.

Damasceno, V., Vianna, V., Vianna, J., Lacio, M., Lima, J., & Novaes, J. (2006). Imagem corporal e corpo ideal. *Revista Brasileira Ciência e Movimento, 14*(1), 87-96.

Dias, B. (2000). Imagem corporal: a descoberta de si mesmo. *História, Ciências, Saúde – Manguinhos, 12*(2), 547-554.

Duarte, C., Ferreira, C., & Pinto-Gouveia, J. (2010). O traço do mindfulness como protetor nos comportamentos bulímicos. *Psychologica, 52*(2), 401-422.

Fairburn, C. (2008). *Cognitive Behaviour Therapy and Eating Disorders*. New York: Guilford Press.

Fairburn, C., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders, 16*, 363-370.

Fairburn, C., & Cooper, Z. (1993). The Eating Disorder Examination. In C. G. Fairburn, & G. T. Wilson, *Binge eating: Nature, assessment and treatment* (12th ed.) (pp. 317-360). New York: Guilford Press.

Fairburn, C. G., Cooper, Z., & O'Connor, M. E. (2008). Eating Disorder Examination (Edition 16.OD). In C. G. Fairburn (Ed.), *Cognitive behaviour therapy and eating disorders* (pp. 265-308). New York: Guilford Press.

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive-behaviour therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behaviour Research and Therapy, 41*, 509-528.

Ferreira, C. (2003). *Anorexia nervosa – A expressão visível do invisível: Contributos para a avaliação de atitudes e comportamentos em relação ao peso e à imagem corporal* (Dissertação de Mestrado não publicada). Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra. Coimbra.

Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (2011). The Validation of the Body Image Acceptance and Action Questionnaire: Exploring the Moderator Effect of Acceptance on Disordered Eating. *International Journal of Psychology and Psychological Therapy, 11*(3), 327-345.

Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (2011a). Physical appearance as a measure of social ranking: The role of a new scale to understand the relationship between weight and dieting. *Clinical Psychology and Psychotherapy*. Advance online publication. doi:10.1002/cpp.169.

Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (2013). Physical appearance as a measure of social ranking: The role of a new scale to understand the relationship between weight and dieting. *Clinical Psychology and Psychotherapy, 20*, 55-66. doi:10.1002/cpp.769.

Field, A. E., Camargo, C. A., Jr., Taylor, C. B., Berkey, C. S., & Colditz, G. A. (1999). Relation of peer and media influences to the development of purging behaviours among preadolescent and adolescent girls. *Archives of Pediatrics and Adolescent Medicine, 153*(11), 1184-1189. doi:10.1001/archpedi.153.11.1184.

Fischer, K. W., & Tangney, J. P. (1995). Self-conscious emotions and affect revolution: Framework and overview. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions: The psychology of shame, guilt, embarrassment and pride* (pp.3-22). New York: Guilford Press.

Fredrickson, B. L., & Roberts, T. (1997). Objectification Theory: Twoward Understanding Women's Lived Experiences and Mental Health Risks. *Psychology of Women Quarterly, 21*, 173-206.

Fritz, M. S., Taylor, A. B., & MacKinnon, D. P. (2012). Explanation of two anomalous results in statistical mediation analysis. *Multivariate Behavioural Research, 47*, 61-87. doi:10.1080/00273171.2012.640596

Furnham, A., Badmin, N., & Sneade, I. (2002). Body Image Dissatisfaction: Gender Differences in Eating Attitudes, Self-Esteem, and Reasons for Exercise. *The Journal of Psychology, 136*(6), 581-596.

Gatward, N. (2007). Anorexia nervosa: An evolutionary puzzle. *European Eating Disorders Review, 15*, 1-12. doi:10.1002/erv.718.

Gilbert, P. (1998). What is shame? Some core issues and controversies. In P. Gilbert & B. Andrews (Eds.), *Shame: Interpersonal behaviour, psychopathology and culture* (pp.3-38). New York: Oxford University Press.

Gilbert, P. (2000a). The relationship of shame, social anxiety and depression: The role of evaluation of social rank. *Clinical Psychology & Psychotherapy, 7*(3), 174-189. doi:10.1002/1099-0879(200007)7:3<174:;AID-CPP236>3.0.CO;2-U.

Gilbert, P. (2000b). Social mentalities: Internal 'social' conflicts and the role of inner warmth and compassion in cognitive therapy. In P. Gilbert and K. Nailey (Eds.). *Genes on the couch: Explorations in evolutionary psychotherapy*. Hove: Brunner-Routledge.

Gilbert, P. (2002). Body shame: A biopsychosocial conceptualization and overview with treatment implications. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualisation, research and treatment* (pp.3-54). New York: Brunner Routledge.

Gilbert, P. (2005a). Social mentalities: A biopsychosocial and evolutionary reflection on social relationships. In M. W. Baldwin (Ed.), *Interpersonal cognition* (pp. 299-335). New York: Guilford.

Gilbert, P. (2005b). Compassion and cruelty: A biopsychological approach. In P. Gilbert (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy* (pp. 9-74). London: Routledge.

Gilbert, P., Bailey, K. G., & McGuire, M. T. (2000). Evolutionary psychotherapy: Principles and outline. In P. Gilbert & K. G. Bailey (Eds.), *Genes on the couch: Explorations in evolutionary psychotherapy* (pp. 3-27). Hove: Brunner-Routledge.

Gilbert, P., & Irons, C. (2009). Shame, self-criticism, and self-compassion in adolescence. In N. Allen (Ed.), *Psychopathology in Adolescence*. Cambridge: Cambridge University Press.

Gilbert, P., & McGuire, M. (1998). Shame, social roles and status: The psychobiological continuum from monkey to human. In P. Gilbert, & B. Andrews (Eds.), *Shame: Interpersonal behaviour, psychopathology and culture* (pp.99-125). New York: Oxford University Press.

Gilbert, P., & Miles, J. (2002). *Body Shame: Conceptualisation, Research and Treatment* (pp. 117-283). New York: Brunner-Routledge.

Gilbert, P., & Thompson, J. K. (2002). Body shame in childhood and adolescence. Relations to general psychological functioning and eating disorders. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualisation, research and treatment* (pp.3-54). New York: Brunner Routledge.

Gilliard, T. S., Lackland, D. T., Mountford, W. K., Egan, B. M. (2007). Concordance Between Self-Repoorted Heights and Weights and Current and Ideal Body Images in Young Adult African American Men and Women. *Ethnicity Disease, 17*, 617-623.

Gittelsohn, J., Harris, S. B., Thorne-Lyman, A. L., Hanley, A. J., Barnie, A., & Zinman, B. (1996). Body image concepts differ by age and sex in an Ojibway-Cree community in Canada. *Journal of Nutrition, 126*, 2990-3000.

Gleaves, H, Williamson, A., Eberenz, P., Sebastian, B., & Barker, E. (2001). Clarifying body-image disturbance: Analysis of a multidimensional model using structural modeling. *Journal of Personality Assessment, 64*, 478-493.

Goss, K., & Allan, S. (2009). Shame, pride and eating disorder. *Clinical Psychology and Psychotherapy, 16*, 303-316. doi:10.1002/cpp.627.

Goss, K., & Gilbert, P. (2002). Eating disorders, shame and pride: A cognitive-behavioural functional analysis. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualisation, research and treatment* (pp.219-255). New York: Brunner Routledge.

Grabhorn, R., Stenner, H., Stangier, U., & Kaufhold, J. (2006). Social anxiety in anorexia and bulimia nervosa: The mediating role of shame. *Clinical Psychology & Psychotherapy, 13*, 12-19. doi:10.1002/cpp.463.

Greco, L. A., Lambert, W., & Baer, R. A. (2008). Psychological inflexibility in childhood and adolescence: Development and evaluation of the Avoidance and Fusion Questionnaire for Youth. *Psychological Assessment, 20*(2), 93-102. doi:10.1037/1040-3590.20.2.93.

Hayaki, J., Friedman, M. A., & Brownell, K. D. (2002). Shame and severity of bulimic symptoms. *Eating Behaviours, 3*, 73-83.

Hayes, S. C. (2004a). Acceptance and commitment therapy and the new behaviour therapies: Mindfulness, acceptance and relationship. In S. C. Hayes, V. M. Follette, & M. M. Linehan (Eds.), *Mindfulness and acceptance: Expanding the cognitive-behavioural tradition*. New York; NY: Guilford Press.

Hayes, S. C. (2004b). Acceptance and commitment therapy, relational frame theory, and the third wave of behaviour therapy. *Behaviour Therapy, 35*, 639-665. doi.org/10.1016/S0005-7894(04)80013-3.

Hayes, S. C. (2005). *Get out of you life and into your life: The new acceptance and commitment therapy*. Oakland, CA: New Harbinger Publications.

Hayes, S. C., & Giford, E. V. (1997). The trouble with language: Experiential avoidance, rules and the nature of verbal events. *Psychological Science, 8*, 170-173.

Hayes, S. C., & Greco, L. A. (2008). Acceptance and mindfulness for youth: It's time. In L. A. Greco & S. C. Hayes (Eds.), *Acceptance & mindfulness treatments for children & adolescents: A practioner guide* (pp. 3-14). Oackland, CA: New Harbinger Publications, Inc.

Hayes, S. C., Luoma, J. B., & Bond, F. W. (2005). Acceptance and Commitment Therapy: Model processes and outcomes. *Behaviour Research and Therapy, 44*, 1-25.

Hayes, S., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, Process and Outcomes. *Behaviour Research and Therapy, 44*, 1-25. doi:10.1016/j.brat.2005.06.006.

Hayes, S. C., Masuda, A., Bissett, R., Luoma, J., & Guerreiro, L. F. (2004). DBT, FAP, and ACT: How Empirically Oriented Are the New Behaviour Therapy Technologies? *Behaviour Therapy, 35*, 35-54. doi.org/10.1016/S0005-7894(04)80003-0.

Hayes, S. C., & Pankey, J. (2002). Experiential avoidance, cognitive fusion, and an ACT approach to anorexia nervosa. *Cognitive and Behavioural Practice, 9*(3), 243-247. doi.org/10.1016/S1077-7229(02)80055-4

Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter?

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and Commitment Therapy: An experiential approach to behaviour change*. New York: Guilford Press.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. D. (1996). Experiential avoidance and behavioural disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*, 1152-1168.

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychological Bulletin, 110*, 86-108.

Heffner, M., Eifert, G. H. (2004). *The Anorexia Workbook: How to Accept Yourself, Heal Your Suffering, and Reclaim Your Life*. New Harbinger Publications.

Heffner, M., Sperry, J., Eifert, G. H., & Detweiler, M. (2002). Acceptance and commitment therapy in the treatment of an adolescent female with anorexia nervosa: A case example. *Cognitive and Behavioural Practice, 9*(3), 232-236. doi.org/10.1016/S1077-7229(02)80053-0.

Higgins, T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*, 319-340. doi:10.1037/0033-295X.94.3.319.

Hildebrandt, T., & Walker, C. D. (2006). Evidence that ideal and attractive figures represent different constructs. A replication and extension of Fingeret, Gleaves and Pearson. *Body Image, 3*, 173-182.

Irons, C., & Gilbert, P. (2005). Evolved mechanisms in adolescent anxiety and depression. The role of attachment and social rank systems. *Journal of Adolescents, 28*, 325–341.

Janna, L. F., & Esther, D. R. (2012). Is Fat a Feminist Issue? Exploring the Gendered Nature of Weight Bias. *Sex Roles, 66*(9), 575-592. doi:10.1007/s11199-011-0022-5.

Jones, D. C. (2001). Social comparison and body image: Attractiveness comparisons to models and peers among adolescent girls and boys. *Sex Roles, 45*(9/10), 645-664. doi:10.1023/A:1014815725852.

Katona, C., & Robertson, M. (2005). *Compêndio de Psiquiatria*. Medicina e Saúde. Lisboa: Instituto Piaget.

Kaufman, G. (1989). *The psychology of shame*. New York: Springer.

Keyser, J., Pastelak, N., Sharma, P., Choi, J., Bender, R., & Alloy, L. (2009). *Specificity of Emotion Awareness to Disordered Eating in Undergraduate Females*. Paper presented at the Association for Behavioural and Cognitive Therapies.

Kline, R. (1998). *Principles and practice of structural equation modeling*. New York: The Guilford Press.

Kline, R. (2005). *Principles and practice of structural equation modeling* (2th ed.). New York: The Guilford Press.

Kristeller, J. L., Baer, R. A., & QuillianWolever, R. (2006). Mindfulness-based approaches to eating disorders. In R. A. Baer (ed.), *Mindfulness-Based Treatment Approaches; Clinician's Guide to Evidence Base and Applications* (pp. 75-91). San Diego, CA: Elsevier Academic Press.

Lawler, M., & Nixon, E. (2011). Body Dissatisfaction Among Adolescent Boys and Girls: The Effects of Body Mass, Peer Appearance

Culture and Internalization of Appearance Ideals. *Journal Youth Adolescence, 40*, 59-71. doi:10.1007/s10964-009-9500-2.

Levinsky, D. (1995). *Adolescência: Reflexões Psicanalíticas*. Porto Alegre: Artes Médicas.

Luce, K. H., & Crowther, J. H. (1999). The reliability of the Eating Disorder Examination – self-report questionnaire version (EDE-Q). *International Journal of Eating Disorders, 25*, 349-351.

Machado, P. P. P. (2007). Questionário de alimentação: EDE-Q 6.0. Centro de Investigação em Psicologia. Braga: Universidade do Minho.

Markham, A., Thompson, T., & Bowling, A. (2005). Determinants of body-image shame. *Personality and Individual Differences, 38*(7), 1529-1541. doi:10.1016/j.paid.2004.08.018.

Maroco, J. (2010). *Análise de equações estruturais: Fundamentos teóricos, software & aplicações [Structural equation analyses: Theoretical basis, software and applications]*. Lisboa: Report Number.

Masheb, R. M., & Grilo, C. M. (2008). Examination of predictors and moderators for self-help treatments of binge-eating disorder. *Journal of consulting and clinical psychology, 76*(5), 900-904. doi: 10.1037/a0012917.

McCabe, M. P., & Ricciardelli, L. A. (2005). A prospective study of pressures from parents, peers, and the media on extreme weight change behaviour among adolescent boys and girls. *Behaviour Research and Therapy, 43*, 653-668.

McCabe, M. P., Ricciardelli, L. Waqa, G., Goundar, R., & Fotu, K. (2009). Body image and body change strategies among adolescent males and females from Fiji, Tonga and Australia. *Body Image, 6*, 299-303. doi:10.1016/j.bodyim.2009.06.001.

McKinley, N. M. (1999). Women and objectified body consciousness: Mother's and daughter's body experience in cultural, developmental and familial context. *Developmental Psychology, 35*, 760-769. doi:10.1037/0012-1649.35.3.760.

McLean, K. C. (2005). Late adolescent identity development: Narrative meaning-marking and memory telling. *Developmental Psychology, 41*, 683-691. doi:10.1037/0012-1649.41.4.683.

McLean, K. C., Breen, A. V., & Fournier, M. A. (2010). Constructing the Self in Early, Middle, and Late Adolescent Boys: Narrative Identity,

Individuation, and Well-Being. *Journal of Research on Adolescence, 20*, 166-187. doi:10.1111/j.1532-7795.2009.00633.x.

Merwin, R., Timko, C. A., Moskovich, A., Konrad Ingle, K., Bulik, C., & Zucker, N. (in preparation). Psychological Inflexibility and Symptom Expression in Anorexia Nervosa.

Merwin, R., & Wilson, K. (2009). Understanding and treating eating disorder: An ACT perspective. *Blackledge, J T*, 87-117.

Orsillo, S. M., & Batten, S. V. (2002). ACT as treatment of a disorder of excessive control: Anorexia. [Comment/Reply]. *Cognitive and Behavioural Practice, 9*(3), 253-259.

Paul, T., Schroeter, K., Dahme, B., & Nutzinger, D. O. (2002). Self-injurious behaviours in women with eating disorders. *American Journal of Psychiatry, 159*, 408-411.

Peterson, K., Paulson, S., & Williams, K. (2007). Relations of Eating Disorder Symptomology with Perceptions of Pressures from Mother, Peers, and Media in Adolescent Girls and Boys. *Sex Roles, 57*(9), 629-639. doi:10.1007/s11199-007-9296-z.

Philips, J., & Drummond, M. (2001). An investigation into the body image perception, body satisfaction and exercise expectations of male fitness leaders: implications for professional practice. *Leisure Studies, 20*, 95-105. doi:10.1080/02614360010025505.

Pinto-Gouveia, J. (2000). Fatores etiológicos e desenvolvimentais nos distúrbios alimentares. In I. Soares (Coord.), *Psicopatologia do desenvolvimento: Trajetórias (in)adaptativas ao longo da vida* (pp.263-314). Coimbra: Quarteto Editora.

Pinto-Gouveia, J., Ferreira, C., & Duarte, C. (2012). Thinness in the Pursuit for Social Safeness: An Integrative Model of Social Rank Mentality to Explain Eating Psychopathology. *Clinical Psychology and Psychotherapy*. Published online In Wiley Online Library. doi:10.1002/cpp.1820.

Pinto-Gouveia, J., Gregório, S., Dinis, A., & Xavier, A. (2012). Experiential Avoidance in Clinical and Non-Clinical Samples: AAQ-II Portuguese Version. *International Journal of Psychology & Psychological Therapy, 12*(2), 139-156.

Presnell, K., Bearman, S. K., & Stice, E. (2004). Risk Factor for Body Dissatisfaction in Adolescent Boys and Girls: A Prospective Study.

International Journal of Eating Disorders, 36, 389-401. doi:10.1002/eat.20045.

Safer, D. L., Telch, C. F., & Agras, W. S. (2001). Dialectical behaviour therapy for bulimia nervosa. *American Journal of Psychiatry, 158*, 632-634.

Sandoz, E. K. (2010). *Assessment of body image flexibility: An evolution the body image – acceptance and action questionnaire*. (unpublished doctoral dissertation). University of Mississippi.

Sands, R., & Wardle, J. (2003). Internalization of ideal body shapes in 9-12 year-old girls. *International Journal of Eating Disorders, 33*(2), 193-204.

Sanftner, J. L., Barlow, D. H., Marschall, D. E., & Tangney, J. P. (1995). The relation of shame and guilt to eating disorder symptomatology. *Journal of Social and Clinical Psychology, 14*, 315-324. doi:10.1521/jscp.1995.14.4.315.

Schmidt, U., & Treasure, J. (2006). Anorexia nervosa: Valued and visible. A cognitive-interpersonal maintenance model and its implications for research and practice. *British Journal of Clinical Psychology, 45*(3), 343-366.

Schork, E. J., Eckert, E. D., & Halmi, K. A. (1994). The relationship between psychopathology, eating disorder diagnosis, and clinical outcome at 10-year follow-up in anorexia nervosa. *Comprehensive Psychiatry, 35*(2), 113-123.

Shafran, R., & Robinson, P. (2004). Thought-shape fusion in eating disorders. *British Journal of Clinical Psychology, 43*, 399-407.

Stice, E. (2001b). Risk factor for eating pathology: recent advances and future directions. In R. H. Striegel-Moore & L. Smolak (Eds.), *Eating disorders: innovative directions In research and practice* (pp.51-73). Washington, DC: American Psychological Association.

Stice, E., Paul, R., Jeff, G., & Shaw, H. (2009). An Effectiveness Trial of a Dissonance-Based Eating Disorder Prevention Program for High-Risk Adolescents Girls. *Journal Consulting Clinical Psychological, 77*(5), 825-834. doi:10.1037/a0016132.

Stice, E., Marti, N., & Durant, S. (2011). Risk factors for onset of eating disorders: Evidence of multiple risk pathways from an 8-year

prospective study. *Behaviour Research and Therapy, 49*, 622-627. doi: 10.1016/j.brat.2011.06.009.

Stice, E. & Shaw, H. E. (2002). Role of body dissatisfaction in the onset and maintenance of eating pathology: A synthesis of research findings. *Journal of Psychosomatic Research, 53*(5), 985-993. doi:10.1016/S0022-3999(02)00488-9.

Telch, C. F., Agras, W. S., & Linehan, M. M. (2001). Dialectical behaviour Therapy for binge eating disorder. *Journal of Consulting and Clinical Psychology, 69*, 1061-1065. doi:10.1037/0022-006X.69.6.1061.

Thompson, J. K. (1996). Assessing body image disturbance: Measures, methodology, and implementation. In J. K. Thompson (Ed.), *Body image, eating disorders and obesity: An integrative guide for assessment and treatment* (pp. 49-81). Washington, Dc: American Psychological Association.

Thompson, J. K., & Altabe, M. A. (1991). Psychometric qualities of the figure rating scale. *International Journal of Eating Disorders, 10*, 615 – 619. doi:10.1002/1098-108X(199109)10:5<615::AID-EAT2260100514>3.0.CO;2-K.

Thompson, J. K., Coovert, M. D., & Stormer, S. M. (1999). Body image, social comparison, and eating disturbance: a covariance structure modeling investigation. *International Journal of Eating Disorders, 26*, 43-51. doi:10.1002/(SICI)1098-108X(199907)26:1<43:;AID-EAT6>3.0.CO;2-R.

Thompson, J., & Stice, E. (2001). Thin-Ideal Internalization: Mounting Evidence for a New Risk Factor for Body-Image Disturbance and Eating Pathology. *American Psychological Society, 10*(5), 181-183.

Tremblay, L., & Larivieri, M. (2009). The influence of puberty onset, Body Mass Index and pressure to be thin on disordered eating behaviours in children and adolescents. *Eating Behaviours, 10*, 75-83. doi:10.1016/j.eatbeh.2008.12.001.

Tylka, L., & Hill, M. (2004). Objectification theory as it relates to disordered eating among college women. *Sex Roles: A Journal of Research, 51*(2). doi:10.1007/s11199-004-0721-2.

Valeri, L., & VanderWeele, T. J. (2013). Mediation analysis allowing for exposure-mediator interactions and causal interpretation: theoretical assumptions and implementation with SAS and SPSS macros. *Psychological Methods*, in press.

Verplanken, B., & Tangelder, Y. (2011). No body is perfect: the significance of habitual negative thinking about appearance of body dissatisfaction, eating disorder propensity, self-esteem and snacking. *Psychology and Health, 26*(6), 685-701. doi:10.1080/08870441003763246.

Wade, T. D., Byrne, S., & Bryant-Waugh, R. (2008). The Eating Disorder Examination: Norm and Construct Validity with Young and Middle Adolescent Girls. *Eating Disorders, 41*, 551-558. doi:10.1002/eat.20526.

Walsh, W. B., & Betz, N. E. (2001). *Tests and assessment*. (2nd ed.). Engleood Cliffs, N. J.: Prentice Hall.

Welch, C., Gross, S. M., Bronner, Y., Dewberry-Moore, N., & Paige, D. M. (2004). Discrepancies in body image perception among fourth-grade public school children from urban, suburban, and rural Maryland. *Journal of the American Dietetic Association, 104*, 1080-1085.

Wenzlaft, E. M., & Wegner, D. M. (2000). Thought suppression. *Annual Review of Psychology, 51*, 59-91.

Wilson, K. G., & Murrell, A. R. (2004). Values work in acceptance and commitment therapy: Setting a course for behavioural treatment. In S. C. Hayes, V. M., Follette, & M. Linehan (Eds.), *Mindfulness & acceptance: Expanding the cognitive-behavioural tradition* (pp. 120-151). New York: Guilford

Wolfe, R. N., Lennox, R. D., & Cutler, B. L. (1986). Getting along and getting ahead: empirical support for a theory of protective and acquisitive self-presentation. *Journal of Social and Personality Psychology, 50*, 356-361.

Wolfe, D. A., & Mash, E. J. (2006). *Behavioral and Emotional Disorders in Adolescents*. London: Guilford Press.

World Health Organization (1995). International classification of diseases (10th rev.). Geneva: WHO.

Body image dissatisfaction and body shame in young adolescence: The mediation effect of fear of compassion for the self

Abstract

Recent studies have suggested importance of shame and body shame in eating psychopathology severity and the role that fear of compassion can have in explaining these disordered behaviours and attitudes. Whereas adolescence is a critical period of development for the onset of eating psychopathology, analysing these variables in this developmental stage is important. The current study investigates whether adolescent girls who feel dissatisfied with their body present increased body shame and whether these associations are mediated by fear of compassion.

These predictions were examined through regression analyses, in a sample of 437 female adolescents, who completed a set of self-report measures assessing body dissatisfaction, body shame and fear of compassion.

Our results showed that body image dissatisfaction was positively and correlated with body shame and with fear of self-compassion. Mediation analysis results showed that the tested model explained 30% of body shame variance and allowed us to confirm that body image dissatisfaction increased body shame partially through higher levels of fear of self-compassion.

The findings suggest that body shame arises as a result of increased body image dissatisfaction and higher levels of fear of directing compassion to one self. These results suggest the importance of assessing and considering the role of fear of compassion in the study of significant variables involved in eating psychopathology severity, namely body shame.

Keywords: Body Image Dissatisfaction, Body Shame, Fears of Compassion, Adolescents, Eating Psychopathology.

I - Introduction

Adolescence is marked by significant difficulties that may be related to the physiological, relational and environmental changes that characterize this developmental period, encompassing the formation of concerns with peer-group relationships and the structuring of new peer group identities, as well as the formation of identity and a system of values, defined by the cultural context (Gilbert & Irons, 2009; McLean, Breen, & Fournier, 2010; Wolfe & Mash, 2006). In this light, in adolescence, there is a highly focus on evaluations by others and competition in peer group to be accepted and approved (Oberle & Schornert-Reichl, 2013; Wolfe, Lennox, & Cutler, 1986). Such concerns, typical of adolescence, can make individuals more vulnerable to difficulties related with fear of rejection and of being assigned an unwanted and inferior social rank position, being linked to the experience of shame (Gilbert & Irons, 2009). This developmental period is marked by changes related with one's body (e.g., body changes, new forms and sensations; Arnett, 2000; Gillen & Lefkowitz, 2009). These characteristics turning it into a critical period for the development of problems related to body image and eating behaviour (Burney & Irwin, 2000; Goss & Gilbert, 2002).

Body image is an important aspect of self-conceptualization (e.g. Cash, 2004; Fisher & Cleveland, 1958) and can be defined as the individual experience of the physical self (Cash, 2004), defined as the weight, measures and shapes evaluation, or any other aspect of the body to determine physical appearance. And studies suggest the effort, for which it becomes a central self-evaluation dimension (Ferreira, Pinto-Gouveia, & Duarte, in press). Research shows that the perceived discrepancy between one's evaluated actual body image and the unreachable beauty and thinness patterns socially valued can generate considerable levels of body image dissatisfaction. This process considered as a key in eating psychopathology (Higgins, 1987; Stice, 2001; Verplanken & Tangelder, 2011). And it may lead to greater negative evaluation of oneself (Jones, 2001) and body shame (Markham, Thompson, & Bowling, 2005). For such reasons, this construct has been a particular field of theoretical and empirical interest, namely in what concerns its impact as a risk factor for eating disorders (Blowers et al., 2003; Krones, Stice, Batres, & Orjada, 2005; Stice, 2001a; Thompson, Coovert, & Storner, 1999).

The age at which body dissatisfaction first surfaces has decreased throughout the last decade, becoming increasingly common in young girls expressing body dissatisfaction and concern about their weight (Davison, Markey, & Birch, 2000; Thompson & Smolak, 2001). Likewise, studies reveal that in adolescence there is a predominance of feelings of body dissatisfaction and fear of fat in girls (Field et al., 1999; Furnham, Badwin, & Sneade, 2002; Janna & Esther, 2012), influenced by the perceived pressure to be thin, in terms of "body ideals", by family, peers and the media, which may promote in eating psychopathology-related in behavioural practices (e.g., restrictive eating, purging, excessive exercising; Dalley, Buunk, & Umit, 2009; Fairburn, 2008; Peterson, Paulson & Williams, 2007; Sands & Wardle, 2003; Tylka & Hill, 2004).

The demands to achieve such unrealistic goals regarding thinness can interfere with developmental milestones such as puberty (Rodin, Silberstein, & Striegel-Moore, 1984). Given these premises, many girls who cannot achieve these standards are likely to experience shame and a pervasive sense of personal inadequacy, adopting a tendency to objectify their bodies. In fact since these ideals of thinness are often incompatible with the development of curves and body fat inherent in puberty, these perceptions are incorporated in body shame, which is therefore associated with early maturation among adolescent girls (Attie & Brooks-Gunn, 1989; Graber & Brooks-Gunn, 1998; O'Dea & Abraham, 2000).

Several theoretical evidences advocate the notion that shame is a multifaceted self-conscious emotion related to a self-focused and self-evaluative experience of the self (e.g., as inferior, inadequate; Tangney & Dearing, 2002; Tracy & Tangney, 2004). However, shame is fundamentally a socially-focused emotion, a defensive response to the threat (or actual experience) of having negative aspects of the self exposed (Lewis, 1992, 2003), of rejection or devaluation (loss of statute), linked to the experience and to a sense of self as negatively felt (e.g., contempt, anger, ridicule) and judged (e.g., as defective, inferior, incompetent) by others (Gilbert, 1992, 1998, 2002), due to loss of attractiveness of the self as a social agent. Being an emotion derived from the relationships and social behaviour (Harder & Greenwald, 2000), shame can be activated before the threat of devaluation or rejection by others, in the case of the subject not being attractive as a social agent (Gilbert, 2002). To sum up, shame can result from the perception of

having features, (e.g., our physical appearance) that are devalued by the social group, leading to the belief that, therefore, others may abandon, reject or ostracize us. And given that the peers group is for humans something essential and specially important during the period of adolescence, feelings of shame at this stage can be particularly pervasive (Gilbert, 2002, 2003, 2007; Gilbert & Irons, 2009).

Body shame involves a state of self-consciousness when individuals perceive their body shape or physical appearance as inferior in relation to the ideal female body represented by the society (Gilbert, 2002; Gilbert & Miles, 2002; Gilbert & Thompson, 2002), which is many times impossible to reach. In this sense, shame focused on one's body is linked with the perception that others will find one's physical appearance an object of negative scrutiny, which somehow diminishes oneself in relation to others, and which might lead to being rejected by them (Fischer & Tangney, 1995; Gilbert, 1998). Body dissatisfaction that derives from the perception that the body one has is different or distant from the "ideal" body socially valued and that one would wish to have, seems to be associated with levels of shame. Particularly, according to Gilbert (2002) women unhappy with their physical appearance and that actively try to change it often reveal body shame issues (Ferreira, 2003; Philips & Drumnond, 2001; Furnham, Badmin, & Sneade, 2002; Gilliard et al., 2007).

Theoretical accounts suggest that body shame can be connected to a number of psychological difficulties, including social anxiety (Gilbert, 2000a, 2000; Grabhorn, Stenner, Stangier, & Kaufhold, 2006), depression (Cheung et al., 2004; Gilbert & Irons, 2004; Thompson & Berenbaum, 2006) and body dysmorphic disorder (Veale, 2002). Body shame is also associated with the development and maintenance of eating psychopathology (Buote et al., 2011; Gilbert, 2002; Gilbert, 2007; Goss & Allan, 2009; Lawler & Nixon, 2011; Stice, Marti, & Durant, 2011). However, studies on the role of body shame, especially in adolescence, remain scant.

Gilbert (2005, 2009) proposed that the antidote to shame is compassion, as an alternative way to regulate threat and negative affect. We can have compassionate feelings for others, from others, and compassion for ourselves, especially in times of difficulty (Gilbert, 2009, 2010a; Neff, 2003a, 2003b). When compassion is directed at the self it is referred to as self-compassion, which entails self-kindness and a mindful approach to

suffering, perceiving one's problems as being part of the human condition, rather than having a self-judging, ruminative, and isolating approach to them (Neff, 2003). Research has shown that lack of self-compassion was associated with increased vulnerability to a number of indicators of psychopathology, and on the contrary, self-compassion has been associated with dimensions of well-being and psychological adjustment (Gilbert, 2005; Kelly, Carter, Zuroff, & Borairi, 2012; Neff, 2003, 2003a, 2003b).

Despite the study about self-compassion in the context of body image and eating-related difficulties being underdeveloped, existent evidence has shown the importance of self-compassion in these contexts. Researches shows that higher levels of self-compassion are linked to a more positive relationship with body image (Berry et al., 2010; Ferreira, Pinto-Gouveia, & Duarte, 2011; Wasylkiw, MacKinnon, & MacLellan, 2012) and to reducing guilt over consuming considered forbidden foods (Adams & Leary, 2007; Wasylkiw, MacKinnon, & MacLellan, 2012). Recent research shows the importance of nurturing a self-compassionate relationship as an antidote to shame and self-judgement in women struggling with body image dissatisfaction (Pinto-Gouveia, Ferreira, & Duarte, 2012). Compassion-focused therapy (Gilbert, 2005, 2009), developed to help self-critical, shame-prone individuals, has recently been adapted to address eating psychopathology with studies corroborating its importance and effectiveness in this context (Goss & Allan, 2010; Kelly, Carter, Zuroff, & Borairi, 2012; Magnus, Kowalski, & McHugh, 2010).

Recently it has been pointed out that there some individuals face difficulties in accessing compassionate feelings, and there is empirical evidence showing that the fear of self-compassion is linked to increased vulnerability to psychopathology (e.g., anxiety and depression; Gilbert, 2012; Gilbert, McEwan, Gibbons et al., 2011; Gilbert, McEwan, Matos et al., 2011; Liotti, 2010). It has been suggested that contexts characterized by shame, low affection or abusive attitudes (Bowlby, 1980; Gilbert, 2007; Mikulincer & Shaver, 2007) promote fears of compassion, and these histories are common in eating disorders patients. Indeed, a recent study conducted in a sample of patients with eating disorders demonstrated that higher fear of self-compassion was associated with higher shame and more severe eating disorder pathology (Kelly et al., 2012).

Thus, even though the existent research point out to the importance of

understanding the role of self-compassion and the importance of fear of self-compassion in eating psychopathology, no study has yet evaluated the impact of this construct on central features of eating disorders, as body image dissatisfaction and shame are. Also, studies on this area during adolescence are nonexistent. Thus, this study intends to contribute for this lack in the literature and intends to investigate whether fear of self-compassion emerges as a mediator on the relationship between body image dissatisfaction and body shame in youth, a particularly relevant period for the onset of body image and eating-related problems.

II - Method

Participants

Participants of this study are part of a wider longitudinal investigation that is being conducted to identify protective and vulnerability factors for eating psychopathology in young adolescent girls. Participants were 437 female adolescents, from the Portuguese student population, and ranged in age from 12 to 16 with a mean age of 13.75 (*SD* = 0.75) and all participants are single (*n* = 437). The participants' years of education varies 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 of the middle region of 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. Forty-three percent (*n* = 188) reported belonging to a low socioeconomic level (determined by socioeconomic status of the father), 30.7% (*n* = 134) reported belonging to a middle socioeconomic level and 26.3% (*n* = 115) reported belonging to a high socioeconomic level (determined by socioeconomic status of the father).

In this sample, participants' height ranged from 1.30 m to 1.80 m (M_{height} = 1.61, *SD* = 0.06) and weight ranged from 32 Kg to 98 Kg (M_{weight} = 52.98, *SD* = 8.58). The subjects' calculated Body Mass Index (BMI; from self-reported weight and height) mean is 20.53 (*SD* = 3.03), with a minimum of 13.28 and a maximum of 35.14. Sixty-nine point three percent of the sample have a BMI within normal range (18.5 kg/m^2 < BMI < 25 kg/m^2). 1.4% are classified as "Very severely underweight", 2.3% classified as

"Severely underweight", 20.1% classified as "Underweight", 6% classified as "overweight" and 0.9% classified as "obese" (WHO, 1995).

Measures

Demographic Data

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

Body Mass Index (BMI) – *Body Mass Index* was calculated as current weight (in Kilograms) divided by square height (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 body silhouettes, numbered 1 to 9 in which the lower numbers correspond to thinner silhouettes, which increases in accordance with the number. In order to evaluate the perception that the subject has regarding his/her real body image, and the discrepancy between this and the image that she/he wants, or perceives as ideal, five questions were added to the original version (Ferreira, 2003). Thus, respondents are asked to select the image that best indicates: (a) their current body image and size; (b) their ideal body image or desire, (c) the shape that she/he feels to have most of the time, (d) body image socially valued as "elegant", and (e) the image more attractive to the opposite sex. The discrepancy between the actual and the ideal body image gives a measure of body image dissatisfaction. This scale shows good test-retest reliability and convergent and divergent validity (Thompson & Altabe, 1991).

Fear of Compassion Scale (FCS-A, Gilbert, McEwan, Matos, & Rivis, 2011; Portuguese version by Matos, Pinto-Gouveia, & Duarte, 2011; adapted for adolescents by Pinto-Gouveia, Cunha, & Duarte, 2012).

This measure was projected to evaluate fear of compassion, consisting of three subscales: "Fear of Compassion for others" comprised 10 items - the compassion we feel for others, related to our sensitivity to other people's thoughts and feelings - ("Being too compassionate makes people soft and easy to take advantage of"); "Fear of Compassion from others" comprised 13 items - the compassion that we experience from others and

flowing into the self - ("I try to keep my distance from others even if I know they are kind"), and "Fear of Compassion for self" comprised 15 items - compassion we have for ourselves when we make mistakes or things go wrong in our lives - ("I worry that if I start to develop compassion for myself I will become dependent on it"). It is used a 5-point Likert scale ranging from (0 = I totally disagree to 4 = I totally agree). In the original study of the scale, the "Fear of Compassion for others" showed Cronbach's Alpha values between .84 and .78; "Fear of Compassion from others" exhibited Cronbach's Alpha values between .85 and .87. At last, "Fear of Compassion for self" revealed Cronbach's Alpha values between .92 and .85. This scale also showed high internal consistency in its Portuguese version was .88 for fears expressing compassion for others, .91 for fears of receiving compassion from others, and .94 for fears in giving compassion to self. The scale shows good psychometric properties for adolescents (Pinto-Gouveia, Cunha, & Duarte, 2012).

Body Shame Scale – Adolescent version (BISS-A; Duarte, Ferreira, & Pinto-Gouveia, 2010).

This measure was designed to assess shame feelings and experiences towards one's body image, comprising the tendency to conceal and to avoid public scrutiny of the body perceived as unattractive. BISS-A is a 17- items self-report scale (e.g., "I prefer hiding some parts of my body") rated in a 5-point Likert scale ranging from (0 = never to 4 = very often). This 17-item instrument generates two subscale scores: *Body Image Concealment* (assesses the need to hide the body perceived as unattractive/defective) and *Social Evaluations Avoidance* (measuring the fear and avoidance of social situations in which physical appearance perceived as unattractive may be negatively evaluated/critiqued by others). 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).

Depression Anxiety and Stress Scales (DASS-21; Lovibond & Lovibond, 1995; Portuguese version by Apóstolo, Mendes, & Azeredo, 2006; adapted for adolescents by Pais-Ribeiro, Honrado, & Leal, 2004).

The *Depression Anxiety Stress Scales 21* (DASS-21) is a short form of Lovibond and Lovibond's (1995) 42-item self-report measure of depression, anxiety, and stress (DASS). This 21-item instrument generates three subscale scores: Depression (e.g., "I could not feel any positive feelings"); Anxiety (e.g., "I felt my mouth dry") and Stress (e.g., "Had difficulty in calming me"). Each item consists of a statement which refers to negative emotional symptoms. The DASS-21 consists of three 7-item self-report scales measures to evaluate which each state has been experienced over the past week, rated in a 4-point Likert scale ranging from (0 = did not apply anything to me to 4 = applied to me most often). In the original study of the scale, the *Depression* showed a Cronbach's Alpha values of .85; *Anxiety* exhibited a Cronbach's Alpha values of .74. At last, *Stress* revealed a Cronbach's Alpha values of .81.

The Cronbach's alphas for all study variables are reported in Table 1.

Procedure

To ensure a wide participation in the study, the Cognitive-Behavioural Research Centre (CINEICC), headquartered at the Faculty of Psychology, University of Coimbra, obtained authorization from the relevant authorities from the relevant authorities: Directorate-general for Curriculum Innovation and Development (DGI-DC) and National Commission for Data Protection to proceed with the research.

The request for collaboration of the aforementioned educational institutions was officially issued by the authors. After proper clarification about the research aims and the importance of cooperation to the scientific community, the consent of the involved institutions' boards was obtained and they issued an authorisation for the voluntarily participation of the subjects.

An informed consent was delivered to the potential subjects containing full disclosure of the nature of the research and the participants' involvement and of the participants' voluntary choice to participate. Since the research population included participants who were less than 18 years old, a parental permission form was attached so that caregivers could become aware of the research and authorize the participation of their

children, being the collection of this document a prerequisite for the involvement of the subjects in the study.

All participants were given a battery of self-report questionnaires, administered in the same order, during a time period previously scheduled with the educational institution board. Again, and in line with ethical requirements, before they filled in the measures, participants received clarification about the procedures and the study's general goals and it was emphasized that their cooperation was voluntary, and that their answers would be 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[2].

Data Analyses

Statistical analyses were conducted using SPSS (v.21; SPSS Inc., Chicago, IL, USA). Descriptive statistics were performed to describe the sample.

Product-moment Pearson correlation analyses were conducted to examine the relationship between body image dissatisfaction (measured as the discrepancy between one's actual and ideal body image; FRS; Thompson & Altabe 1991), body shame (measured by the BISS-A; Duarte, Ferreira, & Pinto-Gouveia, 2010), body mass index (measured as current weight - in Kilograms - divided by square height - in Meters-; BMI), depression anxiety and stress symptoms (measured by the DASS-21; Lovibond & Lovibond, 1995) and fear of compassion (measured by the FCS-A; Gilbert, McEwan, Matos, & Rivis, 2011). Correlations around .10 were considered small or negligible, correlations around .30 were considered moderate, and correlations at or above .50 were considered large (Cohen, 1992; Walsh & Betz, 2001).

Linear regression models were used to test the effects of a series of mediators on the relationship between the independent and the dependent variable, after testing for the suitability of the data to conduct regression

[2] Ten percent of these data were only obtained by self-report measures, given the unwillingness from the schools.

analyses. A mediator model was tested exploring the relationship between body image dissatisfaction and body shame in young adolescent girls, mediated by fear of self-compassion. Analysis testing for this mediating effect followed the linear regression model by Baron and Kenny (1986). According to these authors, a variable functions as a mediator when it meets the following conditions: (i) body image dissatisfaction (predictor variable) significantly regresses with body shame (dependent variable); (ii) body image dissatisfaction (predictor variable) significantly regresses with fear of self-compassion (mediator); and (iii) body image dissatisfaction (predictor variable) and fear of self-compassion (mediator) significantly regresses on the outcome (body shame). The final step of the mediation should demonstrate a significant reduction in the predictive relation of body image dissatisfaction on body shame, after accounting for the variance attributed to fear of self-compassion, when it is added to the model. We further analyzed the amount of mediation - indirect effect - using the Sobel Test, which determines the significance of the indirect effect of the predictor variable on the outcome, through its effect on the mediator.

Effects with p <.050 were considered statistically significant (Cohen, 2003; Tabachnick & Fidell, 2007).

III - Results

Descriptives

The means, standard deviations and Cronbach' Alphas of the study variables are presented in Table 1. All scales showed high internal consistency. The means and standard deviations for these variables are similar to those obtained in previous studies: FCS-A (Matos, Pinto-Gouveia, & Duarte, 2011); BISS-A (Duarte, Ferreira, & Pinto-Gouveia, 2010) and DASS-21 (Pais-Ribeiro, Honrado, & Leal, 2004).

Table 1.

Means (M), Standard Deviations (SD) and Cronbach's Alpha coefficients (α; N = 437)

	M	*SD*	α
FCS_For Others	20.11	9.48	.87
FCS_From Others	16.01	10.51	.87
FCS_For the Self	14.57	13.23	.93
BISS_Total	0.98	0.93	.96
BISS_Concealment	1.24	1.09	.95
BISS_Avoidance	0.66	0.90	.92
DASS_Depression	4.71	5.22	.91
DASS_Anxiety	3.99	4.47	.87
DASS_Stress	5.73	5.04	.90

FCS = Fear of Compassion Scale. FCS_For Others = Fear of Compassion For Others Subscale. FCS_From Others = Fear of Compassion From Others Subscale. FCS_For the Self = Fear of Compassion for the Self. BISS_Total = Body shame Total Scale. BISS_Concealment = Body Image Concealment Subscale of BISS. BISS_Avoidance = Social Evaluations Avoidance Subscale of BISS. DASS = Depression Anxiety Stress Scales.

Preliminary analysis

The values of Skewness and Kurtosis were used to assess uni and multivariate normality of the data distribution and results indicated that all values were between the reference cut-points (|Sk |< 3 e |Ku| < 7) and, therefore, there was no severe violation of normal distribution (Kline, 2005).

Correlations

Product-moment correlation coefficients showed that body image dissatisfaction was positively and moderately correlated with body shame and body image concealment and social evaluations avoidance, subscales of BISS-A and with body mass index. Furthermore, body image dissatisfaction showed a positive, although low in magnitude, correlation with fear of self-compassion, and fear of compassion from others, subscales of FCS-A and with psychopathology, namely depression, anxiety and stress, subscales of DASS-21.

Fear of self-compassion showed a positive moderate association with body shame total score and with body image concealment and social evaluations avoidance, subscales of BISS-A. Furthermore, fear of self-compassion was positively and highly correlated with psychopathology, namely depression, anxiety, stress, subscales of DASS-21 and with fear of compassion for others and fear of compassion from others, subscales of

FCS-A. Also, fear of self-compassion was not correlated with body mass index.

Body shame (total score and subscales) showed a positive, although low in magnitude, correlation with body mass index. Also, body shame was positively and highly correlated with psychopathology, namely depression, anxiety and stress subscales of DASS-21.

The study variables show to moderate associations with BMI, with the except of fears of compassion that were nonsignificantly correlated with BMI. Furthermore the study variables were generally positively and moderately linked to general psychopathology (DASS-21).

Table 2.

Pearson-moment correlation coefficients between the studied variables (N = 437)

	1	2	3	4	5	6	7	8	9	10	11
1.Sil_Body_Dissatisfaction	1										
2.FCS-A_For Others	.09	1									
3.FCS-A_From Others	.16**	.64**	1								
4.FCS-A_For Self	.19**	.50**	.70**	1							
5.BISS_Total	.38**	.31**	.45**	.46**	1						
6..BISS_Concealment	.38**	.31**	.41**	.44**	.98**	1					
7.BISS_Avoidance	.32**	.27**	.46**	.46**	.91**	.81**	1				
8.DASS_DEP	.21**	.33**	.48**	.55**	.57**	.52**	.59**	1			
9.DASS_ANX	.22**	.28**	.45**	.50**	.52**	.48**	.54**	.77**	1		
10.DASS_STRESS	.22**	.33**	.46**	.54**	.52**	.48**	.51**	.82**	.83**	1	
11.BMI	.48**	-.03	.07	.03	.28**	.27**	.27**	.07	.07	.07	1

Note:

** $p < .001$.

* $p < .05$.

BISS_Total = Body Shame Total Scale. BISS_Concealment = Body Image Concealment. BISS_Avoidance = Social Evaluations Avoidance. FCS_A = Fear of Compassion Scale. FCS-A_For others = Fear of Compassion for Others. FSC-A_From Others = Fear of Compassion from Others. FSC-A_For Self – Fear of Compassion for Self. DASS_DEP = Depression Anxiety Stress Scales-21_Depression Subscale. DASS_ANX = Depression Anxiety Stress Scales-21_Anxiety Subscale. DASS_STRESS = Depression Anxiety Stress Scales-21_Stress Subscale. BMI = Body Mass Index.

Regression Analyses – The mediation effect of fear of compassion for the self on the relationship between body image dissatisfaction and body shame.

A series of tests were also carried out to examine the suitability of the current data for regression analyses. The analyses of residuals scatter plots (which provides a test of assumptions of normality, linearity and homoscedasticity between dependent variable scores and errors of prediction) showed that the residuals were normally distributed, had linearity and

homoscedasticity. Also, the independence of the errors were analysed and validated through graphic analysis and the value of Durbin-Watson (values were between 1.83 and 1.94). Also, results indicated the absence of β estimation problems to perform regression analysis (VIF < 5). These findings confirmed that the data had adequacy.

According to our main hypothesis and given the correlation analyses' results a series of regression analyses were conducted to test the model according to which it was assumed that fear of self-compassion would mediate the association between body image dissatisfaction, entered as an independent variable, and body shame (dependent variable) in young adolescent girls. Results showed that body image dissatisfaction was a significant predictor of body shame, explaining a total of 14% of its variance. Then, it was confirmed that body image dissatisfaction was a significant predictor of fear of self-compassion, explaining a total of 3.4 % of its variance. Finally, results indicated that fear of self-compassion emerged as a partial mediator on the association between body image dissatisfaction and body shame (β decreased from .38 to .30; $Z = 3.73$; $p < .001$) emerging as the best predictor (β = .41). This model explains 30% of body shame variance.

Table 3.

The mediation effect of body shame on the relationship between fear of self-compassion and global eating psychopathology (N = 437)

	β	*T*	*p*	*F*	*p*	Adjusted R^2	ΔR^2
Body image dissatisfaction (FRS)				71.35	.000	.14	
D. V. - Body shame (BISS)	.38	8.45	.000				
Body image dissatisfaction (FRS)				16.38	.000	.03	
D. V. - Fear of compassion for the self (FCS)	.19	4.05	.000				
Body image dissatisfaction (FRS)	.30	7.28	.000	93.19	.000	.30	.30
Fear of compassion for the self (FCS)	.41	9.95	.000				
D. V. - Body shame (BISS)							

IV - Discussion

Adolescence is regarded as a critical period for the development of problems related to body image and eating behaviour (Burney & Irwin, 2000; Goss & Gilbert, 2002). It has been recognised, especially in females, that

body image dissatisfaction is linked to shame, and that body shame impacts on the development and maintenance of eating psychopathology (Buote et al., 2011; Gilbert, 2002; Gee & Troop, 2003; Goss & Gilbert, 2002; Grabhorn et al., 2006; Lawler & Nixon, 2011; McCabe & Ricciardelli, 2005; Murray et al., 2000; Stice, Marti, & Durant, 2011; Tremblay & Larivieri, 2009; Strahan et al., 2006). Furthermore, recent research has shown that higher fear of self-compassion was associated with higher shame and more severe eating disorder pathology (Gilbert, McEwan, Matos, & Rivis, 2011)

Elucidating the role of self-compassion in the context of disordered eating, and body image disturbance, namely in youth (Neff & McGehee, 2013), is a cutting edge area of clinical health psychology research and practice (Adams & Leary, 2007; Fain, 2011; Ferreira, Pinto-Gouveia, & Duarte, 2011; Goss, 2011; Loring, 2010; Wasylkiw et al., 2012). The present study uniquely contributes to the existing literature by examining the relationship between body image dissatisfaction and body shame, mediated by fear of self-compassion in a sample of young adolescents.

First, it was confirmed that body image dissatisfaction is positively correlated with body shame, assessed by a newly developed self-report measure adapted to adolescents (Duarte, Ferreira, & Pinto-Gouveia, 2010). This adds to the existent research (Jones, 2001; Ferreira, Pinto-Gouveia, & Duarte, 2013), by corroborating the association between being dissatisfied with one's physical appearance and a specific source of shame, body image (Markham, Thompson, & Bowling, 2005). Also, this study showed that in young adolescent girls, body image dissatisfaction is linked to fear of self-compassion (compassion we have for ourselves when we make mistakes or things go wrong in our lives). In our study, body image dissatisfaction is associated, although low in magnitude, with fear of self-compassion and this fear is, in turn, associated with body shame.

To sum up, correlation analyses results' extend research on the linkage between body image dissatisfaction, body shame and fear of self-compassion, in adolescence. Furthermore, we were interested in examining fear of self-compassion as an underlying mechanism on the link between body image dissatisfaction and body shame. Thus, this study tested a mediator model in which we examined whether the fear of compassion (Gilbert, Clarke, Hempel, Miles, & Irons, 2004), would emerge as a

mediator on the relationship between body image dissatisfaction and body shame.

In accordance with our predictions, results indicated that the mediation analyses provided evidence in support of body image dissatisfaction working in part indirectly through fear of self-compassion in body shame. To note was that it was confirmed that fear of self-compassion was the best predictor of body shame, in comparison to body image dissatisfaction. These findings add to the existent knowledge suggesting the relevant role of fear of self-compassion in eating disorders (Gilbert, 2012; Gilbert, McEwan, Gibbons et al., 2011; Gilbert, McEwan, Matos et al., 2011).

Thus, complementary to that observed by some authors (Ferreira, Pinto-Gouveia, & Duarte, 2011; Wasylkiw, MacKinnon, & MacLellan, 2012), that higher levels of self-compassion are linked to greater positive body image characteristics and reduced eating-related difficulties (Adams & Leary, 2007; Wasylkiw et al., 2012), our study demonstrated that higher fear of self-compassion was a significant predictor of body shame, emerging as a partial mediator on the association between body image dissatisfaction (perception of discrepancy between current and ideal body) and body shame (perception that others will find one's physical appearance an object of negative scrutiny, as unattractive, and that might result in rejection). In other words, the fear of themselves leads to increased body shame (Gilbert, 2002). To sum up, these findings suggest that young adolescent girls, reporting a greater perception of discrepancy between their body shape and their idealized body shape, are more likely to view their physical appearance as an object of negative scrutiny and as a source of social rejection.

These results can suggest that although body dissatisfaction has an impact on levels of shame in relation to body image (e.g., the exercised pressure on adolescents to have a slim body), when this discrepancy is associated with the idea that it is dangerous to have self-compassion, the greater is the impact on the perception that the body can be a source of shame. This may mean that adolescents who fear to be compassionate and to treat themselves with affection, accepting that the body they have is unique (Berry, Kowalski, Ferguson, & McHugh, 2010) and, therefore, different from the body they ideally want to have, are more vulnerable to perceive that

their body is a source of shame, that is, that their body is seen as non-attractive, which may possibly result in being rejected by the social group.

These results add to the existing research on the role of compassion in eating disorders, but complement it by showing that it is not just the absence of compassion that is important but also the fear of compassion. Particularly they emphasize the impact that this fear has on a relationship with one's own body based on shame, a variable that has been identified as important in the development and maintenance of eating psychopathology (Buote et al., 2011; Gilbert 2002; Gilbert, Bailey, & McGuire, 2000; Goss & Gilbert, 2002; Grabhorn et al., 2006). These findings have important clinical implications, by emphasizing the idea that addressing resistance or fear of compassion is necessary, particularly in the area of eating psychopathology (Gilbert, 2009; Gerhardt, 2010).

Study limitations should be considered when interpreting these findings. First, the higher limitation is the cross-sectional study, which precludes conclusions about causality between the variables. Thus, future research should examine the assumptions tested in this study using longitudinal designs, to confirm the directionality and predictability of these findings. Another limitation relates to the fact of using self-report questionnaires, which might have influenced adolescents' responses. However, this limitation was in part solved by the use of instruments appropriately adapted and validated for this population. Nevertheless, future research should use other assessment methods (e.g., investigator-based interviews). Because recent studies suggest that adolescent males, too, struggle with insecurities about their bodies, particularly related to their weight and muscularity (e.g., Calzo, Sonneville, Haines, Blood, Field, & Austin, 2012), the associations examined in the current study should be tested in both genders. Also, future studies should test whether this model present the same results in different age groups, as well as in patients with eating disorders.

Despite these limitations, the current study seems to have important research and clinical implications. In fact, the current findings highlight more attention to the role that fear of self-compassion plays in body and eating-related issues in young adolescent girls, namely in body shame. Likewise, given that these relationships were tested in a sample of early adolescence, these findings point out to the importance of carrying out

preventive work among these populations, namely the development of prevention programs that focus on the role of body image dissatisfaction and body shame and the development of a relationship with one self, charachterised by warmth, acceptance and kindness.

In conclusion, this study reveals that, in adolescent girls, body dissatisfaction impacts on body shame partially through feelings of fear of self-compassion. However, further research is required to determine the precise nature of these associations.

References

Adams, C. E., & Leary, M. R. (2007). Promoting self-compassionate attitudes toward eating among restrictive and guilty eaters. *Journal of Social and Clinical Psychology, 26*, 1120-1144. doi:10.1521/jscp.2007.26.10.1120.

Apóstolo, J. L. A., Mendes, A. C., & Azeredo, Z. A. (2006). "Adaptation to Portuguese of the Depression, Anxiety and Stress Scales (DASS)". *Latin American Journal of Nursing, 14*(6), 863-871.

Apóstolo, J. L. A., Mendes, A. C., & Rodrigues, M. (2007). "Propriedades psicométricas da Escala de Depressão, Ansiedade e Stress (DASS-21) numa amostra não clínica". *Revista Investigação em Enfermagem, 15*, 66-76.

Arnett, J. J. (2002). Emerging Adulthood: What Is It, and What Is It Good For? *Journal compilation, 1*(2), 68-73. doi:10.1111/j.1750-8606.2007.00016.x.

Attie, I., & Brooks-Gunn, J. (1989). The development of eating problems in adolescent girls: A longitudinal study. *Developmental Psychology, 25*, 70-79. Doi:10.1037/0012-1649.25.1.70.

Berry, K. A., Kowalski, K. C., Ferguson, L. J., & McHugh, T. L. F. (2010). An empirical phenomenology of young adult women exercisers' body self-compassion. *Qualitative Research in Sport, Exercise and Health, 2*, 293-312. doi:10.1080/19398441.2010.517035.

Blowers, L. C., Loxton, N. J., Grady-Flesser, M., Occhipinti, S., & Dawe, S. (2003). The relationship between sociocultural pressure to be thin and body dissatisfaction in preadolescent girls. *Eating Behaviours, 4*(3), 229-244: doi:10.1016/S1471-0153(03)00018-7.

Bowlby, J. (1980). *Loss: Sadness and depression. Attachment and loss* (Vol. 3). London: Hogarth Press.

Buote, V. M., Wilson, A. E., Strahan, E. J., Gazzola, S. B., & Papps, F. (2011). Setting the bar: Divergent sociocultural norms for women's and men's ideal appearance in real-world contexts. *Body Image, 8*, 322-334. doi:10.1016/j.bodyim.2011.06.002.

Burney, J., & Irwin, H. J. (2000). Shame and guilt in women with eating-disorder symptomatology. *Journal of Clinical Psychology, 56*(1), 51-61. doi:10.1002/(SICI)1097-4679(200001)56:1<51:;AID-JCLP5>3.0.CO;2-W.

Calzo, J. P., Sonneville, K. R., Haines, J., Blood, E. A., Field, A. E., & Austin, S. B. (2012). The development of associations among body mass index, body dissatisfaction, and weight and shape concern in adolescent boys and girls. *The Journal of Adolescence Health, 51*(5), 517-523. doi: 10.1016/j.jadohealth.2012.02.021.

Cash, T. F. (2004). Body image: past, present and future. *Body Image, 1*, 1-5. doi:10.101/S1740-1445(03)00011-1.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.

Cohen, J. (2003). *Applied multiple regression-correlation analysis for the behavioural sciences*. New Jersey: Routledge.

Dalley, S. E., Buunk, A. P., & Umit, T. (2009). Female body dissatisfaction after exposure to overweight and thin media images: The role of body mass index and neuroticism. *Personality and Individual Differences, 47*(1), 47-51. doi.org/10.1016/j.paid.2009.01.044.

Davison, K. K., Markey, C. N., & Birch, L. L. (2000). The etiology o body dissatisfaction and weight concerns among 5-years old. *Appetite, 35*, 143-151.

Duarte, C., Ferreira, C., & Pinto-Gouveia, J. (2010). O traço do mindfulness como protetor nos comportamentos bulímicos. *Psychologica, 52*(2), 401-422.

Fain, J. (2011). *The self-compassion diet: A step by-step program to lose weight with loving-kindness*. Boulder, CO: Sounds True, Inc.

Fairburn, C. (2008). *Cognitive Behaviour Therapy and Eating Disorders*. New York: Guilford Press.

Ferreira, C. (2003). *Anorexia nervosa – A expressão visível do invisível: Contributos para a avaliação de atitudes e comportamentos em relação ao peso e à imagem corporal* (Dissertação de Mestrado não

publicada). Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra. Coimbra.

Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (2011). The Validation of the Body Image Acceptance and Action Questionnaire: Exploring the Moderator Effect of Acceptance on Disordered Eating. *International Journal of Psychology and Psychological Therapy, 11*(3), 327-345.

Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (2013). Self-compassion in the face of shame and body image dissatisfaction: Implications for eating disorders. *Eating Behaviors, 14*(2), 207-210. doi.org/10.1016/j.eatbeh.2013.01.005.

Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (*in press*). Estudos de validação da Escala da Necessidade de Competir para Evitar a Inferioridade. *Psychologica.*

Field, A. E., Camargo, C. A., Jr., Taylor, C. B., Berkey, C. S., & Colditz, G. A. (1999). Relation of peer and media influences to the development of purging behaviours among preadolescent and adolescent girls. *Archives of Pediatrics and Adolescent Medicine, 153*(11), 1184-1189. doi:10.1001/archpedi.153.11.1184.

Fischer, K. W., & Tangney, J. P. (1995). Self-conscious emotions and affect revolution: Framework and overview. In J. P. Tangney & K. W. Fischer (Eds.), *Self-conscious emotions: The psychology of shame, guilt, embarrassment and pride* (pp.3-22). New York: Guilford Press.

Fisher, S., & Cleveland, S. E. (1958). *Body Image and personality*. New York: Dover Publication.

Furnham, A., Badmin, N., & Sneade, I. (2002). Body Image Dissatisfaction: Gender Differences in Eating Attitudes, Self-Esteem, and Reasons for Exercise. *The Journal of Psychology, 136*(6), 581-596.

Gee, A., & Troop, N. N. (2003). Shame, depressive symptoms and eating weight and shape concerns in a nonclinical sample. *Eating and Weight Disorders, 8*, 72-75. Retrieved from http://www.kutrtis.it/ewd/en/.

Gerhardt, S. (2010). *The selfish society: How we all forgot to love one another and made money instead*. London: Simon & Schuster.

Gilbert, P. (1992). *Depression: The evolution of powerlessness*. Hove: Guilford/Lawrence Erlbaum Associates.

Gilber, P. (1998). What is shame? Some core issues and controversies. In P. Gilbert & B. Andrews (Eds.), *Shame: Interpersonal behaviour, psychopathology and culture* (pp.3-38). New York: Oxford University Press.

Gilbert, P. (2000). The relationship of shame, social anxiety and depression: The role of the evaluation of social rank. *Clinical Psychology & Psychotherapy, 7*, 174-189. doi:10.1002/1099-0879(200007)7:3<174::AID-CPP236>3.0.CO;2-U.

Gilbert, P. (2000a). The relationship of shame, social anxiety and depression: The role of evaluation of social rank. *Clinical Psychology & Psychotherapy, 7*(3), 174-189. doi:10.1002/1099-0879(200007)7:3<174:;AID-CPP236>3.0.CO;2-U

Gilbert, P. (2002). Body shame: A biopsychosocial conceptualization and overview with treatment implications. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualisation, research and treatment* (pp. 3-54). New York: Brunner Routledge.

Gilbert, P. (2003). Evolution, social roles, and differences in shame and guilt. *Social Research: An International Quarterly of the Social Sciences, 70*(4), 1205-1230.

Gilbert, P. (2005). Compassion and cruelty: A biopsychosocial approach. In P. Gilbert (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy*, (pp. 9-74). London: Routledge.

Gilbert, P. (2007). *Psychotherapy and counseling for depression* (3rd ed.). London: Sage.

Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment, 15*(3), 199-208. doi:10.1192/apt.bp.107.005264.

Gilbert, P. (2010a). *Compassion focused therapy: Distinctive features*. London: Routledge.

Gilbert, P. (2012). Fears of self-compassion in a clinical population. Manuscript under review.

Gilbert, P., Clarke, M., Hempel, S., Miles, J., & Irons, C. (2004). Criticizing and reassuring oneself: An exploration of forms styles and reasons in female students. *British Journal of Clinical Psychology, 43*(1), 31-50. doi:10.1348/014466504772812959.

Gilbert, P., & Irons, C. (2004). An exploration of shame, social rank and rumination in relation to depression. *Personality and Individual Differences, 36*(5), 1143-1153. doi.org/10.1016/S0191-8869(03)00206-X.

Gilbert, P., & Irons, C. (2009). Shame, self-criticism, and self-compassion in adolescence. In N. Allen (Ed.), *Psychopathology in Adolescence.* Cambridge: Cambridge University Press.

Gilbert, P., McEwan, K., Gibbons, L., Chotai, S., Duarte, J., & Matos, M. (2011). Fears of compassion and happiness in relation to alexithymia, mindfulness and self-criticism. *Psyhology and Psychotherapy, 84*, 239-255. doi:10.1111/j.2044-8341.2011.02046.x.

Gilbert, P., & McEwan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy, 84*, 239-255.

Gilbert, P., & Miles, J. (2002). *Body Shame: Conceptualisation, Research and Treatment* (pp. 117-283). New York: Brunner-Routledge.

Gilbert, P., & Thompson, J. K. (2002). Body shame in childhood and adolescence. Relations to general psychological functioning and eating disorders. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualisation, research and treatment* (pp.3-54). New York: Brunner Routledge.

Gillen, M. M., & Lefkowitz, E. S. (2009). Emerging adults' perceptions of messages about physical appearance. *Body Image, 6*(3), 178-185. doi:10.1016/j.bodyim.2009.02.002.

Gilliard, T. S., Lackland, D. T., Mountford, W. K., Egan, B. M. (2007). Concordance Between Self-Repoorted Heights and Weights and Current and Ideal Body Images in Young Adult African American Men and Women. *Ethnicity Disease, 17*, 617-623.

Goss, K. (2011). *The compassionate-mind guide to overeating: Using compassion-focused therapy to overcoming bingeing and disordered eating.* Oakland, CA: New Harbinger Publications, Inc.

Goss, K., & Allan, S. (2009). Shame, pride and eating disorders. *Clinical Psychology and Psychotherapy, 16*, 303-316. doi:10.1002/cpp.627.

Goss, K., & Allan, S. (2010). Compassion focused therapy for eating disorders. *International Journal of Cognitive Therapy, 3*, 141-158. doi.org/10.1521/ijct.2010.3.2.141.

Goss, K., & Gilbert, P. (2002). Eating disorders, shame and pride: A cognitive-behavioural functional analysis. In P. Gilbert & J. Miles (Eds.), *Body shame: Conceptualisation, research and treatment* (pp.219-255). New York: Brunner Routledge.

Grabber, J. A., & Brooks-Gunn, J. (1998). Puberty. In E. Blechman & K. Brownell (Eds.), *Behavioural medicine for women: A comprehensive handbook* (pp. 51-58). New York, NY: Guilford. See also Pubertal development (1999). In H. Tierney (Ed.), *Women's studies encyclopedia* (pp. 1166-1170). Westport, CT: Greenwood.

Grabhorn, R., Stenner, H., Stangier, U., & Kaufhold, J. (2006). Social anxiety in anorexia and bulimia nervosa: The mediating role of shame. *Clinical Psychology & Psychotherapy, 13*, 12-19. doi:10.1002/cpp.463.

Harder, D. W., & Greenwald, D. F. (2000). The psychotherapy of shame-related pathology from an evolutionary perspective. In P. Gilbert & K. G. Bailey (Eds.), *Genes on the couch: Explorations in evolutionary psychotherapy* (pp. 304-329). Hove: Brunner-Routledge.

Higgins, T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*, 319-340. doi:10.1037/0033-295X.94.3.319.

Janna, L. F., & Esther, D. R. (2012). Is Fat a Feminist Issue? Exploring the Gendered Nature of Weight Bias. *Sex Roles, 66*(9), 575-592. doi:10.1007/s11199-011-0022-5.

Jones, D. C. (2001). Social comparison and body image: Attractiveness comparisons to models and peers among adolescent girls and boys. *Sex Roles, 45*(9/10), 645-664. doi:10.1023/A:1014815725852.

Joyce, F., Watson, H. J., Egan, S. J., Kane, R. T. (2012). Mediators between perfectionism and eating disorder psychopathology in a community sample. *Eating Behaviors, 13*(4), 361-365. doi:10.1016/j.eatbeh.2012.07.002.

Kelly, A. C., Carter, J. C., Zuroff, D. C., & Borairi, S. (2012). Self-compassion and fear of self-compassion interact to predict response to eating disorders treatment: A preliminary investigation. *Psychotherapy Research, 1*, 1-13. doi:10.1080/10503307.2012.717310

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford Press.

Krones, P. G., Stice, E., Batres, C., & Orjada, K. (2005). In vivo social comparison to a thin-ideal peer promotes body dissatisfaction: A randomized experiment. *International Journal of eating Disorders, 38*, 134-142. doi:10.1002/eat.20171.

Lawler, M., & Nixon, E. (2011). Body Dissatisfaction Among Adolescent Boys and Girls: The Effects of Body Mass, Peer Appearance

Culture and Internalization of Appearance Ideals. *Journal Youth Adolescence, 40*, 59-71. doi:10.1007/s10964-009-9500-2.

Lewis, M. (1992). *Shame: The exposed self*. New York: The Free Press.

Lewis, M. (2003). The role of the self in shame. *Social Research, 70*, 1181–1204.

Liotti, G. (2010). Attachment and dissociation. In P. F. Dell & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders: DSM-V and beyond* (pp. 53-66). London: Routledge.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*, 335-343.

Loring, S. T. (2010). *Eating with fierce kindness: A mindful and compassionate guide to losing weight.* Oakland, CA: New Harbinger Publications, Inc.

Magnus, C. M. R., Kowalski, K. C., & McHugh, T. F. (2010). The role of self-compassion in women's self-determined motives to exercise and exercise-related outcomes. *Self and Identity, 9*, 363-382.

Markham,A., Thompson, T., & Bowling, A. (2005). Determinants of body-image shame. *Personality and Individual Differences, 38*(7), 1529-1541. doi:10.1016/j.paid.2004.08.018.

Matos, M., Pinto-Gouveia, J., & Duarte, C. (2012). Above and beyond emotional valence: The unique contribution of the central and traumatic shame memories to psychopathology vulnerability. *Memory, 20*(5), 461-477. doi:10.1080/09658211.2012.680962.

McCabe, M. P., & Ricciardeli, L. A. (2005). A prospective study of pressures from parents, peers, and the media on extreme weight change behaviour among adolescent boys and girls. *Behaviour Research and Therapy, 43*, 653-668.

McLean, K. C., Breen, A. V., & Fournier, M. A. (2010). Constructing the Self in Early, Middle, and Late Adolescent Boys: Narrative Identity, Individuation, and Well-Being. *Journal of Research on Adolescence, 20*, 166-187. doi:10.1111/j.1532-7795.2009.00633.x.

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford.

Murray, C., Waller, G., & Legg, C. (2000). Family dysfunction and bulimic psychopathology: The mediating role of shame. *International Journal of Eating Disorders, 28*, 84-89. doi:10.1002/(SICI)1098-108X(200007).

Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250. doi:10.1080/15298860390209035.

Neff, K. D. (2003a). Development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250. doi:10.1080/15298860390209035.

Neff, K. D. (2003b). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*, 85-102. doi:10.1080/15298860309032.

Neff, K. D., & McGehee, P. (2010). Self-compassion and Psychological Resilience Among Adolescents and Young Adults. *Self and Identity, 9*, 225-240. doi.org/10.1080/15298860902979307.

Oberle, E., & Schonert-Reichl, K. A. (2013). Relations among peer acceptance, inhibitory control, and math achievement in early adolescence. *Journal of Applied Developmental Psychology, 34*(1), 45-51. doi.org/10.1016/j.appdev.2012.09.003.

O'Dea, J. A., & Abraham, S. (2000). Improving the body image, eating attitudes, and behaviours of young male and female adolescents: a new educational approach that focuses on self-esteem. *International Journal Eating Disorders, 28*(1), 43-57.

Pais-Ribeiro, J. L., Honrado, A., & Leal, I. (2004). Contribuição para o Estudo da Adaptação Portuguesa das Escalas de Ansiedade, Depressão e Stress (EADS) de 21 Itens de Lovibond e Lovibond. *Psicologia, Saúde & Doenças, 5*(2), 229-239.

Peterson, K., Paulson, S., & Williams, K. (2007). Relations of Eating Disorder Symptomology with Perceptions of Pressures from Mother, Peers, and Media in Adolescent Girls and Boys. *Sex Roles, 57*(9), 629-639. doi: 10.1007/s11199-007-9296-z.

Philips, J., & Drummond, M. (2001). An investigation into the body image perception, body satisfaction and exercise expectations of male fitness leaders: implications for professional practice. *Leisure Studies, 20*, 95-105. doi:10.1080/02614360010025505.

Pinto-Gouveia, J., Cunha, M., & Duarte, C. (*manuscript in preparation*). The psychometric properties of the fears of compassion scale: adolescents version.

Pinto-Gouveia, J., Ferreira, C., & Duarte, C. (2012). Thinness in the Pursuit for Social Safeness: Na Integrative Model of Social Rank Mentality to Explain Eating Psychopathology. *Clinical Psychology and Psychotherapy*. Published online In Wiley Online Library. doi:10.1002/cpp.1820.

Rodin, J., Silberstein, L., & Striegel-Moore, R. (1984). Women and weight: A normative discontent. *Nebraska Symposium on Motivation, 32*, 267-307.

Sands, R., & Wardle, J. (2003). Internalization of ideal body shapes in 9-12 year-old girls. *International Journal of Eating Disorders, 33*(2), 193-204.

Stice, E. (2001). Risk factors for eating pathology: Recent advances and future directions. In R. H. Striegel-Moore & L. Smolak (Eds.), *Eating disorders: Innovative directions in research and practice* (pp. 51-73). Washington, DC: American Psychological Association.

Stice, E. (2001a). A prospective test of the dual-pathway model of bulimic pathology: Mediating effects of dieting and negative affect. *Journal of Abnormal Psychology, 110*(1), 124-135. doi:10.1037/0021-843X.110.1.124

Stice, E., Marti, N., & Durant, S. (2011). Risk factors for onset of eating disorders: Evidence of multiple risk pathways from an 8-year prospective study. *Behaviour Research and Therapy, 49*, 622-627. doi: 10.1016/j.brat.2011.06.009.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston: Pearson/Allyn & Bacon.

Tangney, J. P., & Dearing, R. L. (2002). *Shame and guilt*. New York: Guilford.

Thompson, J. K., & Altabe, M. A. (1991). Psychometric qualities of the figure rating scale. *International Journal of Eating Disorders, 10*, 615 – 619. doi:10.1002/1098-108X(199109)10:5<615::AID-EAT2260100514>3.0.CO;2-K.

Thompson, R. J., & Berenbaum, H. (2006). Shame reactions to everyday dilemmas are associated with a history of depressive disorder.

Cognitive Therapy & Research, 30, 415-425. doi:10.1007/s10608-006-9056-3.

Thompson, J. K., Coovert, M. D., & Stormer, S. M. (1999). Body image, social comparison, and eating disturbance: a covariance structure modeling investigation. *International Journal of Eating Disorders, 26*, 43-51. doi:10.1002/(SICI)1098-108X(199907)26:1<43::AID-EAT6>3.0.CO;2-R.

Thompson, J. K., & Smolak, L. (2001). *Body image, eating disorders, and obesity in youth: Assessment, prevention and treatment* (Eds.). Washington DC: American Psychological Association.

Tracy, R. W., & Tangney, J. P. (2004). *The self-conscious emotions: Theory and research*. New York, NY: Guilford Press.

Tremblay, L., & Larivieri, M. (2009). The influence of puberty onset, Body Mass Index, and pressure to be thin on disordered eating behaviours in children and adolescents. *Eating Behaviours, 10*, 75-83. doi:10.1016/j.eatbeh.2008.12.001.

Tylka, L., & Hill, M. (2004). Objectification theory as it relates to disordered eating among college women. *Sex Roles: A Journal of Research, 51*(2). doi:10.1007/s11199-004-0721-2.

Verplanken, B., & Tangelder, Y. (2011). No body is perfect: the significance of habitual negative thinking about appearance of body dissatisfaction, eating disorder propensity, self-esteem and snacking. *Psychology and Health, 26*(6), 685-701. doi:10.1080/08870441003763246.

Walsh, W. B., & Betz, N. E. (2001). *Tests and assessment*. (2nd ed.). Engleood Cliffs, N. J.: Prentice Hall.

Wasylkiw, L., MacKinnin, A. L., & MacLellan, A. M. (2012). Exploring the link between self-compassion and body image in university women. *Body Image, 9*, 236-245. doi:10.1016/j.bodyim.2012.01.007.

Wolfe, R. N., Lennox, R. D., & Cutler, B. L. (1986). Getting along and getting ahead: empirical support for a theory of protective and acquisitive self-presentation. *Journal of Social and Personality Psychology, 50*, 356-361.

Wolfe, D. A., & Mash, E. J. (2006). *Behavioural and Emotional Disorders in Adolescents*. London: Guilford Press.