

## Self-criticism, Perfectionism and Eating Disorders: The Effect of Depression and Body Dissatisfaction

Cláudia Ferreira\*, José Pinto-Gouveia, Cristiana Duarte

University of Coimbra, Portugal

### ABSTRACT

This study aimed at examining a model for eating disorders features' severity that included the association between self-criticism and perfectionistic self-presentation, mediated by depressive symptoms and body image dissatisfaction. A path analysis testing for a mediational model was conducted in a sample of 191 participants, including 94 women from the general population and 97 female patients diagnosed with eating disorders. All participants answered a semi-structured interview (EDE 16.0D) and a set of self-report instruments assessing the study variables. The study findings indicated that the path model explained 43% of body image dissatisfaction variance, and 52% of depressive symptoms variance, and accounted for a total of 64% of the variance of eating disorders' symptoms severity. Results showed that perfectionistic self-presentation and self-criticism were moderately associated. Body image dissatisfaction and depressive symptoms fully mediated the relationship between perfectionistic self-presentation and eating psychopathology severity. Self-criticism, in turn, predicted eating disorders symptoms' severity partially through the mediators' effect. These results clarify the role of perfectionistic self-presentation and self-criticism, as well as the paths through which they operate in eating psychopathology. These mechanisms should be taken into full consideration in the conceptualization and clinical practice with patients with eating disorders.

*Key words:* eating disorders, body image, depression, self-criticism, perfectionistic self-presentation.

### Novelty and Significance

#### What is already known about the topic?

- The overevaluation of eating, body shape and weight, leading to an intense drive to achieve thinness, is the core feature of eating psychopathology.
- Eating psychopathology has a multidetermined nature;
- Body image dissatisfaction and negative affect are important predictors of eating psychopathology and are often linked to a sense of inferiority and self-criticism alongside a strive for perfection.

#### What this paper adds?

- This study clarifies the relationship between self-criticism and the need to appear perfect in the eyes of others, and the means through which they impact on eating psychopathology;
- Perfectionistic self-presentation is associated with self-criticism and predicts eating psychopathology only in the context of high body dissatisfaction and negative affect;
- Self-criticism (a self-to-self relationship characterized by a sense of inadequacy) has a direct impact on eating psychopathology, with body dissatisfaction and negative affect also contributing for this association.

Eating disorders are characterized by the over-evaluation of eating, shape and weight and their control in determining one's self-worth. In this sense, the hallmark of eating disorders is the intense drive to be thin and the morbid fear of losing control over eating and one's body image and shape (Fairburn, 2008). Even though eating disorders are not highly prevalent (with lifetime prevalence rates of anorexia nervosa and

\* Correspondence concerning this article: Cláudia Ferreira, CINEICC, Faculdade de Psicologia e Ciências da Educação, Universidade de Coimbra, Rua do Colégio Novo, Apartado 6153, 3001-802 Coimbra, Portugal. E-mail: claudiaferreira@fpce.uc.pt

bulimia nervosa ranging from 0.3% to 4.2%), these are one of the most life-threatening psychopathological conditions. Nevertheless, the rates of subclinical disordered eating features seem to be significantly higher. In fact, approximately over 50% young women present great efforts in dieting and weight loss, as well as intense concerns about body image, weight and eating (APA Work Group on Eating Disorders, 2006). Furthermore, research show that women who present these subclinical behaviours are at higher risk of developing full syndrome eating disorders (for a review see Fairburn, 2008).

It is widely accepted that there are multiple risk pathways for the development of eating psychopathology (Stice, 2001). One component that is referred to as key to eating disorders' development is body image dissatisfaction (e.g., Mcknight, 2003; Stice, Marti, & Durant, 2011). Body image dissatisfaction often emerges as the result of the perceived sociocultural pressure to be thin and the internalization of the thin beauty ideal (Buote, Wilson, Strahan, Gazzola, & Papps, 2011). Moreover, body image dissatisfaction promotes unhealthy eating patterns, typified by negative affect and dieting, which may progress to eating psychopathology (Stice *et al.*, 2011).

Theoretical and empirical accounts suggest that alongside the overvaluation of eating and body image, patients with eating disorders tend to compare themselves negatively with others (Ferreira, Pinto-Gouveia, & Duarte, 2011). Also, they often are oversensitive regarding how others view them, assuming that others' evaluations towards them are negative and condemning. In this sense, in order to feel safer and to increase a sense of belonging to the social group, avoiding rejection and criticism, these individuals tend to adopt a series of defensive strategies, such as self-criticism and the drive to meet excessively high levels of performance and to be perfect, (Gilbert, Durrant, & McEwan, 2006; Gilbert & Procter, 2006). Self-criticism refers to a type of negative self-judgment and self-scrutiny where one displays a punitive response in face of one's errors, faults or attributes (e.g., physical appearance) that may cause social disapproval or rejection. Self-criticism may then be understood as a strategy to cope with shortcomings of an inadequate or inferior perceived self (Gilbert, Clarke, Hempel, Miles, & Irons, 2004). However, this constant and cruel self-to-self harassment is highly linked to psychopathology, namely depressive symptoms (Dunckley, Zuroff, & Blankstein, 2003; Gilbert *et al.*, 2004; Gilbert *et al.*, 2006). Recent research has gathered evidence showing the important role of self-criticism in eating-related symptoms (e.g., binge eating; Dunckley & Grilo, 2007). Particularly, self-criticism has been considered a potent maladaptive emotional regulation process that, by fueling a sense of being an inferior or flawed self in comparison to others, predicts increased drive for thinness (Pinto-Gouveia, Ferreira, & Duarte, 2012).

A critical self-to-self-relationship has also been associated with striving to achieve flawlessness, which is defined as perfectionism (Flett & Hewitt, 2002; Frost, Martin, Lahart, & Rosenblate, 1990; Gilbert *et al.*, 2006; Hewitt & Flett, 1991). Perfectionism has long been pointed out as a core feature of patients with eating disorders (patent in these patients intense drive to reach "perfection" regarding their weight or body shape) that has an important impact in the onset, development, treatment and recovery from these disorders (for a review see Bardone-Cone *et al.* , 2007; Geller, Cockell, Hewitt, Goldner, & Flett, 2000). A recent study conducted with eating disorders' patients has

shown that clinical perfectionism, along with self-criticism, was significantly linked to the overevaluation of body image and shape (Steele, O'Shea, Murdock, & Wade, 2011).

Currently, there is a growing interest in the interpersonal expression of perfectionism, that is, perfectionistic self-presentation. According to Hewitt *et al.* (2003), perfectionistic self-presentation refers to the need to appear perfect by actively promoting one's supposed "perfection", by nondisplaying one's perceived imperfections, and by occulting or avoid disclosing one's imperfections, in relationship to performance, competence and physical appearance.

Several studies have shown that perfectionistic self-presentation is linked to a wide range of psychopathologies, namely depression (Hewitt & Flett, 2002; McKinnon & Sherry, 2012). In particular, research has shown that anorexia nervosa patients revealed significantly higher scores on this type of perfectionism when compared to nonclinical controls (Castro *et al.*, 2004) or to other psychiatric patients (Cockell *et al.*, 2002). Also, studies conducted in nonclinical samples of young females have shed evidence on the link between perfectionistic self-presentation and eating and body image-related symptoms (Hewitt, Flett, & Ediger, 1995). Nevertheless, new developments suggest that the association between perfectionistic self-presentation and eating disorders' symptoms is not direct, but mediated by other variables. For example, McLaren, Gauvin, and White (2001), in a sample of young females from the general population, found that weight-loss driven exercise mediated the link between perfectionistic self-presentation and dietary restraint. McGee, Hewitt, Sherry, Parkin, and Flett (2005) further proposed that the relationship between perfectionistic self-presentation and eating disorders' related behaviours and attitudes in undergraduate females, depends upon the level of how attractive and satisfied one feels relatively to body image.

To sum up, even though the relevance of perfectionism in eating disorders has been well-documented, only recently there has been paid attention to the interpersonal dimension of perfectionism (e.g., McGee *et al.*, 2005; McLaren *et al.*, 2001). Also, although the existent findings offer interesting suggestions that perfectionistic self-presentation impacts on eating psychopathology through its effect on other factors, the investigation of these mediational relationships is still scant and no work appears to have looked at these aspects in eating disorders' patients. Furthermore, there remains a dearth of evidence regarding how perfectionistic self-presentation relates to self-criticism, as well as the pathways through which these two defensive strategies operate in eating psychopathology.

The current study aims at filling some of the gaps of the current knowledge regarding the role of self-criticism and perfectionistic self-presentation in eating disorders. First we intend to test whether perfectionistic self-presentation and self-criticism would correlate and predict body image dissatisfaction and depressive symptoms. Also, we intended to investigate whether perfectionistic self-presentation and self-criticism, are associated with a global indicator of the severity of eating disorders features, and whether this relationship is mediated by increased levels of body image dissatisfaction and depressive symptoms. We expect that women who reveal an increased need to present themselves as perfect to others and that perceive themselves as inadequate and inferior, present increased negative affect and body image dissatisfaction, and, as a consequence, higher

levels on key behavioural and attitudinal features of eating psychopathology -dietary restraint, and concerns regarding eating, shape, and weight. Specifically, we predict that perfectionistic self-presentation is positively related with eating psychopathology through the effect of body image dissatisfaction and depressive symptoms. Likewise, we intend to test whether self-criticism plays an important role in the explanation of the severity of eating psychopathology, and whether this role is further mediated by body image dissatisfaction and depressive symptoms. We chose to examine these associations in a model tested in a sample that comprise young women from the general population and female patients diagnosed with an eating disorder, assessed by the Eating Disorder Examination (EDE 16.OD; Fairburn, Cooper, & O'Connor, 2008).

To summarize, in this study we present and test a model (see Figure 1) that explains the relationship between perfectionistic self-presentation and self-criticism, and eating disorders symptoms' severity, and whether body image dissatisfaction and depressive symptoms mediate those relationships.

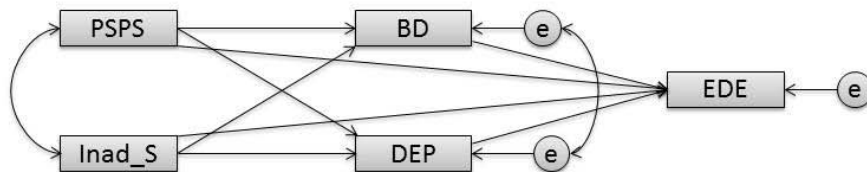


Figure 1. Theoretical (full saturated) model.

## METHOD

### Participants

The sample of this study is part of a wider research that is being conducted to investigate the development and maintenance of eating disorders.

The sample comprised 191 women, 94 from the general population and 97 patients with an eating disorder. The women from the general population presented an age mean of 21.45 ( $SD= 6.51$ ), while the patients presented an age mean of 22.86 ( $SD= 6.89$ ). The two groups did not present significant differences regarding age ( $t(188,876)= 1.453$ ;  $p= .148$ ). Concerning the clinical condition of the eating disorders' patients, 34% ( $n= 33$ ) of the patients presented Anorexia Nervosa, 32% ( $n= 31$ ) Bulimia Nervosa, and 34% ( $n= 33$ ) an Eating Disorder not Otherwise Specified.

As in previous studies, we opted for testing our hypotheses in young females because they are at much higher risk for presenting eating pathology than men (Stice *et al.*, 2011; Hudson, Hiripi, Pope, & Kessler, 2007). Also, considering that disordered eating features are distributed along a gravity continuum ranging from normative concerns regarding body image and eating, to cases of clinical significance, the eating disorder patients and the participants from the general population were gathered in a single sample (Fairburn, 2008). Prior research (Ferreira *et al.*, 2011) and preliminary analyses confirmed that this option was statistically viable. The visual inspection of the distribution showed that this sample did not create a bimodal distribution.

### Instruments

*Eating Disorder Examination 16.0D* (EDE 16.0D; Fairburn, Cooper, & O'Connor, 2008; Psychometric properties of the Portuguese Population by Ferreira, Pinto-Gouveia, & Duarte, 2010). EDE is a standardized interview that can be used for diagnosing eating disorders based on the DSM-IV-TR (2000) criteria, and allows the assessment of the frequency and intensity of core behavioural and psychological characteristics of eating disorders, such as restriction habits, eating, weight, and shape concerns. It is considered a precise evaluation method with high values of internal consistency, of test-retest reliability, and of discriminative and concurrent validity (see Fairburn, 2008 for a review). Chronbach alpha was .97.

*Perfectionistic Self-Presentation Scale* (PSPS; Hewitt *et al.*, 2003; Portuguese version by Ferreira, Pinto-Gouveia, & Duarte, 2009). PSPS is a 27-item scale that measures the need to appear perfect to others. It comprises three subscales: perfectionistic self-promotion (e.g., "I try always to present a picture of perfection"), non display of imperfection (e.g., "I do not want people to see me do something unless I am very good at it"), and nondisclosure of imperfection (e.g., "I should solve my own problems rather than admit them to others"). Participants are asked to rate their (dis)agreement with each item using a 7-point scale, in which higher scores indicate greater levels of perfectionistic self-presentation. The PSPS presents high internal consistency, test-retest reliability, and adequate convergent and discriminant validity (e.g., Hewitt *et al.*, 2003). In the present study the scale presents a Cronbach's alpha value of .93.

*The Forms of Self-Criticizing & Self-Reassuring Scale* (FSCRS; Gilbert *et al.*, 2004; Portuguese version by Castilho, Pinto-Gouveia, & Duarte, 2012). This scale, with 22 items, aims at measuring people's critical and reassuring evaluative responses to a setback or failure. Participants are asked to answer to the following statement "When things go wrong for me..." selecting in a 5-point Likert scale, the extent to which each statement applies to their experience, tapping self-reassurance (e.g., "I am able to remind myself of positive things about myself") and self-criticism. The authors suggest two forms of self-criticism: inadequate-self, which refers to feeling inadequate and/or defeated (e.g., "I am easily disappointed with myself"); and hated-self, which focuses on a sense of disgust and anger with the self (e.g., "I have become so angry with myself that I want to hurt myself"). The Cronbach' alpha values were .90 for the inadequate-self subscale and .86 for both the hated-self and self-reassurance subscales (Gilbert *et al.*, 2004). In the present study we used the inadequate-self subscale (Inad\_S), which presented a Cronbach alpha of .92.

*Eating Disorder Inventory* (EDI; Garner *et al.*, 1983; Portuguese version by Machado, Gonçalves, Martins, & Soares, 2001). This scale is one of the most used and rigorous instruments to assess eating disorders dimensions and can be used as a diagnostic measure. It comprises 64 items subdivided in 8 subscales, assessing weight, shape and eating related attitudes and behaviours, and psychological characteristics common in patients with eating disorders. Using a 6-point Likert scale (ranging from "Always" to "Never") respondents rate how much each item apply to them. For the purpose of this study we only analysed the body dissatisfaction (BD) subscale, which presents adequate internal consistency coefficients and is well-validated (Garner *et al.*, 1983). The Portuguese version presents the following internal consistency values: BD= .91 (Machado *et al.*, 2001). The coefficient alpha in the current study was .94.

*Depression, Anxiety and Stress Scales* (DASS42; Lovibond & Lovibond, 1995; Portu-

guese version by Pais-Ribeiro, Honrado, & Leal, 2004). This scale includes three subscales (of 14 items each) designed to measure levels of Depression, Anxiety, and Stress. The point is to obtain an estimate of how much the subjects experienced each symptom during the previous week in a 4-point scale. Higher results indicate higher levels of emotional distress. The Cronbach's alpha of the Portuguese version (Pais-Ribeiro *et al.*, 2004) resembles the original ones: .93 for Depression (.91 in the original version), .83 for Anxiety subscale (.84 in the original version), and finally .88 for Stress subscale (.90 in the original version). In the present study the Cronbach's alpha value was .97.

### *Procedure and Data analysis*

Participants gave their informed consent after being fully informed about the aims and procedures of the study, and that their cooperation was voluntary and confidential. The EDE 16.0D (Fairburn *et al.*, 2008) and the series of self-report measures were administered by the authors. The participants from the general population comprised a convenience sample recruited through the cooperation of undergraduate Psychology students that were offered 1 point of extra credit as an incentive. The patients with the diagnosis of an eating disorder were recruited in Portuguese public hospitals, and in private clinics, after the respective ethics' committee approval.

Statistical analyses were conducted using PASW (SPSSv.18) and Path analyses were examined using the software AMOS (SPSSv.18).

Product-moment Pearson Correlation analyses were conducted to examine the relationship between the variables: perfectionistic self-presentation, self-criticism (inadequate self subscale), body image dissatisfaction, depressive symptoms and eating psychopathology.

Path analyses were conducted to estimate the presumed relations among variables in the proposed theoretical model (the path diagram is presented in Figure 1). Path analysis is a particular form of Structural Equation Modelling (SEM) used to assess theoretically expected causality. It is a well-known and appropriate statistical methodology that allows for the simultaneous examination of structural relationships and direct and indirect effects between exogenous and endogenous variables controlling for error (Kline, 1998; Maroco, 2010).

The path model investigated in this study comprised 5 observed variables. In the model we examined whether perfectionistic self-presentation (as measured by the PSPS) and self-criticism (the inadequate-self subscale of the FSCRS) would predict eating psychopathology (total score of the EDE 16.0D), mediated by body image dissatisfaction (measured by the EDI) and depressive symptoms (depression subscale of the DASS42). Perfectionist self-presentation and self-criticism were assumed to be the independent exogenous variables; body image dissatisfaction, and depressive symptoms were hypothesized as the endogenous mediator variables; and eating psychopathology was the dependent endogenous variable. The Maximum Likelihood method was used to test for the significance of all the model path coefficients and to compute fit statistics. A series of goodness of fit measures was used to examine the plausibility of the overall model: Chi-square ( $\chi^2$ ), Normed Chi-square (CMIN/DF), Tucker Lewis Index (TLI),

Comparative Fit Index (CFI), Normative Fit Index (NFI), Goodness of Fitness Index (GFI), and Root-Mean Square Error of Approximation (RMSEA), with 95% confidence interval. The significance of the direct, indirect and total effects was assessed by Chi-Square tests and the Bootstrap resampling method, which is considered to be one of the most reliable and powerful procedure to test mediation effects (Maroco, 2010). This procedure, with 2000 Bootstrap samples, was used to create 95% bias-corrected confidence intervals around the standardized estimates of total, direct and indirect effects. Following the assumptions of the Bootstrap method, the effects were considered as significantly different from zero ( $p < .05$ ) if zero was not on the interval between the lower and the upper bound of the 95% bias-corrected confidence interval (Kline, 1998).

## RESULTS

Uni and multivariate normality was assessed using the values of Skewness and Kurtosis, which indicated that there was no severe violation of normal distribution ( $|Sk| < 3$  and  $|Kul| < 8-10$ ; Kline, 1998).

Table 1 reveals the existence of positive and moderate product-moment Pearson correlations coefficients between perfectionistic self-presentation, body image dissatisfaction, depressive symptoms and eating psychopathology.

The theoretical model was tested by a saturated model, that is, with zero degrees of freedom, which comprised 15 parameters. Given that saturated models produce a perfect fit to the data, model fit indices were not examined. The fully saturated model explained 64% of eating psychopathology variance, and only the path regarding the direct effect of self-perfectionist presentation on eating psychopathology exceeded the critical value for two-tailed statistical significance at the .05 level ( $bPSPS = .01$ ;  $SEb = .00$ ;  $Z = 1.59$ ;  $p = .113$ ;  $\beta = .09$ ). In order to obtain a parsimonious model, this nonsignificant path was eliminated and the model recalculated.

The final model with the standardized path coefficients and the estimated standard error is shown in Figure 2. The obtained nested model revealed an excellent model fit with a non-significant chi-square [ $\chi^2(1) = 2.494$ ;  $p = .114$ ], and as supported by a series of well-known and recommended goodness-of-fit indices (CMIN/DF = 2.494; CFI = 0.997; TLI = 0.973; NFI = 0.996; GFI = 0.995; RMSEA = 0.089; Kline, 1998).

The nested model, in which all the path coefficients were statistically significant ( $p < .05$ ), accounted for 64% of eating psychopathology's variance. Also, the model

Table 1. Pearson moment correlations between the studied variables.

	PSPS	Inad_S	BD	DEP
PSPS	-			
Inad_S	.64*	-		
BD	.57*	.61*	-	
DEP	.54*	.71*	.66*	-
EDE		.64*	.75*	.68*

Notes: \* =  $p < .01$ ; PSPS= Perfectionistic Self-Presentation Scale; Inad\_S= Inadequate-Self; BD= Body Dissatisfaction; DEP= Depressive symptoms; EDE= Eating Disorders Examination.

accounted for 43% of body image dissatisfaction's variance, and for 52% of depressive symptoms' variance. Perfectionistic self-presentation directly predicted body image dissatisfaction [ $b_{PSPS} = .09$ ;  $SE_b = .02$ ;  $Z = 4.19$ ;  $p < .001$ ;  $\beta_{PSPS} = .30$ ] and depression [ $b_{PSPS} = .06$ ;  $SE_b = .03$ ;  $Z = 2.01$ ;  $p = .045$ ;  $\beta_{PSPS} = .13$ ]. Self-criticism presented a significant direct effect on body image dissatisfaction [ $b_{Inad\_S} = .39$ ;  $SE_b = .07$ ;  $Z = 5.86$ ;  $p < .001$ ;  $\beta_{Inad\_S} = .42$ ] and depression [ $b_{Inad\_S} = .82$ ;  $SE_b = .09$ ;  $Z = 9.50$ ;  $p < .001$ ;  $\beta_{Inad\_S} = .63$ ], and also in eating psychopathology [ $b_{Inad\_S} = .04$ ;  $SE_b = .01$ ;  $Z = 2.90$ ;  $p = .004$ ;  $\beta_{Inad\_S} = .19$ ]. Body image dissatisfaction [ $b_{BD} = .12$ ;  $SE_b = .01$ ;  $Z = 8.17$ ;  $p < .001$ ;  $\beta_{BD} = .49$ ] and depression [ $b_{DEP} = .04$ ;  $SE_b = .01$ ;  $Z = 3.22$ ;  $p = .001$ ;  $\beta_{DEP} = .22$ ] both significantly and directly predicted eating psychopathology.

Moreover, the model allowed us to identify the indirect effect of perfectionistic self-presentation and self-criticism on eating psychopathology through the effects of body image dissatisfaction and depressive symptoms. The indirect mediational test results suggested that perfectionistic self-presentation predicted greater eating psychopathology fully through increased levels of body image dissatisfaction with an indirect effect of .15 ( $\beta = .30 \times .49$ ) and through increased levels of depression with an indirect effect of .03 ( $\beta = .03 \times .22$ ). The estimate of the indirect effects of perfectionistic self-presentation on eating psychopathology framed by a CI .95% [.086; .270] revealed an effect significantly different from zero at  $p = .001$ . Furthermore, self-criticism partially predicted greater eating psychopathology mediated by increased body image dissatisfaction with an indirect effect of .21 ( $\beta = .42 \times .21$ ) and by increased levels of depression with an indirect effect of .14 ( $\beta = .63 \times .22$ ;  $CI = .243; .457$ ;  $p = .001$ ).

Figure 2 presents the nested model with the standardized regression coefficients and  $R^2$  of perfectionistic self-presentation, self-criticism, body dissatisfaction, depression and eating psychopathology.

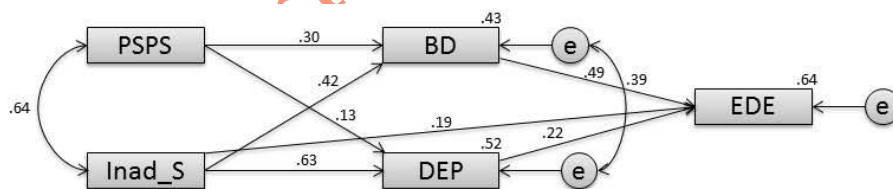


Figure 2. Nested model presenting the mediational path analysis, with the standardized estimates.

## DISCUSSION

Previous theoretical and empirical work has highlighted that body image dissatisfaction predicts the onset of eating disorders and that this pathway is increased by negative affect (Mcknight, 2003; Stice, 2001; Stice et al., 2011). Furthermore, perfectionism has long been recognized as a recurrent theme in the field of eating disorders (for a review see Bardone-Cone et al., 2007). More recently, a study by Pinto-Gouveia et al. (2012), suggests that central features of eating psychopathology -body image



dissatisfaction and drive for thinness- emerge in the context of a critical relationship with oneself, feelings of inadequacy and inferiority and fears of being disapproved or looked down by others. However, the current study was the first one to examine a model that integrated these variables to understand eating psychopathology's severity.

This research aimed at establishing support for a model examining the impact of self-criticism and perfectionistic self-presentation on eating psychopathology's severity, having body image dissatisfaction and depressive symptoms as mediators. These links were tested in a female sample that gathered young women from the general population and eating disorders' patients (following previous research designs; Ferreira *et al.*, 2011) in order to cover a large spectrum of eating psychopathology's severity.

The results demonstrated that the proposed model was acceptable and able to significantly explain 43% of body image dissatisfaction's variance and 52% of depressive symptoms' variance. Notably, this model explained a total of 64% of eating psychopathology's variance, as measured by the total score of the EDE 16.OD (Fairburn *et al.*, 2008). The use of this clinical and investigator-based interview, the gold standard of eating disorder assessment, strengthened our results since it allowed us to avoid the subjective perception of the participants in assessing eating disorders-related symptoms through self-report measures.

In line with previous research (Flett & Hewitt, 2002; Gilbert *et al.*, 2006) we found that self-criticism was moderately associated with the need to appear "perfect" in the eyes of the others. Moreover, our results revealed that self-criticism had a greater direct effect on the mediators -body image dissatisfaction and depressive symptoms- than perfectionistic self-presentation. Also, according to previous findings (Steele *et al.*, 2007; McGee *et al.*, 2005; McLaren *et al.*, 2001), and to our prior hypotheses, our results showed that perfectionistic self-presentation did not have a direct impact on eating psychopathology's severity. Indeed, the effect of the need to portray an image of "perfection" was totally mediated by higher levels of body image dissatisfaction and, in a lesser degree, by increased depressive symptomatology. This suggests that the over concern about having a thin body shape and the rigid control over one's weight and eating do not necessarily derive from an increased tendency of presenting oneself as perfect. It seems that it is only in the context of feeling dissatisfaction with one's body image and negative affect that such tendency expresses itself on those eating disorders' symptoms. Our findings also revealed that body image dissatisfaction and depressive symptomatology partially mediated the link between self-criticism and eating psychopathology's severity. However, contrariwise to the case of perfectionistic self-presentation, self-criticism directly impacted on eating psychopathology's severity. These results were of particular interest. They suggest that increased levels of eating psychopathology may arise in the context of a sense of self as inadequate and inferior and that, in this case, body image dissatisfaction and depressive symptoms are not imperative to explain that association. This conclusion contribute to fill the dearth in the literature regarding the role of self-criticism in eating psychopathology, proposing that a self-to-self critic relationship is key in eating disorders (as previously suggested by preliminary evidence; Pinto-Gouveia *et al.*, 2012), and should be clearly targeted in their treatment.

Overall, these findings extend prior research (e.g., Stice *et al.*, 2011) since they offer evidence supporting the role that body image dissatisfaction and negative affect play on the prediction of eating disorders' symptoms. Nevertheless, they complement theoretical and empirical accounts on perfectionism and eating disorders (e.g., Bardone-Cone, 2007) by revealing that perfectionistic self-presentation predicts eating psychopathology's severity by its combination with self-criticism, and through the effect of body image dissatisfaction and negative affect. In other words, our data suggest that the degree in which the control over eating, body shape and weight becomes crucial in determining one's self-worth does not solely depend on one's necessity to portray an image of perfection, but is significantly predicted by the connection of this necessity with a sense of self as being inferior, flawed and inadequate, which fuels depressive symptoms, as well as feelings of dissatisfaction with one's body image.

Even though this study used a large sample representative of the eating disorders' symptoms distribution along a continuum (from the general population to eating disorders' patients), as well as rigorous sophisticated statistical analyses, the current study is not free from some important limitations and areas that should be examined in future investigations. First, the cross-sectional design used in this study precludes conclusions regarding causality. Future research should test the hypotheses presented here through a longitudinal mediational design to determine the directionality of the associations and whether the link between self-criticism and perfectionistic self-presentation impacts on increased depressive symptoms, body image dissatisfaction, and ultimately in increased vulnerability to eating disorders. Furthermore, even though this study aimed at understanding eating psychopathology through the lens of a transdiagnostic approach (Fairburn, 2008), not teasing apart the eating disorder types and subtypes could have had implications in the obtained results. Thus, these considerations should be verified in future research. Finally, when interpreting these findings the multidetermined nature of eating disorders should be kept in mind. Hence, even though the current study fills an absence in the literature, the integrative model presented here is not closed. There are still gaps in our knowledge and, therefore, future research should test the role of other variables and processes through which they operate in eating psychopathology (e.g., shame and pride).

Overall, this study adds important conclusions regarding the role of self-criticism and perfectionistic self-presentation in eating disorders and have relevant clinical implications suggesting the need to target these constructs when working with young women experiencing an over-concern and intense need to control their eating pattern, weight and body shape.

#### REFERENCES

- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4<sup>th</sup> Ed. Text. Rev.). Washington DC: Author.
- APA Work Group on Eating Disorders (2006). *Treatment of patients with eating disorders* (3<sup>rd</sup> Ed.). doi:10.1176/appi.books.9780890423363.138660
- Bardone-Cone AM, Wonderlich SA, Frost RO, Bulik CM, Mitchell JE, Uppala S, & Simonich H (2007). Perfectionism and eating disorders: Current status and future directions. *Clinical Psychology*

- Review*, 27, 384-405. doi:10.1016/j.cpr.2006.12.005
- Castro J, Gila A, Gual P, Lahortiga P, Saura B, & Toro J (2004). Perfectionism dimensions in children and adolescents with anorexia nervosa. *Journal of Adolescent Health*, 35, 392-398. doi:10.1016/j.jadohealth.2003.11.094
- Cockell SJ, Hewitt PL, Seal B, Sherry S, Goldner EM, Flett GL, & Remick RA (2002). Trait and self-presentational dimensions of perfectionism among women with anorexia nervosa. *Cognitive Therapy and Research*, 26, 745-758. doi:10.1023/A:1021237416366
- Dunkley DM & Grilo CM (2007). Self-criticism, low self-esteem, depressive symptoms, and over-evaluation of shape and weight in binge eating disorder patients. *Behaviour Research and Therapy*, 45, 139-149. doi:10.1016/j.brat.2006.01.017
- Dunkley DM, Zuroff DC, & Blankstein KR (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology*, 84, 234-252. doi:10.1037/0022-3514.84.1.234
- Dunkley DM, Zuroff DC, & Blankstein KR (2006). Specific perfectionism components versus self-criticism in predicting maladjustment. *Personality and Individual Differences*, 40, 665-676. doi:10.1016/j.paid.2005.08.008
- Fairburn CG (2008). *Cognitive behavior therapy and eating disorders*. New York: Guilford Press.
- Fairburn CG, Cooper Z, & O'Connor ME (2008). Eating Disorder Examination (Edition 16.0D). In CG Fairburn (Ed), *Cognitive behavior therapy and eating disorders* (pp. 265-308). New York: Guilford Press.
- 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
- Flett GL & Hewitt PL (2002). *Perfectionism: Theory, research, and treatment*. Washington DC: American Psychological Association.
- Frost RO, Marten PA, Lahart C, & Rosenblate R (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, 14, 449-468. doi:10.1007/BF01172967
- Garner D, Olmsted M, & Polivy J (1983). Development and validation of multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2, 15-34. doi:10.1002/1098-108X(198321)
- Geller J, Cockell SJ, Hewitt PL, Goldner EM, & Flett GL (2000). Inhibited expression of negative emotions and interpersonal orientation in anorexia nervosa. *International Journal of Eating Disorders*, 28, 8-19. doi: 10.1002/1098-108X(200007)28:1<8:AID-EAT2>3.0.CO;2-U
- 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, 31-50. doi:10.1348/014466504772812959
- Gilbert P, Durrant R, & McEwan K (2006). Investigating relationships between perfectionism, forms and functions of self-criticism, and sensitivity to put-down. *Personality and Individual Differences*, 41, 1299-1308. doi:10.1016/j.paid.2006.05.004
- Gilbert P & Procter S (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology & Psychotherapy*, 13, 353-379. doi:10.1002/cpp.507
- Hewitt PL & Flett GL (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, 60, 456-470. doi:10.1037/0022-3514.60.3.456
- Hewitt PL, Flett GL, & Ediger E (1995). Perfectionism traits and perfectionistic self-presentation in eating disorder attitudes, characteristics, and symptoms. *International Journal of Eating Disorders*, 18, 317-326. doi:10.1002/1098-108X(199512)18:4<317:AID-EAT2260180404>3.0.CO;2-2

- Hewitt PL, Flett GL, Sherry SB, Habke M, Parkin M, Lam RW, McMurtry B, Ediger E, Fairlie P, & Stein MB (2003). The interpersonal expression of perfection: Perfectionistic self-presentation and psychological distress. *Journal of Personality and Social Psychology, 84*, 1303-1325. doi:10.1037/0022-3514.84.6.1303
- Hudson JI, Hiripi E, Pope HG Jr, & Kessler RC (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry, 61*, 348-358. doi:10.1016/j.biopsych.2006.03.040
- Kline R (1998). *Principles and Practice of Structural Equation Modeling*. New York: The Guilford Press.
- Lovibond SH & Lovibond PF (1995). *Manual for the Depression Anxiety Stress Scales* (2<sup>nd</sup> Ed.). Sydney: Psychology Foundation.
- Machado P, Gonçalves S, Martins C, & Soares I (2001). The Portuguese version of the eating disorders inventory: Evaluation of its psychometric properties. *European Eating Disorders Review, 9*, 43-52. doi:10.1002/erv.359
- Marôco J (2010). *Análise de Equações Estruturais: Fundamentos teóricos, software & aplicações*. Lisboa: Report Number.
- McGee BJ, Hewitt PL, Sherry SB, Parkin M, & Flett GL (2005). Perfectionistic self-presentation, body image, and eating disorder symptoms. *Body Image, 2*, 29-40. doi:10.1016/j.bodyim.2005.01.002
- McLaren L, Gauvin L, & White D (2001). The role of perfectionism and excessive commitment to exercise in explaining dietary restraint: Replication and extension. *International Journal of Eating Disorders, 29*, 307-313. doi:10.1002/eat.1023
- McKinnon S & Sherry S (2012). Perfectionistic self-presentation mediates the relationship between perfectionistic concerns and subjective well-being: A three-wave longitudinal study. *Personality and Individual Differences, 53*, 22-28. doi:10.1016/j.paid.2012.02.010
- McKnight I (2003). Risk factors for the onset of eating disorders in adolescent girls: results of the McKnight longitudinal risk factor study. *The American Journal of Psychiatry, 160*, 248-254. doi:10.1176/appi.ajp.160.2.248
- Pais-Ribeiro J, Honrado A, & Leal I (2004). Contribuição para o estudo da adaptação portuguesa das escalas de Depressão Ansiedade Stress de Lovibond e Lovibond. *Psychologica, 36*, 235-246.
- Pinto-Gouveia J, Ferreira C, & Duarte C (2014). *Thinness in the pursuit for social safeness: An integrative model of social rank mentality to explain eating psychopathology. Clinical Psychology and Psychotherapy, 21*, 154-165. doi: 10.1002/cpp.1820
- Steele AL, O'Shea A, Murdock A, & Wade TD (2011). Perfectionism and its relation to overevaluation of weight and shape and depression in an eating disorder sample. *International Journal of Eating Disorders, 44*, 459-464. doi: 10.1002/eat.20817
- Stice E (2001). A prospective test of the dual-pathway model of bulimic pathology: mediating effects of dieting and negative affect. *Journal of Abnormal Psychology, 110*, 124-135.
- Stice E, Marti C, & 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

Received, December 28, 2013  
Final Acceptance, June 20, 2014