The dual pathway model of bulimia: Replication and extension with anorexia

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Abstract

The dual model of bulimia proposes that social pressure for ideal body, stereotypes internalization, body image dissatisfaction, dietary and negative affect are lead to development of bulimia. Previous research confirms this model, also studies shown that the same sociocultural factors are important for development of anorexia. So it can be assumed that dual pathway model of bulimia could predict anorexia symptoms. The aim of the study was to test dual pathway bulimia model for predicting anorexia symptoms. A sample of 348 14-18 age schoolgirls from Kaunas city completed Eating Attitude Test, Negative Affect Schedule, Body shape Questionnaire, Perceived sociocultural pressure scale and Ideal Body Stereotype Scale. Structural equation analyses suggested that initial pressure to be thin and thin-ideal internalization predicted subsequent growth in body dissatisfaction, initial body dissatisfaction predicted growth in dieting and negative affect, and initial dieting and negative affect predicted growth in bulimia and anorexia symptoms. The findings provide support for dual pathway model of bulimia for predicting not only bulimia, but also anorexia symptoms.

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1. Introduction

Eating disorders (ED) is a condition which involves extreme body image dissatisfaction and harmful eating behavior (Byrd-Bredbenner, et. al., 2007). They are important cause of psychosocial and physical morbidity (Fairburn, Harrison, 2003). ED affects the entire body, the medical complications of these disorders is very wide,
they cause skeletal, reproductive, cardiovascular, brain, gastrointestinal and hormonal disturbances (Kaplan, Noble, 2007). Studies have also shown that ED are associated with risk of obesity, suicide, depression, anxiety disorders and substance use disorders in the future (Johnson, Cohen, Kasen, Brook, 2002; Moore, Seeley, Lewinsohn, 2003; Stice Hayward, Cameron, Killen, Taylor, 2000).

ED are rare in the general population, the overall prevalence of eating disorders in the population ranges from 0.5% to 1% of anorexia and from 1% to 3% of bulimia, however, the prevalence may increase by up to 19% when it comes to specific groups like adolescent girls. (Garfinkel, Goering, 1995; Kendler, MacLean, Neale, Kessler, Heath, Eaves, 1991). ED is the third most common form of chronic diseases among adolescent girls (Rosen, 2003).

ED are divided into 4 diagnostic types (Anorexia nervosa, Bulimia nervosa, Binge eating and Eating disorders not otherwise specified (EDNOS)), however, the disorders have many features in common and patients often pass from one disorder to another (Fairburn et. al., 2003).

Sometimes symptoms do not warrant a psychiatric diagnosis of ED, but dieting, weight, shape and eating concerns, compensatory behaviours are disturbed eating, which are associated with ED (Quick, Byrd-Bredbenner, 2013). Normally in non clinical samples researchers are concentrated to ED symptoms, because it is not enough to someone to fill the questionnaire to be diagnosed the real ED.

Etiology of ED has not been finally explained, but it is universally recognized that these disorders are caused by a combination of the following factors: genetic, socio-cultural and psychological (Reijonen, Pratt, Patel, Greydanus, 2003). But the most attention recently is given to socio-cultural factors, because they are mostly investigated and confirmed as important risk factors in predicting the development of ED (Stice, Presnell, 2007).

Considering that socio-cultural risk factors are the main and initial in developing bulimia nervosa, Stice (1994) published his theory and prognostic dual pathway model of bulimia. Stice (1994) dual pathway model of bulimia explains how social risk factors work together with psychological and behavioral factors in development of ED symptoms. The dual pathway model of bulimia proposes that social pressure for ideal body and stereotypes internalization are lead to body image dissatisfaction. Body image dissatisfaction leads to dietary restraint and negative affect, which are the final pathways in the development of bulimia (Stice et. al., 2007; Ouwens, Strien, Leeuwe, Staak, 2009).

Empirical results of this model still is quite controversial: number of studies have confirmed this dual pathway model of bulimia for adolescent girls (Stice, 2001; Stice & Agras, 1998; Stice, Akutagawa, Gaggar, & Agras, 2000; Stice, Pressnell, & Sprangler, 2002), however some studies did not prove both pathways of bulimia (Strien, Engels, Leeuwe, Snoek 2005). Different studies showed that the model explained 9% to 71% of the variance in the bulimic symptoms. Some of the studies included to the model some new variables, trying to improve the relevance of the model for predicting bulimia symptoms. Sociotropy, diffuse/avoidant personality style (Duemm, Adams, Keating, 2003), emotional eating (Strien et.al., 2005), neuroticism (Girouard, Bégin, Provencher, Tremblay, Boivin, Lemieux, 2009), these new risk factors where used to extend the model.

However, there is evidence that pressure to be thin, thin-ideal internalization, body dissatisfaction, dieting and negative affect are risk factors not only for bulimia, but for anorexia too (Ahern, Bennett, Hetherington, 2008; Fairburn, Cooper, Doll, Welch, 1999).

Ultra-thin ideal body image espoused for women in media play a big role in ED etiology (Stice, Shaw, 1994). Previous studies found that sociocultural factors similar to bulimia, are related to anorexia nervosa (Toro, Salamero, Martinez, 2007). The study with young models and dancers (girls) showed that both: pressures to be slim and achievement expectations are risk factors in the development of anorexia (Garner, Garfinkel, 1980).

These sociocultural risk factors usually leads to body image dissatisfaction (Stice et. al., 1994). Bulimics and anorexics patients overestimate their body sizes (Stice et. al., 1994), which leads to body dissatisfaction - the main feature for both ED: bulimia and anorexia (Garner, Garfinkel, Stancer, Moldofsky, 1976).

Therefore, some theoretical models suggest that disability to regulate emotions is a part of anorexia etiology (Espeset, Gulliksen, Nordbe, Holte, 2012).

In this study (Espeset et. al., 2012) researchers have examined how different negative emotions are related to anorexia symptoms: sadness and anger were significantly related to body dissatisfaction, purging and restrictive eating and fear linked to fear of fatness was related to avoiding food and body focused situations.

In the dual pathway model of bulimia the final pathways are negative affect and dieting. Longitudinal – prospective study showed that dieting may lead to anorexia symptoms in adolescent girls (Schleimer, 2008).
So it can be assumed that dual pathway model of bulimia could predict anorexia symptoms. The aim of the study was to test dual pathway bulimia model for predicting anorexia symptoms.

2. Methodology

Both the original and new model where tested. The study aimed to test dual pathway bulimia model for predicting anorexia symptoms.

2.1. Participants

A sample of 348 schoolgirls from Kaunas city. The girls had a mean age of 15.78 years (SD = 1.11; range = 13–19).

2.2. Measures

Eating Attitudes Test-26 (EAT-26; Garner, Garfinkel, 1982): This instrument contains 26 statements representing attitudes and behaviors associated with eating disorders symptoms. The EAT-26 contains three factors: Dieting — drive for thinness and dieting behaviors; Bulimia and Food Preoccupation — food thoughts and bulimic behaviors; Oral Control — perceived pressure from others to gain weight and control eating (Garner et al., 1982). Internal consistency of the scales were acceptable (Dieting scale - Cronbach’s α 0,857; Bulimia scale – 0,726 and Oral Control scale – 0,602).

Body Shape Questionnaire (BSQ): The BSQ (Cooper, Taylor, Cooper, Fairburn, 1986) is a self-report questionnaire comprising 34 questions measuring the extent of psychopathology of concerns about body shape, in particular the phenomenal experience of “feeling fat.”

Perceived sociocultural pressure scale (PSPC; Stice, Agras 1998): Eight item scale where participants reported the amount of pressure to be thin they perceived from family, friends, media. Items used a 7-point response format ranging from non to a lot. Internal consistency of the scale was acceptable (Cronbach’s α – 0,803).

Positive and Negative Affect Schedule – Expanded Form (PANAS-X; Watson, Clark – 1999): Negative Affect scale was used to asses activated negative affect. Participants had to indicate to what extent they feel the listed emotions “in general, that is, on the average.” Extent was measured using a five-point scale from very slightly to extremely. Internal consistency of the scale was acceptable (Cronbach’s α – 0,868).

Ideal body Stereotype Scale – Revised (IBSSR; Stice, Agras, 1998): The scale asks participants to indicate their level of agreement with 10 statements concerning what attractive women look like, on 5 – point scales ranging from strongly disagree to strongly agree. Internal consistency of the scale was acceptable (Cronbach’s α – 0,827).

3. Results

Structural equation analysis was performed by AMOS 18.00. Fit of the factor model was judged by using the Chi-square test, the goodness of fit index (GFI) and the root mean square error of approximation (RMSEA). Model fits reasonably well if the Chi-square value does not exceed a limited multiple of its degrees of freedom, GFI is large (greater than .90) and RMSEA is small (less than .08).

The original model

The original dual pathway model of Bulimia (Stice,1994) was tested. This model showed a good fit, GFI = .995 and RMSEA = 0.04. The model explained 24,1 % of the variance in the bulimic symptoms and is shown in Fig. 1. The pathway through dietary restraint as well as the pathway through negative affect was significantly related to bulimic symptoms (see figure 1.).
**Figure 1. Original Stice (1994) Dual pathway model of bulimia**

*The extended model*

The extended dual pathway model of Bulimia for predicting anorexia symptoms was tested. This model showed a good fit, GFI = 0.989 and RMSEA = 0.069. The model explained 18.8% of the variance in the anorexia symptoms and is shown in Fig. 2. The pathway through dietary restraint as well as the pathway through negative affect was significantly related to anorexia symptoms (see figure 2).

**Figure 2. Extended model**

* p<0.05; ** p<0.001

4. Discussion

The present study confirms the outcomes of previous studies (Stice, 2001; Stice, Agras, 1998; Stice et al., 2000), that confirmed the dual pathways of bulimia: the pathway through restrained eating and the pathway through negative affect.

The results of this study showed that increased thin body stereotype internalization and increased social pressure for thin body predicts more frequent and more experienced negative emotions and larger body dissatisfaction. Larger body dissatisfaction predicts bulimia symptoms by dual pathways: negative affect and restrained eating.

The aim of the present study was to test dual pathway bulimia model for predicting anorexia symptoms. Many risk factors have been implicated in the development of ED, but it was still not clear whether they are specific to all eating disorders, or separately to bulimia and anorexia. Previous research have found that there are some general risk factors for both ED, such as depression symptoms, but for example dieting, as risk factor was important only for bulimia (Fairburn et al., 1999). The results of this study is important for development of ED, results revealed that the same risk factors could predict both ED. The extended model was confirmed. The pathway through dietary restraint as well as the pathway through negative affect was significantly related to anorexia symptoms.
These results revealed that dual pathway model of bulimia could also predict anorexia symptoms. Therefore, pressure to be thin, thin-ideal internalization, body dissatisfaction, dieting and negative affect are risk factors not only for bulimia, but for anorexia too.

In our research it was found that pressure for thin body and thin body stereotype internalization predicts body image dissatisfaction, this confirmed previous studies results (Stice et. al., 1993; Stice et. al., 1994). Various studies determined that body image dissatisfaction (Garner et. al., 1976), dieting (Schleimer, 2008), negative affect (Espeset et. al., 2012) are related to anorexia symptoms.

Our research confirmed that dieting and negative affect are related to anorexia symptoms, therefore negative affect and dieting mediates relationship between body image dissatisfaction and anorexia symptoms. These two mediators confirms dual pathways in predicting ED symptoms (Stice et. al., 1994). Girls who are dissatisfied with their bodies usually overestimate their body sizes due to the fact, they are trying to lose weight by dieting. Also dissatisfaction with their bodies leads to negative emotions such as anger, depression, fear, disability to regulate these emotions is a part of ED etiology (Espeset et. al., 2012).

Research explains more detailed effect of individual risk factors for evaluating anorexia symptoms and the mechanism of symptoms occurrence. So, basically the adjustment of these risk factors could prevent these two eating disorders, and one prevention program focused on these risk factors could be effective for the prevention of both.

Also there are some limitations at this study. To understand the etiology of both disorders the model should be extended with some risk factors which are more important for anorexia development, such as personality traits, because in this study only specific bulimia risk factors were tested. Therefore, longitudinal studies are needed to investigate the causal and possible nature of the interrelationships in the new extended model.

References


