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Does perfectionism mediate or moderate the relation between body dissatisfaction and disordered eating attitudes and behaviors?☆

Elisabeth Welch [a,1], Jessie L. Miller [b,2], Ata Ghaderi [a,3], Tracy Vaillancourt [c,d,*]

[a] Department of Psychology, Uppsala University, Box 1225, 751 42 Uppsala, Sweden
[b] Department of Psychiatry and Behavioural Neurosciences, McMaster University, 1200 Main Street West, Hamilton, ON, Canada L8N 3Z5
[c] Faculty of Education and School of Psychology, University of Ottawa, 145 Jean-Jacques-Lussier, Ottawa, Ontario K1N 6N5
[d] Department of Psychology, Neuroscience & Behaviour, McMaster University, Ontario, Canada

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ABSTRACT

A link between perfectionism and disordered eating has been documented in previous studies. The purpose of the current study was to expand our knowledge of the specific role of perfectionism in disordered eating by examining perfectionism as a mediator or a moderator in the relation between body dissatisfaction and disordered eating (assessed using the EAT-26 and its subscales, and the Binge Scale). We sampled a large ethnically diverse sample of university women ($N = 520$) using two measures of perfectionism: the Eating Disorder Inventory Perfectionism subscale (EDI-P) and the Multidimensional Perfectionism Scale (H-MPS). In general, socially prescribed and self-oriented perfectionism, but not other-oriented perfectionism, were correlated with disordered eating attitudes and behaviors, except binge eating. Furthermore, perfectionism was found to partially mediate *and* moderate the relation between body dissatisfaction and disordered eating, however the strength of these associations differed depending on both the particular measure of perfectionism (EDI-P versus H-MPS) and the specific dimension of perfectionism (self-oriented, socially prescribed, other-oriented) used in the analyses. The findings are discussed in relation to the need for more informed and theoretically sound models of the development and maintenance of disordered eating.

Unhealthy eating behaviors are characterized by behaviors such as rigid dieting, chaotic eating habits, bingeing, purging, or food preoccupation, leading to distress and impaired quality of life. These behaviors are alarmingly prevalent in today's society, particularly among females. In a large study of more than 80,000 adolescents, 56% of 9th grade female students and 57% of 12th grade female students reported engaging in one or more disordered eating behaviors, such as fasting, using diet pills, or using laxatives in order to lose or control their weight (Croll, Neumark-Sztainer, Story, & Ireland, 2002). In contrast, only a minority of males from the same study demonstrated these same behaviors (28% of 9th graders 31% of 12th graders). Disordered eating behaviors have been shown to increase the risk of developing clinically significant eating disorders (Forman-Hoffman, 2004). Given the wide-spread use of compensatory actions used by adolescent females to reduce or maintain weight, it is not that surprising that eating disorders are now the third most common chronic illness in this population (Lucas, Beard, Ofallon, & Kurland, 1991) and one of the most common and lethal psychiatric disorders among females (Kendler et al., 1991; Whitaker et al., 1990). For example, anorexia nervosa has been reported to have a standardized mortality rate (SMR) as high as 17.8 (Norring & Sohlberg, 1993) although the majority of recently published studies report on somewhat lower but still disturbingly high SMR for anorexia nervosa around 6–11 (e.g., Keel et al., 2003; Lee, Chan, & Hsu, 2003; Löwe et al., 2001; Signorini et al., 2006). Every year it is estimated that a daunting 5 million Americans (mostly female) are affected by an eating disorder (Becker, Grinspoon, Klibanski, & Herzog, 1999).

One variable that has been found to be an important feature of both eating disorders and disordered eating behaviors and attitudes is perfectionism (Hewitt, Flett, & Ediger, 1995; Joiner, Heatherton, Rudd, & Schmidt, 1997). Although its exact role is unclear, several studies have identified perfectionism as a key risk factor (e.g. Fairburn & Harrison, 2003; Ghaderi, 2001), and some go as far as to suggest that eating disorders may be an expression of perfectionism (Shafran, Cooper, & Fairburn, 2002). Still, despite its robustness as a predictor and concurrent correlate, there is a lack of agreement regarding how perfectionism should be defined and which components should be included in the term. Shafran and colleagues (2002) argue for a one-

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* Corresponding author. 145 Jean-Jacques-Lussier, Ottawa, Canada K1N 6N5. Tel.: +1 613 562 5800x4134.
E-mail addresses: Elisabeth.Welch@psyk.uu.se (E. Welch), millej6@mcmaster.ca (J.L. Miller), Ata.Ghaderi@psyk.uu.se (A. Ghaderi), tracy.vaillancourt@uottawa.ca (T. Vaillancourt).
[1] Tel.: +46 18 4712136; fax: +46 18 4712123.
[2] Tel.: +1 905 521 2100x74361; fax: +1 905 521 4970.
[3] Tel.: +46 18 4717986; fax: +46 18 4712123.

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dimensional conceptualization of perfectionism, whereas other experts in the field (e.g. Hewitt, Flett, Besser, Sherry, & McGee, 2003) present theoretical and empirical evidence for the value and importance of a multidimensional construct.

The most commonly used measures of perfectionism are the Perfectionism subscale of the *Eating Disorder Inventory* (EDI-2; Garner, Olmstead, & Polivy, 1983); the *Multidimensional Perfectionism Scale* (H-MPS; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991); and *Frost's Multidimensional Perfectionism Scale* (F-MPS; Frost, Marten, Lahart, & Rosenblate, 1990). The two most frequently used of these instruments is the Perfectionism subscale of the *Eating Disorder Inventory* (EDI-P) because of its brief six-item scale, its good psychometric properties, and its empirical validation with eating disorders (Garner et al., 1983); and the H-MPS because of its conceptual similarities to the EDI-P (see Sherry, Hewitt, Besser, McGee, & Flett, 2004). Initially the EDI-P was considered to be one-dimensional; however a confirmatory factor analysis by Sherry et al. (2004) revealed a two-factor solution consisting of self-oriented perfectionism (EDI-P-SOP) and socially prescribed perfectionism (EDI-P-SPP). In the H-MPS, perfectionism is conceptualized as being composed of three different dimensions: (1) self-oriented perfectionism, (2) socially prescribed perfectionism, and (3) other-oriented perfectionism. Self-oriented perfectionism involves first setting high standards for oneself and thereafter harshly evaluating one's own behavior based on how well one meets those standards. Socially prescribed perfectionism refers to the belief that others have unrealistically high standards for self, irrespective of the accuracy of this perception. Finally, other-oriented perfectionism reflects unrealistic high standards that the individual sets for significant others.

Several studies indicate that the relation between perfectionism and disordered eating varies as a function of instruments used to measure these constructs. For example, using the EDI-P in a study of female university students, Sherry et al. (2004) found unique contributions of both self-oriented and socially prescribed perfectionism to predictions of the variance in the total score of the *Eating Attitude Test* (EAT) as well as the variance in the three different EAT subscales (i.e. the dieting, bulimia and oral subscales). Although Hewitt et al. (1995), who used the H-MPS in a sample of 81 female university students, found that self-oriented and socially prescribed perfectionism were significantly correlated to the total EAT score and the dieting subscale of the EAT, no significant relations were found for the bulimia and oral subscale of EAT. In a study of women with binge eating disorder Pratt, Telch, Labouvie, Wilson and Agras (2001) found that women with bulimia nervosa and binge eating disorder scored significantly higher on socially prescribed perfectionism compared to the non-eating disordered group. In contrast, Kuehnel and Wadden (1994) did not find that patients with binge eating disorder differed from non-eating disordered individuals using the EDI-P. These discrepant findings, as well as a number of recent studies (e.g., Cain, Bardone-Cone, Abramson, Vohs, & Joiner, 2008; Jacobs et al., 2009; Sassaroli et al., 2008; Sherry et al., 2009) indicate the need for further studies of the relationship between the different dimensions of perfectionism and eating attitudes, as well as between the different dimensions of perfectionism and binge eating. Furthermore, both perfectionism and disordered eating are latent constructs. These constructs consist of not only concrete behavioral components, but also cognitive, emotional and physiological elements. Current measures of perfectionism and disordered eating tap on different parts of these elements and each instrument focuses mostly on one or two components, while generally ignoring the others. Using different instruments might help elucidate whether and through which components or representations perfectionism serves as a mediator (a variable that explains the relation between two other variables) or moderator (a variable that influences the strength of a relation between two other variables) of the relation between body dissatisfaction and disordered eating.

Another means to advance our understanding of the function of perfectionism in disordered eating is to examine a priori possible associations between these variables within a larger sample size. One approach is to examine the interactions between perfectionism, disordered eating and associated correlates of both constructs. Kraemer, Stice, Kazdin, Offord, and Kupfer (2001) state that the effect of single variables can never be completely understood unless they are placed within the context of all other relevant variables. In line with this argument, Fairburn (1997) has presented a model in which perfectionism (and dichotomous thinking) first act as mediators between extreme concerns about shape and weight and intense and rigid dieting, and then mediate the relationship between intense and rigid dieting and binge eating. Using a similar theoretical and empirical model, Van Blyderveen and Miller (2009) found perfectionism acted as a partial mediator between peer victimization and eating disorder symptoms in a clinical sample of youth aged 10 to16 with a diagnosis of either anorexia or bulimia nervosa. Another interaction that is worth examining, but that has not previously been investigated, is the role of perfectionism as a mediator and/or moderator between body dissatisfaction and eating behaviors and attitudes. Body dissatisfaction is a well-supported risk factor for eating disorders (Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004), as well as the strongest risk factor for the use of unhealthy weight control practices.

The current consensus on the etiology of ED is best represented by the multi-factorial model of the emergence of ED. This model has been criticized for being non-specific and lacking the instructional value for conducting research that considerably contributes to the body of knowledge (e.g., Jansen, 2001). In order to build a clear and predictive model of the emergence of ED there needs to be more sophisticated empirical tests of the multi-factorial model, rather than studying single correlations. Studying the more complex interrelations between a few relatively well-known variables might be a reasonable next step. Neither the multi-factorial model of ED nor previous research provides a clear basis for considering perfectionism as a mediator or a moderator. Hence, we need to reconsider our concepts and constructs and their interrelations not only on a theoretical level but also empirically. On a theoretical level, perfectionism qualifies as both mediator and moderator between body dissatisfaction and disordered eating given its relation to these variables. The present study is designed to help us understand the role of perfectionism, and contribute to building a more solid model or part of a model of the emergence of ED.

Accordingly, the aims of the present study are to: (1) replicate and extend previous research in a large non-clinical population by investigating the unique contributions of different dimensions of perfectionism to variations in self-reported eating attitudes and behaviors, and (2) examine perfectionism's role as a possible mediator or moderator between a well-established risk factor, namely body dissatisfaction (Jacobi et al., 2004), and disordered eating behaviors and attitudes.

1. Method

1.1. Participants

A non-clinical sample consisting of 520 female undergraduate students drawn from different faculties at a medium sized university located in southern Ontario, Canada was used in this study. The sample was restricted to women due to the disproportionate representation of women among all types of eating disorders (Murray, 2003). The mean age of the participants was 20.89 years ($SD = 4.43$) and their average body mass index (BMI) was 22.84 ($SD = 4.34$). The self-reported ethnicity of participants was as follows: White/Caucasian (53.5%); South Asian (14.2%); Chinese (11.7%); Black (4.4%); Arab/West Asian (3.1%); Korean (1.7%); South East Asian