

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/8001750>

The Role of Stress in the Association between Low Self-Esteem, Perfectionism, and Worry, and Eating Disorders

Article in *International Journal of Eating Disorders* · March 2005

DOI: 10.1002/eat.20079 · Source: PubMed

CITATIONS

93

READS

2,707

2 authors:



Sandra Sassaroli

Studi Cognitivi Network

92 PUBLICATIONS 860 CITATIONS

[SEE PROFILE](#)



Giovanni Maria Ruggiero

Studi Cognitivi Network

107 PUBLICATIONS 1,089 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



REBT applications [View project](#)



Contents and processes in cognitive behavioural therapy [View project](#)

The Role of Stress in the Association between Low Self-Esteem, Perfectionism, and Worry, and Eating Disorders

Sandra Sassaroli, MD
Giovanni Maria Ruggiero, MD*

ABSTRACT

Objective: Several theorists have hypothesized that stressful situations may trigger abnormal eating and even eating disorders in predisposed people. The purpose of the current study was to assess whether a stressful situation would reveal an association between perfectionism, low self-esteem, worry, and body mass index (BMI) and measures of eating disorder symptoms in female high school students.

Method: A sample of 145 female high school students completed the Eating Disorder Inventory, the Multidimensional Perfectionism Scale, the Penn State Worry Questionnaire, and the Self Liking and Competence Scale three times—on an average school day, on the day of an examination, and on the day the subjects received the results of that examination. Linear regression analysis was performed to verify whether the dimensions of perfectionism were associated with the measures of eating disorders.

Results: Low self-esteem, worry, and parental criticism (a dimension of perfectionism) were associated with the measures of eating disorders only during the stressful situation, whereas concern over mistakes (another dimension of perfectionism) was associated in both stressful and nonstressful situations.

Discussion: The results suggest that in nonclinical female individuals, stress might bring out a previously absent association between some psychological predisposing factors for eating disorders and an actual desire or plan to lose weight. Such a finding suggests that stress may stimulate behaviors related to eating disorders in a predisposed personality. © 2005 by Wiley Periodicals, Inc.

Keywords: low self-esteem; perfectionism; worry; stress; drive for thinness; bulimia; body dissatisfaction

(*Int J Eat Disord* 2005; 37:135–141)

Introduction

Scientific literature affirms that psychological constructs and processes play a role in influencing the increase in eating disorders (ED). Perfectionism and low self-esteem are the most frequently quoted psychological predisposing factors.

Perfectionism is a central psychological feature of people with ED (Bauer & Anderson, 1989; Bruch, 1973; Casper, 1983; Davis, 1997; Davis, Claridge, & Fox, 2000; Garner, 1986) and is considered to be a main risk factor for ED (Bastiani, Rao, Weltzin, & Kaye, 1995; McLaren, Gauvin, & White, 2001; Ruggiero, Levi, Ciuna, & Sassaroli, 2003; Vitousek &

Hollon, 1990). Low self-esteem is also usually considered to be a factor of vulnerability for ED (Button, Sonuga-Barke, Davies, & Thompson, 1996; Fairburn, Cooper, & Shafran, 2003; Fairburn, Shafran, & Cooper, 1999; Fairburn, Welch, Doll, Davies, & O'Connor, 1997; Vitousek & Hollon, 1990).

Perfectionism is a multidimensional construct. One of the most widely used definitions of perfectionism is found in the study reported by Frost, Marten, Lahart, and Rosenblate, (1990), who individuated six dimensions: personal high standards, concern over mistakes, parental criticism, parental expectations, doubts, and organization. According to these authors, concern over mistakes is the distinguishing feature of pathologic perfectionism. Pathologic perfectionists allow little room for making mistakes and perceive even minor ones as likely to lead to a future final failure. Thus, pathologic perfectionists never feel that anything is done completely enough or well enough, and their actions are always accompanied by feelings of self-criticism and a sense of ineffectiveness. Other studies have used the multidimensional construct proposed by Hewitt

Accepted 28 January 2004

*Correspondence to: Giovanni Maria Ruggiero, MD, "Studi Cognitivi," via Montebello 27, 20121, Milano, Italy. E-mail: giruggi@tin.it

"Studi Cognitivi," Post-graduate Cognitive Psychotherapy School, Milan, Italy

Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/eat.20079

© 2005 Wiley Periodicals, Inc.

and Fleet (1991) and their related self-reported questionnaire. However, a comparison of the two measures of perfectionism revealed considerable overlap (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993).

Conversely, the traditional conceptualization of self-esteem is that of a global, unidimensional construct regarding the personal judgment of one's own worth (Rosenberg, 1965). More recently, Tafarodi and Swann (1995) proposed a bidimensional perspective of self-esteem and a related instrument. The first dimension, predominantly affective and subjective in nature, is called self-liking and is based on social feedback and social acceptance. The second dimension is called self-competence and is based on the personal evaluation of one's own performance and is basically more cognitive and objective. Silvera et al. (1998) has shown that there is a good correlation between low self-esteem measured according to this bidimensional definition and measures of ED.

Worry is less well known in the field of ED when compared with the above-mentioned psychological dimensions. However, it could play an important psychopathologic role in ED. Worry is a thought activity characterized by a predominance of anxious predictions and fears of possible future negative events (Borkovec, Ray, & Stöber, 1998). It is worthwhile to note that the definition of fear of fatness in the 4th ed. of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994) has points in common with worry. In fact, fear of fatness is a prediction about possible future negative events regarding weight and fat. In addition, the findings of some studies support the hypothesis that worry plays a psychopathologic role in ED. Wadden, Brown, Foster, and Linowitz (1991) found that non-clinical girls showed significantly more worry about weight and food than nonclinical boys. Kerkhof et al. (2000) found that subjects with ED show higher measures of worry than controls. Scattolon and Nicky (1995) found that food consumption in a nonclinical sample of worry-prone, chronic dieters was triggered by worries related to social rank and school performance.

From a constellation of predisposing factors, stress is an essential element to trigger an ED. Stressful situations negatively affect eating both in human and in animal models and may trigger abnormal eating and even ED in a predisposed personality (Connan & Treasure, 1998).

Brown et al. (1999) have shown that a school examination is a highly stressful situation involving a person's whole perception of his or her sense of competence and efficacy. Semiexperimental designs

that compared a school examination with average school days have elegantly shown the influence of stress in increasing the correlation between psychological dimensions and measures of anxiety (Brown et al., 1999) or of ED (Ruggiero et al., 2003).

This research purported to study whether measures of perfectionism, negative self-evaluation, and worry are related to female students' increased measures of eating-disordered behaviors and thoughts before important school examinations and before receiving the results of those examinations. As a secondary aim, the current study also focused on some psychological dimensions other than perfectionism and low self-esteem and on one physical dimension. The other psychological dimensions are measured by the Eating Disorders Inventory and cannot be traced back to perfectionism and low self-esteem, that is, Interpersonal Distrust (i.e., the individual's feeling of reluctance to form close relationships), Interoceptive Awareness (i.e., the capability to recognize emotional states and visceral sensations related to hunger and satiety), and Maturity Fears (i.e., the desire to retreat to the security of childhood). The physical dimension is body mass index (BMI), which can actually influence the development of an ED. A high BMI is a predisposing factor for ED because being overweight before the onset of the disorder has been documented in both anorexia and bulimia nervosa (Cooper, 1995; Fairburn et al., 1997). Consequently, BMI was measured and investigated in the current study.

Methods

Subjects

A sample of 171 female students was recruited from eight Italian high schools. In a screening interview, subjects were asked to participate in a three-step study of both their expectations and attitudes toward an important written school examination and their thoughts and feelings toward eating and body weight and fat. During the interview, age, height, weight, adequacy in understanding and fluently speaking Italian, and possible past or current psychological and/or psychopharmacologic treatments were assessed. Weight was assessed before each of the three steps of the research.

Twenty-six participants were excluded: 3 reported that they were in psychotherapy for a psychological disorder, 6 did not report weight data, 4 were underweight (BMI < 17.5), and 10 were overweight (BMI > 25). Three subjects presented a weight fluctuation of more than 3 kg from the first to the third step of the study. The final sample comprised 145 individuals with an age range of 16–22

years old and a BMI range of 17.51–24.80 ($M = 20.47$, $SD = 1.75$).

Subjects were informed that all collected data would be strictly confidential. All of them agreed to participate and signed an informed consent form. Parental permission was requested for subjects who were younger than 18. The questionnaires were administered during school time under the supervision of the teachers on three different occasions.

Instruments

The subjects completed the Multidimensional Perfectionism Scale (MPS) developed by Frost et al. (1990), the Self Liking and Competence Scale (SLCS) developed by Tafarodi and Swann (1995), the Penn State Worry Questionnaire (PSWQ) developed by Meyer, Miller, Metzger, and Borkovec (1990), and the Eating Disorder Inventory (EDI) developed by Garner, Olmsted, and Polivy (1983).

The MPS is a 35-item questionnaire based on what has been theorized about perfectionism. It measures six dimensions of perfectionism, including excessive concern over making mistakes, high personal standards, parental expectations, parental criticism, doubts about actions, and organization.

The SLCS is a 20-item self-report questionnaire based on what has been theorized about self-esteem by Tafarodi and Swann (1995). The SLCS measures two dimensions of self-esteem—self-liking and self-competence.

The PSWQ is a 16-item self-report questionnaire based on what has been theorized about worry by Borkovec et al. in many articles (Borkovec, Ray, & Stöber, 1998; Meyer, Miller, Metzger, & Borkovec, 1990). The total score of the PSWQ is a reliable and widely accepted measure of people's tendency to worry.

The EDI is a 64-item, broad range, self-report questionnaire designed to assess the cognitive and behavioral dimensions of anorexia and bulimia nervosa. The EDI provides eight subscale scores indicating drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, and maturity fears.

The reliability, validity, and factor structure of the MPS, SLCS, PSWQ, and EDI have been demonstrated in both clinical and nonclinical samples (Garner, 1991; Hewitt & Flett, 1991; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991; Meyer et al., 1990; Tafarodi & Swann, 1995).

The first author translated the four questionnaires into Italian. The Italian versions of the four questionnaires were then back-translated into English by an American who is unfamiliar with the tool. One of the authors of the EDI compared the original and back-translated versions of the instruments and did not find any significant differences (D.M. Garner, personal communication to Brenda VanAntwerp, January 15, 1997). An English teacher from

the United States revised the Italian translation of the MPS and the SLCS and compared the back-translations and the original versions of the MPS and the SLCS. He did not find any significant differences (R. Denaro, personal communication to G.M. Ruggiero, July 11, 2002).

Procedure

Brown et al. (1999) have shown that perfectionism is related to students' perceptions of course difficulty and higher levels of anxiety before examinations. The current study purported to replicate Brown et al.'s methodology and to verify whether psychometric measures of perfectionism, negative self-evaluation, worry, and BMI are related to female students' scores on EDI subscales before examinations and before results of the examinations such as Drive for Thinness, Bulimia, and Body Dissatisfaction.

The MPS, SLCS, PSWQ, and EDI were completed by the subjects in three different situations, that is, Phases 1, 2, and 3. Phase 1 was an average high school day, Phase 2 was the day of an important examination, and Phase 3 was the day in which the subjects received the results of their examination. The authors of the study presumed that Phases 2 and 3 were plausibly high-stress situations in terms of self-judgment of personal competence and efficacy, situations that could easily stimulate perfectionistic, negative self-evaluative, and worrying tendencies. Coefficients of linear regression analysis were calculated to evaluate the association between the measures of perfectionism, low self-esteem, worry, and BMI (predictor variables) and the three symptomatologic subscales of the EDI, that is, Drive for Thinness, Bulimia, and Body Dissatisfaction (dependent variables). SPSS 10.0 (SPSS Inc., 1999) was used to perform statistical analysis.

Results

Drive for Thinness was associated with concern over mistakes, Interoceptive Awareness, and BMI in all three situations (both stressful and nonstressful), whereas it was associated with Interpersonal Distrust, self-liking, and self-competence only in a stressful situation (the examination for Interpersonal Distrust and the review for self-liking and self-competence).

Bulimia was associated with Interoceptive Awareness in all three situations (both stressful and nonstressful), whereas it was associated with worry, parental criticism, and BMI only in a stressful situation (the examination for worry and both examination and the review for parental criticism and BMI).

Body Dissatisfaction was associated with self-liking and BMI in all three situations (both stressful and nonstressful).

Coefficients of linear regression between psychological dimensions and measures of ED on the three situations of the study are presented in Table 1.

Discussion

The study confirms the findings of past research that found associations between dimensions of self-esteem, perfectionism, worry, and higher BMI and measures of disordered eating behaviors and overconcern about weight and shape in nonclinical women.

The current study replicates in a larger scale a previous study by the same authors that measured the association between psychological and symptomatologic measures of ED in the same three stressful and nonstressful situations (Ruggiero et al., 2003). The previous study was performed on a smaller sample and measured a smaller number of dimensions, that is, Drive for Thinness and Bulimia as symptomatologic dimensions, whereas Body Dissatisfaction was excluded, and only perfectionism as the psychological dimension, whereas self-esteem and worry were absent. The current study confirms some of the findings of the previous one, whereas other findings are disconfirmed.

It is confirmed that Drive for Thinness is a dimension that tends to reveal a new association with psychological dimensions in stressful situations,

that is, an association not observable in neutral situations, whereas Body Dissatisfaction tends to show no change. In addition, the demeanor of Bulimia is comparable to Drive for Thinness. Such a finding could mean that nonclinical females tend to have a steady level of dissatisfaction with their bodily aspect, but only a stressful situation may induce thoughts of dieting, bingeing, and compensative behaviors. In other words, it is confirmed that stress may be a central factor in transforming a vague insecurity with one's body to a pervasive desire to lose weight and fat.

Conversely, other findings of the previous study are disconfirmed. In the current study, the variables that reveal an association with measures of ED absent in the average school day and present in the stressful school days are mainly low self-esteem and worry. Contrary to the previous study, concern over mistakes, the most relevant of the perfectionism dimensions, does not seem sensitive to stress in this study, for it associates with Drive for Thinness in all the three phases of the study, associates with Bulimia only in the nonstressful situation, and never associates with Body Dissatisfaction. Actually, such a finding is in harmony with the findings of Hewitt, Flett, and Ediger (1995) and McLaren et al. (2001), who found that the association between perfectionism and measures of drive for thinness is present in neutral, nonstressful situations. Nevertheless, it is still reasonable to believe that the association between perfectionism and behaviors or thoughts related to ED could be influenced by stress. Thus,

TABLE 1. Coefficients of linear regression analysis between psychological dimensions and measures of eating disorders in stressful and nonstressful situations

	Average Day			Day of the Examination			Day of the Review of the Examination		
	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>
Drive for Thinness									
Concern over mistakes	.394	5.094	.000***	.345	3.959	.000***	.277	3.351	.001**
Interceptive awareness	.297	3.839	.000***	.279	3.556	.001**	.384	4.297	.000**
Interpersonal distrust	-.076	-.969	.335	-.113	-1.487	.140	.190	2.095	.038*
Body mass index	.231	3.051	.003**	.204	2.835	.005**	.231	2.890	.005*
Self-liking	-.061	-.697	.487	-.339	-3.271	.001**	-.123	-1.212	.228
Self-competence	.122	1.531	.129	-.342	-3.792	.000***	-.088	.935	.352
Bulimia									
Concern over mistakes	.215	2.580	.011*	-.053	-.603	.548	.018	.160	.873
Interceptive awareness	.385	4.614	.000***	.248	3.002	.003**	.189	2.247	.026*
Worry	-.014	-.159	.874	.392	4.916	.000***	-.096	-1.001	.319
Parental criticism	-.022	-.253	.801	.198	2.463	.015*	.228	2.695	.008**
Body mass index	.108	1.334	.185	.261	3.318	.001**	.200	2.453	.016*
Body Dissatisfaction									
Self-liking	-.429	-6.037	.000***	-.438	-5.938	.000***	-.385	-5.038	.000***
Body mass index	.451	6.338	.000***	.397	5.931	.000***	.388	5.077	.000***

p* < .05. *p* < .01. ****p* < .001.

the results are not conclusive yet, and further research is needed to clarify the role played by stress in the interplay between perfectionism and ED.

It is noteworthy that there was a dimension of perfectionism that appeared to be influenced by stress, that is, parental criticism. Parental criticism, the perfectionists' tendency to feel parental love as conditioned by their capacity to satisfy parents' expectations and critical evaluations (Burns, 1980; Hamachek, 1978; Hollander, 1965; Patch, 1984), was associated with Bulimia only on the 2 stressful school days. Many studies have shown the influence of painful parental relationships on the development of ED. Such a finding may support the hypothesis that the fear of failure could stimulate the fear of parental blame and withdrawal of love, and of other kinds of affective retaliation in perfectionistic subjects. The significant association with the variable Bulimia suggests that this kind of thought may stimulate the desire for bingeing and for controlling weight via compensative behavior. The current study confirms that disordered eating behaviors may be associated with core beliefs related to dysfunctional family relationships (Humphrey, 1988; Råstam & Gillberg, 1991; Thienemann & Steiner, 1993).

Probably the most important finding of the current study is that stressful situations reveal an association between low self-esteem and worry with the EDI subscales Drive for Thinness and Bulimia, respectively. As it is widely known, subjects with ED are oppressed by a pervasive, generic, and vague feeling of not being sufficiently qualified, competent, or suited for the demands of life, and they spend a lot of time worrying about these negative feelings. This general self-schema is a core cognitive characteristic of ED and has been called long-standing negative self-evaluation (Vitousek & Hollon, 1990). However, the finding that, in nonclinical people, low self-esteem is associated with a measure of disordered eating only concurrently with stress, whereas perfectionism seemingly does not need the stress factor to reveal an association, seems to suggest that perfectionism is the primary personality factor for the development of an ED. Hence, it could be imagined that perfectionistic people allow little room for making mistakes and perceive even minor ones as likely to lead to a future final failure, and it is only in a stressful situation that such an overfeared failure leads to further damages in terms of low self-esteem. In turn, it is possible that some perfectionistic people, mainly female, could imagine that dietary restrictions and a slimmer body aspect could compensate for the reduction in self-esteem. Successful dietary restrictions may enhance the subjective sense of low self-esteem (Slade, 1982). Hence, ED

could be described as disorders of the sense of self-esteem and self-worth, which are, without remedy, pervasively negative, if not lacking in such subjects.

Worry could also be the product of interplay between a perfectionistic personality and stress. Actually, perfectionistic subjects spend a lot of their time intensively worrying about their fear of failure and this worry tends to increase in a stressful situation (Borkovec et al., 1998). The association between worry and measures of ED shown in the current study may suggest that, in some cases, the pervasive worry of perfectionistic subjects can produce both bingeing and an illusory compensation, that is, the desire for controlling weight and fat. In fact, it is widely known that pervasively negative emotional states are frequently linked with bulimic behaviors (Meyer, Waller, & Waters, 1998).

Both the dimensions of self-esteem considered herein, that is, self-liking and self-competence were associated with Drive for Thinness on the day of the examination, but not on the day of the results of the examination. This finding disconfirms the Silvera et al. (1998) study, which found that only the self-liking dimension is associated with a measure of disordered eating, and the Bardone, Perez, Abramson, and Joiner (2003) study, which found that self-competence demonstrated a stronger relationship than self-liking to change in bulimic symptoms over time. In our study, both the dimensions associated with Drive for Thinness. Conversely, when we consider the EDI subscale Body Dissatisfaction, the result confirms Silvera et al.'s hypothesis that only self-liking is associated with the measure of disordered eating, not self-competence. We can conclude that the current study partially supports such a hypothesis and that the associations may depend also on the dimension of disordered eating considered.

The study confirms the association of BMI with the measures of disordered eating. This finding is in agreement with previous studies that indicated that premorbid obesity is a risk factor for ED (Cooper, 1995; Fairburn et al., 1997). In the current study, this association does not seem influenced by stress, except for Bulimia, where it is noteworthy that the association is present only on the 2 stressful days. In other words, people with higher BMI may tend to worry about thinness and body dissatisfaction even if the situation is not stressful, but under stress the enhanced negative feelings of dissatisfaction with themselves could stimulate bingeing and other bulimic behaviors.

The last two significantly associated dimensions were Interpersonal Distrust and Interoceptive Awareness. The former variable is seemingly influenced by

stress, whereas the latter is not. The need to keep others at a distance may be an important psychological factor for ED and could be enhanced by a stressful condition (Simmons, Smith, & Hill, 2002; Strober, 1981), whereas the confusion and mistrust related to internal emotions and sensation are a deep intrapsychic trait of ED that seemingly does not need stress to emerge. It is worthwhile to believe that interpersonal distrust could depend on low self-esteem and be in hierarchic relationship with the higher level beliefs regarding self-evaluation.

In conclusion, the current study has confirmed the importance of the impact of stressful situations on the association between psychological dimensions and measures of ED. Contrary to a similar previous study, it appears that low self-esteem is the dimension mostly influenced by the presence of a stressful situation. In addition, to our knowledge, our study is one of the few works that explored the psychopathologic role of worry as a factor for ED. This research has used a larger sample than the previous one, but the main limitation of the study remains the nonclinical nature of the sample.

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Bardone, A.M., Perez, M., Abramson, L.Y., & Joiner, Jr., T.E. (2003). Self-competence and self-liking in the prediction of change in bulimic symptoms. *International Journal of Eating Disorders*, 34, 361–369.
- Bastiani, A.M., Rao, R., Weltzin, T., & Kaye, W. H. (1995). Perfectionism in anorexia nervosa. *International Journal of Eating Disorders*, 17, 147–152.
- Bauer, B.G., & Anderson, W.P. (1989). Bulimic beliefs: Food for thought. *Journal of Counseling and Development*, 67, 416–419.
- Borkovec, T.D., Ray, W.J., & Stöber, J. (1998). Worry: A cognitive phenomenon intimately linked to affective, physiological, and interpersonal behavioral processes. *Cognitive Therapy and Research*, 22, 561–576.
- Brown, E.J., Heimberg, R.G., Frost, R.O., Makris, S.G., Juster, H.R., & Leung, A.W. (1999). Relationship of perfectionism to affect, expectations, attributions and performance in the classroom. *Journal of Social and Clinical Psychology*, 18, 98–120.
- Bruch, H. (1973). *Eating disorders: Obesity, anorexia nervosa, and the person within*. New York: Basic Books.
- Burns, D. D. (1980, November). The perfectionist's script for self-defeat. *Psychological Today*, November, 34–51.
- Button, E.J., Sonuga-Barke, E.J.S., Davies, J., & Thompson, M. (1996). A prospective study of self-esteem in the prediction of eating problems in adolescent schoolgirls: Questionnaire findings. *British Journal of Clinical Psychology*, 35, 193–203.
- Casper, R.C. (1983). Some provisional ideas concerning the psychologic structure in anorexia nervosa and bulimia. In P.L. Dasrby, P.E. Garfinkel, D.M. Garner, & D.V. Coscina (Eds.), *Anorexia nervosa: Recent developments in research* (pp. 387–392). New York: Liss.
- Connan, F., & Treasure, J. (1998). Stress, eating and neurobiology. In H.W. Hoec, J.L. Treasure, & M. Katzman (Eds.), *Neurobiology in the treatment of eating disorders* (pp. 211–236). Chichester: Wiley.
- Cooper, Z. (1995). The development and maintenance of eating disorders. In K.D. Brownell & C.G. Fairburn (Eds.), *Eating disorders and obesity: A comprehensive handbook* (pp. 199–206). New York: Guilford Press.
- Davis, C. (1997). Normal and neurotic perfectionism in eating disorders: An interactive model. *International Journal of Eating Disorders*, 22, 421–426.
- Davis, C., Claridge, G., & Fox, J. (2000). Not just a pretty face: Physical attractiveness and perfectionism in the risk for eating disorders. *International Journal of Eating Disorders*, 27, 63–73.
- 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.
- Fairburn, C.G., Shafran, R., & Cooper, Z. (1999). A cognitive behavioural theory of eating disorders. *Behaviour Research and Therapy*, 37, 1–13.
- Fairburn, C.G., Welch, S.L., Doll, H.A., Davies, B.A., & O'Connor, M.E. (1997). Risk factors for bulimia nervosa: A community-based case-control study. *Archives of General Psychiatry*, 54, 509–517.
- Frost, R.O., Heimberg, R.G., Holt, C.S., Mattia, J.I., & Neubauer, A.L. (1993). A comparison of two measures of perfectionism. *Personality and Individual Differences*, 14, 119–126.
- Frost, R.O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, 14, 449–468.
- Garner, D.M. (1986). Cognitive therapy for anorexia nervosa. In K.D. Brownell & J.P. Foreyyt (Eds.), *Handbook of eating disorders: Physiology, psychology, and treatment of obesity, anorexia, and bulimia* (pp. 301–327). New York: Basic Books.
- Garner, D.M. (1991). *The Eating Disorder Inventory-2: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Garner, D.M., Olmsted, M.P., & Polivy, J. (1983). Development and validation of a multidimensional Eating Disorder Inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2, 15–34.
- Hamachek, D.E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology*, 15, 27–33.
- Hewitt, P.L., & Flett, G.L. (1991). Perfectionism in the self and social context: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, 60, 456–470.
- Hewitt, P.L., Flett, G.L., & Ediger, E. (1995). Perfectionism traits and perfectionistic self-presentation in eating disorder attitudes, characteristics, and symptoms. *International Journal of Eating Disorders*, 18, 317–326.
- Hewitt, P.L., Flett, G.L., Turnbull-Donovan, W., & Mikail, S.F. (1991). The Multidimensional Perfectionism Scale: Reliability, validity, psychometric properties in psychiatric samples. *Psychological assessment: A Journal of Consulting and Clinical Psychology*, 3, 464–468.
- Hollander, M.H. (1965). Perfectionism. *Comprehensive Psychiatry*, 6, 94–103.
- Humphrey, L.L. (1988). Relationships with subtypes of anorexic, bulimic, and normal families. *Journal of the American Academy of Child and Adolescent Psychiatry*, 27, 544–551.
- Kerkhof, A., Hermas, D., Figee, A., Laeremans, I., Pieters, G., & Aardema, A. (2000). De Penn State Worry Questionnaire en de Worry Domains Questionnaire: eerste resultaten bij Nederlandse en Vlaamse klinische en poliklinische populaties [The Penn State Worry Questionnaire and the Worry Domains Questionnaire: First results in Dutch and Flemish in- and outpatient groups]. *Gedragstherapie*, 2000, 33, 135–145.

- 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.
- Meyer, C., Waller, G., & Waters, A. (1998). Emotional states and bulimic psychopathology. In H.W. Hoek, J.L. Treasure, & M. Katzman (Eds.), *Neurobiology in the treatment of eating disorders* (pp. 271–289). Chichester: Wiley.
- Meyer, T.J., Miller, M.L., Metzger, R.L., & Borkovec, T.D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behavior Research and Therapy*, 28, 487–495.
- Patch, A.R. (1984). Reflections on perfection. *American Psychologist*, 39, 386–390.
- Råstam, M., & Gillberg, C. (1991). The family background in anorexia nervosa: A population-based study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 30, 283–289.
- Rosenberg, M. (1965). *Society and adolescent self-image*. Princeton: Princeton University Press.
- Ruggiero, G.M., Levi, D., Ciuna, A., & Sassaroli, S. (2003). Stress situation reveals association between perfectionism and drive for thinness. *International Journal of Eating Disorders*, 34, 220–226.
- Scattolon, Y.S., & Nicky, R.M. (1995). Worry as an inhibitor of dietary restraint. *Behavioural & Cognitive Psychotherapy*, 23, 25–33.
- Silvera, D.H., Bergersen, L., Bjørgum, J.A., Perry, J.A., Rosenvinge, J.H., & Holte, A. (1998). Analyzing the relation between self-esteem and eating disorders: Differential effects of self-liking and self-competence. *Eating and Weight Disorders*, 3, 95–99.
- Simmons, J.R., Smith, G.T., & Hill, K.K. (2002). Validation of eating and dieting expectancy measures in two adolescent samples. *International Journal of Eating Disorders*, 31, 461–473.
- Slade, P. (1982). Toward a functional analysis of anorexia nervosa and bulimia nervosa. *British Journal of Clinical Psychology*, 21, 167–179.
- SPSS, Inc. (1999). *SPSS 10.0 per windows*. Bologna: SPSS Italia.
- Strober, M. (1981). A comparative analysis of personality organization in juvenile anorexia nervosa. *Journal of Youth and Adolescence*, 10, 285–295.
- Tafarodi, R.W., & Swann, W.B., Jr. (1995). Self-liking and self-competence as dimensions of global self-esteem: Initial validation of a measure. *Journal of Personality Assessment*, 65, 322–342.
- Thienemann, M., & Steiner, H. (1993). Family environment of eating disordered and depressed adolescents. *International Journal of Eating Disorders*, 14, 43–48.
- Vitousek, K.B., & Hollon, K.B. (1990). The investigation of schematic content and processing in eating disorders. *Cognitive Therapy and Research*, 14, 191–214.
- Wadden, T.A., Brown, G., Foster, G.D., & Linowitz, J.R., (1991). Salience of weight-related worries in adolescent males and females. *International Journal of Eating Disorders*, 10, 407–414.