3

Perceived Parental Psychological Control and Eating Disordered Symptoms: Maladaptive Perfectionism as a Possible Intervening Variable

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Manuscript submitted for publication.

Recent developmental theorizing suggests that intrusive parenting may create a vulnerability to psychopathology because it fosters a perfectionist orientation. However, research addressing this hypothesis in relation to eating disorders (ED's) is generally lacking. This study (a) examined mean-level differences between ED-patients and normal controls in psychologically controlling parenting and perfectionism and (b) addressed the intervening role of perfectionism in associations between psychological control and ED-symptoms, distinguishing between maladaptive and relatively more adaptive types of perfectionism. Hypotheses were examined in a sample of normal controls (*N* = 85) and a sample of ED-patients (*N* = 60). Findings indicate that ED-patients and bulimics in particular show elevated levels of paternal (but not maternal) psychological control and elevated levels of both adaptive and maladaptive perfectionism compared to normal controls. Further, mediation analyses show that maladaptive perfectionism is a significant intervening variable between parental psychological control and ED-symptoms. Directions for future research on controlling parenting, perfectionism and eating disorders are outlined.

Introduction

Although past research has extensively addressed the role of personality and family functioning in the etiology and course of eating disorders (ED) (Polivy & Herman, 2002), the role of both etiological factors has been investigated within separate research domains. Accordingly, there is little research investigating the interplay of family functioning and personality in relation to ED's. Specifically, recent research on the role of personality yields convincing evidence that perfectionism is a robust and specific predictor of ED-symptoms (e.g., Shafran, Cooper, & Fairburn, 2002). Parallel research on family functioning is increasingly showing that intrusive parental control is significantly related to disordered eating attitudes and behaviors (e.g., Vandereycken, 1994). However, both strands of research have developed relatively independently, with studies focusing either on the role of perfectionism or on the role of controlling parenting. The lack of studies addressing interrelationships between controlling parenting and perfectionism in the context of eating disorders is surprising given that developmental theories explicitly assume a role for controlling parenting in the development of perfectionism (e.g., Blatt, 1995) and given that various theorists posit that perfectionism, creates, in turn, a vulnerability to eating disturbances (e.g., Shafran et al., 2002).

The present study aimed to examine whether and how perceived controlling parenting and perfectionism are related to ED-symptoms, both in a sample of normal controls and a sample of ED-patients, and additionally tested the hypothesis that perfectionism plays an intervening role in the relation between perceptions of parental psychological control and severity of ED-symptoms. As such, the present study heeds recent calls to provide more insight in the psychological processes and dynamics through which family functioning (and parenting in particular) carries over into ED-related symptoms and behaviors (e.g., Murray, Waller, & Legg, 2000). In the following sections, we first describe the literature on parental control and perfectionism in eating disorders, followed by the developmental research which conceptualizes perfectionism as an intervening variable between parental intrusive control and vulnerability to psychopathology.

Parental Control and Eating Disorders

The notion that disturbances in family functioning and parenting processes play a role in the etiology and course of eating disorders has a longstanding tradition in research on ED (Garfinkel & Garner, 1982; Humpfrey, 1989; Kog & Vandereycken, 1985; Polivy & Herman, 2002; Strober & Humphrey, 1987; Yager, 1982). In particular, it has been argued that intrusive, controlling parenting is characteristic of families of adolescents with an ED (e.g., Minuchin, Rosman, & Baker, 1978; Vandereycken, 1994) and research is increasingly confirming this hypothesis.

First, a number of studies have examined mean-level differences between ED-samples and normal controls in perceived parental control. Many of these studies have relied on the overprotection scale of the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) which measures a level of parental protection that is excessive taking into account the child's developmental level and abilities. A number of studies have shown that ED-patients, and bulimic patients in particular, perceive their parents and particularly their father as more overprotective than do controls (e.g., Calam, Waller, Slade, & Newton, 1990; Pole, Waller, Stewart, & Parkin-Feigenbaum, 1988; Rhodes & Kroger, 1992; Steiger, Van der Feen, Goldstein, & Leichner, 1989), although other studies could not confirm this (e.g., Palmer, Oppenheimer & Marshall, 1988; Vandereycken, 1994). Apart from research using the PBI, a number of studies have examined other control-related parenting constructs in relation to eating disorders. Haworth-Hoeppner (2000), for instance, found that, compared to normal controls, eating disorder patients perceive their family environment as critical and coercive. Further, Berg, Crosby, Wonderlich, and Hawley (2000) observed higher levels of paternal control in bulimics compared to normal controls and Rorty, Yager, Rossotto, and Buckwalter (2000) found that bulimics reported heightened levels of parental intrusiveness (e.g., maternal invasion of privacy and paternal seductiveness) compared to normal controls. Together, these studies suggest that families of eating disordered adolescents are characterized by elevated levels of controlling and intrusive parenting. Such elevated levels of parental control have been mainly documented for bulimic patients and for paternal ratings of parenting.

Second, a number of studies have examined whether parental control is correlated with severity of disordered eating attitudes and behaviors. Unfortunately, these studies have typically been performed within non-clinical samples. Various studies have shown that the PBI overprotection scale is positively correlated with the eating-disordered behaviors and attitudes (e.g., Ahmad, Waller, & Verduyn, 1994; Calam & Slade, 1987; Kendler et al., 1991; Murray, et al., 2000; Tata, Fox, & Cooper, 2001), although other studies could not confirm such associations (Furnham & Adam-Saib, 2001; Markham, Thompson, & Bowling, 2005; Tsai, Curbow, & Heinberg, 2003). In samples of eating disordered patients, parental overprotection has been shown to predict suicidal behavior (Yamaguchi et al. 2000) and body image disturbances (De Panfilis, Rabbaglio, Rossi, Zita, & Maggini, 2003), but, to the best of our knowlegde, no single study to date has examined relations between parental overprotection and severity of ED-symptoms within a clinical sample. The present study aimed to fill this empirical gap.

Specifically, the present study focuses on the role of perceived parental psychological control, a construct that has received considerable empirical attention in recent developmental research on parenting and socialization (Barber & Harmon, 2002). Psychological control refers to parental behaviors that intrude upon children's thoughts and feelings, and has been characterized as typical of parents who excessively use manipulative parenting techniques such as guilt-induction and love withdrawal (i.e., making attention parental attention and care contingent upon the child's compliance to parental demands) (Barber, 1996).[1]

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[1] It is important to delineate the construct of psychological control from other parental control constructs such as overprotectiveness and more general assessments of parental control. First, psychological control and overprotection can be considered overlapping though nonredundant constructs (Holmbeck et al., 2002). Both constructs pertain to parenting that inhibits the child's autonomy. However, whereas overprotective parents inhibit their children's autonomy by excessive physical contact, infantilization and excessive concern for the child's well-being (Parker et al., 1979), psychologically controlling rely on a different set of autonomy-inhibiting tactics, including shaming, manipulativeness, and guilt-induction (Barber, 1996). Thus, although overprotection and psychological control both define an intrusive and autonomy-inhibiting parenting style, they are expressed through somewhat different parental behaviors (Holmbeck et al., 2002). Second, contrary to general assessments of controlling parenting (such as coerciveness or criticism), psychological control pertains to a specific type of controlling parenting behaviors. Psychologically controlling parents pressure their children to comply with parents'

Research among non-clinical samples has consistently shown that perceptions of psychological control are related to children's and adolescents' internalizing problems, including depression (e.g., Barber, 1996; Barber, Olsen, & Shagle, 1994), low self-worth (e.g., Garber, Robinson, & Valentiner, 1997) and anxiety (e.g., Seibel & Johnson, 2001). Moreover, recent cross-lagged longitudinal research shows that psychological control exacerbates rather than merely follows from adolescent internalizing problems (Barber, Stolz, Olsen, & Maughan, 2005).

Although controlling parenting is thought to be implicated in the development of ED-symptoms and although psychological control is a robust predictor of internalizing problems in general, the present study is among the first to specifically examine the construct of perceived psychological control in relation to ED-symptoms. Specifically, the present study aims (a) to examine mean-level differences in perceived parental psychological control between a sample of normal controls and a sample of late adolescents with an ED, and (b) to assess associations between psychological control and severity of ED-symptoms within both samples. In addition, we aimed to gain a better understanding of the psychological dynamics underlying this hypothesized association by examining the role of perfectionism, a personality feature which has been found to be strongly related to eating disturbances (Shafran et al., 2002). The conceptualization of perfectionism and its relation to ED is outlined in the next paragraph.

Perfectionism and Eating Disorders

In current research, perfectionism is conceptualized as a complex and multidimensional construct (Frost, Marten, Lahart, & Rosenblate, 1990). Although not uncontroversial, scholars are increasingly arguing for a distinction between 'adaptive' and 'maladaptive' dimensions of perfectionism. Central to perfectionism is the setting of (excessively) high personal standards for performance and achievement (Blatt, 1995; Shafran & Mansell, 2001). In line with the theorizing of Hamacheck (1978), an adherence to high personal standards is viewed as relatively adaptive, as this quality may foster positive, goal-

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goals through *internally* controlling means. As such, psychological control does not pertain to overtly controlling behaviors (such as explicit criticism, harsh rule enforcement, or even power assertion) but to a set of indirect techniques that are often communicated in a subtle, covert fashion (e.g., guilt induction) (Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005).

oriented strivings. The setting of high personal standards is, however, often accompanied by more maladaptive features such as negative self-evaluative tendencies (Frost et al., 1990). Specifically, contrary to more adaptive perfectionists, maladaptive perfectionists would be overly concerned about making mistakes when trying to attain personal standards; their striving for high standards would be motivated by fear of failure rather than by a need for achievement and they would pervasively doubt everyday decisions and behaviors. These negative self-evaluative characteristics would render them vulnerable to maladjustment in general and to internalizing problems in particular (e.g., Blatt, 1995).

Recent research is increasingly documenting the validity and usefulness of a distinction between adaptive and maladaptive perfectionism. Factor-analytical studies (e.g., Dunkley, Blankstein, Masheb, & Grilo, 2006; Enns, Cox, & Clara, 2002; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993) point to a distinction between an adaptive factor (i.e., setting high personal standards) and a maladaptive factor, (i.e., concern over mistakes and doubts about actions), although it must be noted that both components tend to be highly correlated. These high correlations suggest that both types of perfectionism often go hand in hand, so that the setting of high standards is often accompanied by self-evaluative concerns for not attaining these standards. Furthermore, at the correlational level, it was found that both 'adaptive' and maladaptive perfectionism are related to indices of maladjustment. After controlling for their shared variance, however, only maladaptive perfectionism is uniquely related to maladjustment and adaptive perfectionism is either unrelated or positively related to adjustment (e.g., Soenens, Vansteenkiste, Luyten, Duriez, & Goossens, 2005; Luyten, Van Houdenhove, Cosyns, & Van den Broeck, 2006).

Diverse theoretical formulations suggest a central role for perfectionism in general and maladaptive perfectionism in particular in the etiology and course of eating disorders (see Goldner, Cockell, & Srikameswaran, 2002 and Shafran et al., 2002 for overviews). By definition, maladaptive perfectionists have strong fears that they are unable to meet their goals in life (e.g., Blatt, 1995). Perhaps as a means to compensate for their feelings of incompetence and lack of control in life in general, maladaptive perfectionists may start to focus on a domain over which they believe to have a

fair amount of control, that is, eating and physical appearance. Maladaptive perfectionists might believe that achieving thinness and attaining an appealing body image provides them with the sense of self-worth they are searching for (Ryan, Deci, Grolnick, & LaGuardia, 2006). Unfortunately, even attainment of the ideal weight is unlikely to provide them a lasting sense of satisfaction, because a focus on physical appearance reflects an extrinsic goal orientation, and research has shown that extrinsic goals are unlikely to provide a stable sense of security (Ryan, 1995; Vansteenkiste et al., in press).

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Contrary to maladaptive perfectionists, adaptive perfectionists derive a sense of goal-directedness and personal control from their goal pursuit. Moreover, they are able to flexibly adjust their standards and goals in accordance with situational demands. Most likely, such adaptive qualities make them less vulnerable to or may even protect them from the rigid and escalating pursuit of thinness and the negative evaluation of one's physical appearance that characterizes ED-patients.

Despite the specific role ascribed to maladaptive perfectionism in relation to eating disorders, research on perfectionism and ED's typically did not explicitly distinguish between maladaptive and relatively more adaptive types of perfectionism (Davis, 1997; Pearson & Gleaves, 2006). For instance, ED-patients have been shown to display elevated levels of perfectionism compared to normal controls (e.g., Castro et al., 2004; Halmi et al., 2000) and studies in non-clinical populations have documented an association between diverse components of perfectionism and eating disorder symptoms (e.g., Hewitt, Flett, & Ediger, 1995). The present study examined (a) mean-level differences in adaptive and maladaptive perfectionism between a sample of normal controls and a sample of ED-patients and (b) associations between both dimensions of perfectionism and severity of ED-symptoms. It was expected that normal controls and ED-patients would be most strongly distinguished on the basis of maladaptive perfectionism and that maladaptive perfectionism would be more strongly related to ED-patients severity of ED-symptoms than adaptive perfectionism.

Apart from failing to distinguish between adaptive and maladaptive perfectionism, ED-research has generally failed to tap into the (parental) antecedents of perfectionism (see Woodside et al., 2002 for an exception). This is surprising given that developmental theories explicitly view the family climate (and controlling parenting in particular) as a factor in setting up the dynamics of a perfectionist orientation, as explained in the following section.

Perfectionism as an Intervening Variable

Diverse theories about the origins of perfectionism, such as the psychodynamic theory of Blatt (1995) and the Social Expectations Model of the development of perfectionism (Flett, Hewitt, Oliver, &

Macdonald, 2002) propose that controlling parenting may foster perfectionist concerns. Highly critical, guilt-inducing and conditionally approving (i.e., psychologically controlling) parents would convey the message to children that failure is unacceptable and that parental love is dependent upon the extent to which certain standards and norms are met – a message that, if adopted, is likely to set the stage for a (maladaptive) perfectionist orientation (Blatt, 1995). Specifically, exposed to conditionally approving parents, adolescents would start to conditionally approve their own behavior, so that feelings of contentment versus self-criticism would covary with the attainment of their personal rigidly held standards. Such a critical orientation towards oneself would, however, lead individuals to get concerned with failing to attain their standards and, hence, would set the stage for the development of maladaptive perfectionism. Moreover, as perfectionism would, in turn, create a vulnerability to maladjustment in general and disordered eating behaviors and attitudes in particular, (psychologically) controlling parenting may be indirectly related to adolescent ED-symptoms and adjustment through the effect of (maladaptive) perfectionism.

Consistent with these hypotheses, studies have evidenced a positive relationship between adolescent perceptions of controlling parenting and perfectionism (e.g., Enns, Cox, & Larsen, 2000; Flett, Hewitt, & Singer, 1995; Kenney-Benson & Pomerantz, 2005). Particularly relevant for the present research, Soenens and colleagues found that parental psychological control predicts maladaptive (but not adaptive) perfectionism in samples of middle to late adolescents (Soenens, Elliot, et al., 2005; Soenens, Vansteenkiste et al., 2005). In addition, maladaptive perfectionism was found to mediate any direct effect of psychological control on adolescents' self-esteem and depressive feelings (Soenens, Vansteenkiste et al., 2005). This research suggests that psychologically controlling parenting carries over into adolescent maladjustment through the development of a highly self-critical and perfectionist orientation. No study to date, however, has examined the role of perfectionism as an intervening variable in relations between parental psychological control and adolescent ED-symptoms.

Overview of the Present Study

The present study aimed (a) to examine mean-level differences in psychologically controlling parenting and adaptive and maladaptive perfectionism between a sample of normal controls and a sample of ED-patients, and (b) to examine associations between parental psychological control, adolescent (adaptive and maladaptive) perfectionism and severity of eating disorder symptoms. We formulated the following three hypotheses. (a) Perceptions of parental psychological control will relate positively to maladaptive (but not adaptive) perfectionism and to ED-symptoms, (b) Maladaptive (but not adaptive) perfectionism will relate positively to severity of ED-symptoms, and (c) Maladaptive perfectionism represents an intervening variable between perceptions of parental psychological control and ED-symptoms. These hypotheses were tested in a sample of restrictive anorexia patients and bulimic patients as well as in a sample of normal controls. On the basis of the extant literature, we hypothesized that, in spite of mean-level differences on some study variables (e.g., with ED-patients reporting higher psychological control and perfectionism than normal controls), the anticipated structural relations between the constructs under investigation would be generally similar in both groups.

Method

Participants

The ED-sample consisted of 60 late adolescent women who were inpatients admitted to a specialized treatment unit at Tienen, a mid-sized city in Belgium (Europe). Age of the ED-sample ranged from 15 to 25 with a mean of 19 years and 11 months. Seventy-two percent of the patients came from intact married families, 25% had divorced parents, and 2% came from a family in which one of the parents had deceased. This sample was selected from a larger sample of ED-patients (N = 127) on the basis of their living situation. As the primary aim of this article is to examine family processes, we selected only those patients who were still living with at least one of their parents. A further selection was made on the basis of patients' ED-diagnosis. Patients were diagnosed according to DSM-IV criteria (American Psychiatric Association, 1994) by an experienced psychiatrist (WV). In the sample of patients

still living at home, 37 were diagnosed as anorexia nervosa, restrictive type (AN-R); 6 as anorexia nervosa, bingeing-purging type (AN-P); 23 as bulimia nervosa (BN), and 15 as eating disorder not otherwise specified (EDNOS). Because two of the diagnostic categories (i.e., AN-P and EDNOS) were represented by a number of participants that was too small to be considered separately in statistical analyses, these two groups were not included in this study. The final number of ED patients included in the analyses was 60. The diagnosis assigned to the patients in this sample was externally validated by examining their scores on the three scales tapping disordered eating attitudes and behaviors of the Eating Disorder Inventory–II (EDI; Garner, Olmsted, & Polivy, 1983; Garner, 1991). As shown in Table 3.1, patients diagnosed as AN-R and BN did not differ in level of drive for thinness but, as expected, differed in level of bulimia. BN-patients displayed significantly higher bulimia scores than AN-R patients. In addition, BN-patients reported somewhat lower body dissatisfaction than did AN-R-patients.

The control sample consisted of 85 female late adolescent psychology students from a Belgian university. These participants were also selected from a larger sample (N = 100) on the basis of their living situation. All participants were living at home with at least one of their parents. Mean age of this sample ranged from 17 to 25 with a mean of 19 years. 81% came from intact married families, 14% had divorced parents, and 5% came from a family in which one of the parents had deceased.

The ED-sample and the control sample did not significantly differ on relevant demographic variables such as gender (all participants were female), living situation (i.e., living with both parents together or with one of the parents; $\chi^2(2) = 4..59$; $p > .05$), age ($t(142) = -1.91$; $p > .05$), years of education ($t(140) = 1.79$; $p > .05$), and parental marital status (i.e., married versus divorced versus one of the parents deceased; $\chi^2(3) = 6.35$; $p > .05$).

Procedure

ED-patients completed their questionnaires at admission as a part of the routine assessment. One part of the questionnaire (including psychological control and perfectionism) was administered in paper-and-pencil format and another part (including the EDI-II) was administered on a computer.

Control group participants completed their questionnaires during a collective testing session at the university and received course credit for their participation. For all participants, participation was voluntary and anonymity was guaranteed.

Measures

All questionnaires were translated into Dutch, the participants' mother tongue, according to the guidelines of the International Test Commission (Hambleton, 1994). Unless otherwise indicated, items were scored on 5-point Likert scales, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Psychological Control. Participants completed a 7-item psychological control scale which was derived from the Children's Report on Parent Behavior Inventory (CRPBI; Schaefer, 1965). This scale has been used and validated in studies with non-clinical samples (Soenens, Elliot, et al., 2005; Soenens, Vansteenkiste, et al., 2005). Participants rated the items for mother and father separately. A sample item reads: "My mother/father is less friendly to me if I don't see things like she/he does." Cronbach's alphas were .87 and .89 for paternal and maternal ratings of psychological control in the ED-sample, respectively and .87 and .87 in the control group, respectively.

Perfectionism. Participants completed three scales from the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990), namely the Concern over Mistakes scale (9 items, e.g., "People will probably think less of me if I make a mistake"), the Doubts about Actions scale (4 items, e.g., "Even when I do something very carefully, I often feel that is not quite right"), and the Personal Standards scale (7 items, e.g., "I set higher goals for myself than most people"). Past factor-analytical studies have shown that items from the Concern over Mistakes and the Doubts about Actions scales load together on a single factor which has been labeled 'maladaptive perfectionism' or 'evaluative concerns perfectionism' whereas the items of the Personal Standards load together on a separate factor labeled 'adaptive perfectionism' or 'positive striving perfectionism' (e.g., Dunkley et al., 2006; Enns et al., 2002; Frost et al., 1993; Soenens, Elliot, et al., 2005). To further assess the validity of a distinction between maladaptive and adaptive perfectionism in our own data, a Principal Components Analysis (PCA) on the

perfectionism items was performed. In order to arrive at a sample sufficiently large to yield a stable factor solution, PCA was conducted on the ED-sample and the control group sample together. The scree-plot clearly pointed to a solution with two components. After orthogonal rotation (VARIMAX), the first component had an eigenvalue of 7.14 (corresponding to 36% of explained variance) and the second component had an eigenvalue of 4.31 (corresponding to 22% of explained variance). All items from the Concern over Mistakes scale and the Doubts about Actions scale had substantial loadings on the first component (i.e.,>. 40) and all items of the Personal Standards scale had substantial loadings on the second component. Given these results, the items of the Concern over Mistakes and Doubts about Actions scales were averaged to form an index of maladaptive perfectionism and the items of the Personal Standards scale were averaged to form an index of adaptive perfectionism. Cronbach's alpha was .90 and .88 for maladaptive perfectionism in the ED-sample and the control group, respectively and .80 and .83 for adaptive perfectionism in the ED-sample and the control group, respectively.

ED-symptoms. Participants completed the Dutch version (Van Strien, 2002) of the Eating Disorder Inventory-II (Garner, 1991; Garner et al., 1983), a 64-item questionnaire tapping psychological characteristics and symptoms relevant to eating disorders. The EDI consists of eight subscales assessing both eating attitudes and related ego dysfunction characteristics but for the purpose of the present study only the three subscales measuring eating attitudes (i.e., drive for thinness, bulimia, and body dissatisfaction) were used. Participants rated how much each item applied to them on a scale ranging from 1 (*never*) to 6 (*always*). Scale scores are calculated such that higher scores represent higher levels of eating related psychopathology. Information on the validity and psychometric characteristics of the EDI-II is provided in Garner (1991) and Van Strien (2002).

Depression. Participants completed the Dutch version (Schotte, Maes, Cluydts, De Doncker, & Cosyns, 1997) of the Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988). This 21-questionnaire taps participants' affective, cognitive, motivational, and somatic symptoms during the past week. Items are rated on a scale from 0 (*never*) to 3 (*always*).

Results

Data-analysis proceeded in three steps. First, we examined mean-level differences in the study variables between the control group and the two groups of ED-patients (AN-R and BN). Second, correlations were computed between the study variables in the control group and the group of ED-patients. Third, mediation analyses were performed to examine the role of perfectionism as an intervening variable in associations between parental psychological control and ED-symptoms.

Table 3.1 *Means and Standard Deviations (between Brackets) by Group*

	Group				
Variable	Control Group	Anorexia Nervosa-R	Bulimia	F (2, 128)	η^2
1. Psychological Control Father	2.04 (0.81)$_b$	2.41 (0.97)$_{ab}$	2.74 (1.05)$_a$	5.77**	.08
2. Psychological Control Mother	2.09 (0.79)	2.23 (1.01)	2.45 (1.06)	1.40	.02
3. Adaptive Perfectionism	2.80 (0.61)$_c$	3.99 (0.72)$_a$	3.56 (0.71)$_b$	39.88***	.38
4. Maladaptive Perfectionism	2.39 (0.66)$_b$	3.82 (0.69)$_a$	3.51 (0.86)$_a$	55.08***	.46
5. Drive for Thinness	2.39 (4.30)$_b$	14.03 (5.61)$_a$	14.81 (5.65)$_a$	94.96***	.60
6. Bulimia	0.82 (2.31)$_b$	1.19 (3.08)$_b$	13.38 (5.09)$_a$	143.71***	.69
7. Body Dissatisfaction	7.80 (6.47)$_c$	15.68 (8.29)$_b$	20.48 (6.95)$_a$	33.66***	.35

Note: Means with different subscripts are significantly different. * $p < .05$, ** $p < .01$, *** $p < .001$.

Mean-Level Differences. By means of univariate ANOVA's, the three groups (normal controls, AN-R and BN) were compared in their perceptions of psychological control and in their levels of adaptive and maladaptive perfectionism. Table 3.1 shows the results of this analysis. The groups differed significantly in paternal psychological control. Subsequent post-hoc Tukey tests revealed that bulimic individuals perceived their fathers as higher in psychological control than normal controls. The mean rating of paternal psychological control in the AN-R group was in between these two groups but did not significantly differ from either the BN group or the control group. In order to examine whether the mean-level difference between the groups is due to differences in participants' degree of depression, an additional ANOVA with depression as a covariate was run. The effect of group on paternal psychological

control remained significant ($F(2, 111) = 3.02$; $p < .05$), indicating that the difference between the groups was not due to distorted perceptions of the family climate caused by the degree of depression. Contrary to the findings with the paternal psychological control scale, no significant difference between the groups was found in ratings of maternal psychological control.

Control group subjects were found to score significantly lower than the two ED-groups in both adaptive and maladaptive perfectionism. Moreover, post-hoc Tuckey analyses indicated that whereas the AN-R-patients and the BN-patients did not differ in maladaptive perfectionism, AN-R patients were higher in adaptive perfectionism than BN-patients. Because we hypothesized that the groups would be more strongly differentiated on the basis of maladaptive perfectionism than on the basis of adaptive perfectionism, an additional set of ANOVA's was conducted. To control for the variance shared by maladaptive and adaptive perfectionism, residual scores were calculated for each component, parsing out the variance shared with the other component. The ANOVA's were run again with these residual scores as dependent variables. It was found that whereas differences between groups in maladaptive perfectionism (controlled for adaptive perfectionism) were still significant ($F(2, 142) = 12.27$; $p < .001$), groups no longer differed in adaptive perfectionism after controlling for maladaptive perfectionism ($F(2, 142) = 1.74$; $p > .05$), indicating that normal controls were differentiated from ED-patients on the basis of maladaptive perfectionism and not on the basis of adaptive perfectionism.

Correlational Analyses. The Pearson Product Moment correlations among the study variables are presented in Table 3.2. Correlations were computed separately for the control group (below diagonal) and the ED-group (above diagonal). Because preliminary analyses did not reveal any significant differences in associations among the study variables between AN-R patients and BN-patients and to increase statistical power, correlations were computed for both ED-groups together.

As expected, paternal and maternal psychological control were positively related to maladaptive perfectionism in both samples. In contrast, ratings of psychological control were unrelated to adaptive perfectionism, although the positive assocation between paternal psychological control and adaptive

perfectionism in the control group was an exception. Further, paternal psychological control was positively related to each of the ED-symptoms in the control group and to bulimia in the ED-group. Maternal psychological control, by contrast, was not significantly related to any of the ED-symptoms in any of the groups. Maladaptive perfectionism was positively correlated with the drive for thinness and body dissatisfaction in both samples. The correlation between maladaptive perfectionism and bulimia only obtained significance in the control group. Adaptive perfectionism was unrelated to any of the ED-symptoms. In the ED-sample, a significantly negative association between adaptive perfectionism and bulimia even emerged.

Table 3.2 *Correlations among Study Variables*

Measure	1	2	3	4	5	6	7	8
1. PC Father		.36**	.02	.25*	-.03	.31*	.20	.09
2. PC Mother	.51***		.09	.32*	.03	.10	.18	.39*
3. Perfectionism (adapt)	.21*	.16		.62***	.23	-.34*	.05	.11
4. Perfectionism (maladapt)	.43***	.24*	.44***		.33*	-.13	.28*	.55**
5. Drive for Thinness	.31**	.07	.16	.60***		.17	.57***	.42*
6. Bulimia	.24*	.11	.15	.38***	.72***		.33*	.05
7. Body Dissatisfaction	.27*	.02	.04	.35***	.67***	.47***		.44**

Note: Control group below and ED-group above the diagonal. PC = Psychological Control. Adapt = Adaptive. Maladapt = Maladaptive. * $p < .05$, ** $p < .01$, *** $p < .001$.

In order to further explore the differential relations of adaptive and maladaptive perfectionism to ED-symptoms, regression analyses were conducted entering both perfectionism components as simultaneous predictors of the three ED-symptom scales. Within the ED-group, these analyses additionally controlled for mean-level differences between the two diagnostic categories (AN-R and BN) and for interactions between diagnostic group and the perfectionism components. Interaction terms were created by multiplying centered variables. None of the interaction terms reached significance (all *p*'s > .05), indicating that associations between perfectionism and the ED-symptoms were similar for AN-R patients and BN-patients. Results of these regression analyses are shown in Table 3.4 and

demonstrate that maladaptive perfectionism was positively related to each of the ED-symptoms across both samples. There was one exception to this general finding, that is, maladaptive perfectionism was positively, albeit not significantly, related to bulimia in the ED-group. Adaptive perfectionism, in contrast, tended to relate negatively to the ED-symptom scales in both samples, although only one of these associations reached significance, that is, the association with bulimia in the ED-group.

Table 3.3 *Regression Analyses Predicting Eating Disorder Symptoms*

	Predictor			
	Control Group		Eating Disorder Group	
Variable	Adaptive Perfectionism	Maladaptive Perfectionism	Adaptive Perfectionism	Maladaptive Perfectionism
Drive for Thinness	-.14	.66***	.06	.34*
Bulimia	-.03	.39**	-.21*	.18
Body Dissatisfaction	-.15	.42***	-.13	.46**

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Mediation Analyses. As the analyses reported in the preceding paragraph demonstrate that ratings of psychological control were only systematically related to maladaptive (but not adaptive) perfectionism and as only maladaptive perfectionism was positively related to the ED-outcomes, we only considered maladaptive perfectionism as a possible intervening variable in associations between perceived parental psychological control and the ED-symptoms.

The intervening role of maladaptive perfectionism was examined by means of regression analyses using a 4-step procedure (Kenny, Kashy, & Bolger, 1998). Step 1 involves determining the magnitude of the path from the independent variable (psychological control) to the dependent variables (drive for thinness, bulimia, and body dissatisfaction). Step 2 requires finding a significant path from the independent to the intervening variable (maladaptive perfectionism). Step 3 requires finding a significant path from the intervening to the dependent variable, controlling for the independent variable. Finally, in

Step 4, the decrease in the path from the independent to the dependent variables after controlling for the intervening variable is inspected.

Table 3.4 *Regression Analyses Testing the Intervening Role of Maladaptive Perfectionism between Psychological Control and Eating Disorder Symptoms*

		Paternal Psychological Control				
Dependent variable	Sample	Step 1	Step 2	Step 3	Step 4	*z'*
Drive for Thinness	Control	.31**	.43***	.51***	.06	3.27***
	ED	-.05	.31**	.40**	-.15	2.10*
Bulimia	Control	.24*	.43***	.35**	.09	2.31*
	ED	.18*	.31**	-.01	.18*	-0.53
Body Dissatisfaction	Control	.27*	.43***	.30**	.14	1.80*
	ED	.16	.31**	.33**	.07	1.77*
		Maternal Psychological Control				
Dependent variable	Sample	Step 1	Step 2	Step 3	Step 4	*z'*
Drive for Thinness	Control	.07	.24*	.63***	-.09	2.15*
	ED	.02	.35**	.39**	-.10	2.29**
Bulimia	Control	.11	.24*	.38***	.02	1.92*
	ED	.01	.35**	.04	-.01	0.30
Body Dissatisfaction	Control	.02	.24*	.37***	-.07	1.92*
	ED	.15	.35**	.34*	.05	1.97*

Note: Step 1 = Path from independent (psychological control) to dependent variable. Step 2 = Path from independent to mediating variable (maladaptive perfectionism). Step 3 = Path from mediating to dependent variable (controlling for the independent variable). Step 4 = Path from independent to dependent variable (controlling for the mediator). * $p < .05$, ** $p < .01$, *** $p < .001$.

Mediation is shown (a) when an initially significant path in Step 1 is reduced to non-significance in Step 4 and (b) when both indirect paths in Step 2 (independent variable to intervening variable) and Step 3 (intervening variable to dependent variable) are significant. However, even in the absence of a significant direct path in Step 1, an independent variable may still be indirectly related to a dependent variable through its effect on the intervening variable (MacKinnon, Lockwood, Hoffman, West, & Sheets,

2002). Such an indirect effect would be evidenced when both the paths in Step 2 and Step 3 are significant and when the total indirect effect of the independent variable on the dependent variable through the intervening variable is significant. In order to assess the significance of these indirect effects, MacKinnon, et al.s' (2002) z' test was computed. Again, analyses within the ED-group controlled for mean-level differences between the two diagnostic categories (AN-R and BN).

As shown in Table 3.4, paternal psychological control had a significant initial effect on each of the ED-outcomes in the control group. Each of these three initial effects was reduced to non-significance after entering maladaptive perfectionism as an intervening variable. Moreover, all indirect effects of paternal psychological control over maladaptive perfectionism to these three ED-outcomes were significant, suggesting full mediation. In the ED-sample, paternal psychological control was not directly related to two of the ED-outcomes (i.e., drive for thinness and body dissatisfaction). Despite this, paternal psychological control was significantly indirectly related to these outcomes through its effect on maladaptive perfectionism. Paternal psychological control did not show a mediated or indirect effect on bulimia in the ED-group, essentially because the association between maladaptive perfectionism and bulimia was not significant.

Maternal psychological control did not show any significant direct effect on the ED-outcomes in either sample (see Step 1 in Table 3.4). Despite this, maternal psychological control was significantly indirectly related to each of the ED-outcomes through its effect on maladaptive perfectionism, with one exception. As with the paternal ratings, maternal psychological control was not indirectly related to bulimia in the ED-sample because maladaptive perfectionism did not predict bulimia in that sample.

Discussion

Developmental theory suggests that intrusive, controlling parenting creates a vulnerability to psychopathology through the development of a perfectionist orientation (e.g., Barber, 1996; Blatt, 1995). Although research yielded evidence for the intervening role of perfectionism in associations between parental control and internalizing problems in general (e.g., Enns et al., 2002; Soenens, Vansteenkiste,

et al., 2005), this hypothesis has not been fully addressed in research on eating disorders. The aim of the present study, therefore, was to examine both perceived parental psychological control and perfectionism in relation to ED-symptomatology. Several interesting findings emerged.

A significant difference was found between women with an ED and non-eating-disordered women in their perceptions of paternal (but not maternal) psychological control, even after controlling for the possibly confounding effect adolescents' concurrent level of depression. It should be noted that these mean-level differences in parental psychological control only applied to the bulimia nervosa (BN) group; the group of patients with anorexia nervosa of the restrictive type (AN-R) fell in between the BN group and the normal control group but did not differ significantly from either of both groups in their ratings of paternal psychological control. This finding is in line with previous research which has evidenced only small or non-significant differences in perceptions of parental rearing between anorexia patients and normal controls (see Vandereycken, 1994, 2002 for overviews). It is unclear from such findings, however, whether the relative lack of differences between AN-R patients and normal controls implies that paternal control is a less important factor in the development of AN-R (compared to, for instance, BN) or whether this is due to higher levels of response bias and self-presentational responding in AN-R-patients. It has been noted that anorexic patients in particular have a tendency to deny their problems and to idealize their family (Vanderecyken, 2002; Vansteenkiste, Soenens, et al., 2005), a tendency which may mask true underlying issues with parental control and intrusiveness. Future research may examine this possibility by adequately controlling for response bias and denial tendencies or by adopting a multiple informants approach in assessing parenting processes.

Second, several significant positive associations were found between paternal psychological control and severity of ED-symptoms, although these associations were more pronounced in the control group compared to the ED-group. Together, these findings add to previous research documenting positive correlations between controlling parenting and ED-symptoms (e.g., Calam et al., 1990; Steiger et al., 1989). These findings also add to the literature on psychological control because this is the first

study to demonstrate an association between psychological control and ED-symptoms.

Contrary to the findings with paternal psychological control, however, correlations between maternal psychological control and ED-symptoms were generally not significant. The lack of mean-level differences in maternal psychological control and the lack direct effects of maternal psychological control on ED-symptoms compared to the significant findings for paternal psychological control is remarkable, but nevertheless in line with various previous studies which found that paternal control more strongly differentiates among normal controls and ED-patients than maternal control (e.g., Pole et al., 1988; Vandereycken, 1994). Evidently, this does not mean that maternal parenting is not related to the etiology and course of eating disorders. Other dimensions of the mother-child relationship may be more directly relevant to ED-outcomes. In a review by Vandereycken (1994), for instance, it was concluded that ED-patients perceive their mothers as primarily low on care. Moreover, as will be outlined in the following sections, maternal psychological control may still indirectly relate to ED-related attitudes and behaviors through its effect on maladaptive perfectionism.

Third, the present study indicates that it is useful to consider perfectionism as a multidimensional instead of a unidimensional construct. Specifically, it was found that ED-patients and normal controls primarily differed on maladaptive perfectionism, but not on adaptive perfectionism. Specifically, after controlling for the variance shared by adaptive and maladaptive perfectionism, only maladaptive perfectionism was found to discriminate between the control group and the ED-samples. This finding suggests that the negative self-evaluative concerns involved in a perfectionist orientation, rather than the setting of high personal standards as such, may be the driving psychopathological force in the development of an eating disorder. As such, this finding further attests to the validity of a distinction between maladaptive and relatively more adaptive types of perfectionism and confirms clinical descriptions of ED-patients as being primarily characterized by elevated levels of maladaptive perfectionist self-evaluative concerns (Blatt, 1995; Shafran & Mansell, 2001).

Fourth, the usefulness of differentiating these two types of perfectionism became even clearer

because, as hypothesized, maladaptive (instead of adaptive) perfectionism was established as an intervening variable in the association between psychological control and ED-symptoms. We began the mediational analyses by showing that perceptions of maternal and paternal psychological control were significantly related to maladaptive perfectionism in both samples, whereas associations with adaptive perfectionism were generally non-significant. This pattern of findings replicates earlier findings (e.g., Soenens, Vansteenkiste, et al., 2005) and indicates that conditionally approving and guilt-inducing parenting is primarily related to adolescents' maladaptive self-evaluative concerns, involving conditional approval of oneself, and continuous doubts and concerns about whether norms and standards for behavior are met. Next, such maladaptive perfectionist thoughts and feelings were found to be significantly related to severity of ED-symptoms in both normal controls and ED-patients. The setting of high personal standards (i.e., the relatively more adaptive type of perfectionism) was either unrelated or even negatively related to ED-related behaviors and attitudes.

Finally, and most importantly, mediation analyses demonstrated that maladaptive perfectionism either fully mediated direct linkages between psychological control and ED-symptoms (which was primarily the case for ratings of paternal psychological control) or indirectly established an association between psychological control and ED-symptoms (which was primarily the case for ratings of maternal psychological control). Hence, irrespective of whether psychological control showed an initial direct effect on ED-symptoms, these findings suggest that psychologically controlling parenting carries over into disordered eating behaviors and attitudes because it sets up the dynamics of a maladaptive perfectionist orientation. Adolescents of psychologically controlling parents appear to develop harsh, perfectionist, and internally controlling strategies to evaluate their own behavior. Possibly in combination with high levels of self-consciousness and a strong focus on physical appearance (Ryan et al., in press), which is pursued to compensate for feelings of incompetence and insecurity, such a maladaptive perfectionist orientation may result in a strong drive for thinness and a negative evaluation of one's appearance (i.e., body dissatisfaction). Together, the mediation analyses clearly support our

hypothesized sequence of events and provide an initial step in clarifying the processes and dynamics involved in relations between controlling parenting and eating disorders.

There was one notable exception to the general pattern of findings, that is, maladaptive perfectionism did not play a significant intervening role in associations between psychological control and bulimia in the ED-samples, which was due to a lack of association between maladaptive perfectionism and bulimia in the ED-group. Although not anticipated, the finding that maladaptive perfectionism was less strongly related to bulimia than to drive for thinness and body dissatisfaction meshes with theory and research suggesting that bulimic symptoms are more closely tied to undercontrolled characteristics such as impulsiveness and emotional dysregulation than to overcontrolled personality features such as restrictiveness and desire for control (e.g., Claes, Vandereycken, Luyten, Soenens, & Vertommen, in press; Westen & Harnden-Fischer, 2001). As perfectionism primarily involves overcontrolled rather than undercontrolled characteristics, it is not surprising to find that it is less substantially associated with bulimia. Further research is needed, however, to replicate this finding as well as to directly examine this possible explanation of our findings. These findings also point to the possibility of etiological heterogeneity in eating disordered patients which needs to be taken into account in future studies.

To summarize, the present set of findings clearly indicate that the distinction between maladaptive and relatively more adaptive types of perfectionism is highly relevant to the study of eating disorders. Not only could adaptive and maladaptive perfectionism be differentiated factor-analytically, they also showed differential relations to both a hypothesized antecedent factor (i.e., psychological control) and to ED-symptoms. Despite this, we would like to caution that the term ‘adaptive’ perfectionism might be somewhat misleading because this component generally did not relate significantly negatively to the ED-outcomes, neither at the correlational level nor when the shared variance with maladaptive perfectionism was controlled for in the regression analyses. Thus, these results suggest that although adaptive perfectionism does not represent a risk factor for eating

disordered psychopathology, it also does not substantially protect against such psychopathology. Furthermore, this study, along with other studies (e.g., Dunkley et al., 2006; Soenens, Vansteenkiste, et al., 2005), shows that there is a substantial positive correlation between both components of perfectionism, suggesting that people who set high personal to themselves (i.e., 'adaptive' perfectionism), on average, tend to simultaneously engage in negative self-evaluative processes including fear of failure and relentless doubts about one's behavior (i.e., maladaptive perfectionism). The possibility therefore exists that, although an adherence to high personal standards is, as such, not maladaptive, it could give rise to or sustain the processes involved in maladaptive perfectionism. An important aim for future research, therefore, is to examine whether 'adaptive' perfectionism can turn into maladaptive perfectionism in the long run (Luyten et al., 2006) and thus indirectly represent a vulnerability factor to eating disorders rather than a protective factor.

Limitations

The present study represents a first and preliminary test of the intervening role of perfectionism in associations between psychological control and ED-symptoms. As such, it shows a number of important shortcomings which need to be addressed in future research. This study is limited by its reliance on self-reports, which may invoke some degree of response bias (e.g., idealization, denial, or social desirability) or may be distorted by participants' functioning at the time of assessment. Apart from controlling for participants' level of depression or distress (as was done in the present study), future research would do well to include independent assessments of the parenting constructs, for instance, by relying on parent reports or behavioral observations of parent-child relationships. Such methods may also allow minimizing problems associated with shared method variance.

Second, although socialization research typically assumes that parenting exerts an influence on adolescents' functioning and vulnerability to psychopathology, this direction of effects could not be adequately tested in this cross-sectional study. For instance, people with a temperamental vulnerability to develop ED-symptoms (e.g., through hereditary processes) may elicit more psychological control

from their parents. Similarly, parents' use of internally controlling tactics may be the result of parents' anxiety about the child's development and parents' high concern to deal with the health-endangering implications of an eating disorder. Also, perfectionist adolescents may engage in avoidant and relationally aggressive interpersonal behaviors towards their parents which may, in turn, elicit intrusive and manipulative behaviors from the parents themselves. In this regard, it is important to note that recent cross-lagged longitudinal research on associations between psychological control and depression has evidenced reciprocal processes, indicating that intrusive parenting does not only create a vulnerability to internalizing problems but is also elicited to some extent by the child's own development (Barber, Stolz, et al., 2005). An important aim for future research is to address the question of direct of effects in research on eating disorders as well.

Conclusion

This study showed that paternal but not maternal perceived psychological control is significantly related to ED-symptoms and ED-diagnosis. More importantly, it was found that paternal psychological control and maternal psychological control are essentially indirectly related to ED-symptoms through their relation with maladaptive perfectionism. These findings are in line with a hypothesized sequence of events assuming that intrusive and conditionally approving parenting carries over into ED-symptoms through the development of perfectionist and self-evaluative processes. This indirect effect of maladaptive perfectionism was found across the samples of normal controls and ED-patients, suggesting that this hypothesized process may be implied in the development of both sub-clinical expressions of eating disorders and expressions of a full-blown clinical eating disorder.

References

Ahmad, S., Waller, G., & Verduyn, C. (1994). Eating attitudes among Asian schoolgirls: The role of perceived parental control. *International Journal of Eating Disorders*, *15*, 91-97.

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders, fourth edition.* Washington, DC: Author.

Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development*, *67*, 3296 - 3319.

Barber, B. K., & Harmon, E. L. (2002). Violating the self: Parental psychological control of children and adolescents. In B. K. Barber (Ed.), *Intrusive parenting: How psychological control affects children and adolescents* (pp. 15-52). Washington, DC: APA.

Barber, B. K., Olsen, J. E., Shagle, S. C. (1994). Associations between parental psychological and behavioral control and youth internalized and externalized behaviors. *Child Development*, *65*, 1120-1136.

Barber, B. K., Stolz, H. E., Olsen, J. A., & Maughan, S. L. (2005). Parental support, psychological control, and behavioral control: Assessing relevance across time, method, and culture. *Society for Research in Child Development Monograph Series, 70,* 4.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8,* 77-100.

Berg, M. L., Crosby, R. D., Wonderlich, S. A., & Hawley, D. (2000). Relationship of temperament and perceptions of nonshared environment in bulimia nervosa. *International Journal of Eating Disorders, 28*, 148-154.

Blatt, S. J. (1995). The destructiveness of perfectionism. *American Psychologist, 50*, 1003–1020.

Calam, R., & Slade, P. (1987). Eating problems and sexual experience: Some relationships. *British Review of Bulimia and Anorexia Nervosa, 2*, 37-43.

Calam, R., Waller G., Slade, P., & Newton, T. (1990). Eating disorders and perceived relationship with parents. *International Journal of Eating Disorders*, *9*, 479-485.

Castro, J., Gila, A., Gual, P., Lahortiga, F., Saura, B., & Toro, J. (2004). Perfectionism dimensions in children and adolescents with anorexia nervosa. *Journal of Adolescent Health, 35*, 392-398.

Claes, L., Vandereycken, W., Luyten, P., Soenens, B., & Vertommen, H. (in press). Personality prototypes in eating disorders based on the Big Five Model. *Journal of Personality Disorders*.

Davis, C. (1997). Normal and neurotic perfectionism in eating disorders: An interactive model. *International Journal of Eating Disorders, 22*, 421-426.

De Panfilis, C., Rabbaglio, P., Rossi, C., Zita, G., & Maggini, C. (2003). Body image disturbance, parental bonding and alexithymia in patients with eating disorders. *Psychopathology, 36*, 239-246.

Dunkley, D. M., Blankstein, K. R., Masheb, R. M., & Grilo, C. M. (2006). Personal standards and evaluative concerns dimensions of "clinical" perfectionism: A reply to Shafran et al. (2002, 2003) and Hewitt et al. (2003). *Behavior Research and Therapy, 44*, 63-84.

Enns, M. W., Cox, B. J., & Clara, I. (2002). Adaptive and maladaptive perfectionism : Developmental origins and association with depression proneness. *Personality and Individual Differences, 33,* 921-935.

Enns, M. W., Cox, B. J., & Larsen, D. K. (2000). Perceptions of parental bonding and symptom severity in adults with depression : Mediation by personality dimensions. *Canadian Journal of Psychiatry, 45,* 263-268.

Flett, G. L., Hewitt, P. L., Oliver, J. M., & MacDonald, S. (2002). Perfectionism in children and their parents: A developmental analysis. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 89-132). Washington, DC : APA.

Flett, G. L., Hewitt, P. L., & Singer, A. (1995). Perfectionism and parental authority styles. *Individual Psychology, 51,* 50-60.

Frost, R. O., Heimberg, R. G., Holt, C. S., Mattia, J. L., & 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. M., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14,* 449-468.

Furnham, A., & Adam-Saib, S. (2001). Abnormal eating attitudes and behaviors and perceived parental control: A study of white British and British-Asian school girls. *Social Psychiatry and Psychiatric Epidemiology, 36,* 462-470.

Garber, J., Robinson, N. S., Valentiner, D. (1997). The relation between parenting and adolescent depression: Self-worth as a mediator. *Journal of Adolescent Research, 12,* 12-33.

Garfinkel, P. E., & Garner, D. M. (1982). *Anorexia nervosa: A multidimensional perspective*. New York: Brunner/Hazel.

Garner, D. M. (1991). ED-12: Eating Disorder Inventory-II. *Professional manual*. Odessa, FL: Psychological Assessment Resources.

Garner, D. M., Olmsted, M. P., and Polivy, J. (1983). The eating disorder inventory: A measure of cognitive-behavioral dimensions of anorexia nervosa and bulimia. In Darby, P. L., Garfinkel, P. E., Garner, D. M., and Coscina, D. V., (eds.). *Anorexia nervosa: Recent developments in research*. New York: Alan R. Liss, Inc.

Goldner, E. M., Cockell, S. J., & Srikawmeswaran, S. (2002). Perfectionism and eating disorders. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 319-340). Washington, DC : APA.

Halmi, K. A., Sunday, S. R., Strober, M., Kaplan, A., Woodside, D. B., Fichter, M., Treasure, J., Berrettini, W. H., & Kaye, W. H. (2000). Perfectionism in anorexia nervosa: Variation by clinical subtype, obsessionality, and pathological eating behavior. *American Journal of Psychiatry, 157*, 1799-1805.

Hamachek, D. E. (1978). Psychodynamics of normal and neurotic perfectionism. *Psychology, 15,* 27-33.

Hambleton, R. K. (1994). Guidelines for adapting educational and psychological tests: A progress report. *European Journal of Psychological Assessment, 10*, 229-244.

Haworth-Hoeppner, S. (2000). The critical shapes of body image: The role of culture and family in the production of eating disorders. *Journal of Marriage and Family, 62,* 212-227.

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.

Holmbeck, G. N., Johnson, S. Z., Wills, K., McKernon, W., Rolewick, S., & Skubic, T. (2002). Observed and perceived parental overprotection in relation to psychosocial adjustment in pre-adolescents with a physical disability: The mediational role of behavioral autonomy. *Journal of Consulting and Clinical Psychology, 70,* 96-110.

Humphrey, L. L. (1989). Observed family interactions among subtypes of eating disorders using structural analysis of social behavior. *Journal of Consulting and Clinical Psychology, 57*, 206-214.

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, *22*, 280-287.

Kendler, K. S., MacLean, C., Neale, M., Kessler, R., Heath, A., & Eaves, L. (1991). The genetic epidemiology of bulimia nervosa. *American Journal of Psychiatry, 148*, 1627-1637.

Kenney-Benson, G. A., & Pomerantz, E. (2005). The role of mothers' use of control in children's perfectionism: Implications for the development of children's depressive symptoms. *Journal of Personality, 73,* 23-46.

Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). Data analysis in social psychology. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 1, pp. 233-265). Boston, MA: McGraw-Hill.

Kog, E., & Vandereycken, W. (1985). Family characteristics of anorexia nervosa and bulimia: A review of the research literature. *Clinical Psychology Review*, *5*, 159-180.

Luyten, P., Van Houdenhove, B., Cosyns, N., & Van den Broeck, A.-L. (2006). Are patients with chronic fatigue syndrome perfectionistic – or were they? A case-control study. *Personality and Individual Differences, 40*, 1473-1483.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*, 83-104.

Markham, A., Thompson, T., & Bowling, A. (2005). Determinants of body-image shame. *Personality and Individual Differences, 38*, 1529-1541.

Minuchin, S., Rosman, B. L., & Baker, L. (1978). *Psychosomatic families*. Cambridge, MA: Harvard University Press.

Murray, C., Waller, G., & Legg, C. (2000). Family dysfunction and bulimic psychopathology: The mediating role of shame. *International Journal of Eating Disorders, 28*, 84-89.

Palmer, R. L., Oppenheimer, R., & Marshall, P.D. (1988). Eating disordered patients remember their parents: A study using the parental bonding instrument. *International Journal of Eating Disorders*, *7*, 101-106.

Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Psychology*, *52*, 1-10.

Pearson, C. A., & Gleaves, D. H. (2006). The multiple dimensions of perfectionism and their relation with eating disorder features. *Personality and Individual Differences, 41*, 225-235.

Pole, R., Waller, D. A., Stewart, S. M., & Parkin-Feigenbaum, L. (1988). Parental caring versus overprotection in bulimia. *International Journal of Eating Disorders*, *7*, 601-606.

Polivy, J., & Herman, P. C. (2002). Causes of eating disorders. *Annual Review of Psychology, 53*, 187-213.

Rhodes, B., & Kroger, J. (1992). Parental bonding and separation-individuation difficulties in late adolescent eating disordered women. *Child Psychiatry and Human Development, 22*, 249-263.

Rorty, M., Yager, J., Rossotto, E., & Buckwalter, G. (2000). Parental intrusiveness in adolescence recalled by women with a history of bulimia nervosa and comparison women. *International Journal of Eating Disorders, 28,* 202-208.

Ryan, R. M., Deci, E. L., Grolnick, W. S., & LaGuardia, J. G. (in press). The significance of autonomy and autonomy support in psychological development and psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental Psychopathology: Vol.1. Theory and Method (2nd ed.).* New York: Wiley.

Schaefer, E. (1965). A configurational analysis of children's reports of parental behavior. *Journal of Consulting Psychology*, *29*, 552-557.

Schotte, C. K., Maes, M., Cluydts, R., De Doncker, D., & Cosyns, P. (1997). Construct validity of the Beck Depression Inventory in a depressive population. *Journal of Affective Disorders, 46,* 115-125.

Seibel, F. L., & Johnson, W. B. (2001). Parental control, trait anxiety, and satisfaction with life in college students. *Psychological Reports, 88*, 473-480.

Shafran, R., Cooper, Z., & Fairburn, C. G. (2002). Clinical perfectionism: A cognitive-behavioural analysis. *Behaviour Research and Therapy, 40*, 773-791.

Shafran, R., & Mansell, W. (2001). Perfectionism and psychopathology: A review of research and treatment. *Clinical Psychology Review, 21*, 879–906.

Soenens, B., Elliot, A. J., Goossens, L., Vansteenkiste, M., Luyten, P., & Duriez, B. (2005). The intergenerational transmission of perfectionism: Parents' psychological control as intervening variable. *Journal of Family Psychology, 19*, 358-366.

Soenens, B., Vansteenkiste, M., Luyten, P., Duriez, B., & Goossens, L. (2005). Maladaptive perfectionistic self-representations: The mediational link between psychological control and adjustment. *Personality and Individual Differences, 38, 487-498*.

Steiger, H., Van der Feen, J., Goldstein, C., & Leichner, P. (1989). Defense styles and parental bonding in eating disordered women. *International Journal of Eating Disorders*, *8*, 131-140.

Strober, M., & Humphrey, L. L. (1987). Familial contributions to the etiology and course of anorexia nervosa and bulimia. *Journal of Consulting and Clinical Psychology*, *55*, 654-659.

Tata, P., Fox, J., & Cooper, J. (2001). An investigation into the influence of gender and parenting styles on excessive exercise and disordered eating. *European Eating Disorders Review, 9,* 194-206.

Tsai, G., Curbow, B., & Heinberg, L. (2003). Sociocultural and developmental influences on body dissatisfaction and disordered eating attitudes and behaviors of Asian women. *Journal of Nervous and Mental Disease, 191*, 309-318.

Vandereycken, W. (1994). Parental rearing behaviour and eating disorders. In C. Perris, W. A. Arrindell, & M. Eisemann (Eds.), *Parenting and psychopathology* (pp. 219-234). London: Wiley.

Vandereycken, W. (2002). Families of patients with eating disorders. In C. G. Fairburn, & K. D. Brownell (Eds.), *Eating disorders and obesity: A comprehensive handbook* (pp. 215-220). New York: Guilford.

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., & Matos, L. (2005). Examining the motivational impact of intrinsic versus extrinsic goal framing and internally controlling versus autonomy-supportive communication style upon early adolescents' academic achievement. *Child Development, 76*, 483-501.

Vansteenkiste, M., Soenens, B., & Vandereycken, W. (2005). Motivation to change in eating disorder patients: A conceptual clarifcation on the basis of Self-Determination Theory. *International Journal of Eating Disorders, 37,* 207-219.

Van Strien, T. (2002). *Eating Disorder Inventory II. Nederlandse versie (EDI-II NL)*. Lisse, Belgium: Swets & Zeitlinger.

Westen, D., & Harnden-Fischer, J. (2001). Personality profiles in eating disorders: Rethinking the distinction between Axis I and Axis II. *American Journal of Psychiatry, 158*, 547-562.

Woodside, D. B., Bulik, C. M., Halmi, K. A., Fichter, M. M., Kaplan, A., Berrettini, W. H., Strober, M., Treasure, J., Lilenfeld, L., Klump, K., & Kaye, W. H. (2002). Personality, perfectionism, and attitudes toward eating in parents of individuals with eating disorders. *International Journal of Eating Disorders, 31*, 290-299.

Yager, J. (1982). Family issues in the pathogenesis of anorexia nervosa. *Psychosomatic Medicine*, *44*, 43-57.

Yamaguchi, N., Kobayashi, J., Tachikawa, H., Sato, S., Hori, M., Suzuki, T., & Shiraishi, H. (2000). Parental representation in eating disorder patients with suicide. *Journal of Psychosomatic Research, 49*, 131-136.