RESEARCH ARTICLE

Personality Dimensions among Women with an Eating Disorder: Towards Reconceptualizing DSM†

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Abstract

Objective: To evaluate the incremental validity of a dimensional assessment of personality, after controlling for diagnostic category, in accounting for meaningful variation in eating disorder attitudes and behaviours and in current affective distress among a clinical sample of eating disordered women.

Methods: 244 treatment seeking eating disordered women and 116 non-eating disordered women were assessed with the NEO five factor inventory (NEO-FFI), and with measures of eating disorder attitudes and of affective distress using a cross sectional design.

Results: As predicted, differences were found between eating disordered and non-eating disordered women on several NEO-FFI scales, which provided a context for subsequent analyses. NEO-FFI scales accounted for meaningful variation in eating disordered attitudes and behaviours as well as in levels of current affective distress over and above DSM-IV diagnostic category.

Conclusion: A flexible approach to diagnosis, which includes personality dimensions along with a description of eating disorder symptoms, may result in a more inclusive and useful diagnostic scheme for treating women with eating disorders. Copyright © 2009 John Wiley & Sons, Ltd and Eating Disorders Association.

Keywords

five factor model; NEO; eating disorders; personality dimensions; diagnosis; DSM

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Personality pathology is common among women with eating disorders (ED; Vitousek & Manke, 1994), and prevalence estimates of personality disorders range from 20–80% (Herzog, Keller, Lavori, Kenny, & Sacks, 1992). Problematic personality traits are linked to poorer treatment outcomes for EDs (Fahey & Russell, 1993; Bloks, Hoek, Callewaert, & van Furth, 2004). Further, a recent review suggested that a dimensional approach to personality, rather than a categorization of personality disorders, differentially predicts outcomes for those with anorexia nervosa (AN) and bulimia nervosa (BN) (Cassin & von Ranson, 2005). Similarly, dimensional measurements of personality were shown to predict ED symptoms and affective distress after controlling for ED diagnosis (Westen & Harnden-Fischer, 2001). The role of personality dimensions in etiology, symptom severity and outcome of ED treatment has important implications for the revision

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of the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV) currently underway (Walsh, 2007).

Researchers and clinicians note a number of concerns with the current approach to ED classification in DSM-IV. First, patients with EDs move between ED diagnoses over time, suggesting that subtypes, for example, may not be distinctive disorders (Eddy, Dorer, Franko, Tahilani, Thompson-Brenner, & Herzog, 2008; Eddy, Keel, Dorer, Delinsky, Franko, & Herzog, 2002). Second, the eating disorder not otherwise specified (EDNOS) category typically accounts for 50–60% of any given ED sample (Fairburn & Bohn, 2005; Fairburn, Cooper, Bohn, o'Connor, Doll, & Palmer, 2007). Hence, a large proportion of ED individuals are clustered in a heterogeneous EDNOS group for which there is a little research on treatment options. A third criticism of the DSM-IV in general is its focus on a categorical method of classification despite substantial evidence that emotional and behavioural problems occur on a continuum (Walsh, 2007). Specifically with regard to EDs, Fairburn and Cooper (2007) emphasized that aspects of personality, such as negative affect, perfectionism and low self-esteem, may be present to varying degrees across ED groups, and thus suggested a 'transdiagnostic' perspective to EDs.

A number of researchers argued for including personality dimensions when diagnosing ED patients to increase understanding of etiology, symptom severity and treatment outcome (Vitousek & Manke, 1994; Westen & Harnden-Fisher, 2001). Whereas the association between personality factors and ED symptoms has been examined (Davis, Claridge, & Cerullo, 1997; Diaz-Marsa, Carrasco, & Saiz, 2000), the contribution of personality over and above variance accounted for by DSM-IV ED diagnosis has rarely been addressed. One exception is a study by Westen and Harnden-Fischer (2001) that identified three personality clusters from clinician assessment of their ED patients. Using Q-sort and Q-factor analysis techniques, three clusters of ED patients were identified: high functioning/perfectionistic, constricted/overcontrolled and emotionally dysregulated/undercontrolled. These personality clusters accounted for meaningful variation in ED symptoms, global functioning, sexual abuse history and history of psychiatric hospitalization over and above DSM-IV ED diagnosis.

Despite its importance, certain aspects of Westen and Harnden-Fischer's (2001) study may have limited its generalizability. First, Q-factor analysis, a method similar to principal components analysis, may have produced sample-specific clusters and results not necessarily representative of latent groups (Preacher & MacCallum, 2003). Second, these cluster scores were difficult to interpret because normative data were not provided; that is, it was not evident if higher scores represented an elevation relative to a norm.

Hence, in the current study, we examine whether self-reported personality factors assessed using a dimensional model of personality with known norms, are associated with ED attitudes and behaviours and with affective distress after controlling for DSM-IV ED diagnosis. Our goal is to evaluate the potential added value of personality dimensions in understanding and treating individuals with EDs.

The dimensional model used was the five factor model of personality (FFM: Costa & McCrae, 1992), which provides a dimensional description of normal personality traits within five broad domains. Neuroticism is defined by anxiety, depression, impulsiveness and vulnerability to stress. extraversion is defined by gregariousness, assertiveness and excitement seeking. Openness to experience is defined by adventurousness, being free-spirited and imaginativeness. Agreeableness is defined by compliance, cooperativeness and modesty. Conscientiousness is defined by orderliness, deliberateness and self-discipline. This model was derived from factor analysis studies, and is regarded by some as representing the basic structure for normal personality (Saulsman & Page, 2004).

There is a paucity of research exploring FFM personality factors in clinical ED samples, and there are inconsistencies among existing research findings (Podar, Jaanisk, Allik, & Harro, 2007). The lack of consistency may be due to studying non-clinical samples (e.g. Markon, Kruger, & Watson, 2005; Pollock-Barziv & Davis, 2005), and to idiosyncratically assessing and combining ED diagnostic groups (e.g. Ghaderi & Scott, 2000). Despite this, there is a documented link between neuroticism and ED diagnoses (Cassin & von Ranson, 2005). However, the combination of specific personality dimensions associated with each ED diagnosis is less clear (Podar et al., 2007). Existing findings suggest that compared to controls, those with EDs have higher levels of neuroticism and lower levels of extraversion, agreeableness and conscientiousness (Podar et al., 2007; Podar, Hannus, & Allik, 1999). Further, Bollen and

Table 1 Demographic information of participants

	ANR ($n = 45$)	ANB ($n = 50$)	BN ($n = 149$)	NE ($n = 116$)
Mean Age (SD)	24.55 (7.74)	26.75 (9.14)	26.12 (8.94)	23.69 (7.29)
Mean BMI (SD)	15.89 (3.72)	16.92 (2.30)	24.06 (5.67)	23.14 (3.72)
Marital status percentages				
Married or co-habitating	19.1	15.4	25.8	22.4
Never married and single	80.9	75.0	68.4	76.7
Divorced/separated	0.0	9.3	5.1	0.9
Widowed	0.0	0.0	0.6	0.0
Per cent caucasian	95.7	92.0	88.7	90.9
Median family income in thousands, CAD	70–79	50–59	50–59	70–79

Notes: ANR = anorexia nervosa restricting subtype, ANB = anorexia nervosa binge and/or purge subtype, BN = bulimia nervosa purging subtype, NE = non-eating disordered, SD = standard deviation. CAD = annual family income reported in Canadian dollars.

Wojciechowski (2004) reported that those with AN restricting subtype (ANR) had higher scores on agreeableness and conscientiousness compared to those with AN binge or purge subtype (ANB).

Goals and hypotheses

The first goal of this study is to examine differences among three common ED diagnostic groups (ANR, ANB and BN) and a sample of women without an ED on the personality dimensions measured by the FFM. We hypothesized that women with an ED will have higher levels of neuroticism, and lower extraversion, agreeableness, and conscientiousness compared to women without an ED. Further, those with ANR were expected to have higher scores on agreeableness and conscientiousness compared to those with ANB. These expected group differences would provide a context within which to understand findings associated with the second goal of this study. Following the example of Westen and Harnden-Fischer (2001), we examined the incremental validity of the FFM personality factors over and above diagnostic category in accounting for meaningful variation in ED attitudes and behaviours and in current affective distress of women with an ED. We hypothesized that the FFM personality factors would be related to ED attitudes and behaviours and to affective distress after accounting for ED diagnosis.

Method

Participants

Eating disordered participants were 244 women seeking treatment at a centre for EDs within a general hospital in a medium sized urban centre. Of the total clinical sample, 45 were diagnosed with ANR, 50 with ANB and 149 with BN. A non-clinical sample consisting of 116 women was recruited for comparison. See Table 1 for demographic characteristics for all samples.

Measures

NEO-five factor inventory

The NEO-FFI (Costa and McCrae, 1992) contains 60 self-report items, equally divided among the five factors of the FFM: (i) neuroticism, in which high scores are associated with emotional dysregulation and low scores with emotional blandness; (ii) extraversion, in which high scores indicate dominating social interactions, and low scores indicate social isolation and introversion; (iii) openness to experience, in which high scores indicate eccentric or non-conformist thinking, and low scores suggest a constricted range of interests: (iv) agreeableness, in which high scores indicate need to please others and passivity, and low scores indicate quarrelsomeness and cynicism; and (v) conscientiousness, in which high scores indicate rigidity and compulsivity, and low scores indicate aimlessness and lack of discipline. NEO-FFI scales are expressed as T-scores, with a normative population mean of 50 and standard deviation of 10. For the current study, the coefficient alphas for the ED sample were adequate: neuroticism = .87, extraversion = .84, openness to experience = .68, agreeableness = .76, and conscientiousness = .86. The NEO-FFI does not assess for invalid profiles, which has been a source of criticism for its use in clinical settings (Ben-Porath & Waller, 1992). The validity scales from the personality assessment inventory (PAI; Morey, 1992) were used

to assess the validity of each participant's approach to test taking.

Personality assessment inventory

The PAI (Morey, 1991) is a self-report assessment of mental disorders and constructs, with 344 items including 11 clinical and 4 validity scales. PAI scales are expressed as T-scores with a normative population mean of 50 and standard deviation of 10. The PAI depression, anxiety and anxiety related disorders scales were used in this study to assess affective distress because they were the highest loading scales on a PAI affective distress factor in a large sample of ED women (Tasca, Wood, Demidenko, & Bissada, 2002). Among an ED sample, these PAI scales showed adequate coefficient alphas: depression = .93, anxiety = .93 and anxiety related disorders = .87 (Tasca et al., 2002). Any of the following PAI validity scale T-score elevations were used to identify and exclude participants with invalid profiles: inconsistency >72; infrequency >74; negative impression >91; and positive impression >65 (Morey, 1991).

Eating disorder examination-questionnaire (EDEQ)

The EDEQ (Fairburn & Beglin, 1994) consists of 36 self-report items that provide an assessment of the degree of problematic ED attitudes and behaviours. The EDEQ is modelled on the EDE interview (Fairburn & Cooper, 1993). Fairburn and Beglin (1994) reported good concurrent validity of the EDEQ with the EDE in community and clinical samples. In this sample of ED women, alpha coefficients of the four EDEQ scales were adequate: restraint = .82, eating concerns = .78, weight concerns = .77 and shape concerns = .87.

Eating disorder diagnostic scale (EDDS)

The EDDS (Stice, Telch, & Risvi, 2000) is a self-report measure with 22 items that assess DSM-IV criteria for all EDs. The scale provides a classification into one of the DSM-IV ED categories or a non-eating disordered category. The criterion validity of the EDDS assessed against the eating disorder examination interview (EDE; Fairburn & Cooper, 2000) was adequate, $\kappa = 0.78$, in a large sample of adolescent and university-age women ($N = 443$) (Stice et al., 2000). The EDDS was used only to screen out possible eating disordered women from the non-clinical sample.

Procedure

Participants in the clinical sample were adult (≥18 years) women referred by a physician for an assessment of an ED. ED diagnoses were based on a semi-structured clinical interview with a clinical PhD-level psychologist and a psychiatrist following DSM-IV diagnostic criteria. The two clinicians came to a consensus regarding each diagnosis. To further assess the reliability of the DSM-IV diagnoses, 10% of all assessment reports were randomly selected, identifying information and diagnoses were removed, and these reports were reviewed by an independent clinical PhD-level psychologist with expertise in ED diagnoses. Agreement between the original diagnosis and the independent review was 87.5%. In all cases, the original diagnosis was retained.

The clinical sample completed all questionnaires before treatment. Between 2003 and 2005, 523 women were referred to the centre. Those with EDNOS ($n = 160$) and BED ($n = 54$) were excluded in order to examine variability accounted for by diagnoses that meet current fully accepted criteria for a homogenous ED category. Women with BN non-purging subtype ($n = 13$) were excluded because of their small numbers. Also excluded were 40 participants with invalid profiles assessed by the PAI (Morey, 1991), and 14 participants with incomplete data. There were no differences among ED diagnostic groups on the proportion of invalid PAI profiles or missing data.

The non-clinical sample was recruited from three sources: an introductory psychology class, a nursing graduate class and through print advertising in the community. After excluding those: with a possible ED ($n = 19$) as indicated by the EDDS, and with invalid PAI profiles ($n = 10$), a pool of 116 non-eating disordered women remained.

After providing a complete description of the study to the participants, written informed consent was obtained. This research was approved by the research ethics boards of each institution involved.

Data analyses

First, a MANOVA with *post hoc* Tukey's tests was used to compare women with ANR, ANB, BN and no ED on their NEO-FFI personality scales. Second, principal components analysis (PCA) was employed as a means of data reduction for the EDEQ and the PAI scales

combined. Varimax rotation was used so that the components represented unrelated (orthogonal) factors. Eigenvalues greater than 1 and loadings greater than 0.4 defined the components. Third, separate multiple regression analyses were performed with each of the components derived from the PCA as dependent variables. The regressions included three hierarchical steps in which: (i) dummy coded ED DSM-IV diagnostic category was entered in the first step; (ii) NEO-FFI scales were entered in the second step to assess the proportion of variance explained after controlling for DSM-IV diagnosis; and (iii) the interactions between ED DSM-IV diagnosis and NEO-FFI scales were entered in the third step. Partial correlations (*pr*) were examined to assess the unique variance accounted for by each predictor variable.

Results

All scales were normally distributed, there were no univariate or multivariate outliers, and variances were homogeneous.

Means and standard deviations on the NEO-FFI scales for each ED diagnostic group and the non-ED group appear in Table 2. The multivariate test from the MANOVA was significant, $F(10, 492) = 4.21$, $p < .001$, $\eta^2 = .08$. Also significant were the tests for between-group effects on neuroticism, $F(2, 250) = 6.99$, $p = .001$, $\eta^2 = .05$, extraversion, $F(2, 250) = 4.02$, $p = .03$, $\eta^2 = .03$, agreeableness, $F(2, 250) = 5.87$, $p = .003$, $\eta^2 = .05$ and conscientiousness, $F(2, 250) = 11.46$, $p < .001$, $\eta^2 = .08$ scales. The between-group effect for openness to experience was not significant. *Post hoc* tests indicated that the ED groups had higher levels of neuroticism, $p < .001$, and lower levels of extraversion, $p < .001$, than the non-eating disordered women. Non-eating disordered women and those with ANR had higher levels of agreeableness compared to the ANB and BN women, $p < .05$. Non-eating disordered women and those with ANR had higher scores on conscientiousness than the BN group, $p < .001$. Finally, the ANR group also had higher conscientiousness scores than the ANB group, $p < .05$ (Table 2).

Prior to conducting the regression analyses, a PCA with varimax rotation was performed on the four EDEQ scales and the three PAI scales combined. Two components emerged. In the first component, each EDEQ scale loaded greater than 0.4, and the component accounted for 40.14% of the variance. In the second component, each of the PAI scales loaded greater than 0.4, and this component accounted for 34.98% of the variance. Hence an EDEQ eating attitudes and behaviours factor and a PAI affective distress factor were each used as a dependent variable in separate regression analyses.

In the first step of the hierarchical regression for the EDEQ attitudes and behaviours factor, ED diagnostic category (ANR, ANB, BN) was significant, $R^2 = .12$, $F(2, 241) = 16.09$, $p < .001$. Specifically, those with ANB had significantly higher scores on the EDEQ factor than women with ANR, $pr = 0.28$, $p < .001$, and women with BN had higher scores that women with ANR, $pr = 0.33$, $p < .001$ (Table 3). Those with BN and ANB did not differ on EDEQ factor scores, $pr = 0.00$, $p = .96$. In the second step, the NEO-FFI personality scales as a group were significantly associated with the EDEQ factor, R^2 change $= 0.11$, $F(5, 236) = 6.72$, $p < .001$. Specifically, high neuroticism, $pr = 0.30$, $p < .001$, low openness to experience, $pr = -0.16$, $p = .02$, and high agreeableness, $pr = 0.19$, $p = .004$, were each uniquely associated with higher EDEQ ED attitudes and behaviours factor scores. The third step examining the interaction

Table 2 Means (M) and standard deviations (SD) of NEO-FFI scales expressed as T-scores.

	ANR ($n = 45$)		ANB ($n = 50$)		BN ($n = 149$)		NE ($n = 116$)		Multiple Comparisons
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	Tukey's
Neuroticism	59.53[a,c]	10.28	66.55[a,d]	9.18	64.50[a,d]	10.05	50.34[b]	12.22	ANB, BN > ANR > NE
Extraversion	45.64[a,c]	12.60	39.35[a,c]	13.67	44.79[a,d]	12.67	55.19[b]	11.32	NE > ANB, ANR > BN
Openness	48.81	10.23	47.92	9.74	49.54	10.77	51.04	10.30	n.s.
Agreeable	53.17[c]	9.26	45.96[d]	12.25	46.70[d]	12.76	51.11[c]	10.30	NE, ANR > ANB, BN
Conscientious	48.64[a,c]	9.86	42.63[d]	11.98	39.51[b]	11.84	45.12[a]	10.43	NE, ANR > BN. ANR > ANB

Notes: ANR = anorexia nervosa restricting subtype, ANB = anorexia nervosa binge and/or purge subtype, BN = bulimia nervosa purging subtype, NE = non-eating disordered, SD = standard deviation, N.S. = non-significant. Tukey's test for *post hoc* comparisons was applied. [a,b] Means within rows with these different superscripts differ at *post hoc* < .001. [c,d] Means within rows with these different superscripts differ at $p < .05$.

Table 3 Means (M) and standard deviations (SD) of EDEQ and PAI Scales for the sample of women with an eating disorder

	ANR ($n = 45$)		ANB ($n = 50$)		BN ($n = 149$)	
	M	*SD*	*M*	*SD*	*M*	*SD*
EDEQ factor	−0.72	1.04	0.17	1.02	0.16	0.88
Restraint	4.33	1.97	5.47	1.86	4.71	1.52
Weight concerns	4.02	1.86	5.42	1.68	5.56	1.30
Shape concerns	4.62	1.74	5.90	1.44	5.96	1.08
Eating concerns	3.66	1.65	4.93	1.54	4.89	1.32
PAI factor	−0.05	0.90	0.52	0.98	−0.16	0.98
Anxiety	66.47	11.88	76.86	13.44	69.18	13.32
Depression	70.91	15.37	82.76	15.35	74.14	15.14
Anxiety related disorders	62.77	14.80	71.30	15.72	63.34	13.47

Notes: ANR = anorexia nervosa restricting subtype, ANB = anorexia nervosa binge and/or purge subtype, BN = bulimia nervosa purging subtype. EDEQ = eating disorder examination questionnaire, PAI = personality assessment inventory. EDEQ and PAI factor scores were derived from a principal components analysis.

between ED diagnosis and NEO-FFI scales was not significant, R^2 change = 0.02, $F(9, 227) = 0.69$, $p = .72$. When the four EDEQ scales separately were used as dependent variables in the regression models, similar patterns of results were obtained.

In the first step of the hierarchical regression for the PAI affective distress factor, ED diagnostic category (ANR, ANB or BN) was significant, $R^2 = 0.07$, $F(2, 241) = 9.32$, $p < .001$. Specifically, those with ANB had significantly higher scores on the PAI affective distress factor than those with ANR, $pr = 0.18$, $p < .004$ and BN, $pr = 0.27$, $p < .001$ (Table 3). Those with BN and ANR did not differ on their PAI affective distress factor scores, $pr = 0.04$, $p = .52$. In the second step, the NEO-FFI personality scales as a group were significantly associated with the PAI affective distress factor, R^2 change = 0.44, $F(5, 236) = 42.82$, $p < .001$. Specifically, high neuroticism, $pr = 0.58$, $p < .001$ and low extraversion, $pr = -0.16$, $p = .01$ were each uniquely associated with higher PAI affective distress factor scores. The third step examining the interaction between ED diagnoses and NEO-FFI scales was not significant, R^2 change = 0.01, $F(9, 227) = 0.66$, $p = .75$. When the three PAI scales were used separately as dependent variables in the regression models, similar patterns of results were obtained.

Discussion

Our results provide evidence for the incremental validity of personality dimensions in explaining variation in levels of current functioning in women with EDs. The consistency between these results and those from Westen and Harnden-Fischer (2001) are worth noting. Despite employing different methodologies for identifying and quantifying personality dimensions (a Q-sort technique versus NEO-FFI) and different sampling approaches (clinician rating versus patient self-report), both studies found that personality dimensions explained meaningful variance in several areas of functioning of clinical importance to ED assessment and treatment. Together, these studies provide converging evidence that personality dimensions are a useful and meaningful addition to current categorical symptom-based diagnostic schemes for ED.

The results of this study indicate the specific personality dimensions that may be clinically related to current ED attitudes and behaviours among women with an ED. After controlling for variance explained by DSM-IV ED diagnosis, dimensions such as emotional dysregulation (neuroticism), need to please/passivity (agreeableness), and constricted range of interests (low openness to experience) each separately explained a moderate amount of variance in ED attitudes and behaviours. Recall, that there were few differences between the ED and non-eating disordered samples on these dimensions, except notably when it came to emotional dysregulation. Hence, it is likely that characteristics such as need to please, passivity and constricted range of interests contribute to the expression of ED attitudes and behaviours primarily when they occur in the presence of existing emotional dysregulation.

The second regression model indicated that emotional dysregulation (neuroticism) accounted for a large amount of variance, and introversion (low

extraversion) accounted for a modest but significant amount of variance in affective distress over and above variance accounted for by ED diagnosis. Both of these personality dimensions also clearly differentiated the ED from the non-eating disorder samples. These results are consistent with a general context of emotion regulation difficulties and interpersonal problems often encountered by those with EDs. These difficulties indicate the importance of treatment approaches that target not only ED symptoms but also the affective and interpersonal contexts of ED patients' experiences (e.g. Fairburn, Jones, Peveler, Hope, & O'Connor, 1993; Tasca, Ritchie, Conrad, Balfour, Gayton et al., 2006; Wilfley, Agras, Telch, Rossiter, Schneider et al., 1993).

As argued by Westen and Harnden-Fischer (2001), eating disorder symptoms may be one expression of a more general pattern of maladaptive personality functioning. The results of the current study suggest that a symptom-focussed treatment that does not address personality functioning will be limited in its scope and possibly limited in its overall effectiveness. ED patients who also have problems with emotional dysregulation, indicated by high neuroticism scores, will likely benefit from concurrent treatment focussing on affect regulation, self reflection and reducing impulsiveness. Those ED patients with problems with introversion and need to please/passivity, indicated by low extraversion and high agreeableness scores respectively, will likely benefit from treatment that targets maladaptive interpersonal functioning. Finally, individuals with an ED who have a constricted range of interests, indicated by low openness to experience scores, may benefit from treatment that promotes motivation for change.

Given the likely advantages of adding personality dimensions to DSM-IV criteria for diagnosing EDs, what would such an approach look like and how would it operate? New diagnostic approaches to EDs might employ a more flexible combination of categorical and dimensional evaluations. For example, the first diagnostic question may be categorical and symptom-focussed. That is, do patients have ED symptoms such as binge eating and purging, and/or do they engage in dietary restriction leading to low body weight? A second question might assess personality dimensions, such as: (i) emotional dysregulation and low self esteem (i.e. similar to neuroticism); (ii) timidity and introversion (i.e. similar to low extraversion); (iii) preference for routine and concreteness (i.e. similar to low openness to experience); and (iv) need to please others, passivity and perfectionism (i.e. similar to agreeableness). A flexible approach requiring both the presence of ED symptoms and evaluation of personality dimensions may reduce the number of individuals who do not fit into a specific ED category, i.e. those currently diagnosed with EDNOS. This would result in more inclusive research and treatment programs for a greater number of individuals with serious EDs. Wonderlich, Lilenfeld, Riso, Engel and Mitchell (2005) speculated that this type of approach would be more useful in predicting the course and treatment outcome for those with an ED than the current DSM-IV classification system.

Several limitations of this study are acknowledged. First, the use of a cross sectional design does not permit examination of causality. One could argue that levels of self-reported personality dimensions may be a result of rather than a cause of ED attitudes and behaviours, for example. However, the main goal of this study was to examine variance accounted for by personality dimensions relative to ED diagnosis at the time of seeking treatment. A second and related limitation is that some personality traits assessed in this study may not be stable, but instead they are exaggerated by the ED symptoms and their severity (Wonderlich & Mitchell, 2001). On the other hand, other researchers argue that it is the personality traits that provide the context within which ED symptoms are expressed (Westen & Harnden-Fischer, 2001). The results of a study by Bloks et al. (2004) are indicative of this debate. Bloks et al. (2004) reported that intensive ED treatment resulted in significant positive change in personality traits and ED symptoms. Hence, they concluded that both personality traits and ED symptoms vary over time, and that personality traits are exaggerated in the acute phase of the ED illness. However, these authors also found that: (a) several personality traits that changed following treatment still remained higher when compared to a non-ED sample; and (b) differences among ED diagnostic groups on personality traits along the impulsive-compulsive dimension were stable over time and independent of the severity of ED symptoms. Bloks et al. (2004) concluded that a controlled trial would be necessary to address this issue conclusively. Third, some have argued that self-report assessments of personality, such as the NEO-FFI, may not be accurate or valid because of many implicit or non-conscious aspects of personality functioning (Westen, 1995). This argument

has merit; however, results of the current study are consistent with those of a study that used clinician report to assess personality (Westen & Harnden-Fischer, 2001). Third, participants were drawn from a sample of middle income, Caucasian women seeking treatment for an ED. Future studies may focus on a more ethnically diverse community drawn sample of women and men to establish the generalizability of these findings.

This study is consistent with a growing body of research that suggests that adding a dimensional aspect to diagnosed EDs based on personality functioning would add substantial validity to the current DSM-IV symptom-based categorical approach. Personality functioning is implicated in the etiology of EDs (Lilenfeld, Stein, Bulik, Strober, Plotnicov et al., 2000), affects current functioning (Westen & Harnden-Fischer, 2001), and is likely related to treatment outcomes (Bloks et al., 2004; Steinhausen, 2002). Implementation of a flexible diagnostic approach utilizing personality dimensions in the upcoming revision of the DSM would likely result in a more inclusive and useful assessment of EDs, and would have important implications for developing and testing novel treatments for EDs.

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