6

Personality and eating disorders

Drew Westen, Heather Thompson-Brenner and Joanne Peart

Abstract

Objectives of review. The objective of this chapter is to examine the current state of research on personality traits, personality disorders, and personality subtypes in eating disorders (EDs).

Summary of recent findings. Personality pathology, whether relatively mild or severe, is nearly ubiquitous in ED patients. Patients with EDs tend to have problems with negative affect, whether allied with perfectionism, anxious obsessionality, and overcontrol of impulses and emotions (often seen in restricting anorexia); or with emotional dysregulation, rejection sensitivity, and undercontrol of impulses and emotions (often seen in patients with bulimic symptoms, with or without anorexic features). Data using several methods have converged on three personality subtypes that appear to cut across different ED diagnoses, but have implications for understanding and treating patients with EDs.

Future directions. Although data are converging on several key constructs in the study of personality in EDs, different measures may be tapping different constructs or subconstructs, suggesting the need for research employing a range of measures of similar constructs in the same sample. Given the ubiquity of personality pathology in EDs and data suggesting that personality may moderate treatment response, it would seem prudent for all treatment research on EDs to assess personality carefully and to consider personality variables when constructing treatments for EDs.

Introduction

The earliest systematic clinical accounts of eating disorders (EDs) in the 1970s suggested a link between personality and EDs. Empirical developments in the study of EDs and of psychopathology more broadly (Krueger 2002; Kendler *et al.* 2003; Westen, Gabbard and Blagov in press) have recently borne out the importance of studying psychopathology in the context of personality. However, characterizing the precise nature of the link between personality and EDs poses a number of challenges.

Causal arrows linking eating and personality can run in multiple directions (*see* Bloks *et al.* 2004; Lilenfeld *et al.* in press; Stice *et al.* in press). Personality could predispose individuals to EDs; EDs could affect personality (e.g. patients with anorexia nervosa (AN) could become more obsessional while starving); or personality and eating pathology could mutually influence each other. Although the evidence is not definitive, and the causal arrows are surely multidirectional, personality variables do appear to represent diatheses for EDs. Recent prospective studies implicate neuroticism and its close cousin negative emotionality (Ghaderi and Scott 2000; Stice 2002; Cervera *et al.* 2003), obsessive–compulsive personality features (Lilenfeld *et al.* in press); impulsivity (Wonderlich *et al.* 2004), perfectionism (Bulik *et al.* 2003; Sherry *et al.* 2004), and poor interoceptive awareness (Lilenfeld *et al.* in press) as risk factors for EDs. Further research is necessary, however, to establish both the temporal relations and precise processes through which personality processes contribute to disordered eating (*see* Wonderlich *et al.* 2005a,b).

In this chapter we review three primary ways in which researchers have conceptualized and studied personality in EDs. We then discuss the clinical implications of recent research. We conclude by discussing future directions.

Literature review

Personality refers to enduring patterns of cognition, emotion, motivation, and behavior that are activated over time or circumstance. These patterns may express themselves in many situations (e.g. a tendency to feel inadequate) or may repeatedly express themselves only under certain very specific conditions (e.g. a tendency to choose troubled or inappropriate romantic partners). Researchers have conceptualized and studied personality in EDs in three ways, focusing on personality *traits*, *disorders*, and *subtypes*. We examine each in turn.

Personality traits

Traits are emotional, cognitive, and behavioral tendencies on which individuals vary (e.g. the tendency to experience negative emotions). Researchers studying personality traits in EDs tend either to focus on traits first observed clinically in ED patients or to compare different kinds of ED patients using trait dimensions assessed in omnibus personality inventories.

Three clinically observed traits have received substantial empirical attention. Two – perfectionism and obsessionality – were first identified in AN patients, and one – impulsivity – in bulimia nervosa (BN) patients. Studies have consistently reported significant comorbidity between EDs and obsessive–compulsive disorder (OCD) (e.g. Halmi *et al.* 2003). Obsessive–compulsive personality traits in childhood are highly predictive of subsequent ED development (Anderluh *et al.* 2003). Although the data are not yet conclusive as to the causal sequence linking obsessionality and EDs, a number of studies strongly suggest that obsessionality predates and is a significant risk factor for eating pathology (Anderluh *et al.* 2003). Compulsive and inhibited traits in ED patients also appear to be associated with distinct biological correlates, particularly in serotonergic functioning (Steiger *et al.* 2003; Bruce *et al.* 2004).

Whereas compulsivity has been most frequently identified in anorexia patients, impulsivity is more common in bulimia patients than either restricting AN patients (e.g. Vervaet *et al.* 2004) or normal comparison subjects (Kane *et al.* 2004). A widely studied distinction is between multi-impulsive and uni-impulsive bulimia (Lacey and Evans 1986). Multi-impulsive individuals with BN display several forms of impulsive behaviors (e.g. stealing, substance abuse) in addition to binge eating, whereas uni-impulsive patients only binge and purge. Empirically, multi-impulsive bulimic individuals tend to have significantly more psychopathology than uni-impulsive patients, particularly borderline personality disorder (BPD) and mood disorders (Fichter *et al.* 1994; Bell and Newns 2002). The uni/multi-impulsive distinction has been replicated cross-culturally: Matsunaga and colleagues (2000) found a multi-impulsive group in a sample of Japanese bulimia patients. Like their Western counterparts, this group also had a greater prevalence of BPD than uni-impulsive bulimics. Data on impulsivity appear to be particularly important in light of research linking impulsivity to early drop-out rates from psychotherapy (Agras *et al.* 2000).

Studies using omnibus trait measures have tended to produce a similar portrait of AN patients to that painted by studies of clinically observed traits: high in negative affectivity or neuroticism (anxious, fearful, and harm avoidant) and obsessionality (persistent). These results have begun to replicate cross-culturally, particularly for restricting AN (Nagata *et al.* 2003). BN patients, on the other hand, do not seem to fit any single profile. Like AN patients, they tend to be high in negative affectivity. However, some studies have shown bulimia patients to resemble AN patients in other respects, whereas others have found them to be more extraverted, impulsive, novelty seeking, and reward dependent (for similar cross-cultural data, *see* Nagata *et al.* 2003; Vervaet *et al.* 2004). Emerging research has begun to link both the compulsivity and perfectionism seen in AN patients and the impulsivity often seen in BN patients with serotonin dysregulation (e.g. Kaye *et al.* 2003).

Personality disorders

A second way in which researchers have examined personality in ED patients is by assessing personality disorders as defined by axis II of the *Diagnostic and*

Statistical Manual of Mental Disorders, 4th edition (DSM-IV). Whereas Cluster A (odd–eccentric) diagnoses are infrequent in ED samples, Cluster C (anxious–fearful) disorders are frequently observed in AN patients, and Cluster B (dramatic–erratic) in BN patients. Research suggests that Cluster C PDs are the most common among patients with all ED diagnoses, while Cluster B disorders are only present in those with bulimic symptomatology (Ilkjaer *et al.* 2004).

Borderline personality disorder is particularly common among binge-purging AN and BN patients (Skodol *et al.* 1993; Braun *et al.* 1994; Vitousek and Manke 1994). Conversely, EDs are very common in BPD samples. A recent prospective follow-up study of 290 BPD patients (Zanarini *et al.* 2004) found that, within six years of initial BPD diagnosis, 34% had met the criteria for a specific eating disorder and an additional 28% for eating disorder not otherwise specified (EDNOS). Among those whose BPD had remitted at six-year follow-up, rates of eating pathology declined from 55% to 26%. For nonremitting BPD patients, EDs were relatively stable (approximately 50%).

Personality subtypes

Research on axis II comorbidity in EDs tends to echo both the consistencies and inconsistencies in the literature using other personality constructs, such as traits (see Milos *et al.* 2003, 2004). Patients with AN, particularly restricting AN, tend to be avoidant (i.e. higher in negative affectivity and harm avoidance, and lower in extraversion) and obsessional (higher on rigidity, constraint, and compulsivity). Patients with BN are more likely to have borderline features (including negative affectivity, impulsivity, extraversion), although in some samples they are distinguished from other ED patients by their relative freedom from personality pathology. Complicating matters, binge-purging AN patients sometimes resemble AN patients and sometimes resemble BN patients, and most ED patients 'cross over' from AN to BN or vice versa at some point in their lives (Eddy *et al.* 2002), raising questions about how the two classes of ED could have differing personality profiles.

The combination of consistency and inconsistency in the literature has led to the hypothesis that patients with similar ED diagnoses may be heterogeneous vis-à-vis several distinct personality *styles*, that only imperfectly map onto DSM-IV ED diagnoses (Westen and Harden-Fischer 2001). Several research groups have attempted to cluster ED patients empirically based on personality data, and a convergence across methods has begun to emerge (Goldner *et al.* 1999; Westen and Harnden-Fischer 2001; Espelage *et al.* 2002; Thompson-Brenner and Westen 2005c; Wonderlich *et al.* 2005a). Although it is unclear to what extent patients classified using one instrument map onto those classified using a different measure, studies have generally identified three personality styles common among ED patients. The first is a *high functioning* style, sometimes allied with perfectionism and negative affectivity (Westen and Harnden-Fischer 2001; Wonderlich *et al.* 2005a). This style is most commonly seen in a subset of BN patients. The second is a *constricted, emotionally restrictive* style, most commonly observed in AN patients, with or without bulimic symptoms. Perfectionism

and negative affect have also characterized this group in recent analyses (Wonderlich *et al.* 2005b). The third is an *impulsive* or *emotionally dysregulated* style, most often seen in patients with BN, with or without AN symptoms.

Across samples, the three subtypes differ in frequency of specific axis II symptoms in ways that make sense of the consistencies and inconsistencies in the literature. Compulsive/constricted patients, who are likely to have a diagnosis of restricting AN, tend to receive diagnoses of avoidant PD and obsessive compulsive personality disorder (OCPD). Impulsive/dysregulated patients, who are likely to have either BN or AN-BP, are most likely to have a diagnosis of BPD. High-functioning patients, who are most likely to have BN, are least likely to receive a PD diagnosis. These data make sense of the consistent findings of constricted personality traits in restricting anorexics, borderline and impulsive traits in a subset of patients with BN and AN-BP, and negative affectivity without a PD diagnosis in a subset of patients with both BN and anorexia nervosa-restricting type (AN-R).

Recent research has begun to flesh out the nature of these subtypes. In a sample of patients with BN symptoms patients treated in the community (Thompson-Brenner and Westen 2005a,b,c) showed high levels of constricted (31%) and dysregulated (27%) pathology, with the vast majority of patients (84%) readily classified by their treating clinicians into one of the three subtypes. Several studies have identified differences among the subtypes suggestive of a valid diagnostic distinction using Robins and Guze (1970) criteria, including differences in adaptive functioning, as reflected in Global Assessment of Functioning (GAF) scores and rates of hospitalization (Thompson-Brenner and Westen 2005a,c); variables relevant to etiology, such as childhood sexual abuse and family functioning (Eddy *et al.* 2004b; Thompson-Brenner and Westen 2005a,c); axis I and II comorbidity (Thompson-Brenner and Westen 2005a,c; Wonderlich *et al.* 2005a); adult sexual behavior (Eddy *et al.* 2004a); emotion regulation strategies (Harnden-Fischer *et al.* 2005; Wonderlich *et al.* 2005b); biology, including serotonin activity and neuro-psychological functioning (Bruce *et al.* 2004; Steiger *et al.* 2003, 2004); and treatment length and outcome (Thompson-Brenner and Westen 2005b,c). For example, in a naturalistic sample, constricted patients on average attained recovery approximately five months later than high-functioning patients, and dysregulated patients attained recovery approximately five months later than that (Thompson-Brenner and Westen 2005c). The percentage of patients who recovered (i.e. ceased bingeing and purging) during treatment was lower in the dysregulated group (43%), followed by the constricted (50%) and high-functioning groups (62%).

An alternative approach to subtyping has grouped ED patients into two clusters, described as 'dietary-alone' and 'dietary-negative affect', which show consistent differences in rates of associated personality pathology (Stice and Agras 1999; Grilo *et al.* 2001; Stice and Fairburn 2003). Compared with dietary-alone, the dietary-negative affect subtype shows higher rates of personality disorders; higher rates of mood, anxiety, and impulse control disorders; lower self-esteem; and increased social maladjustment.

Most recently, Grilo (2004) found that female adolescent psychiatric inpatients with features of EDs could be clustered into the same two groups.

The dietary-negative affective group (43%) was again characterized by higher levels of personality disturbance. As with personality pathology in EDs more generally, however, some of the elevations observed by Grilo appear somewhat inconsistent. For example, the dietary-negative affect group showed elevations in a set of scales reflecting anxious, avoidant, or internalizing pathology (e.g. inhibition, introversion, dolefulness) as well as other scales suggesting impulsive or externalizing pathology (e.g. oppositionality, borderline PD) (Grilo 2004). It may be that these apparent contradictions would be resolved by a three-cluster rather than a two-cluster solution, which distinguishes more disturbed patients with negative affectivity who are either constricted and overcontrolled from those who are impulsive and undercontrolled.

Summary of important findings

Personality pathology, whether relatively mild or severe, is nearly ubiquitous in EDs. Patients with EDs tend to have problems with negative affect, whether allied with perfectionism, anxious obsessionality, or the kinds of self-loathing, rejection sensitivity, and abandonment fears characteristic of patients with BPD. ED patients also tend to struggle with impulse and affect regulation. Some overregulate their feelings, desires, and impulses; this is the case with many patients with the AN, restricting type. Others under-regulate, or have difficulty putting the brakes on their feelings, desires, and impulses; this appears to be the case with a substantial minority of patients with bulimic symptoms, whether diagnosed with BN, AN, binge-purging type or EDNOS. Data on personality subtypes suggest that we should not assume a one-to-one correspondence between symptoms and personality, and should correspondingly expect that the same disorder (e.g. BN) could be associated with both undercontrol and overcontrol, depending on sample characteristics (e.g. college student samples, where we might expect more high-functioning patients among those with BN than in an outpatient or hospital sample). To put it another way, the heterogeneity of personality with ED diagnoses (e.g. BN, or AN, binge-purge type) may be patterned, not random.

Clinical implications

Although we focus here primarily on treatment implications, an important implication for clinical assessment should be clear: clinicians treating ED patients should comprehensively assess patients' personality functioning as well as their eating (and other axis I) symptoms. The increasing body of literature linking personality to virtually all the disorders on axis I of DSM-IV suggests the importance of a comprehensive case formulation in treating ED and other patients.

Over the last decade, with the advent of the empirically supported therapies movement, research has focused on specific treatments for specific disorders, particularly cognitive–behavioral therapy (CBT) and interpersonal psychotherapy

(IPT) for BN. Data from randomized controlled trials (RCTs) for treatments for AN are more sparse (but beginning to emerge). Researchers have examined the moderating role of personality on treatment response for several years, at least for BN patients. The literature is by no means entirely consistent (*see* Bossert *et al.* 1992; Bulik *et al.* 1998; Grilo *et al.* 2003), likely reflecting a number of factors, including lack of power to detect differences, lack of data on personality, differences across studies in inclusion and exclusion criteria, and perhaps most importantly, the fact that virtually all RCTs have excluded certain patients with severe PDs either explicitly or *de facto* (e.g. excluding patients with substance abuse and suicidality, which eliminates most BPD patients; *see* Thompson-Brenner *et al.* 2003). Nevertheless, the outlines of a pattern emerge from the majority of studies. Several studies suggest that the presence of Cluster B (particularly borderline) pathology is associated with negative outcome (e.g. Johnson *et al.* 1990; Davis *et al.* 1992; Fahy and Russell 1993; Fairburn *et al.* 1993a; Rossiter *et al.* 1993; Wonderlich *et al.* 1994; Steiger and Stotland 1996). Related findings suggest that trait anger and impulsivity predict early drop-out from treatment (Fassino *et al.* 2003), and that negative emotionality, stress reactivity, and alienation predict low treatment-seeking behavior (Perkins *et al.* 2005). Other studies suggest that perfectionism, obsessive–compulsive PD, and asceticism also predict poor outcome in AN (e.g. Bizeul *et al.* 2001; Fassino *et al.* 2001; Rastam *et al.* 2003; Sutandar-Pinnock *et al.* 2003) (*see* Steinhausen 2002 for a review). It is of note that the two forms of severe personality disturbance identified in subtyping studies – constriction and impulsivity/dysregulation – both seem to be associated with poorer prognosis in RCTs. It is also of note that a trait associated with healthier forms of personality adaptation, 'self-directedness', predicts positive outcome (Fassino *et al.* 2003, 2004).

Research on personality has contributed to three new lines of research on treatment in ED patients. The first is the application of dialectical behavior therapy (DBT) to EDs. DBT is based on the rationale that emotional dysregulation is the core pathology in BPD, causing secondary disruptions in identity and interpersonal functioning (Linehan 1993; Linehan *et al.* 2001; McMain *et al.* 2001). DBT includes group and individual therapy, crisis intervention, and skills training. Abridged versions of DBT (fewer sessions per week, uni-modal treatment) have been tested with BN and binge-eating disorder (BED) (Safer *et al.* 2001; Telch *et al.* 2000, 2001). These reports suggest useful modifications of the DBT protocol for patients with eating symptoms, including expanded diary cards, nutritional education, and application of distress tolerance techniques to bodily focused judgments and impulses to binge (Wisniewski and Kelly 2003). In one study, DBT for BN produced substantial improvement, although recovery rates were not high relative to trials of CBT for BN (Safer *et al.* 2001). As several reviewers have suggested, research on DBT for BN and other EDs needs to identify the subgroups of patients who are most likely to benefit from DBT interventions, particularly given that many BN patients have more constricted forms of personality for which DBT may not be as useful (Kotler *et al.* 2003; Westen and Harnden-Fisher 2001). One case series has studied DBT with patients with severe, comorbid BN and BPD (Palmer *et al.* 2003). The therapy was effective in reducing days of inpatient hospitalization, self-harm, and ED symptoms,

although three of five patients with BN continued to meet criteria for an ED post treatment. Nonetheless, the low drop-out rate and symptomatic improvement in this very severe sample suggest that elements of DBT may be useful for the treatment of dysregulated BN patients.

The second line of research in ED treatment relevant to personality is the development of enhanced, flexible, pan-disorder treatment manuals. The development of these manuals reflects the repeated observation that the relatively nonspecific diagnosis of EDNOS is the most prevalent ED in practice as well as the consistent observation of links between many forms of eating pathology and personality traits such as perfectionism, low self-esteem, difficulties with emotion regulation, and interpersonal problems (Fairburn *et al.* 2003). The basic formulation of BN reflected in the Fairburn *et al.* (1993b) CBT manual (CBT-93) is that overvaluation of shape and weight drives dietary restriction; dietary restriction leads to binge eating; and binge eating leads to compensatory behaviors that in turn produce additional vulnerability to binge eating. The new transdiagnostic treatment proposed by Fairburn and colleagues supplements this formulation, suggesting that several additional deficits may help maintain ED symptoms, including mood intolerance, interpersonal difficulties, low self-esteem, and clinical perfectionism (Fairburn *et al.* 2003, 2004). Although these deficits are not explicitly described as personality characteristics, they meet most definitions of personality (i.e. patterns of cognition, thought, and affect that persist across time or situation). The CBT-Enhanced (CBT-E) manual, which includes optional modules for each of these four deficits, is currently being tested with a transdiagnostic ED sample. Data collected to date on CBT-E with BN suggest that the treatment produces improvement and recovery in a greater percentage of cases (72%) than CBT-93 has in most prior BN samples (approximately 50%) (Fairburn 2004).

The third line of research has begun to use naturalistic data to study the influence of personality on treatments in the community (Thompson-Brenner and Westen 2005a,b,c). In a national sample of BN patients described by their treating clinician, personality subtype (dysregulated, constricted) showed systematic relations to the ways clinicians reported intervening with patients. The two most striking findings were a substantially increased use of intervention strategies associated with psychodynamic approaches among cognitive–behavioral (CBT) clinicians when working with dysregulated patients, and a shift toward more structured CBT interventions among psychodynamic clinicians when working with constricted patients. For CBT clinicians, the extent to which the patient showed evidence of dysregulation was correlated around r=.50 with their endorsement of statements such as the following: 'Helped the patient come to terms with her relationships with and feelings about significant others from the past (e.g. mother, father)'; 'Focused on similarities between the patient's relationships (and perceptions of relationships) repeated over time, settings, or people'; 'Addressed the patient's avoidance of important topics and shifts in mood'; 'Focused on the relationship between the therapist and patient'; and 'Focused on the influence of unconscious processes on behavior, emotions, beliefs'. For clinicians who reported a psychodynamic orientation, the extent to which the patient showed a constricted style correlated around r=.30 with the

extent to which they reported that they 'taught the patient specific techniques for coping with her symptoms' and 'actively initiated the topics of discussion and other therapeutic activities'; and correlated r=–.30 with the item, 'Preferred that the patient, rather than the therapist, initiate the discussion of significant issues'. In addition, for clinicians of all theoretical orientations, patients' dysregulation was associated with use of adjunctive treatments, such as medication, group treatment, and hospitalizations. Multivariate analyses controlling for personality style found that use of CBT was associated with faster change in ED symptoms, while analyses controlling for personality style and treatment length found that psychodynamic therapy was associated with increased change in global functioning. Other recent naturalistic survey research finds that clinicians do not use structured treatment manuals because of their perceived inadequacy in addressing comorbidity (Haas and Clopton 2003), something that may perhaps change as research expands on CBT-E.

Future directions

These are clearly exciting times in the study of personality and EDs. What began with prescient clinical observations has become an increasingly sophisticated empirical literature on the relation between personality and eating pathology. In some ways, the study of personality in eating disorders, like the study of internalizing and externalizing personality spectra in axis I disorders (Krueger 2002), has taken us 'back to the future', to the idea that symptoms often need to be understood in their characterological context (Westen *et al.* in press). This does not mean returning to pre-empirical days of relying exclusively on clinical hunches about character structure or etiology. Rather, we are witnessing a period in which we may find substantial clinical and empirical utility in trying to bridge the chasm between decades-old clinical ideas about the way personality patterns may provide fertile ground for the development and maintenance of certain forms of psychopathology and contemporary research on the structure, behavioral genetics, and molecular genetics of personality and psychopathology.

The research described here suggests multiple directions for the future, of which we note two. First, although data are converging on several key constructs in the study of personality in EDs, we cannot assume that all measures purporting to assess the same construct are in fact doing so or doing so equally well. For example, impulsivity is a multidimensional construct, and measurement can focus on trait aspects associated with externalizing pathology, specific behaviors, or specific behaviors as indicators of latent traits (*see* Wonderlich *et al.* 2004). Similarly, although we have emphasized the convergence of different approaches to subtyping personality in EDs, the subtypes are not identical, and we cannot assume that self-report measures are assessing the same constructs as measures that require clinically experienced raters. There is good reason to believe that the assessment of personality pathology can be complicated by patients' lack of insight and by their lack of expertise in assessing constructs such as regulation of emotion, identification and tolerance of affect, and subtle

aspects of interpersonal functioning (e.g. the extent to which the person can form rich and nuanced representations of the self and others) (*see* Westen 1997). Perhaps the best strategy at this point would be to collect data using multiple instruments and observers on the range of personality constructs studied in EDs to assess convergence and to conduct analyses across instruments to identify common dimensions as in recent research on the major self-report personality trait instruments (Markon *et al.* 2005).

Second, as a field, we are only beginning to grapple with personality as a variable of importance in the treatment of EDs. Preliminary data, described above, suggest that CBT-E may prove more effective than standard CBT for BN, perhaps because it is addressing personality features not adequately addressed in the original model and manual. Suggestive but highly preliminary research from our own laboratory suggests that most clinicians in the community attend closely to personality in EDs and employ integrative strategies to address both personality characteristics and target symptoms, and that these integrative approaches tend to yield better global and ED-specific outcomes than more 'pure' approaches. However, far more questions remain than have been addressed: How long is optimal treatment for ED patients with different forms of personality pathology? What is the best mix of symptom-focused versus diathesis-focused targets in therapy? What is the optimal timing of that mix (e.g. target symptoms first and personality diatheses once symptoms are under control, or target both simultaneously)? At this point, it would seem prudent for all treatment research on EDs to assess personality variables carefully as baseline predictors of outcome, as potential markers of likely response to various treatments (both pharmacological and psychotherapeutic), and as outcome variables.

Preparation of this article was supported in part by NIMH grants MH62377 and MH62378 to the first author.

Corresponding author: Drew Westen, Department of Psychology and Department of Psychiatry and Behavioral Sciences, Emory University, 532 Kilgo Circle, Atlanta, GA 30322, USA. Email: dwesten@emory.edu

References

References included from the targeted review years are preceded by one asterisk. References preceded by three asterisks are of particular significance. The significance is explained by a short commentary following the complete reference.

Agras WS, Crow SJ, Halmi KA, Mitchell JE, Wilson GT and Kraemer HC (2000) Outcome predictors for the cognitive behavior treatment of bulimia nervosa: Data from a multisite study. *American Journal of Psychiatry*, **157**: 1302–08.

*Anderluh MB, Tchanturia K, Rabe-Hesketh S and Treasure J (2003) Childhood obsessive-compulsive personality traits in adult women with EDs: Defining a broader ED phenotype. *American Journal of Psychiatry*, **160**: 242–7.

Bell L and Newns K (2002) What is multi-impulsive bulimia and can multi-impulsive patients benefit from supervised self-help? *European Eating Disorders Review*, **10(6)**: 413–27.

Bizeul C, Sadowsky N and Rigaud D (2001) The prognostic value of initial EDI scores in anorexia nervosa patients: a prospective follow-up study of 5–10 years. Eating Disorder Inventory. *European Psychiatry*, **16(4)**: 232–8.

*Bloks H, Hoek HW, Callewaert I and van Furth E (2004) Stability of personality traits in patients who received intensive treatment for a severe eating disorder. *Journal of Nervous and Mental Disease*, **192(2)**: 129–38.

Bossert S, Schmolz U, Wiegand M, Junker M and Krieg J (1992) Predictors of short-term treatment outcome in bulimia nervosa inpatients. *Behavior Research and Therapy*, **30**: 193–9.

Braun D, Sunday S and Halmi K (1994) Psychiatric comorbidity in patients with eating disorders. *Psychological Medicine*, **24**: 859–67.

***Bruce KR, Steiger H, Koerner NM, Israel M and Young SN (2004) Bulimia nervosa with co-morbid avoidant personality disorder: Behavioural characteristics and serotonergic function. *Psychological Medicine*, **34(1)**: 113–24.

This study was notable for the breadth of assessment measures converging on the finding of a consistently inhibited subtype of bulimia nervosa. In a sample with both BN and avoidant PD, the authors tested personality functioning (interpersonal inhibition and avoidance), neuropsychological functioning (errors of inhibition on the Go/No go task), and serotonergic functioning (deficits consistent with inhibited functioning). The study concludes that a distinct subtype exists, characterized by inhibition across three major domains.

Bulik C, Sullivan PF, Joyce PR, Carter FA and McIntosh VV (1998) Predictors of 1-year treatment outcome in bulimia nervosa. *Comprehensive Psychiatry*, **39**: 206–14.

*Bulik CM, Tozzi F, Anderson C, Mazzeo SE, Aggen S and Sullivan PF (2003) The relation between eating disorders and components of perfectionism. *American Journal of Psychiatry*, **160(2)**: 366–8.

*Cervera S, Lahortiga F, Martinez-Gonzalez MA, Gual P, Irala-Estevez J and Alonso Y (2003) Neuroticism and low self-esteem as risk factors for incident eating disorders in a prospective cohort study. *International Journal of Eating Disorders*, **33(3)**: 271–80.

Davis R, Olmsted MP and Rockert W (1992) Brief group psychoeducation for bulimia nervosa. II: Prediction of clinical outcome. *International Journal of Eating Disorders*, **11**: 205–11.

Eddy KT, Keel PK, Dorer DJ, Delinsky SS, Franko DL and Herzog DB (2002) Longitudinal comparison of AN subtypes. *International Journal of Eating Disorders*, **31(2)**: 191–201.

*Eddy K, Novotny C and Westen D (2004a) Sexuality, personality, and eating disorders. *Eating Disorders: The Journal of Treatment and Prevention*, **12**: 198–208.

*Eddy K, Thompson-Brenner H and Westen D (2004b) *Adolescent personality subtypes in patients with eating disorders*. Paper presented at the annual convention of the Academy for Eating Disorders, Orlando, Florida, April.

Espelage DL, Mazzeo SE, Sherman R and Thompson R (2002) MCMI-II profiles of women with eating disorders: A cluster analytic investigation. *Journal of Personality Disorders*, **16**: 453–63.

Fahy TA and Russell GFM (1993) Outcome and prognostic variables in bulimia nervosa. *International Journal of Eating Disorders*, **14**: 135–45.

***Fairburn CG (2004) *Keynote event: A dialogue about evidence-based practice*. Keynote Session at the Academy for Eating Disorders Annual Conference, Orlando, Florida, April.

This keynote address at the AED Annual Conference presented the first data regarding CBT-Enhanced, the new, flexible, transdiagnostic treatment for eating disorders. The presentation emphasized the point that empirically supported treatments exist only for

BN, whereas EDNOS is the most commonly diagnosed eating disorder in almost every clinical context. The presentation discussed the principles of CBT-E, including the 'focused' version that resembles earlier versions of CBT for BN but is tailored to the individual, the weight-gain version that is necessary for underweight patients, and the 'broad' version that can include modules addressing clinical perfectionism, mood intolerance, interpersonal problems, and low self-esteem. The first uncontrolled data for CBT-E suggested that over two-thirds of patients with EDNOS and BN recover by the end of treatment.

Fairburn CG, Peveler RC, Jones R, Hope RA and Doll HA (1993a) Predictors of 12-month outcome in bulimia nervosa and the influence of attitudes to shape and weight. *Journal of Consulting and Clinical Psychology*, **61**: 696–8.

Fairburn CG, Marcus MD and Wilson GT (1993b) Cognitive-behavioral therapy for binge eating and bulimia nervosa: A comprehensive treatment manual. In: CG Fairburn and GT Wilson (eds), *Binge Eating: nature, assessment and treatment*. Guilford Press, New York.

*Fairburn CG, Cooper Z and Shafran R (2003) Cognitive behaviour therapy for eating disorders: A 'transdiagnostic' theory and treatment. *Behaviour Research and Therapy*, **41**: 509–28.

*Fairburn CG, Bohn K and Hutt M (2004) *EDNOS (Eating Disorder not otherwise Specified): Why it is important, and how to treat it using cognitive behavior therapy*. Workshop Session at the Academy for Eating Disorders Annual Conference, Orlando, Florida, April.

Fassino S, Abbate DG, Amianto F, Leombruni P, Garzaro L and Rovera GG (2001) Nonresponder anorectic patients after 6 months of multimodal treatment: Predictors of outcome. *European Psychiatry*, **16(8)**: 466–73.

*Fassino S, Abbate-Daga G, Piero A, Leombruni P and Rovera GG (2003) Dropout from brief psychotherapy within a combination treatment in bulimia nervosa: Role of personality and anger. *Psychotherapy and Psychosomatics*, **72(4)**: 203–10.

*Fassino S, Amianto F, Gramaglia C, Facchini F and Abbate Daga G (2004) Temperament and character in eating disorders: Ten years of studies. *Eating and Weight Disorders*, **9(2)**: 81–90.

Fichter M, Quadflieg N and Rief W (1994) Course of multi-impulsive bulimia. *Psychological Medicine*, **24**: 591–604.

Ghaderi A and Scott B (2000) The Big Five and eating disorders: A prospective study in the general population. *European Journal of Personality*, **14**: 311–23.

Goldner EM, Srikameswaran S, Schroeder ML, Livesley WJ and Birmingham CL (1999) Dimensional assessment of personality pathology in patients with eating disorders. *Psychiatry Research*, **85**: 151–9.

*Grilo CM (2004) Subtyping female adolescent psychiatric inpatients with features of eating disorders along dietary restraint and negative affect dimensions. *Behaviour Research and Therapy*, **42(1)**: 67–78.

Grilo CM, Masheb RM and Berman RM (2001) Subtyping women with bulimia nervosa along dietary and negative affect dimensions: A replication in a treatment-seeking sample. *Eating and Weight Disorders*, **6**: 53–8.

*Grilo CM, Sanislow CA, Shea MT, Skodol AE, Stout RL, Pagano ME, Yen S and McGlashan TH (2003) The natural course of bulimia nervosa and eating disorder not otherwise specified is not influenced by personality disorders. *International Journal of Eating Disorders*, **34**: 319–30.

*Haas HL and Clopton JR (2003) Comparing clinical and research treatments for eating disorders. *International Journal of Eating Disorders*, **33**: 412–20.

*Halmi KA, Sunday SR, Klump KL, Strober M, Leckman JF, Fichter M, Kaplan A, Woodside B, Treasure J, Berrettini WH, Al Shabboat M, Bulik CM and Kaye WH (2003) Obsessions

and compulsions in anorexia nervosa subtypes. *International Journal of Eating Disorders*, **33**: 308–19.

*Harnden-Fischer J, Thompson-Brenner H and Westen D (2005) *Emotional experience and emotion regulation in eating disorders*. Unpublished manuscript, Emory University, Georgia.

*Ilkjaer K, Kortegaard L, Hoerder K, Joergensen J, Kyvik K and Gillberg C (2004) Personality disorders in a total population twin cohort with eating disorders. *Comprehensive Psychiatry*, **45(4)**: 261–7.

Johnson C, Tobin DL and Dennis A (1990) Differences in treatment outcome between borderline and nonborderline bulimics at one-year follow-up. *International Journal of Eating Disorders*, **9**: 617–27.

*Kane TA, Loxton NJ, Staiger PK and Dawe S (2004) Does the tendency to act impulsively underlie binge eating and alcohol use problems? An empirical investigation. *Personality and Individual Differences*, **36**: 83–94.

*Kaye WH, Barbarich NC, Putnam K, Gendall KA, Fernstrom J, Fernstrom M, McConaha CW and Kishore A (2003) Anxiolytic effects of acute tryptophan depletion in anorexia nervosa. *International Journal of Eating Disorders*, **33(3)**: 257–67.

*Kendler KS, Prescott CA, Myers J and Neale MC (2003) The structure of genetic and environmental risk factors for common psychiatric and substance use disorders in men and women. *Archives of General Psychiatry*, **60(9)**: 929–37.

*Kotler LA, Boudreau GS and Devlin MJ (2003) Emerging psychotherapies for eating disorders. *Journal of Psychiatric Practice*, **9(6)**: 431–41.

Krueger RF (2002) The structure of common mental disorders. *Archives of General Psychiatry*, **59**: 570–1.

Lacey J and Evans C (1986) The impulsivist: A multi-impulsive personality disorder. *British Journal of Addiction*, **81**: 641–9.

Lilenfeld LRR, Wonderlich SA, Riso LPL, Crosby RD and Mitchell JE (in press) Eating disorders and personality: a methodological and empirical review. *Clinical Psychology Review*.

Linehan MM (1993) *Skills Training Manual for Treating Borderline Personality Disorder*. Guilford Press, New York.

Linehan MM, Cochran BN and Kehrer CA (2001) Dialectical behavior therapy for borderline personality disorder. In: DH Barlow (ed), *Clinical Handbook of Psychological Disorders: a step-by-step treatment manual*. Guilford Press, New York, pp 470–522.

*Markon KE, Krueger RF and Watson D (2005) Delineating the structure of normal and abnormal personality: An integrative hierarchical approach. *Journal of Personality and Social Psychology*, **88**: 139–57.

Matsunaga H, Kiriike N, Iwasaki Y, Miyata A, Matsui T, Nagata T, Yamagami S and Kaye WH (2000) Multi-impulsivity among bulimic patients in Japan. *International Journal of Eating Disorders*, **27(3)**: 348–52.

McMain S, Korman LM and Dimeff L (2001) Dialectical behavior therapy and the treatment of emotional dysregulation. *Journal of Clinical Psychology*, **57**: 183–96.

*Milos G, Spindler AM, Buddeberg C and Crameri A (2003) Axes I and II comorbidity and treatment experiences in eating disorder subjects. *Psychotherapy and Psychosomatics*, **72(5)**: 276–85.

*Milos G, Spindler A and Schnyder U (2004) Psychiatric comorbidity and Eating Disorder Inventory (EDI) profiles in eating disorder patients. *Canadian Journal of Psychiatry*, **49(3)**: 179–84.

*Nagata T, Oshima J, Wada A, Yamada H, Iketani T and Kiriike N (2003) Temperament and character of Japanese eating disorder patients. *Comprehensive Psychiatry*, **44(2)**: 142–5.

*Palmer RL, Birchall H, Damani S, Gatward N, McGrain L and Parker L (2003) A dialectical behavior therapy program for people with an eating disorder and borderline personality disorder–description and outcome. *International Journal of Eating Disorders*, **33**: 281–6.

*Perkins PS, Klump KL, Iacono WG and McGue M (2005) Personality traits in women with anorexia nervosa: evidence for a treatment-seeking bias? *International Journal of Eating Disorders*, **37(1)**: 32–7.

*Rastam M, Gillberg C and Wentz E (2003) Outcome of teenage-onset anorexia nervosa in a Swedish community-based sample. *European and Child Adolescent Psychiatry*, **12**: I78–90.

Robins E and S Guze (1970) The establishment of diagnostic validity in psychiatric illness: its application to schizophrenia. *American Journal of Psychiatry*, **126**: 983–7.

Rossiter EM, Agras WS, Telch CF and Schneider JA (1993) Cluster B personality disorder characteristics predict outcome in the treatment of bulimia nervosa. *International Journal of Eating Disorders*, **13**: 349–57.

Safer DL, Telch CF and Agras WS (2001) Dialectical behavior therapy for bulimia nervosa. *American Journal of Psychiatry*, **158**: 632–4.

*Sherry SB, Hewitt PL, Besser A, McGee BJ and Flett G (2004) Self-oriented and socially prescribed perfectionism in the Eating Disorder Inventory Perfectionism Subscale. *International Journal of Eating Disorders*, **35**: 69–79.

Skodol A, Oldham J, Hyler S, Kellman H, Doidge N and Davies M (1993) Comorbidity of DSM-III–R eating disorders and personality disorders. *International Journal of Eating Disorders*, **14**: 403–16.

Steiger H and Stotland S (1996) Prospective study of outcome in bulimics as a function of axis-II comorbidity: Long-term responses on eating and psychiatric symptoms. *International Journal of Eating Disorders*, **20**: 149–61.

*Steiger H, Israel M, Gauvin L, Ng Ying Kin NM and Young SN (2003) Implications of compulsive and impulsive traits for serotonin status in women with bulimia nervosa. *Psychiatry Research*, **120(3)**: 219–29.

*Steiger H, Gauvin L, Israel M, Kin NM, Young SN and Roussin J (2004) Serotonin function, personality-trait variations, and childhood abuse in women with bulimia-spectrum eating disorders. *Journal of Clinical Psychiatry*, **65**: 830–7.

Steinhausen HC (2002) The outcome of anorexia nervosa in the 20th century. *American Journal of Psychiatry*, **159(8)**: 1284–93.

Stice E (2002) Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin*, **128(5)**: 825–48.

Stice E and Agras WS (1999) Subtyping women along dietary restraint and negative affect dimensions. *Journal of Consulting and Clinical Psychology*, **67**: 460–9.

*Stice E and Fairburn CG (2003) Dietary and dietary-depressive subtypes of bulimia nervosa show differential symptom presentation, social impairment, comorbidity, and course of illness. *Journal of Consulting and Clinical Psychology*, **71**: 1090–4.

*Stice E, Peart J, Thompson-Brenner H, Martinez E and Westen D (in press) Eating disorders. In: F Andrasik (ed), *The Comprehensive Handbook of Personality and Psychopathology: Volume II: adult psychopathology*. Wiley, Hoboken, NJ.

*Sutandar-Pinnock K, Blake Woodside D, Carter JC, Olmsted MP and Kaplan AS (2003) Perfectionism in anorexia nervosa: a 6–24-month follow-up study. *International Journal of Eating Disorders*, **33(2)**: 225–9.

Telch CF, Agras WS and Linehan MM (2000) Group dialectical behavior therapy for binge-eating disorder: A preliminary, uncontrolled trial. *Behavior Therapy*, **31**: 569–75.

Telch CF, Agras WS and Linehan MM (2001) Dialectical behavior therapy for binge eating disorder. *Journal of Consulting and Clinical Psychology*, **69**: 1061–5.

*Thompson-Brenner H and Westen D (2005a) A naturalistic study of treatment for bulimia, Part 1: Comorbidity and therapeutic outcome. *Journal of Nervous and Mental Disease*, **193(9)**: 573–84.

***Thompson-Brenner H and Westen D (2005b) A naturalistic study of treatment for bulimia, Part 2: Therapeutic interventions in the community. *Journal of Nervous and Mental Disease*, **193(9)**: 585–95.

This two-part article presents data from a clinician-report study of 145 patients with bulimic pathology treated in the community. Results from the community support prior observations that rates of comorbidity are very high and are related to treatment outcome. Results supported the observation of three personality subtypes, with treatment length and outcome associated with subtype. The use of cognitive-behavioral interventions was associated with more rapid remission, whereas the use of psychodynamic interventions was associated with global outcome.

*Thompson-Brenner H and Westen D (2005c) Personality subtypes in eating disorders: Validation of a classification in a naturalistic sample. *British Journal of Psychiatry*, **186**: 516–24.

*Thompson-Brenner H, Glass S and Westen D (2003) A multidimensional meta-analysis of psychotherapy for bulimia nervosa. *Clinical Psychology: Research and Practice*, **10(3)**: 269–87.

*Vervaet M, van Heeringen C and Audenaert K (2004) Personality-related characteristics in restricting versus binging and purging eating disordered patients. *Comprehensive Psychiatry*, **45(1)**: 37–43.

Vitousek K and Manke F (1994) Personality variables and disorders in anorexia nervosa and bulimia nervosa. *Journal of Abnormal Psychology*, **103**: 137–47.

Westen D (1997) Divergences between clinical and research methods for assessing personality disorders: Implications for research and the evolution of Axis II. *American Journal of Psychiatry*, **154**: 895–903.

Westen D and Harnden-Fischer J (2001) Personality profiles in eating disorders: Rethinking the distinction between axis I and axis II. *American Journal of Psychiatry*, **158**: 547–62.

*Westen D, Gabbard G and Blagov P (in press) Back to the future: Personality structure as a context for psychopathology. In: RF Krueger and JL Tackett (eds), *Personality and Psychopathology*. Guilford Press, New York.

*Wisniewski L and Kelly E (2003) The application of dialectical behavior therapy to the treatment of eating disorders. *Cognitive and Behavioral Practice*, **10**: 131–8.

Wonderlich SA, Fullerton D, Swift WJ and Klein MH (1994) Five-year outcome from eating disorders: Relevance of personality disorders. *International Journal of Eating Disorders*, **15**: 233–43.

***Wonderlich SA, Connolly KM and Stice E (2004) Impulsivity as a risk factor for eating disorder behavior: Assessment implications with adolescents. *International Journal of Eating Disorders*, **36**: 172–82.

This study investigated the role of impulsivity as a risk factor for disordered eating. The primary goal was to establish whether risk outcomes depended on the way that impulsivity was measured. The researchers found that trait impulsivity, as measured by traditional personality scales, failed to predict the onset of eating pathology. However, behavioral indicators of impulsivity, such as substance abuse or delinquency, significantly predicted the onset of disordered eating.

***Wonderlich SA, Crosby RD, Joiner T, Peterson CB, Bardone-Cone A, Klein M, Crow S, Mitchell JE, le Grange D, Steiger H, Kolden G, Johnson F and Vrshek S (2005a) Personality subtyping and bulimia nervosa: Psychopathological and genetic correlates. *Psychological Medicine*, **35(5)**: 649–57.

This multi-site study combined data on 178 patients with clinical or sub-clinical BN, including data on ED symptoms, personality pathology, perfectionism, impulsivity,

drug abuse, depression, anxiety, obsessive–compulsive behavior, and genetic information. Latent profile analysis including the variables above (excluding ED symptoms) produced a stable three-cluster solution. Clusters were labeled 'High-functioning', 'Affective–Perfectionistic', and 'Impulsive'. The affective–perfectionistic cluster had significantly higher scores on perfectionism, obsessive–compulsive symptoms, trait anxiety, inhibitedness, and depression. The impulsive cluster had significantly higher scores on impulsive/self-destructive behavior, dissocial behavior, and substance abuse.

***Wonderlich SA, Lilenfeld LR, Riso LP, Engel S and Mitchell JE (2005b) Personality and anorexia nervosa. *International Journal of Eating Disorders*, **37(S1)**: S68–S71.

This article reviews the extant literature on eating disorders and anorexia nervosa. The major conceptual models of the relationship between personality and anorexia nervosa are reviewed. In addition, the authors review methodological challenges for eating disorder and personality research and suggest more clarity in the conceptual models that researchers apply to their future work.

*Zanarini MC, Frankenburg FR, Hennen J, Reich DB and Silk KR (2004) Axis I comorbidity in patients with borderline personality disorder: 6-year follow-up and prediction of time to remission. *American Journal of Psychiatry*, **161(11)**: 2108–14.