PERSONALITY TRAITS IN EATING-DISORDERED PATIENTS WITH AND WITHOUT SELF-INJURIOUS BEHAVIORS

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Although there is a high comorbidity of eating disorder and self-injurious behavior (SIB), no systematic research has focused on personality trait differences in patients with and without SIB. In this study, a Dutch adaptation of the NEO-FFI (Costa & McCrae, 1985, 1992) was completed by 178 female, eating-disordered (ED) patients of whom 46.5% showed at least 1 form of SIB (e.g., cutting, burning, hair pulling). A subsample of 41 patients also completed the NEO-PI-R. Compared to patients without SIB, ED patients with SIB scored significantly higher on the Neuroticism scale and significantly lower on the Extraversion scale; on subtraits (facet scores) they appeared to be more anxious, more willing to please and less cheerful, efficient and ambitious. Personality traits were not associated with frequency or form of SIB or subtype of ED (except for impulsiveness). We also did not find a significant interaction effect between ED subtype and presence/absence of SIB.

Research on personality traits in eating-disordered (ED) patients has substantially grown in recent years because of its implications for the development and course of the disorder. Differences in temperament appear to influence the form of clinical presentation (anorexia nervosa: restricting versus binging-purging subtype; bulimia nervosa: purging or nonpurging subtype), and severity (Diaz-Marsa, Carrasco, & Saiz, 2000). ED patients are reported to have elevated harm avoidance scores (e.g., Kleifeld, Sunday, Hurt, & Halmi, 1994), assessed using Cloninger’s Temperament and Character Inventory or Tridimensional Personality Questionnaire (e.g., Racuvori, 2002), with anorexia nervosa patients of the binging-purging type reporting the highest levels (e.g., Bulik, Sullivan, Weltzin, & Kay, 1995), and restrictive anorexics only slightly elevated scores compared to “normal” controls. Further, there is also agreement that bulimics have elevated scores on novelty seeking (e.g., Bulik et al., 1995) and that a bulimic component to the clinical picture is associated with impulsiveness (high novelty seeking), anxiousness (high harm avoidance), and decreased self-directedness and/or cooperativeness. These personality traits can be associated with high per-
sistence, and when this is the case, the risk of developing the binging subtype of anorexia nervosa increases. As a group, restrictive anorexics differ from all other ED patients: they have high levels of persistence (ambition, overachieving, perfectionism) and show decreased novelty seeking (Kleifield et al., 1994).

A literature search revealed only four studies using the NEO-PI to assess the relationship between personality traits and (subclinical or clinical) ED. In a study by Brookings and Wilson (1994), 137 undergraduates completed the NEO-PI, the Eating Disorder Inventory (EDI), and the Eating Attitudes Test (EAT-26). Correlation and multiple regression analyses showed that Neuroticism and Extraversion made the largest unique contributions to the EDI subscales and EAT-26. Podar, Hannus, and Allik (1999) assessed the relative contribution of personality to self-reported eating attitudes in a group of ED patients, a weight-reduction training group (Weight Watchers), and a control group without weight problems. Within the group of ED patients, only the Impulsiveness facet scale discriminated between anorexics and bulimics, with the latter scoring significantly higher. Funk (1999) reported that anorexic women had lower scores on Extraversion and higher scores on Conscientiousness than bulimia nervosa patients; subjects with mixed anorexic and bulimic symptoms categories showed scores somewhere between the two groups. Finally, Auerbach-Barber (1998) examined the personality characteristics in binging versus nonbinging obese people: the former reported more Neuroticism and less Extraversion.

Recently, more attention has been paid to the presence of self-injurious behavior (SIB), such as cutting, burning, and hair pulling, in ED patients. Although these behaviors frequently co-occur (Favaro & Santonastaso, 1998, 2000), few studies have reported on personality differences in ED patients with and without SIB. The present study examined whether personality (assessed with the Five-Factor Model) differed according to ED subtype and the presence/absence of SIB, whether there is an interaction between ED subtype and presence/absence of SIB, and whether personality traits are associated with different forms of SIB.

**METHOD**

We gathered data from 178 female ED patients (mean age = 23.8, SD = 6.9), of whom 79 were inpatients admitted to a specialized ED treatment unit and 99 were outpatients. Patients were diagnosed according to DSM-IV criteria (American Psychiatric Association, 1994) based on a diagnostic interview and a self-report questionnaire, the Eating Disorder Evaluation Scale (EDES; Vandereycken, 1993). The following diagnoses were obtained: 30.3% (N = 54) anorexia nervosa restrictive subtype (AN-R), 18.5% (N = 33) anorexia nervosa binging-purging subtype, 19.7% (N = 35) bulimia nervosa nonpurging subtype (BN-NP), and 31.5% (N = 56) bulimia nervosa purging type (BN-P). Patients diagnosed with “eating disorders not otherwise specified” (ED-NOS), were excluded from this study because of the heterogeneity of this subsample.

SIB was assessed using a modified version of the Self-Injury Questionnaire (SIQ; Claes, Vandereycken, & Vertommen, 2001). Subjects were asked...
if they had deliberately injured themselves in the past year [e.g., bruising, cutting, burning, biting, hair pulling]. If so, they had to specify—for each behavior separately—when this occurred, how often it occurred, whether they felt pain, what kind of emotional experiences they had before and after the self-injurious act, and their motive or intent.

All patients completed the adjusted Dutch version of the Neuroticism, Extraversion, Openness to Experience—Five Factor Inventory (NEO-FFI; Costa & McCrae, 1985, 1992). The NEO-FFI is a 60-item, self-report measure of the five major personality traits: Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C). Items are answered on a 5-point scale ranging from "strongly agree" to "strongly disagree." A subsample of 41 patients filled out the 240-item NEO Personality Inventory—Revised (NEO PI-R; Costa & McCrae, 1985, 1992) which assessed the 6 facets of each of the 5 factors. There is considerable evidence for the reliability and construct validity of the Dutch NEO FFI and NEO PI-R (Hoekstra, Ormel, & de Fruyt, 1996). Data analysis began by determining whether frequency of a particular SIB was equal across the different ED subgroups using the likelihood-ratio chi-square statistic ($L^2$; Mood, Graybill, & Boes, 1974). Subsequently, the relationship between the different NEO (sub)scales and the different subtypes of ED and the absence/presence of SIB as well as the interaction between both were explored using multivariate analysis of variance (MANOVA) and the Wilks's Lambda criterion (SPSS, version 11).

RESULTS

Eighty patients (46.5%; 23 AN-R, 18 AN-P, 13 BN-NP, 26 BN-P) reported at least 1 form of SIB: 43 patients (24.6%) reported scratching, 34 bruising (19.5%), 54 cutting (31.4%), 14 burning (8.0%), and 21 hair pulling (11.8%). The proportions of scratching ($L^2 = 4.67$, $df = 3$, $p = 0.19$), bruising ($L^2 = 0.61$, $df = 3$, $p = 0.89$), cutting ($L^2 = 5.72$, $df = 3$, $p = 0.12$), burning ($L^2 = 3.76$, $df = 3$, $p = 0.28$), and hair pulling ($L^2 = 4.03$, $df = 3$, $p = 0.25$) were not significantly different between the subgroups.

NEO-FFI scale scores for the different subtypes of ED patients with and without SIB were not significantly different for inpatients and outpatients, and the data of both samples were merged. The MANOVA indicated that only the overall multivariate main effect of the presence/absence of SIB was significant [$F(5, 145) = 3.488$, $p = 0.005$]; the main effect of the subtype of ED [$F(15; 400,683) = 0.858$, $p = 0.612$] and the interaction between ED subtype and presence/absence of SIB [$F(15; 400,683) = 0.379$, $p = 0.984$] were not. Patients with SIB scored significantly higher on Neuroticism and significantly lower on Extraversion than patients without SIB. To explore these differences a subgroup of 41 patients was asked to complete the facet scales of the NEO PI-R. A MANOVA with the presence/absence of SIB and ED subtype as independent variables and the 35 facet scores as dependent variables revealed significant main effects for ED subtype [$F(90; 12,86) = 2.432$, $p = 0.04$] and presence/absence of SIB [$F(30, 4) = 8.356$, $p = 0.02$] and no significant interaction between them. The univariate ANOVAs revealed only the Impulsiveness facet significantly differentiated between the different diag-

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nostic subgroups of ED patients \( (F = 3.591, df = 3, p = 0.02) \). Scheffé’s post hoc tests showed that purging bulimic patients were significantly more impulsive than restrictive anorexics. Differences in facet scores were found between patients with and without SIB: the former appeared to be more anxious \( (F = 4.844, df = 1, p = 0.035) \), willing to please \( (A5) (F = 5.867, df = 1, p = 0.021) \), less cheerful \( (E6) (F = 7.807, df = 1, p = 0.009) \), less efficient \( (C1) (F = 4.854, df = 1, p = 0.035) \), and less ambitious \( (C4) (F = 4.362, df = 1, p = 0.045) \). Compared to a group of “normal” females, patients scored higher on neuroticism and lower on agreeableness; and with respect to facet scores, female patients scored higher on anxiety \( (N1) \) and willingness to please \( (A5) \), and lower on cheerfulness \( (E6) \) and efficiency \( (C1) \).

Personality scores did not differ significantly according to type of ED or type of SIB. Finally, to find out whether the form of SIB had some significance, we selected the patients who reported only one SIB (e.g., only cutting or only burning) and again performed a MANOVA: for the NEO-FFI scores we did not find significant overall main effects of “type of ED” and “particular type of SIB” nor their interaction. However, caution is required in interpreting these results due to the small sample involved in this analysis.

**DISCUSSION**

Our failure to find significant differences in SIB frequencies among the different types of ED patients is consistent with the results of Favaro and Santonastaso (1998, 2000) and Garfinkle, Mollysky, and Garner, 1980. These differences may be due to different definitions of SIB (e.g., including suicide attempts or not) and the use of different assessment procedures (self-report vs. interview).

Marked personality differences were obtained between ED patients with and without SIB. Patients with SIB were more neurotic and less extraverted and had higher facet scores indicating that they were more anxious, more willing to please, and less cheerful, efficient, and ambitious. These results are consistent with previous research (see Claes, Vandereycken, & Vertommen, 2003), showing that ED patients with SIB report more traumatic experiences and display more borderline personality features than those without SIB. Several authors (e.g., Dubo, Zanarini, Lewis, & Williams, 1997) consider SIB as an inadequate way for borderline patients to cope with negative feelings linked to traumatic experiences. If this is the case, we would expect that ED patients with SIB (often associated with BPD) have more problems with their affect regulation and therefore experience more negative \( (N) \) and less positive feelings \( (E) \) than those without SIB. Finally, the diagnostic subtypes of ED patients only differed with respect to impulsiveness: purging bulimics were more impulsive than anorexics; bulimics were more impulsive than normal controls, and anorexics scored in the same range as normal controls. These results are in accordance with previous research (e.g., Claes, Vandereycken, & Vertommen, 2002; Diaz-Marsa et al., 2000) and have important treatment implications. The presence of impulsive traits in ED patients appears to increase the risk of a poor treatment outcome (Sohlberg, Norring, Holmgren, & Rosemark, 1989) and a worse long-term prognosis (Fichter, Quadflieg, & Rief, 1994). Further-
more, when we compared the ED patients’ overall scores with those of normal controls, the patients appeared to be more neurotic and less agreeable as reported by Diaz-Marsa et al. (2000). The latter authors suggest that neurotic-emotionally unstable traits are associated with eating pathology in general, whereas impulsiveness is more specifically tied to the presence of bulimic symptoms. In our view, ED patients with SIB have more problems with their affect regulation, which might be related to a history of traumatic experiences and/or to borderline personality features, and the presence of SIB can be viewed as an indicator of the severity of the underlying psychopathology (see Newton, Freeman, & Munro, 1993).

Further research should not only focus on differences in general psychopathology or personality features in ED patients with and without SIB, but should also try to discover the mechanisms that are responsible for the fact that some ED patients need SIB and others do not, and why those patients who started to injure themselves continue to display this behavior. Analyses of situational, cognitive, and emotional antecedents and consequences of SIB in ED patients (e.g., Claes, Vandereycken, Van Mechelen, & Vertommen, 2002), can be one way to find out more about the mechanisms that are responsible for the development and maintenance of such self-harming behaviors.

REFERENCES


Dubo, E.D., Zanarini, M.C., Lewis, R.E., & Williams, A.A. (1997). Childhood ante-


