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Abstract: Axes I and II were separated in DSM-III to encourage the consideration of the influence of both personality and psychopathology on patient behavior, on the assumption that an understanding of personality would increment syndromal diagnosis in treatment decisions. However, in practice the distinction between Axis I and Axis II is less clear. The current report investigates one aspect on which Axis I and Axis II might be expected to differ, that being the significance of normative personality traits as an influence on functional status. In this study, the contribution of normative personality traits to functioning is presented for 2 groups of patients, one with major depression and a second with personality disorders. The data suggest that personality traits are significant and equally relevant predictors of functioning for both groups. The utility of assessing personality traits for individuals with both Axis I and II disorders is thus supported.

Key Words: Personality traits, Axis II, major depressive disorder, assessment.

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Multi-axial diagnosis was implemented in DSM-III to encourage clinicians to assess potentially important clinical data, including personality factors, in addition to syndromal diagnosis (Williams, 1985). The separation of Axis I and II, and in particular the label applied to the latter, implies that normative personality traits are more

related to ‘personality’ disorders than to other types (i.e., Axis I) of disorders. However, personality as included on Axis II of the diagnostic system reflects enduring dysfunction or distress (i.e., disorders rather than personality traits; Spitzer et al., 1977). Researchers have criticized Axis II for what they perceive as an overemphasis on maladaptive functioning in lieu of normative elements of personality (e.g., Widiger and Kelso, 1983), and some authors have argued for the explicit assessment of normative personality traits in clinical diagnosis (e.g., Harkness and Lilienfeld, 1997). Others have argued that substantive differences between Axis I and Axis II disorders in terms of phenomenology, course, and cause remains to be established, and thus question segregation of personality disorders onto Axis II (Ruocco, 2005). In fact, relationships between normative personality traits, such as the 5-factor model (FFM; Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness) and many Axis I disorders have been established empirically (Shea and Yen, 2005), undermining the assumption that the relationship of personality traits to clinical phenomena is unique to the personality disorders. Nevertheless, particular relationships between personality disorders and personality traits have been hypothesized and established empirically (e.g., Lynam and Widiger, 2001).

A slightly different question involves the salience of normative personality traits in the prediction of clinical and psychosocial phenomena for Axis I as opposed to Axis II diagnosis. It may be assumed that personality traits would be more salient for the prediction of functioning in personality disorders than in other disorders just as, by analogy, specific cognitive abilities are likely more salient for identifying problems associated with learning disorders than for problems associated with personality disorders or marital distress. This paper represents an effort to test the hypothesis that normative personality traits are as relevant for capturing clinically relevant heterogeneity within a common Axis I disorder, major depressive disorder (MDD), as they are for capturing heterogeneity among individuals with personality disorders (PD). MDD serves as a useful comparison group, as this disorder has demonstrated empirical links to normative traits (Clark et al., 1994; Weissman et al., 1978), although the

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diagnostic significance of such traits for MDD is not explicit in the DSM system.

METHODS

Participants

Participants were 525 patients recruited from multiple clinical sites for the Collaborative Longitudinal Personality Disorder Study (CLPS; Gunderson et al., 2000). Individuals with comorbid major depressive disorder and personality disorder were removed from the original CLPS sample ($N = 733$) and the remaining participants were placed into one of 5 study cells: borderline (BPD; $N = 118$), schizotypal (STPD; 58), avoidant (AVPD; 122), obsessive compulsive (OCPD; 123), and a comparison group meeting criteria for major depressive disorder (MDD; 104). Participants with a PD who did not meet diagnostic criteria for MDD at baseline were collapsed into one PD group. Participants with MDD had fewer than 2 symptoms of any specific PD or 15 total PD symptoms at baseline.

Measures

Diagnostic Interview for DSM-IV Personality Disorders (DIPD-IV)

The DIPD-IV (Zanarini et al., 1996) is a semistructured interview that assesses individual DSM-IV Axis II criteria characteristic of the person most of his or her adult life and present over at least the previous 2 years. Study inclusion for the personality disorder sample was determined by the diagnostic cutoffs indicated in the DSM-IV. Interrater reliability coefficients were fair to good for all categorical disorders diagnosed 5 times or more in a baseline subsample (range from $\kappa = 0.40$ to 0.75 ; Zanarini et al., 2000).

SCID-I

The SCID-I (First et al., 1996) is a semistructured diagnostic interview with established reliability that is used to diagnose 33 Axis I disorders by DSM-IV criteria. The SCID-I was used to determine the Major Depressive Disorder diagnosis for study inclusion. SCID-I diagnosis of Major Depressive Disorder demonstrated an interrater reliability of 0.80 in a baseline subsample (Zanarini et al., 2000).

NEO Personality Inventory, Revised (NEO-PI-R)

The NEO-PI-R (Costa and McCrae, 1992) was designed to provide a comprehensive assessment of the 5 factors and 30 facets of the FFM. Internal consistency reliabilities for the 5 domains in this sample ranged from 0.87 to 0.92 . The scale scores from the 5 factors are used in the current study to represent normative traits.

Schedule for Nonadaptive and Adaptive Personality (SNAP)

The SNAP (Clark, 1993) is a 375-item self-report questionnaire designed to assess personality characteristics in both the normal and abnormal range. The 3 higher-order factors, Negative Temperament, Positive Temperament, or Disinhibition, represent normative personality traits. Although the SNAP also contains lower order traits conceptu-

alized as subcomponents of the higher order traits, these traits were not considered in the current study due to the fact that they were designed to be relevant for personality disorders and thus may not represent normative traits. Internal consistency in our study sample was consistent with results described in the SNAP manual, with a median of 0.89 for the 3 temperament scales.

Global Assessment of Functioning

The GAF is a commonly used clinician-rated single item ranging from 1 to 100 and indicating symptom severity and level of functioning. GAF was assessed at baseline and 4-year follow-up.

Analyses

Multiple regression models were constructed to predict baseline and 4-year GAF with the personality traits and a dichotomous variable indicating diagnostic axis (MDD versus PD). These variables were standardized before analyses were conducted. To test the hypothesis that traits were differentially effective for predicting functioning for diagnostic axis, a second block consisting of the interaction between traits and the diagnostic variable was entered, and change in model effect size was assessed.

RESULTS

Results from regression analyses are depicted in Table 1. Overall, all models contributed significantly in explaining variance associated with functioning, with coefficients of determination (r^2) ranging from 0.02 to 0.08 . With one exception (Openness failed to predict 4-year GAF), all 8 normative traits assessed were significant predictors of functioning in concert with diagnosis, whereas diagnostic axis was a significant predictor ($p < 0.05$) in only 5/16 models. Of most direct relevance to the current paper, in no case did the interaction term add significantly to the model, indicating that the personality traits were comparably related to functioning across diagnostic axes. Changes in proportion of variance explained associated with considering the interaction between traits and diagnostic axis were all < 0.02 , and none approached statistical significance ($p < 0.05$). To further explore the relations between personality traits and functioning across study groups, bivariate correlations were computed between each trait functioning separately for major depression and personality disorder groups (Table 2). Overall, this coefficient was larger in the personality disorder group in 7/16 cases, further suggesting the lack of an interaction.

The direction of the correlations presented in Table 2 suggests that a trait constellation involving lower levels of neuroticism/negative temperament and disinhibition and higher levels of extroversion/positive temperament, agreeableness, and conscientiousness tends to result in better functioning in this sample. Results for openness to experience were more equivocal; at baseline, higher openness was associated with better functioning, but this effect was not statistically significant in predicting functioning at 4 years.

TABLE 1. Regression Coefficients and Effect Size of Trait and Diagnosis in Predicting GAF and Change in Effect Size Due to Adding Interaction Term to Derived Model

	N	E	O	A	C	NT	PT	DS
Baseline GAF								
Trait β	-0.28*	0.23*	0.18*	0.17*	0.17*	-0.27*	0.19*	-0.14 [†]
Diagnosis β	0.04	0.05	0.09	0.06	0.09	0.01	0.09 [‡]	0.08
Model r^2	0.08*	0.06*	0.04*	0.04*	0.04*	0.07*	0.04*	0.03*
Int. Δr^2	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
4-yr GAF								
Trait β	-0.28*	0.21*	0.08	0.22*	0.19*	-0.27*	0.18*	-0.17*
Diagnosis β	0.03	0.07	0.11 [‡]	0.08	0.12 [‡]	0.03	0.11 [‡]	0.11 [‡]
Model r^2	0.08*	0.06*	0.02 [‡]	0.06*	0.05*	0.08*	0.05*	0.04*
Int. Δr^2	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00

Traits: N = neuroticism, E = extroversion, O = openness to experience, A = agreeableness, C = conscientiousness, NT = negative temperament, PT = positive temperament, DS = disinhibition.

Diagnosis refers to a dichotomous variable indicating diagnostic category (Major Depressive Disorder vs. Personality Disorder) scored such that positive values represent stronger relation to PD than MDD. Int. = (trait \times diagnosis). Variables were standardized before models were constructed.

* $p < 0.001$, [†] $p < 0.01$, [‡] $p < 0.05$.

DISCUSSION

The purpose of this study was to compare the predictive capacity of personality traits on concurrent and future symptomatic and functional impairment for individuals with major depression and personality disorders. The results suggest that personality traits are *not* more relevant for capturing heterogeneity in functioning among Axis II personality disorders than for Axis I major depression. The normative traits investigated here were systematically related to impairment for both groups, suggesting the utility of assessing these traits whether individuals are characterized as personality disordered or not.

These results highlight the similarity of Axis I and Axis II disorders in terms of the relationship of personality traits to functioning. Results also suggest the utility of supplementing both syndromal and personality diagnoses as they are currently conceptualized in DSM-IV with an assessment of personality traits (Harkness and Lilienfeld, 1997). Although the importance of personality traits are implicit in the name of Axis II "personality" disorders and little reference is made in the DSM regarding the relevance of personality for Axis I,

personality traits appear to be relevant for understanding heterogeneity for both Axis I and Axis II diagnoses.

The results of the current study are limited in certain respects. For example, although effects for personality traits predicting functioning were significant (and generally larger than those for diagnostic axis), they tended to be modest (explaining 2%–8% of the variance in functioning). Thus, there remains the question of whether the increased time and effort required to assess personality traits yields significant information with respect to clinical utility. However, given the global nature of the GAF ratings and their unknown reliability, the associations between traits and impairments reported here may reflect an underestimate. Another limitation of the current study is found in the restriction of diagnoses examined, as the project examined only one Axis I and 4 Axis II disorders. Results may therefore reflect characteristics particular to the selected diagnoses, which may not generalize across other disorders; such disorders should be examined in subsequent studies to ascertain the generality of the finding that personality traits are relevant predictors of impairment and outcome, even for disorders not labeled as "personality" problems per se.

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