

## Measurement of Nonclinical Personality Characteristics of Women With Anorexia Nervosa or Bulimia Nervosa

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Past research on personality and eating disorders has most often emphasized personality psychopathology and personality disorders. We further investigated nonclinical personality characteristics among women with anorexia nervosa ( $n = 35$ ) or bulimia nervosa ( $n = 45$ ) using the Multidimensional Personality Questionnaire (MPQ; Tellegen, 1982, 1985). The MPQ measures several personality traits that have been shown to consist of a substantial genetic component (Tellegen et al., 1988). In logistic regression analyses, women with anorexia nervosa evidenced greater degrees of control (vs. impulsivity) and general constraint, and a lower degree of absorption in sensory experiences relative to those with bulimia nervosa. Relative to the normative population (Tellegen, 1982), our sample evidenced very low scores on Well-being, Social Closeness, and Positive Affectivity and high scores on Stress Reaction, Alienation, and Negative Affectivity. Our results emphasize the importance of considering nonclinical personality features and temperament, and varying methods of assessment, in the understanding of predisposing factors for eating disorders.

Personality characteristics of individuals with eating disorders have been the focus of much research, with an emphasis on comparison of individuals with anorexia nervosa versus bulimia nervosa (Johnson & Wonderlich, 1992; Vitousek & Manke, 1994). In general, those with anorexia nervosa have been characterized as reticent,

introversive, constricted, obsessional, and compulsive, whereas those with bulimia nervosa have been characterized as relatively more social, impulsive, and affectively labile (Vitousek & Manke, 1994). Most investigations of personality and eating disorders have involved clinical instruments with an emphasis on psychopathology such as personality disorders (e.g., Herzog, Keller, Lavori, Kenny, & Sacks, 1992; Johnson & Wonderlich, 1992; Skodol et al., 1993; Wonderlich, Swift, Slotnick, & Goodman, 1990). Considerably less is known about nonclinical personality features of individuals with eating disorders.

Casper, Hedeker, and McClough (1992) did include several clinical and non-clinical measures of personality in their study of 46 women with eating disorders and 19 normal control participants. Among their measures was the Multidimensional Personality Questionnaire (MPQ; Tellegen, 1982, 1985), a nonclinical instrument that consists of 11 primary personality dimensions and three higher order factors (Positive Emotionality, Negative Emotionality, and Constraint). These personality traits measured by the MPQ have been shown to consist of a substantial genetic component (Tellegen et al., 1988). Compared to those with bulimia nervosa, Casper et al. (1992) found that those with anorexia nervosa scored higher on Control (vs. impulsivity), Traditionalism, Harm Avoidance, and Constraint. Compared to the controls, those with anorexia nervosa scored higher on Control, Traditionalism, Harm Avoidance, and Constraint. Both eating disordered groups scored lower than did controls on Well-being, Social Closeness, and Positive Affectivity, and on Stress Reaction and Negative Affectivity.

These results are interesting and suggest that anorexics are more constricted and conventional in comparison to other women in general, and that women with eating disorders evidence greater negative affect and less positive affect in comparison with other women in general. However, there are some problematic aspects to the study by Casper et al. (1992). They conducted individual statistical tests on each of the MPQ scales, yet one might expect at least some of those scales to be correlated with each other. We do not know what unique differences between anorexics and bulimics emerge after scale intercorrelation is controlled. Also, Casper et al. included a small control group, yet the MPQ manual (Tellegen, 1982) contains normative data based on a large sample of young, adult women ( $N = 401$ ). Describing where anorexic's and bulimic's MPQ scores fall in relation to young women in general may elucidate relations between personality characteristics and eating disorders.

The objective of this study was to further investigate potential differences between women with anorexia nervosa and women with bulimia nervosa with regard to scores on the MPQ. We conducted multivariate statistical analyses that allowed us to reveal group differences that exist even after holding scores on the remaining MPQ scales constant. We also compared the anorexic and bulimic groups' scores to the normative sample by calculating percentile scores for the eating disordered women based on the available normative data.

## METHOD

### Participants

Participants were 80 female outpatients (Mean age = 22.7 years;  $SD = 7.2$ ) who met *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1987) criteria for anorexia nervosa ( $n = 35$ ) or bulimia nervosa ( $n = 45$ ). In line with current diagnostic practices (American Psychiatric Association, 1994), those who met criteria for both anorexia nervosa and bulimia nervosa were diagnosed with anorexia nervosa.

### Measures

*Personality characteristics.* Participants completed the MPQ (Tellegen, 1982, 1985), a 300-item instrument consisting of true-false responses to statements and self-descriptors. The items are scored to derive 11 primary scales measuring personality traits that have been found to evidence a substantial genetic component (Tellegen et al., 1988). High scores on Well-being indicate experiences of pleasure, a cheerful, optimistic disposition, and high self-esteem. High scores on Social Potency indicate forcefulness, decisiveness, and preference for leadership roles. High scores on Achievement indicate a strong work ethic, determination, and perfectionism. High scores on Social Closeness indicate sociability and capacity for interpersonal warmth, comfort, and affection. High scores on Stress Reaction indicate nervousness, proneness to worry, irritability, and labile affect. High scores on Alienation indicate paranoia and feelings of being mistreated and used by others. High scores on Aggression indicate a propensity toward physical aggression and hurting others for one's own advantage. High scores on Control indicate propensities toward caution, reflection before action, rationality, and a preference for having activities planned (i.e., a lack of impulsivity). High scores on Harm Avoidance indicate lack of enjoyment of dangerous experiences and a preference for safer, more mundane activities. High scores on Traditionalism indicate endorsement of high moral standards and religious values and disdain for permissiveness and selfishness. High scores on Absorption indicate high emotional responsiveness to sensory experiences and a tendency to become absorbed in them. On each scale, low scores indicate the opposite characteristics of high scores.

By combining scores on particular personality scales, three higher order factors are generated. High scores on Positive Emotionality (based on Well-being, Social Potency, and Achievement) indicate a generalized sense of well-being and active engagement in pleasurable transactions with the environment. High scores on Negative Emotionality (based on Stress Reaction, Alienation, and Aggression) indicate a great deal of emotional tension, anxiety, anger and resentment. High

scores on Constraint (based on Control, Harm Avoidance, and Traditionalism) indicate general restraint, avoidance of risky behavior, deference, and conventionality. The MPQ was developed and normed using large, nonclinical samples of adults and evidences good reliability (Tellegen, 1982, 1985; Tellegen et al., 1988).

### Procedure

Upon presentation at the Eating Disorders clinic, 2-hour diagnostic assessments were conducted by clinicians experienced in the evaluation and treatment of eating disorders. Diagnoses were based on these interviews and were arrived at consensually among members of the clinical team involved in the assessments. Finally, participants completed the MPQ.

## RESULTS

Scores on the 11 primary personality scales were entered into a stepwise logistic regression analysis (Norusis, 1990) to predict group membership (0 = Anorexia Nervosa, 1 = Bulimia Nervosa). The advantage of logistic regression analysis is the consideration of relations between each predictor variable and the dependent variable while the effects of the other predictors are simultaneously controlled, hence we were able to discover which MPQ scales were uniquely predictive of anorexia nervosa versus bulimia nervosa. An additional stepwise logistic regression analysis was conducted entering only the scores on the three higher order scales. The logistic regression results are presented in Table 1. Relative to women with

TABLE 1  
Logistic Regression Analyses to Predict Differences Between Individuals With Anorexia Nervosa Versus Bulimia Nervosa With Regard to MPQ Scores

<i>Analysis</i>	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>df</i>	<i>p</i> <	<i>R</i>
Personality scales <sup>a</sup>						
Control	-.14	.05	7.25	1	.008	-.22
Absorption	.07	.04	4.25	1	.04	.14
(Constant)	1.17	1.04	1.27	1	.26	
Composite scales <sup>b</sup>						
Age	.07	.04	4.00	1	.05	.14
Constraint	-.04	.02	5.33	1	.02	-.17
(Constant)	5.42	3.02	1.27	1	.08	

*Note.* MPQ = Multidimensional Personality Questionnaire (Tellegen, 1982, 1985); *SE* = Standard Error of *B*; *R* = partial correlation coefficient between predictor variable and subtype status holding other predictors constant. Diagnosis: 0 = Anorexia Nervosa, 1 = Bulimia Nervosa.

<sup>a</sup>Model:  $\chi^2(2) = 16.29, p < .0003$ , goodness-of-fit  $\chi^2(77) = 82.33, p < .32$ ; cases correctly classified = 70.0%. <sup>b</sup>Model:  $\chi^2(2) = 10.66, p < .005$ , goodness-of-fit  $\chi^2(77) = 84.94, p < .26$ ; cases correctly classified = 68.8%.

TABLE 2  
Mean Scores on the Multidimensional Personality Questionnaire (MPQ) and Percentiles Based on a Normative Sample of Young, Adult Women

Scale	<i>Anorexia Nervosa</i> <sup>a</sup>			<i>Bulimia Nervosa</i> <sup>b</sup>		
	<i>M</i>	<i>SD</i>	<i>Percentile</i>	<i>M</i>	<i>SD</i>	<i>Percentile</i>
MPQ						
Well-being	8.9	6.9	2	9.1	7.1	3
Social potency	7.8	6.7	37	10.7	6.2	56
Achievement	13.0	4.0	66	12.4	5.5	61
Social closeness	13.0	6.1	23	13.4	5.5	26
Stress reaction	18.3	7.3	76	20.6	5.3	86
Alienation	6.7	5.2	79	7.6	6.0	85
Aggression	5.1	4.3	45	5.6	4.5	50
Control (vs. Impulsivity)	16.6	4.8	71	12.7	5.1	41
Harm avoidance	18.5	6.0	52	18.7	4.9	51
Traditionalism	19.3	4.5	66	17.4	4.9	51
Absorption	13.5	7.5	18	18.2	7.0	41
Composite						
Positive emotionality	141.8	13.8	16	144.7	15.7	22
Negative emotionality	142.3	18.2	74	147.4	17.8	84
Constraint	173.0	13.1	81	164.7	15.7	62

*Note.* Percentile scores based on comparison to normative sample of young, adult women ( $N = 401$ , Mean age = 23; Tellegen, 1982, Appendix 2).

<sup>a</sup> $n = 35$ , <sup>b</sup> $n = 45$ .

bulimia nervosa, women with anorexia nervosa evidenced greater scores on Control and Constraint and lower scores on Absorption.

How did the eating disordered women in our sample compare to the large normative sample of young, adult women ( $N = 401$ ; Tellegen, 1982, Appendix 2)? The means, standard deviations, and percentile scores (based on the normative sample) for each MPQ scale are presented in Table 2 by diagnostic group.

## DISCUSSION

The objective of this study was to characterize nonclinical personality features among women with anorexia nervosa or bulimia nervosa and to investigate differences between the two eating disordered groups. We considered the MPQ an appropriate instrument to use as the traits it measures have been shown to evidence a substantial genetic component (Tellegen et al., 1988), and normative data exist based on a large sample of young adult women drawn from the general community (Tellegen, 1982). Surprisingly, the MPQ has not been used more extensively in the study of individuals with eating disorders.

In considering statistically significant differences between women with anorexia nervosa and those with bulimia nervosa, as well as comparison of the MPQ scores generated by our sample with those from the normative sample, a consistent pattern emerges. Both groups of eating disordered women evidenced very low scores on Well-being (2nd to 3rd percentile) and on Positive Affectivity (16th to 22nd percentile). Low scores on these scales indicate individuals who experience little joy or excitement and are seldom happy (Tellegen, 1982). Similarly, both groups evidenced relatively high scores on Stress Reaction (76th to 86th percentile) and Negative Affectivity (74th to 84th percentile). Such high scores indicate excessive worry, irritability, and emotional lability (Tellegen, 1982). This pattern of scores is not surprising given the high rates of comorbid depression and anxiety that have been documented among individuals with eating disorders (Fornari et al., 1992).

Both eating disordered groups evidenced low scores on Social Closeness (23rd to 26th percentile) and high scores on Alienation (79th to 85th percentile). This pattern of scores indicates mistrust, social isolation, feelings of being mistreated by others, and preference for working problems out by oneself (Tellegen, 1982). Group scores on each of the rest of the MPQ scales were in or near the average range (37th to 66th percentile) with the exceptions of those scales on which women with anorexia nervosa differed from women with bulimia nervosa.

Those with anorexia nervosa scored higher (71st percentile) on Control (lack of impulsivity) than did those with bulimia nervosa (41st percentile). With regard to emotional-behavioral Constraint scores, women with bulimia nervosa scored in the high end of the average range (62nd percentile), yet women with anorexia nervosa scored even higher (81st percentile). Women with bulimia nervosa scored relatively low on Absorption (41st percentile), yet women with anorexia nervosa scored even lower (18th percentile). Taken as a whole, these results characterize the anorexics in our sample as cautious, timid, restrained, conventional, avoidant of risky behavior, and not liable to stray into fantasy or absorption in sensory experiences. This description is consistent with past research on individuals with anorexia nervosa (Vitousek & Manke, 1994), but, rather than simply demonstrating greater constraint relative to bulimics, our results demonstrate high levels of constraint relative to a normative population as well.

Interestingly, Casper (1990) administered the MPQ to 25 young women who demonstrated long-term ( $M = 6$  years) recovery from anorexia nervosa, 15 healthy sisters of the former anorexic patients, and 19 healthy female college students who served as controls. In discriminant function analyses, the only MPQ scales that significantly distinguished the groups were Control (former anorexics higher than sisters) and Constraint (former anorexics higher than controls). Inhibited personality features have been documented in young, anorexic patients (Strober, 1980, 1981), but the fact that young women who previously met diagnostic criteria for anorexia nervosa and fully recovered continued to score relatively high on control and constraint lend additional evidence that these propensities may have a substan-

tial genetic component (Tellegen et al., 1988), and hence may exist premorbidly (Dally & Gomez, 1979; Rastam, 1992). Indeed, there appears to be increased research interest in the temperament of individuals with eating disorders (e.g., Bulik, Sullivan, Weltzin, & Kaye, 1995; Johnson & Wonderlich, 1992).

Our findings, though not surprising, add credence to the importance of considering nonclinical personality features in the study and differentiation of individuals with eating disorders. Additional research is needed employing other measures of personality and temperament to discern stable characteristics of individuals who develop anorexia nervosa or bulimia nervosa, especially as these characteristics are found to exist premorbidly and to persist after recovery from the eating disorder.

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