

## MCMI-II Personality Scale Scores Among Women With Anorexia Nervosa or Bulimia Nervosa

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Issues of personality psychopathology among women who experience eating disorders are of interest to both researchers and clinicians. The MCMI-II (Millon, 1987) may be a useful instrument for use with this population as it measures 13 categories of personality psychopathology. It is surprising to note that no report of MCMI-II scores among women with eating disorders has been published. In this study, adult women with anorexia nervosa, restricting type ( $n = 27$ ) or binge-eating/purging type ( $n = 33$ ), or bulimia nervosa, purging type ( $n = 105$ ), completed the MCMI-II at initial assessment. Significant differences were found as a function of diagnostic group and the overall pattern of elevated scores illustrated prominent personality features of the sample as a whole. Results are discussed with regard to congruence with previous research and the potential implications for understanding the psychodynamics of eating disorders.

An extensive literature now exists on the substantial comorbidity of eating disorders and personality disorders (see Johnson & Wonderlich, 1992, and Vitousek & Manke, 1994, for reviews). Overall, prevalence of Cluster A personality disorders (paranoid, schizoid, and schizotypal) among women with eating disorders appears relatively low, as does the rate of antisocial, narcissistic, and self-defeating personality disorders (Herzog, Keller, Lavori, Kenny, & Sacks, 1992; Johnson & Wonderlich, 1992). Avoidant and dependent personality disorders are fairly common and appear equally likely across eating disorder subtypes (Johnson & Wonderlich, 1992).

Although there is some heterogeneity in findings, it appears that anorexics and bulimics differ in the relative salience of certain personality disorders. For example, borderline and histrionic personality disorders are more prevalent among individuals with bulimic symptoms (Herzog, Keller, Sacks, Yeh, & Lavori, 1992; Johnson & Wonderlich, 1992; Levin & Hyler, 1986; Skodol et al., 1993; Wonderlich, Swift, Slotnick, & Goodman, 1990). In contrast, exclusively restricting anorexics are more likely to exhibit compulsive personality features and obsessive-compulsive personality disorder (Herzog, Keller, et al., 1992; Johnson & Wonderlich, 1992; Vitousek & Manke, 1994; Wonderlich et al., 1990).

As examination of personality psychopathology has become more salient among those studying eating disorders, improved methods for assessing clinical personality features in this population is of increasing importance to both researchers and clinicians. The results of previous work suggest that widely used instruments such as the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) may not be particularly useful with this clinical population and do not appear to discriminate among eating disorder subtypes (Pryor & Wiederman, 1996). The Millon Clinical Multiaxial Inventory (MCMI; Millon, 1982) may be a more promising measure of personality psychopathology among those with clinical eating disorders (Tisdale & Pendleton, 1993; Wiederman & Pryor, 1996). However, we are aware of only two separate studies in which different eating disorder diagnostic groups were compared with regard to MCMI scores.

Kennedy, McVey, and Katz (1990) administered the MCMI to 44 female inpatients diagnosed with anorexia nervosa ( $n = 19$ ), bulimia nervosa ( $n = 16$ ), or a combination of anorexia nervosa and bulimia nervosa ( $n = 9$ ). Despite the small subsamples, they found some statistically significant group differences. Compared to the other two diagnostic groups, women with a combination of anorexia and bulimia scored higher on the Schizoid and Schizotypal scales, whereas women with bulimia nervosa scored higher on the Borderline scale.

Norman, Blais, and Herzog (1993) administered the MCMI to individuals diagnosed with anorexia nervosa ( $n = 17$ ), bulimia nervosa ( $n = 58$ ), or a combination of anorexia nervosa and bulimia nervosa ( $n = 12$ ). Compared to the other two groups, the individuals with bulimia nervosa more frequently evidenced elevations on the Dependent and Histrionic subscales. Compared to the women with bulimia nervosa, those with anorexia nervosa or a combination of anorexia and bulimia evidenced higher scores on the Schizoid and Avoidant scales.

The results of previous studies using the MCMI with women diagnosed with eating disorders are of interest but were inconsistent and based on small samples. Also, the MCMI was criticized by many on psychometric grounds as well as issues of validity (see Craig, 1993, for review). In response, the MCMI was substantially revised, subsequently validated, and new norms were established. The resulting instrument was published as the MCMI-II (Millon, 1987), and it promised to

represent a significant improvement over the earlier version (Craig, 1993; Gonclaves, Woodward, & Millon, 1994; Millon, 1985). However, to date, no published study has included comparison of eating disorder diagnostic groups using the newer MCMI-II.

Employing a relatively large sample of women who met diagnostic criteria for anorexia nervosa or bulimia nervosa (American Psychiatric Association, 1987), we sought to investigate differential patterns of MCMI-II personality scale scores among eating disorder diagnostic groups. Based on earlier research on personality disorders among those with eating disorders (Johnson & Wonderlich, 1992; Vitousek & Manke, 1994), we expected the sample as a whole to evidence relative elevations on the Avoidant and Dependent scales and relatively low scores on the Schizoid, Schizotypal, and Paranoid scales. We expected those women with anorexia nervosa to display relatively higher scores on the Compulsive scale, whereas women with bulimia nervosa were expected to evidence relative elevations on the Borderline and Histrionic scales.

## METHOD

### Participants

Research participants were 165 female adults consecutively evaluated at a university-based eating disorders clinic who met diagnostic criteria (Diagnostic and Statistical Manual for Mental Disorders [3rd ed., rev. [DSM-III-R]; American Psychiatric Association [APA], 1987) for either anorexia nervosa ( $n = 60$ ) or bulimia nervosa ( $n = 105$ ). In line with current diagnostic practices (APA, 1994), those women who had clinical symptoms of bulimia nervosa but also met diagnostic criteria for anorexia nervosa were classified with the latter diagnosis. Accordingly, those with anorexia nervosa were classified according to restricting type ( $n = 27$ ) or binge-eating/purging type ( $n = 33$ ). All women with bulimia nervosa engaged in purging. The women in the current sample ranged in age from 18 to 56 ( $M = 26.65$ ,  $SD = 7.22$ ) and all but 4 (2.4%) were White.

### Measures

*Personality psychopathology.* All participants completed the MCMI-II (Millon, 1987). The MCMI-II consists of 175 true-false items that are scored to generate 13 personality scales (see Table 1) roughly corresponding to clinical personality disorder diagnoses currently in use (Craig, 1993). Raw scores are converted to Base-Rate (BR) scores, and a BR of 75 or greater is indicative of a significant clinical problem (Millon, 1987).

## Procedure

On presentation to the clinic, 2-hr diagnostic assessments were conducted by, or under the supervision of, faculty clinicians experienced in the evaluation of eating disorders. These assessments included separate semistructured interviews conducted by a psychologist and a psychiatrist, a physical examination by the psychiatrist (including collection of laboratory specimens as needed), and separate interviews with family members who may have presented with the identified client. Eating disorder diagnoses were based on data collected during the intake evaluation, were made in strict accordance with published diagnostic criteria (*DSM-III-R*; APA, 1987), and were consensually derived among members of the university clinical team (psychologist, psychiatrist, predoctoral intern, postdoctoral fellow) who had been involved in the evaluation.

Because the diagnoses were made in the context of identifying eating disordered clients for possible clinical intervention, independent raters were not employed, so issues of interrater reliability cannot be addressed. However, given the multiple sources of data and the multiple sources of professional input that went into diagnostic decisions, false positives were highly unlikely. False negatives due to client denial or minimization were probably more likely and would have resulted in such individuals failing to meet diagnostic criteria at intake. The women included in this study are those that clearly met *DSM-III-R* criteria for anorexia nervosa or bulimia nervosa. Finally, participants completed the MCMI-II (at initial intake, subsequent to diagnosis but prior to commencement of treatment).

As the focus of the intake evaluation was disordered eating and there was a limited amount of time in which to perform the assessment, diagnosis of other Axis I disorders was not undertaken as systematically. Hence, data on other possible Axis I disorders are not presented in this study. Prior research has shown that personality disorders and affective disorders frequently coexist among women with eating disorders (Braun, Sunday, & Halmi, 1994). However, personality disorders appear to exist independent of affective disorders among this population (Carroll, Touyz, & Beumont, 1996; Sunday, Levey, & Halmi, 1993).

## RESULTS

The means and standard deviations for scores on each MCMI-II personality scale are presented in Table 1 as a function of diagnostic subtype. One-way analyses of variance were performed and, when statistically significant, group differences were investigated using the Student-Newman-Kuels post hoc test. Note that none of the groups differed in scores on the Schizoid, Avoidant, Histrionic, Self-Defeating, Schizotypal, or Paranoid scales. Compared to women with bulimia nervosa, those with anorexia nervosa, restricting type, had higher scores on the Dependent scale

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TABLE 1  
Means and Standard Deviations for Each  
Personality Scale of the Millon Clinical Multiaxial Inventory-II (Millon, 1987)

MCMI-II Scale	Restricting Anorexics		Bulimic Anorexics		Purging Bulimics	
	M	SD	M	SD	M	SD
Schizoid (1)	70.37	17.73	61.42	27.83	65.27	23.82
Avoidant (2)	72.30	31.38	75.94	23.38	77.30	22.45
Dependent (3)	86.52 <sub>a</sub>	22.93	70.52	29.33	71.82 <sub>b</sub>	31.59
Histrionic (4)	47.63	30.21	52.85	28.67	63.14	31.19
Narcissistic (5)	31.63 <sub>a</sub>	32.95	45.30	30.60	50.93 <sub>b</sub>	31.30
Antisocial (6a)	42.30 <sub>a</sub>	23.80	55.82 <sub>b</sub>	21.11	58.23 <sub>b</sub>	24.56
Aggressive-Sadistic (6b)	45.78 <sub>a</sub>	27.08	61.15 <sub>b</sub>	20.48	56.96 <sub>b</sub>	25.28
Compulsive (7)	74.89 <sub>a</sub>	19.38	67.45 <sub>a</sub>	24.07	57.05 <sub>b</sub>	22.73
Passive-Aggressive (8a)	56.26 <sub>a</sub>	31.94	65.85	28.45	73.67 <sub>b</sub>	24.89
Self-Defeating (8b)	71.52	29.38	76.48	20.33	82.23	18.56
Schizotypal (S)	62.78	20.96	59.88	18.67	59.58	18.62
Borderline (C)	58.67 <sub>a</sub>	23.08	68.42	20.31	70.78 <sub>b</sub>	23.72
Paranoid (P)	58.89	16.37	60.18	13.85	58.83	14.59

Note. Within each row, means with different subscripts differ significantly ( $p < .05$ ) from each other (Student-Newman-Kuels post hoc test).

TABLE 2  
Percentages of Women in Each Diagnostic Group Who Demonstrated a  
Base Rate Score of 75 or Greater on Each of the Personality Scales of the  
Millon Clinical Multiaxial Inventory-II (Millon, 1987)

MCMI-II Scale	Restricting Anorexics		Bulimic Anorexics		Purging Bulimics	
	n	%	n	%	n	%
Schizoid (1)	8	29.6	8	24.2	25	23.8
Avoidant (2)	16	59.3	17	51.5	58	55.2
Dependent (3)	21	77.8 <sub>a</sub>	16	48.5 <sub>b</sub>	62	59.0
Histrionic (4)	4	14.8 <sub>a</sub>	9	27.3 <sub>a</sub>	50	47.6 <sub>b</sub>
Narcissistic (5)	3	11.1	5	15.2	27	25.7
Antisocial (6a)	1	3.7 <sub>a</sub>	5	15.2	21	20.0 <sub>b</sub>
Aggressive-Sadistic (6b)	5	18.5	9	27.3	27	25.7
Compulsive (7)	18	66.7 <sub>a</sub>	14	42.4 <sub>a</sub>	24	22.9 <sub>b</sub>
Passive-Aggressive (8a)	7	25.9 <sub>a</sub>	15	45.5	55	52.4 <sub>b</sub>
Self-Defeating (8b)	17	63.0	17	51.5	72	68.6
Schizotypal (S)	4	14.8	4	12.1	11	10.5
Borderline (C)	5	18.5	10	30.3	33	31.4
Paranoid (P)	2	7.4	1	3.0	9	8.6

Note. Within each row, percentages with different subscripts differ significantly ( $p < .05$ , two-tailed) from each other (chi-square test).

and lower scores on the Narcissistic, Passive–Aggressive, and Borderline scales. Compared to both groups who experienced bulimic symptoms, restricting anorexics scored significantly lower on the Antisocial and Aggressive–Sadistic scales. Last, women in either anorexic group scored significantly higher on the Compulsive scale relative to women with bulimia nervosa.

The means in Table 1 display overall differences among diagnostic subtypes, but the question remains: Do the diagnostic groups differ in the frequency with which each displays clinically significant elevations on particular MCMII-II personality scales? To address this question, we calculated the percentage of women in each diagnostic group who had a BR score of 75 or greater on each of the scales, and these results are presented in Table 2. Note that not all of the significant group differences in Table 1 translated into significant group differences in Table 2. Relative to those with bulimia nervosa, women with anorexia nervosa (either subtype) were less likely to display elevated scores on the Histrionic scale and more likely to display elevated scores on the Compulsive scale. Restricting anorexics were more likely than binge-eating/purging anorexics to show elevated scores on the Dependent scale and less likely than women with bulimia nervosa to show elevated scores on the Passive–Aggressive scale.

## DISCUSSION

Kennedy et al. (1990) and Norman et al. (1993) found that anorexics, relative to bulimics, had higher scores on MCMII Schizoid, Avoidant, and Schizotypal scales. Such was not the case in this study, which was based on the MCMII-II. However, our findings were similar to those of previous authors' with regard to the relatively higher scores women with bulimia nervosa displayed on the Histrionic and Borderline scales. Of interest in this study is comparison of apparent group differences when one considers mean scale scores compared to the percentage of participants who evidenced a clinically significant scale elevation. When considering these findings as a whole, a discernable pattern emerges.

In this study, women with anorexia nervosa, restricting type, were defined by their distinctly high scores on the Dependent and Compulsive scales. This pattern is consistent with much previous research and clinical description characterizing the anorexic individual as generally inhibited, compulsive, and overly concerned with pleasing others (see Vitousek & Manke, 1994). In contrast, women with bulimia nervosa displayed distinctly high scores on the Histrionic and Passive–Aggressive scales, a finding that is congruent with previous research using different personality instruments (see Johnson & Wonderlich, 1992). It should be noted that, even though women with bulimia nervosa had higher scores on the Narcissistic and Antisocial scales than did women with anorexia nervosa, only a small minority or women in any of the diagnostic groups displayed clinically significant elevations

on these two scales. It is interesting to note that all three eating disorder diagnostic groups had relatively high scores on the Avoidant and Self-Defeating scales, with more than one-half of the women showing clinically significant elevations.

Much has been written on the supposed distinctions between anorexics who experience bulimic symptoms and those who do not (see Pryor, Wiederman, & McGilley, 1996; Vitousek & Manke, 1994). In this study, the MCMI-II scores displayed by the women with anorexia nervosa, binge-eating/purging type, formed an interesting pattern. With regard to several of the personality scales (e.g., Histrionic, Narcissistic, Antisocial, Passive-Aggressive, and Borderline), bulimic anorexics appeared to hold a middle position between those with anorexia nervosa, restricting type, and those with bulimia nervosa. On some scales (e.g., Histrionic, Compulsive) the bulimic anorexics had scores similar to restricting anorexics, whereas on other scales (e.g., Antisocial, Aggressive-Sadistic, Borderline) bulimic anorexics had scores more similar to those with bulimia nervosa.

Others have advocated consideration of eating disorders as lying on a continuum of severity, possibly with caloric restriction (exclusively restricting anorexics) at one end and increasingly severe bulimic behavior on the other (e.g., Shisslak, Crago, & Estes, 1995; Striegel-Moore, Silberstein, Frensch, & Rodin, 1989). The results of this study suggest that personality features, or personality psychopathology, may lie along a similar continuum among women with disordered eating such that Cluster C personality disorders correspond to more severe caloric restriction and Cluster B personality disorders are associated with increasing degrees of bulimic behavior. Anorexic women with bulimic symptoms appear to represent some middle point along such a continuum.

Regardless of diagnostic subtype, women with eating disorders frequently experience significant degrees of anxiety and depression, apparently secondary to concerns over body weight and shape (Cooper, 1995; Halmi et al., 1991). A provocative possibility in need of further investigation is that young women who experience diet- and weight-related anxiety and depression may seek alleviation of these uncomfortable states in different ways (i.e., fasting vs. purging) according to their particular personality features. If this is the case, then clinical eating disorders may share some underlying etiology yet manifest according to the personality features of the individual experiencing the eating disorder. If this is true, then accurate assessment of personality features among women with eating disorders would have important implications for the treatment provider (Wiederman & Pryor, 1996).

The results of this study indicate that the MCMI may be useful for understanding differences in personality psychopathology among women with different presentations of disordered eating. However, further research on the MCMI among such samples is needed to address unanswered questions. For example, how are MCMI scores affected by treatment for, and recovery from, the eating disorder (Kennedy et al., 1990; Vitousek & Manke, 1994)? How are MCMI personality scores related

to eating disorder symptom severity as well as psychosocial functioning in other domains? How do MCMI scores of patients with eating disorders compare to scores of other psychiatric groups (Tisdale, Pendleton, & Marler, 1990)? Issues of personality assessment are important for researchers and clinicians working with individuals who suffer from eating disorders. Further research is needed to determine the ultimate utility of the MCMI with this population.

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