PERSONALITY DISORDERS AND THE PREDICTION OF ALCOHOL USE OUTCOMES FOR WOMEN: DIMENSIONAL VERSUS CATEGORICAL CLASSIFICATION

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Abstract

The impending shift in DSM-5 from categorical to a hybrid categorical-dimensional diagnosis scheme has generated considerable interest in the relative merits of these respective approaches. This is particularly true for the diagnostically complex category of personality disorders (PDs). The present study assessed whether categorical or dimensional measures better predicted alcohol consumption in a sample of 102 women enrolled in a clinical trial comparing individual Cognitive Behavioral Therapy (CBT) to conjoint CBT for alcohol use disorders (AUD). Linear regression was used to evaluate whether each PD diagnosis (categorical), or the number of PD symptoms endorsed per PD (dimensional) better predicted percent days drinking over the course of six months of treatment. PD criteria (dimensional) better predicted drinking for Paranoid, Borderline, and Obsessive-Compulsive PDs, while diagnosis (categorical) was a better predictor only for Passive-Aggressive PD. Both schemes predicted drinking outcomes for Avoidant, Dependent, and Depressive PDs, and neither was predictive for Narcissistic PD. These findings suggest that the addition of a dimensional approach for PDs potentially enhances the prediction of alcohol use outcomes.

Keywords

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INTRODUCTION

Since the introduction of Axis II in the third Diagnostic and Statistical Manual (DSM-III; APA, 1980) efforts have been made to improve the reliability of personality disorder (PD) diagnosis (Blais & Norman, 1997). The fourth edition of the DSM specifically emphasized the importance of improving the discriminant validity of PD diagnoses (APA, 2000). To this end, a number of PD experts recommended a dimensional system composed of continuously varying symptom descriptors not grouped into categories or classifications. It is probable that DSM-5 will heed this recommendation by moving toward a hybrid dimensional-categorical model capable of describing the personality characteristics of all patients, whether they have a PD or not (APA, 2012). Such a model may improve the clinical utility, reliability and validity of PD diagnosis (Coolidge & Segal, 1998; Widiger & Trull, 2007).

Widiger & Trull (2007) highlighted several problems with the current categorical model of PD diagnosis. These problems include weak distinctions between normal and abnormal functioning, frequent comorbidity among PDs, poor boundaries between as well as heterogeneity within diagnostic categories, and insufficient scientific support validating these categories. In addition, they cite poor "coverage" of criteria resulting in excessive use of the diagnosis Personality Disorder -Not Otherwise Specified (PDNOS). They argued that a dimensional model of classification would address each of these problems, resulting in greater clinical utility and better communication among clinicians. Similarly, Verheul (2006) argued that a dimensional classification system would increase the clinical utility of PD diagnoses by broadening the spectrum of personality pathology, thus affording clinicians more diagnostic flexibility and limiting the excessive use of the diagnosis PDNOS. Ultimately, this may allow practitioners to better account for, and to communicate "subtlety" in diagnoses, thereby improving clinical decision making and diagnostic reliability. Recent research supports this postulate.

Jane and colleagues (2006) investigated three kinds of inter-rater reliability coefficients using the Structured Clinical Interview for DSM-IV (APA, 2000), one based on categorical diagnosis, one based on symptoms/criteria counts, and one based on a continuous dimensional approach using the sum of severity scores across PD traits. They found that inter-rater reliability estimates based on continuous dimensional scores were most reliable. Similarly, using the Structured Clinical Interview for DSM-III-R Personality Disorders (First, Spitzer, Gibbon, & Williams, 1995), Zanarini & Frankenburg (2001) found the categorical model to be very reliable, though not as reliable as the dimensional model (using number of criteria met and level of clinical significance as rated by the interviewer). Schneider and colleagues (2004) also found the reliability of dimensional assessment of Axis II to be high, especially for inter-rater reliability, whereas they found the reliability of categorical diagnoses to be inconsistent. Using the categorical Diagnostic Interview for DSM-IV Personality Disorders (Zanarini, Frankenburg, Sickel, & Yong, 1996), Zanarini and colleagues (2000), found fair-to-good inter-rater and test-retest reliability for all PDs, but notably, found that both were better when using a dimensional scheme.

PDs are highly comorbid with alcohol use disorders (AUDs) in both males and females (McGlashan et al., 2000; Morgenstern, Langenbucher, Labouvie, & Miller, 1997). PD

diagnosis generally has been associated with lower abstinence rates following AUD treatment (Krampe et al., 2006) as well as poorer post-treatment alcohol use outcomes such as quantity and frequency of alcohol use (Pettinati, Pierce Jr, Belden, & Meyers, 1999). In light of the impending DSM-5 shift toward dimensional diagnosis, and the high comorbidity between PDs and AUD, as well as the strong association between PDs and AUD treatment outcome, a comparison of the predictive utility of categorical and dimensional measures of PD on AUD treatment outcome is merited. Thus, the present study investigated the association between these distinct measures and alcohol consumption in a sample of women receiving outpatient treatment for AUDs. Because frequency of use, rather than quantity, is a more important predictor of alcohol related problems in women (Lex, 1991; Nolen-Hoeksema, 2004; Stockwell et al., 2002), percent drinking days within treatment was used as the outcome measure.

MATERIALS AND METHODS

Participants

Participants were 102 women engaged in a clinical trial comparing individual Cognitive Behavioral Therapy (CBT) to Behavioral Couples Therapy (BCT) for AUDs. Abstinence was the ultimate drinking goal for treatment, although some women worked with their clinician to gradually reduce their drinking over several weeks to eventually attain abstinence. Demographic information is presented in Table 1.

Participants met the following inclusion criteria: female; current alcohol use disorder; had consumed alcohol within the past 60 days; and were either married, cohabiting for at least six months, or in a committed heterosexual relationship for at least one year with a male partner who was willing to participate in both the research and treatment. Couples were excluded if either partner showed signs of psychosis, severe cognitive impairment, or current physiological dependence on drugs other than alcohol and nicotine.

Procedure

The design and procedures of the parent study have been described in detail elsewhere (McCrady, Epstein, Cook, Jensen, & Hildebrandt, 2009). Briefly, women were recruited to the study through community advertisements and referrals. Potential participants were initially screened by telephone, and then through an in-person interview and consent process. Baseline data were collected after informed consent; randomization to treatment condition occurred at the end of the baseline interview. In correspondence with the end of the treatment protocol, follow up data were collected six months after baseline.

Measures

PDs were assessed at baseline with the questionnaire and interview portions of the Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II; Jane, et al., 2006). The number of PD symptoms was assessed using the SCID-II Yes/No self-report Questionnaire. Baseline alcohol use was assessed at intake with the Timeline Follow-Back Interview (Sobell & Sobell, 1992), which covered 90 days prior to treatment entry. Alcohol use was assessed again immediately post-treatment, covering the approximately 6 months

participants were engaged in active treatment. To account for their influence on the relationship between PD and within treatment drinking, baseline alcohol use and treatment condition were entered as covariates in subsequent regression analyses.

RESULTS

Thirty-four participants (34.7%) met criteria for one or more PD. Of the 34 participants who met criteria for a PD, 12 (12.2%) met criteria for more than one. Descriptive PD data are presented in Table 2. The Timeline Follow-Back Interview revealed participants drank an average 59.5 (SD = 25.7) of the 90 days prior to baseline, and drank an average of 7.8 (SD = 3.9) standard drinks per day during this period.

Testing for multivariate outliers using Mahalanobis distance (D^2; $p<.001$) revealed two influential outliers who were removed from subsequent regression analyses. SCID-II Questionnaire scores were checked for skewness and kurtosis, and normalized using logarithmic transformation.

Hierarchical regression analyses were performed separately for each PD to evaluate whether the presence of PD diagnosis (categorical) or number of PD symptoms endorsed for each PD measure on the SCID-II Questionnaire (dimensional) better predicted percent days drinking over the course of the six month treatment. Baseline drinking was entered at step 1, treatment condition was entered at step 2, and PD outcome was entered at step 3. Two or fewer participants met criteria for Schizotypal, Schizoid, Histrionic and Antisocial PD; therefore, analyses were not conducted for these PDs.

With alpha set at .05, the total number of symptoms endorsed per PD on the SCID-II Questionnaire was a better predictor of within treatment percent days drinking than a categorical diagnosis for three distinct PDs (Paranoid, Borderline & Obsessive-Compulsive). For one PD (Passive-Aggressive), categorical diagnosis was a better predictor. In three PDs (Avoidant, Dependent & Depressive) the number of symptoms endorsed on the SCID-II Questionnaire and categorical diagnosis both predicted percent days drinking. In one PD (Narcissistic) neither number of symptoms endorsed on the SCID-II Questionnaire nor categorical diagnosis predicted percent drinking days. Results of the regression analyses are presented in Table 3.

DISCUSSION

In a sample of women receiving outpatient treatment for AUD, alcohol consumption was predicted by either categorical or dimensional assessment of Paranoid, Borderline, Avoidant, Dependent, Obsessive-compulsive, Depressive, and Passive Aggressive PDs. Narcissistic PD did not significantly predict percent drinking days. The dimensional approach was found to have superior predictive power for Paranoid, Borderline, and Obsessive-compulsive PDs. Categorical diagnosis was found to be superior in the case of Passive-aggressive PD. Both categorical and dimensional assessments predicted percent drinking days in Avoidant, Dependent, and Depressive PDs.

In terms of evaluating PDs, this study lends support to the view that, for certain PDs the addition of a dimensional approach may increase diagnostic utility in predicting clinical outcomes. Verheul (2006) argued that a "clinically useful diagnostic system should encompass the spectrum of personality pathology… [and should] link the pathology to theoretically meaningful correlates and antecedents, rather than just providing classification." This study speaks to this, offering evidence that a dimensional approach may provide important information about diagnostic reliability and clinically relevant behavior.

Yet for Passive-Aggressive PD the categorical approach predicted drinking outcomes, while the dimensional approach did not. One possible explanation for this differential effect is that the categorical ratings were obtained during structured interviews, whereas the dimensional ratings were assessed via self-report measures. The self-report items from the SCID are necessarily more sensitive than the interview as the interview portion further refines information collected from the self-report portion, and therefore captured lower levels of symptom intensity. It may be that for some PDs (e.g., Paranoid, Borderline and Obsessive-Compulsive) sensitivity to subthreshold characteristics of the disorders as wholes, and nuance in the individual criteria, is key.

It is of note that of the 34 individuals in this study diagnosed with a PD, 12 had co-occurring PDs and many individuals who met criteria for a PD also met criteria for at least one other Axis I disorder. Due to the small sample, we are unable to further tease apart how comorbidity may play a role, but in future research with larger, more heterogeneous samples it may be possible to further examine the role of comorbidity and assess which disorders interact with one another in clinically meaningful ways.

The findings are pertinent and timely considering the current work on PDs in DSM-5. In June of 2011, the Personality Disorders Work Group for DSM-5 proposed field-testing a "hybrid dimensional-categorical model" for PD diagnosis (APA, 2012). Although the majority of previous research has focused on diagnostic reliability, the current study points to the importance of examining predictive validity as well.

The limitations of this study include the small sample size and the homogeneity of the sample in terms of relationship status and gender. Future studies should seek to replicate these findings in larger, more heterogeneous samples that include males, as well as with other commonly utilized dimensional questionnaires used to assess PD. Though similar rates of PD have been found in males and females (Kass, Spitzer, & Williams; 1983), the interactions between PDs, problem alcohol use, and treatment may differ by gender. Such interactions should be explored in future research. It also may be of use to examine whether the addition of a dimensional approach predicts clinically relevant behavior other than alcohol use. It is hoped that such work will ultimately result in more efficient and accurate assessment of PDs and also elucidate the role PDs play in the treatment and behavioral outcomes of Axis I disorders.

Acknowledgments

REFERENCES

APA. Diagnostic and statistical manual of mental disorders. 3rd. American Psychiatric Association; Washington, DC: 1980.

APA. Diagnostic and statistical manual of mental disorders: DSM-IV-TR. American Psychiatric Association; Washington, DC: 2000.

APA. DSM-5 Devleopment. 2012. Retrieved 02/20/2012, 2012, from http://dsm5.org/proposedrevision/Pages/PersonalityDisorders.aspx

Blais MA, Norman DK. A psychometric evaluation of the DSM-IV personality disorder criteria. Journal of Personality Disorders. 1997; 11:168–176. [PubMed: 9203111]

Coolidge FL, Segal DL. Evolution of personality disorder diagnosis in the Diagnostic and Statistical Manual of Mental Disorders. Clinical Psychology Review. 1998; 18:585–599. [PubMed: 9740979]

First MB, Spitzer RL, Gibbon M, Williams JBW. The structured clinical interview for DSM-III-R personality disorders (SCID-II). Part I: Description. Journal of Personality Disorders. 1995; 9(2): 83–91.

Jane JS, Pagan JL, Turkheimer E, Fiedler ER, Oltmanns TF. The interrater reliability of the Structured Interview for DSM-IV Personality. Comprehensive Psychiatry. 2006; 47:368–375. [PubMed: 16905399]

Kass, F.; Spitzer, RL.; Williams, JB. An empirical study of the issue of sex bias in the diagnostic criteria of DSM-III. 1983.

Krampe H, Wagner T, Stawicki S, Bartels C, Aust C, Kroener-Herwig B, Ehrenreich H. Personality Disorder and Chronicity of Addiction as Independent OutcomePredictors in Alcoholism Treatment. Psychiatric Services. 2006; 57:708–712. [PubMed: 16675768]

Lex BW. Some gender differences in alcohol and polysubstance users. Health Psychology. 1991; 10:121–132. [PubMed: 2055210]

McCrady BS, Epstein EE, Cook S, Jensen N, Hildebrandt T. A randomized trial of individual and couple behavioral alcohol treatment for women. Journal of Consulting and Clinical Psychology. 2009; 77:243–256. [PubMed: 19309184]

McGlashan TH, Grilo CM, Skodol AE, Gunderson JG, Shea MT, Morey LC, Stout RL. The Collaborative Longitudinal Personality Disorders Study: baseline Axis I/II and II/II diagnostic co-occurrence. Acta Psychiatrica Scandinavica. 2000; 102(4):256–264. [PubMed: 11089725]

Morgenstern J, Langenbucher J, Labouvie E, Miller KJ. The comorbidity of alcoholism and personality disorders in a clinical population: Prevalence and relation to alcohol typology variables. Journal of Abnormal Psychology. 1997; 106(1):74–78. [PubMed: 9103719]

Nolen-Hoeksema S. Gender differences in risk factors and consequences for alcohol use and problems. Clinical Psychology Review. 2004; 24:981–1010. [PubMed: 15533281]

Pettinati HM, Pierce JD Jr, Belden PP, Meyers K. The relationship of Axis II personality disorders to other known predictors of addiction treatment outcome. The American Journal on Addictions. 1999; 8:136–147. [PubMed: 10365194]

Schneider B, Maurer K, Sargk D, Heiskel H, Weber B, Frölich L, Seidler A. Concordance of DSM-IV Axis I and II diagnoses by personal and informant's interview. Psychiatry Research. 2004; 127:121–136. [PubMed: 15261711]

Sobell, LC.; Sobell, MB. Timeline follow-back: A technique for assessing self-reported alcohol consumption. In: Litten, RZ.; Allen, JP., editors. Measuring Alcohol Consumption: Psychosocial and Biochemical Methods. Humana Press; Totowa, NJ: 1992. p. 41-69.

Stockwell T, McLeod R, Stevens M, Phillips M, Webb M, Jelinek G. Alcohol consumption, setting, gender and activity as predictors of injury: a population-based case-control study. Journal of Studies on Alcohol. 2002; 63:372–379. [PubMed: 12086138]

Verheul, R. Clinical utility of dimensional models for personality pathology. In: Widiger, TA., editor. Dimensional Models of Personality Disorders: Refining the Research Agenda for DSM-V. American Psychiatric Association; Washington, DC: 2006. p. 203-218.

Widiger TA, Trull TJ. Plate tectonics in the classification of personality disorder: Shifting to a dimensional model. American Psychologist. 2007; 62:71–83. [PubMed: 17324033]

Zanarini, M.; Frankenburg, F.; Sickel, A.; Yong, L. The diagnostic interview for DSM-IV personality disorders (DIPD-IV). McLean Hospital; Belmont, MA: 1996.

Zanarini MC, Frankenburg FR. Attainment and maintenance of reliability of axis I and II disorders over the course of a longitudinal study. Comprehensive Psychiatry. 2001; 42:369–374. [PubMed: 11559863]

Zanarini MC, Skodol AE, Bender D, Dolan R, Sanislow C, Schaefer E, McGlashan TH. The collaborative longitudinal personality disorders study: Reliability of axis I and II diagnoses. Journal of Personality Disorders. 2000; 14:291–299. [PubMed: 11213787]

Table 1

Demographic Information

Demographic Variable	Statistics
Age	Mean = 45.05
	Standard Deviation = 9.19
	Range = 28 – 68
Marital Status	
Married	N = 91
Living as married	N = 6
Committed but not living together	N = 5
Income	Median = $81,500
	Range = $0 – $275,000
Ethnicity	
European American	N = 97
Other	N = 5

Table 2

Frequency of Personality Disorder Diagnosis & Comorbid Psychopathology

Personality Disorder	Number participants meeting diagnostic criteria for PD ($n = 102$)	Number participants with comorbid PD diagnosis (by Personality Disorder)	Number participants with lifetime comorbid Axis I diagnosis (by Personality Disorder)
Cluster A			
Paranoid	4	4	4
Schizoid	0	0	0
Schizotypal	0	0	0
Cluster B			
Antisocial	2	1	0
Borderline	6	4	5
Histrionic	1	1	0
Narcissistic	3	3	2
Cluster C			
Avoidant	6	3	6
Dependent	4	4	3
Obsessive-compulsive	5	3	4
PDs for Further Study			
Depressive	19	5	13
Passive-agressive	5	4	4

Note. PD = Personality disorder

Table 3

Comparison of Categorical and Dimensional Diagnoses in the Prediction of Within Treatment Drinking

Personality Disorder	Percent Drinking Days		
	β	R^2	*P*
Cluster A			
Paranoid			
Categorical	−.024	.00	.821
Dimensional	**.248**	**.06**	**.018**
Cluster B			
Borderline			
Categorical	.159	.02	.132
Dimensional	**.217**	**.04**	**.042**
Narcissistic			
Categorical	.011	.01	.289
Dimensional	.147	.02	.163
Cluster C			
Avoidant			
Categorical	**.211**	**.04**	**.038**
Dimensional	**.231**	**.05**	**.023**
Dependent			
Categorical	**.423**	**.18**	**<.001**
Dimensional	**.284**	**.08**	**.005**
Obsessive-compulsive			
Categorical	.190	.04	.066
Dimensional	**.235**	**.05**	**.021**
DSM-IV Appendix B			
Depressive			
Categorical	**.262**	**.07**	**.010**
Dimensional	**.328**	**.11**	**.001**
Passive-agressive			
Categorical	**.274**	**.07**	**.007**
Dimensional	.146	.02	.164

Note. R^2 indicates the change in R^2, the additional variance accounted for by adding the personality disorder variable (presence/absence of diagnosis, or number of symptoms endorsed) over and above the variance accounted for by baseline levels of the drinking outcome variable and treatment condition.