The American Journal of Drug and Alcohol Abuse, 37:105–110, 2011

ISSN: 0095-2990 print / 1097-9891 online
DOI: 10.3109/00952990.2010.540284

informa
healthcare

Clinical correlates of desire for treatment for current alcohol dependence among patients with a primary psychiatric disorder

Lara A. Ray, Ph.D.[1], Eliza Hart, B.A.[1], Iwona Chelminski, Ph.D.[2], Diane Young, Ph.D.[2] and Mark Zimmerman, M.D.[2]

[1]*Department of Psychology, University of California, Los Angeles, Los Angeles, CA, USA,* [2]*Department of Psychiatry and Human Behavior, Brown Medical School, Providence, RI, USA*

***Background and Objectives*: Rates of treatment-seeking for alcohol use disorders are notably low. To elucidate the clinical correlates of treatment-seeking for alcoholism, this study compared patients with current alcohol dependence and a primary psychiatric diagnosis who endorsed a desire for alcoholism treatment to patients who refused treatment or who were unsure.**
***Method*: A total of 131 (54 females) psychiatric outpatients with current alcohol dependence completed an intake assessment at a large hospital-based psychiatric clinic and at the end of the intake were asked whether they would like to receive treatment for alcohol problems.**
***Results*: Compared with alcohol-dependent patients who refused treatment for alcoholism or who were unsure ($n = 46$), patients who expressed a desire for treatment ($n = 85$) were older, were more likely to be female, reported higher levels of social impairments, and were more likely to endorse the following alcohol dependence symptoms: (i) multiple unsuccessful efforts or persistent desire to stop or cut down on their drinking; and (ii) drinking more than intended.**
***Conclusions*: Approximately, 35% of patients who met current DSM-IV criteria for alcohol dependence reported no interest (or were unsure) in alcoholism treatment despite being engaged in treatment-seeking for another psychiatric disorder.**
***Scientific Significance*: These findings extend previous epidemiological studies documenting treatment-seeking patterns for alcoholism by identifying clinical features associated with interest in treatment for this disorder among psychiatric outpatients.**

Keywords: alcohol dependence, treatment, diagnosis, desire for treatment

INTRODUCTION

The National Epidemiological Survey on Alcohol and Related Conditions (NESARC) estimated that 30.3% of adults will receive a lifetime diagnosis of an alcohol use disorder, with 17.8% of those meeting the criteria for alcohol dependence and 12.5% for alcohol abuse (1). Epidemiological data also suggest that alcohol dependence is a chronic and relapsing disorder, with the longest episode of alcohol dependence lasting, on average, 3.7 years (1). Alcohol use disorders have been associated with a host of negative outcomes including accidental injuries such as car crashes (2), domestic violence (3), neuropsychological impairments (4), and loss of productivity (5). Furthermore, alcohol use disorders are often comorbid with other Axes I and II diagnoses and such comorbidity is associated with even poorer outcomes on a variety of functional domains (6).

Although alcohol dependence is a highly prevalent and debilitating psychiatric condition, only a small percentage of individuals who meet DSM-IV criteria for current alcohol dependence seek treatment for this disorder. Epidemiological data suggest that only 24.1% of individuals with lifetime alcohol dependence have ever sought help for alcohol problems and that, on average, the lag between onset and treatment-seeking for alcoholism is 8 years (1). Results from NESARC indicated that only 12.1% of individuals with past year alcohol dependence received treatment within the same time period (1).

A number of studies to date have examined determinants and correlates of treatment-seeking for alcoholism. Results suggested that treatment utilization for alcohol dependence is higher among males (1,7), older individuals (1,7–9), individuals reporting lower levels of education and income (1,7), individuals experiencing greater problems associated with substance use (8), and those reporting elevated levels of emotional distress

Address correspondence to: Lara A. Ray, Department of Psychology, University of California, Los Angeles, 1285 Franz Hall, Box 951563, Los Angeles, CA 90095-1563 USA. Tel: +310-794-5383. Fax: +310-207-5895. E-mail: lararay@psych.ucla.edu

(10). Treatment utilization for alcohol dependence is higher among individuals with prior treatment experiences (10) and recent reports have suggested that first-time treatment-seekers, called "treatment naïve," are clinically different from patients with previous treatment experiences, called "treatment experienced," on dimensions such as problem severity and commitment to treatment (11). These findings underscore the need to further examine treatment-seeking behaviors for alcoholism as they relate to clinical features and outcome.

To that end, previous research has shown that low treatment-seeking rates may be related to stigma (1,7,12) and that individuals who recognize higher levels of alcohol problems are more likely to seek help (7,8,13). And even among patients who endorse the need for alcoholism treatment, a subset fails to enter treatment. Specifically, results from the National Longitudinal Alcohol Epidemiologic Survey (NLAES) found that 12.7% of individuals diagnosed with an alcohol use disorder acknowledged the need for treatment and yet failed to seek treatment for these disorders (7).

Studies have also identified a number of individual-level barriers to treatment-seeking for alcoholism, such as beliefs that alcohol problems were not serious enough to seek help, confidentiality and privacy concerns, treatment-related cost, and time conflicts with existing responsibilities (10,13). Studies have suggested that abstinence-geared treatment programs may represent an obstacle to treatment-seeking among patients who are not ready to quit drinking and, instead, would like to reduce their alcohol use (11,14). Although epidemiological and clinical studies have consistently underscored the overall low treatment-seeking rates for alcoholism and have identified potential determinants of treatment-seeking for alcoholism, no studies to date have examined alcohol-dependent patients in the context of a clinical setting in which treatment services are available and offered.

To that end, this report from the Rhode Island Methods to Improve Diagnostic Assessment and Service (MIDAS) project focuses on patients who at the time of intake and evaluation for outpatient psychiatric services received a diagnosis of current alcohol dependence. This study will compare patients who endorsed a desire for alcoholism treatment versus those who either declined treatment or were unsure about their desire for alcoholism treatment. To elucidate the clinical correlates of desire for treatment for alcoholism among patients for whom services are available, this study will compare the two groups on demographic, diagnostic, and clinical variables.

This study is unique in the following ways. First, it consists of a sample of psychiatric outpatients who are seeking treatment for a primary psychiatric disorder and who meet current criteria for alcohol dependence. Hence, this sample is representative of psychiatric comorbidity often observed in clinical practice. Second, as all patients are entering treatment for a primary psychiatric diagnosis, access to treatment, a major confound in studies of treatment-seeking in the general population, is effectively controlled for. By evaluating individuals with access to treatment resources and currently engaged in treatment-seeking, the group of non-treatment interested patients, and those who are unsure, arguably comprises individuals who are most resistant to addressing their alcohol use with treatment providers.

METHOD

Participants

Participants were recruited from the Rhode Island Hospital Department of Psychiatry's outpatient practice (15). This is a large general psychiatry practice that does not specialize in addiction treatment. In an initial telephone screen, patients were invited to participate in a face-to-face semi-structured diagnostic evaluation before meeting with their treating clinician. For individuals who agreed to participate, the MIDAS assessment was in essence their intake for services in the clinic. The current report is based on patients who met current criteria for alcohol dependence ($n = 131$, 54 females). Upon meeting the criteria for a given psychiatric disorder, participants were asked about their interest in treatment for that disorder at the time of intake. Participants did not receive information regarding the specific treatment options available at the clinic during the intake assessment. Of those patients for whom alcohol dependence was not the primary reason for treatment-seeking, and yet received a current diagnosis of alcohol dependence, 85 patients reported an interest in alcoholism treatment, 32 declined treatment for alcoholism, and 14 were not sure about whether they would like to receive treatment for alcoholism. For the purpose of this study, the first group was called treatment interested ($n = 85$) and the last two groups were combined into non-treatment interested ($n = 46$). Demographic characteristics for both groups are presented in Table 1.

Procedures and Assessments

The Rhode Island Hospital Institutional Review Board approved the research protocol and participants provided written informed consent after receiving a complete description of this study. DSM-IV Axis I diagnoses were obtained using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I/P; 16) and the Structured Interview for DSM-IV Personality (SIDP-IV; 17) assessed DSM-IV Axis II personality disorders. SIPD-IV data are available for 107 participants as the Axis II assessment was implemented after this study was underway and Axis I assessment was well established. The inter-rater reliability of the diagnoses in the MIDAS study is adequate (18,19) with a previously reported kappa coefficient, $\kappa = .64$ for alcohol dependence (20).

In addition to the diagnostic variables, the following clinical indices were examined in this study: (i) History of suicide attempts comprised two questions regarding number of previous suicide attempts, which was then further transformed into a dichotomous variable: 0 = no suicide attempt, and 1 = one or more suicide attempts; and (ii) History of hospitalizations was assessed by the

TABLE 1. Demographic characteristics by treatment interest status in psychiatric outpatients with a current diagnosis of alcohol dependence.

	Non-treatment-interested ($n = 46$)	Treatment-interested ($n = 85$)	t/χ^2	P
Age, mean (SD)	33.9 (12.3)	38.9 (12.7)	−2.40	<.05
Gender: female, %	30.4	48.2	3.84	<.05
Ethnicity: Caucasian, %	78.3	80.0	.06	.81
Marital status, %			1.96	.38
Single	50.0	37.4		
Married/living together	28.3	36.1		
Divorced/separated/widowed	21.7	26.5		
Education, %			.28	.96
Less than high school diploma	8.7	10.8		
High school graduate	19.6	18.1		
Some college	41.3	43.4		
College degree or higher	30.4	27.7		

following question: "Have you ever been a patient in a psychiatric hospital?" Valid answers included inpatient rehabilitation/detoxification and were dichotomized into yes/no; (iii) Global Assessment of Functioning (GAF) ratings; (iv) Social functioning in the past month was rated on a seven-point scale ranging from 1 = superior to 7 = grossly inadequate; and (v) Work functioning focused on determining the total time of work missed because of psychiatric problems and was rated on a nine-point scale ranging from 1 = no absenteeism due to psychiatric problems to 9 = worked none of the time because of psychiatric problems. GAF, social, and work functioning ratings were obtained for each patient by the diagnostic rater.

Data Analysis

The primary analytic approach involved comparing alcohol-dependent patients who expressed a desire for alcohol dependence treatment ($n = 85$) with those who declined treatment (or who were unsure about their desire for treatment) ($n = 46$) on demographic, diagnostic, and clinical variables. Symptom-level data were available for a subset of patients ($n = 75$, 51 treatment-seekers and 24 non-treatment-seekers) comprising the first 1500 patients who completed the MIDAS project. Symptom data were used for exploratory analysis of how individual symptoms of alcohol dependence predict treatment interest.

For the purpose of this investigation, diagnostic categories were combined, when appropriate, to increase overall base rates (i.e., cell sizes), thereby increasing statistical power to detect group differences and minimizing the chances of type I error due to multiple comparisons. Student t-tests and chi-square tests were used for tests of continuous and categorical variables, respectively. Student t-tests were used as they account for potential violations of the assumption of the homogeneity of variance, and important issue when comparing two groups with an unequal number of participants (n). Specifically, for variables in which the homogeneity of variance assumption was held, results of t-tests using pooled variance are reported, whereas for variables that violated the homoscedasticity assumption in our sample, the individual sample standard deviation was used to calculate the t-test. Analyses were performed using SAS Statistical Software (SAS Institute Inc., Cary, NC, USA 2003). For all comparisons, statistical significance was set at $p < .05$, and all tests were two tailed.

RESULTS

Demographic, Diagnostic, Clinical, and Symptomatic Variables

Treatment-interested individuals with alcohol dependence differed from non-treatment-interested individuals on age [$t(130) = -2.40$, $p < .05$] and gender [$\chi^2(1) = 3.84$, $p < .01$], such that alcohol-dependent patients who expressed a desire for treatment were older and more likely to be female than non-treatment-interested. Diagnostic-level variables did not differentiate the two groups. Analysis of clinical characteristics revealed that treatment-interested patients experienced worse social functioning in the past month [$t(52) = -2.72$, $p < .05$] when compared with non-treatment-interested, suggesting that impairments in social functioning may be associated with greater likelihood of interest in alcoholism treatment (Table 2).

Analyses of the subset of patients for whom symptom-level data were available revealed that treatment-interested individuals were significantly more likely to endorse the following alcohol dependence symptoms: (i) recurrent unsuccessful efforts to cut down [$\chi^2(1) = 5.50$, $p < .05$]; and (ii) drinking more than intended [$\chi^2(1) = 3.83$, $p = .05$]. Interestingly, the two groups did not differ significantly on alcohol dependence symptom count and no other individual symptom predicted treatment interest (Table 3).

DISCUSSION

This study compared psychiatric outpatients with current alcohol dependence who endorsed a desire for alcoholism

TABLE 2. Diagnostic and clinical characteristics by treatment interest status in psychiatric outpatients with a current diagnosis of alcohol dependence.

	Non tx-interested ($n = 46$)	Tx-interested ($n = 85$)	t/χ^2	P
Diagnostic Characteristics				
Axis I Disorders, Lifetime History, %				
Major Depressive Disorder	69.6	74.1	0.31	.58
Bipolar Disorder (I or II)	10.9	5.9	1.05	.31
Anxiety Disorder	65.2	75.3	1.50	.22
Impulse Control Disorder	23.9	31.8	0.89	.35
Drug Use Disorder	56.5	50.6	0.42	.52
Axis II Disorders, %	39.4	35.1	0.17	.68
Clinical Characteristics				
History of suicide attempt, %	21.7	31.8	1.48	.22
History of hospitalization, %	30.4	37.4	0.62	.43
Age of onset of ALC, *M* (*SD*)	24.8 (10.8)	27.8 (12.8)	−1.35	.18
GAF rating, *M* (*SD*)	51.7 (7.5)	49.6 (10.7)	1.34	.18
Social functioning, *M* (*SD*)	3.2 (1.0)	4.1 (1.3)	−2.72	<.01
Work functioning, *M* (*SD*)	2.4 (1.6)	2.8 (2.1)	−1.05	.30

ALC = alcohol dependence; GAF = Global Assessment of Functioning;

TABLE 3. DSM-IV alcohol dependence symptoms by treatment interest status in psychiatric outpatients with a current diagnosis of alcohol dependence.

	Non-treatment-interested ($n = 24$)	Treatment-interested ($n = 51$)	t/χ^2	P
Alcohol dependence symptoms, % of patients who met the criteria				
Tolerance	79.2	76.5	.07	.80
Withdrawal	33.3	51.0	2.05	.15
Drinking more than intended	79.2	94.1	3.83	<.05
Unsuccessful efforts to cut down	62.5	86.3	5.50	<.05
Spend a great deal of time drinking	83.3	68.6	1.81	.18
Important activities reduced/given up	62.5	54.9	.39	.54
Continued use despite problems	83.3	84.3	.01	.91
Symptom count, mean (SD)	4.8(1.2)	5.2(1.5)	−.92	.36

treatment to patients who were not interested in alcoholism treatment (or who were unsure) on diagnostic and clinical variables. This is an important empirical question in light of the notably low rates of treatment-seeking for alcohol use disorders (1,21). Patients who were not interested in treatment were younger, were more likely to be male, had better social functioning ratings, and were less likely to endorse the following alcohol dependence symptoms: (i) multiple unsuccessful efforts or persistent desire to stop or cut down on their drinking and (ii) drinking more than intended. This clinical profile extends previous epidemiological findings documenting the low treatment-seeking rates for alcoholism and suggesting that the average latency between alcohol dependence diagnosis and treatment-seeking is 8 years (1). Given that non-treatment-seekers were more likely to be younger, it is possible that longer periods of active alcohol problems are needed before formal treatment-seeking may occur. This is consistent with recent NESARC findings suggesting that older age and longer time since the onset of dependence are associated with increased help-seeking (8).

Patients reporting a desire for alcohol treatment were more likely to endorse the DSM-IV dependence symptom capturing repeated failed efforts or persistent desire to quit or cut down on drinking. To some extent, this symptom reflects a greater perception of need to alter drinking behavior, which in turn has been positively associated with treatment-seeking (8). Repeated unsuccessful efforts to stop or cut down drinking may be necessary before patients recognize the need for formal treatment. Studies using item response theory to capture the continuum of severity of alcohol dependence symptoms suggested that this particular symptom is associated with higher overall problem severity (22,23), which in turn may predict higher desire for treatment. Notably, symptom count was not associated with desire for treatment in this sample.

Patients reporting a desire for treatment were also more likely to endorse the symptom of drinking more than intended. Although this symptom was not identified as high in relative severity in studies of this sample (24) and others (25), results have suggested that despite its low overall severity, this symptom discriminates well in the lower range of the continuum of drinking problems (25). Screening efforts focusing on these two DSM-IV symptoms may be particularly effective in identifying psychiatric outpatients who are most likely to accept alcoholism treatment.

This sample is unique in that patients had equal access to services. In fact, all patients were assessed during an intake process and were all psychiatric treatment-seekers at this large outpatient facility. All patients included in this study were also diagnosed with current alcohol dependence. Hence, differences in their reported desire for alcoholism treatment may be seen as unique to this diagnosis given that patients were involved in treatment-seeking for general psychiatric care. The fact that 35% of patients with current alcohol dependence in a psychiatric facility reported no desire for alcohol dependence treatment, or were unsure about wanting treatment, highlights the need to further understand and address help-seeking behaviors related to alcoholism. Excluding individuals who were unsure about their interest in treatment, a total of 32 participants (24%) with current alcohol dependence reported no interest in treatment. Interest in treatment for alcoholism is notably higher in this study than in recent reports from epidemiological surveys where service availability was not controlled for and patients were not treatment-seekers for general psychiatric disorders. It is plausible to speculate that treatment-seeking for alcohol dependence may be considerably higher when services are available and offered. Conversely, patients with psychiatric comorbidities who are treatment-seekers for psychiatric disorders may be more oriented toward psychiatric treatment and therefore more likely to endorse a desire for it.

In conclusion, this study provides information on psychiatric outpatients diagnosed with current alcohol dependence who endorsed interest in treatment versus those who declined treatment for alcohol problems or who were unsure. This is especially relevant as seeking treatment is related to a number of clinical, social, and demographic factors (9), suggesting that studies of psychiatric disorders and help-seeking in the general population should be replicated in clinical populations to provide the practicing clinician with information that might have more direct clinical utility. Although this study provides general information on the clinical profiles of alcohol-dependent patients and their treatment-seeking behaviors, several methodological limitations should be considered in interpreting these findings. First, the use of a cross-sectional and retrospective design was one limitation of this study. The MIDAS dataset used for this study does not contain information on age of substance use offset., therefore, we could not examine factors related to the course of substance use in our sample and we were unable to examine the temporal relationship between diagnostic and clinical variables of interest. Second, this study does not generalize to alcohol-dependent patients without psychiatric comorbidity or those who are not actively seeking treatment for a primary psychiatric disorder. Third, this study assesses attitudes about alcoholism treatment at the intake assessment. It is quite plausible that these attitudes would change upon discussion with treatment providers and over the course of treatment for the primary psychiatric disorder.

Likewise, if more information about the available services for alcoholism were provided during the intake, participants may change their attitudes toward treatment. Fourth, this large outpatient psychiatric clinic does not specialize in the treatment of addiction; therefore, it is possible that patients would endorse higher rates of treatment-seeking for alcoholism in the context of an addiction specialty clinic. Nevertheless, general psychiatric practices represent an important frontline for the treatment of mental disorders and these findings help inform clinical practice by suggesting that providers ought to carefully consider alcohol dependence even among patients who report no desire, or ambivalence, about treatment for this disorder.

ACKNOWLEDGMENTS

The MIDAS project was supported, in part, by grants MH48732 and MH56404 from the National Institute of Mental Health (Bathesda, MD, USA), LAR were supported by a grant (T32 AA007459) from the National Institute on Alcohol Abuse and Alcoholism (Bathesda, MD, USA).

Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this paper.

REFERENCES

1. Hasin DS, Stinson FS, Ogburn E, Grant BF. Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. Arch Gen Psychiatry 2007; 64(7):830–842.
2. Chou SP, Dawson DA, Stinson FS, Huang B, Pickering RP, Zhou Y, Grant BF. The prevalence of drinking and driving in the United States, 2001–2002: Results from the National Epidemiological Survey on Alcohol and Related Conditions. Drug Alcohol Depend 2006; 83(2):137–146.
3. Caetano R, Nelson S, Cunradi C. Intimate partner violence, dependence symptoms and social consequences from drinking among white, black and Hispanic couples in the United States. Am J Addict 2001; 10(Suppl.):60–69.
4. Glass JM, Buu A, Adams KM, Nigg JT, Puttler LI, Jester JM, Zucker RA. Effects of alcoholism severity and smoking on executive neurocognitive function. Addiction 2009; 104(1):38–48.
5. Harwood H. Updating Estimates of Economic Costs of Alcohol Abuse in the United States: Estimates, Updated Methods, and Data. Bathesda, MD: NIAAA; 2000.
6. Kessler RC. The epidemiology of dual diagnosis. Biol Psychiatry 2004; 56(10):730–737.
7. Grant BF. Barriers to alcoholism treatment: Reasons for not seeking treatment in a general population sample. J Stud Alcohol 1997; 58(4):365–3671.

8. Grella CE, Karno MP, Warda US, Moore AA, Niv N. Perceptions of need and help received for substance dependence in a national probability survey. Psychiatr Serv 2009; 60(8):1068–1074.
9. Alegria M, Bijl RV, Lin E, Walters EE, Kessler RC. Income differences in persons seeking outpatient treatment for mental disorders: A comparison of the United States with Ontario and The Netherlands. Arch Gen Psychiatry 2000; 57(4): 383–391.
10. Saunders SM, Zygowicz KM, D'Angelo BR. Person-related and treatment-related barriers to alcohol treatment. J Subst Abuse Treat 2006; 30(3):261–270.
11. Locastro JS, Potter JS, Donovan DM, Couper D, Pope KW. Characteristics of first-time alcohol treatment seekers: The COMBINE Study. J Stud Alcohol Drugs 2008; 69(6): 885–895.
12. Cunningham JA, Sobell LC, Chow VM. What's in a label? The effects of substance types and labels on treatment considerations and stigma. J Stud Alcohol 1993; 54(6):693–699.
13. Tucker JA, Vuchinich RE, Rippens PD. A factor analytic study of influences on patterns of help-seeking among treated and untreated alcohol dependent persons. J Subst Abuse Treat 2004; 26(3):237–242.
14. Gastfriend DR, Garbutt JC, Pettinati HM, Forman RF. Reduction in heavy drinking as a treatment outcome in alcohol dependence. J Subst Abuse Treat 2007; 33(1):71–80.
15. Zimmerman M. Integrating the assessment methods of researchers in routine clinical practice: The Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project. In Standardized Evaluation in Clinical Practice. First MB, ed. Arlington, VA: American Psychiatric Publishing, 2003; Vol. 22; 29–74.
16. First MB, Spitzer RL, Gibbon M, Williams JBW. Structured Clinical Interview for DSM-IV Axis I Disorders – Patient Edition (SCID-I/P, version 2.0). New York: Biometrics Research Department, New York State Psychiatric Institute, 1995.
17. Pfohl B., Blum N., Zimmerman M. Structured Interview for DSM-IV Personality. Washington, DC: American Psychiatric Press, 1997.
18. Zimmerman M, Mattia JI. Psychiatric diagnosis in clinical practice: Is comorbidity being missed? Compr Psychiatry 1999; 40(3):182–191.
19. Zimmerman M, Rothschild L, Chelminski I. The prevalence of DSM-IV personality disorders in psychiatric outpatients. Am J Psychiatry 2005; 162(10):1911–1918.
20. Zimmerman M, McGlinchey JB, Chelminski I, Young D. Diagnostic comorbidity in 2,300 psychiatric outpatients presenting for treatment evaluated with a semi-structured diagnostic interview. Psychol Med 2008; 38(2):199–210.
21. Compton WM, Thomas YF, Stinson FS, Grant BF. Prevalence, correlates, disability, and comorbidity of DSM-IV drug abuse and dependence in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. Arch Gen Psychiatry 2007; 64(5):566–576.
22. Kahler CW, Strong DR, Stuart GL, Moore TM, Ramsey SE. Item functioning of the alcohol dependence scale in a high-risk sample. Drug Alcohol Depend 2003; 72(2):183–192.
23. Krueger RF, Nichol PE, Hicks BM, Markon KE, Patrick CJ, Iacono WG, McGue M. Using latent trait modeling to conceptualize an alcohol problems continuum. Psychol Assess 2004; 16(2):107–119.
24. Ray LA, Kahler CW, Young D, Chelminski I, Zimmerman M. The factor structure and severity of DSM-IV alcohol abuse and dependence symptoms in psychiatric outpatients. J Stud Alcohol Drugs 2008; 69(4):496–499.
25. Kahler CW, Strong DR. A Rasch model analysis of DSM-IV Alcohol abuse and dependence items in the National Epidemiological Survey on Alcohol and Related Conditions. Alcohol Clin Exp Res 2006; 30(7):1165–1175.