



Published in final edited form as:

Addict Behav. 2007 August ; 32(8): 1745–1752.

Psychiatric Symptomatology among Individuals in Alcohol Detoxification Treatment

Mark E. Johnson^a, Christiane Brems^a, Michael E. Mills^b, and Dennis G. Fisher^c

^a*Behavioral Health Research and Services, University of Alaska Anchorage*

^b*Department of Psychology, Loyola Marymount University*

^c*Center for Behavioral Research and Services, California State University, Long Beach*

Abstract

The coexistence of psychiatric symptomatology among individuals receiving longer-term treatment for alcohol use disorders has been well-established; however, less is known about comorbidity among individuals receiving alcohol detoxification. Using the Brief Symptom Inventory (BSI; Derogatis, 1992), we compared psychiatric symptomatology among 815 individuals receiving short-term detoxification services with normative data from nonpatients, psychiatric patients, and out-of-treatment individuals using street drugs. Findings revealed that individuals in the current sample reported a wide range of psychiatric symptoms with over 80% meeting BSI criteria for diagnosable mental illness. These BSI scores were significantly more severe than those reported by out-of-treatment individuals using street drugs and most closely resembled BSI scores reported for adult psychiatric inpatients. Findings suggest that routine screening for severe mental health symptoms appears warranted in detoxification units. Such screening would greatly increase the chance that coexistence of substance use and other psychiatric disorders would be properly addressed in ongoing treatment.

Keywords

psychopathology; dual diagnosis; comorbidity; alcohol detoxification; alcoholism

1.0 Introduction

Ample documentation exists that the co-occurrence of psychiatric disorders with substance use disorders is a general and widespread problem in general mental health and substance abuse treatment settings (e.g., Brems & Johnson, 2004; Havassy, Alvidrez & Owen, 2004; RachBeisel, Scott, & Dixon, 1999), as well as in the general population (e.g., Kessler et al., 1997; National Institute on Alcoholism and Alcohol Abuse, 2006; Substance Abuse and Mental Health Services Administration, 2005). Although varying considerably from study to study depending on treatment setting, assessment methods, and participant characteristics, individuals receiving or seeking long-term residential or outpatient alcohol treatment services

Correspondence concerning this article should be addressed to Dr. Mark E. Johnson, Behavioral Health Research and Services, University of Alaska Anchorage, 3401 E. 42nd Street, Suite 200, Anchorage, AK 99508; mejohnson@uaa.alaska.edu; 907-786-1642 (office); 907-561-2895 (FAX).

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

have been found to have very high rates of psychiatric comorbidity (e.g., Castel, Rush, Urbanoski, & Toneatto, 2006; Johnson, Brems, & Burke, 2002; Watkins et al., 2004). However, less is known about psychiatric symptomatology among individuals with severe and sustained alcohol abuse or dependence who are receiving short-term detoxification, but no additional treatment services. The purpose of this study was to assess the degree of psychopathology as measured by the Brief Symptom Inventory (Derogatis, 1992) among individuals seeking detoxification services at a short-term, alcohol detoxification program.

2.0 Method

2.1 Setting and Participants

Data were collected from 815 individuals receiving services at an alcohol detoxification unit located in Anchorage, Alaska. This unit is designed to provide a four-day intervention to detoxify individuals from alcohol and to assess them for any additional needed treatment. Average length of stay for the participants was 4.84 days ($SD=1.28$). Table 1 provides demographic information about the 815 participants.

2.2 Instrumentation

Brief Symptom Inventory (BSI; Derogatis, 1992). The BSI consists of 53 symptoms drawn from the Symptom Checklist-90-R (Derogatis, 1992) and assesses current psychological symptomatology. Each symptom is rated on a 5-point Likert scale that ranges from *not at all present* (0) to *extremely present* (4) for their existence within the past seven days. The BSI results in nine subscales (Somatization, Obsessive-Compulsiveness, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, Psychoticism) and three global indices of distress (*Global Severity Index* [number and severity of symptoms], *Positive Symptom Distress Index* [intensity of symptoms], *Positive Symptom Total* [number of symptoms endorsed in a pathological direction without regard to intensity]).

Scoring is accomplished by adding ratings for subscale items and dividing by the number of items. These mean raw scores can be transformed into T-scores (mean of 50 and standard deviation of 10) separately for women and men, based on relevant norms tables (adult, adolescent, inpatient, and outpatient). The following two criteria have been established for designating a protocol as being positive for diagnosable psychopathology based on adult, non-patient norms: a) T-score for GSI of 63 or greater, or b) T-scores of 63 or greater on two or more subscales (Derogatis, 1992). The instrument has demonstrated good psychometric properties, with adequate reliability and validity (Derogatis, 1992; Morlan & Tan, 1998).

2.3 Procedure

The BSI was completed as part of the detoxification unit's regular intake assessment and after consumers provided informed consent for treatment and use of data for research and evaluation purposes; all research procedures were conducted in compliance with the Institutional Review Board at the University of Alaska Anchorage. The BSI and other intake forms were completed as soon as staff members believed consumers were sufficiently sober to give consent, understand instructions, and participate in the assessment process. For most consumers, the assessment process was completed on the second day of services.

3.0 Results

3.1 Comparisons with Normative Samples

To compare whether the BSI scores obtained for the current sample differed from those of four normative samples (adolescent non-patients, adult non-patients, psychiatric inpatients, and psychiatric outpatients) provided by Derogatis (1992), independent two-tailed *t*-tests were

calculated. Table 2 provides means and standard deviations and Table 3 provides *t*-test results. Significant differences ($p < .001$) were revealed between the current sample and the normative adult and adolescent non-patients on all but one subscale (adolescent non-patients for *Hostility* subscale). On all comparisons, the current sample of individuals receiving alcohol detoxification treatment services provided more pathological symptom ratings.

The current sample differed significantly from psychiatric outpatients on four of nine subscales (*Somatization*, *Phobic Anxiety*, *Paranoid Ideation*, and *Psychoticism*) and two of three global scales (*Global Severity Index* and *Positive Symptom Total*). For all significant differences, the current sample provided higher ratings than the normative psychiatric outpatient sample. The current sample differed significantly from psychiatric inpatients only on the *Somatization* subscale, on which the current sample provided higher ratings.

3.2 Comparisons with Out-of-Treatment Drug Users Sample

Additional independent two-tailed *t*-tests were calculated to compare BSI scores obtained from the current sample with BSI scores from a sample of 582 injection drug-using individuals not currently in treatment. These out-of-treatment drug users were participants in a NIDA-funded project designed to determine the effects of a needle exchange program (Fisher, Fenaughty, Cagle, & Wells, 2003). Additional details about this sample are available in Johnson, Neal, Brems, and Fisher (2006). Table 2 provides means and standard deviations and Table 3 provides *t*-test results. Results indicate that all BSI subscales and global indices obtained from individuals receiving alcohol detoxification treatment services were significantly higher than scores obtained from out-of-treatment, injection drug-using individuals.

3.3 Positive Diagnostic Indicators

Participants were categorized using the two criteria established by Derogatis (1992; see above) for identifying protocols as demonstrating diagnosable psychopathology. Table 4 provides the percentages of participants who had a T-score of 63 or greater on each of the nine SCL-90-R subscales. Based on the criterion of having T-scores of 63 or greater on two or more subscales, 81.3% of the men and 82.6% of the women were diagnosable with comorbid psychopathology. Based on the criterion of a GSI T-score of 63 or greater, 75.3% of the men and 75.8% of the women produced protocols that were sufficiently severe to suggest a diagnosis of comorbid psychopathology.

4.0 Discussion

Prior research has indicated that substance abusers with severe psychopathology are more likely to receive treatment at mental health facilities and those with less severe psychopathology are more likely to receive treatment at substance abuse facilities (Primm et al., 2000). However, current findings suggest that this conclusion based on prior research may not be generalizable to individuals in detoxification. The individuals in this sample reported psychiatric symptoms of great acuity and wide range and an exceedingly high proportion of the sample (over 80%) met BSI criteria for diagnosable mental illness. Clearly, this suggests a large proportion of individuals in detoxification suffer from great psychiatric distress that warrants attention. Further, these findings provide evidence that individuals in alcohol detoxification are symptomatically significantly different from other individuals who are abusing or dependent on alcohol and from individuals in the general population or in the psychiatric population.

The implications of this finding could potentially be far-reaching for agencies providing detoxification services. It appears crucial to identify additional psychopathology among individuals in alcohol detoxification as such symptoms are likely to complicate treatment and

evaluation plans. It may be erroneously assumed by providers that the prime goal of detoxification services is the initiation of sustained sobriety, and that comorbid psychiatric symptoms will be relieved on their own, or will significantly diminish, once that objective is achieved. Rather, more positive overall outcomes are likely if treatment plans are designed to help alleviate both the alcohol use disorder and any comorbid psychological symptoms (Brems & Johnson, 1997; Grant et al., 2004). Attention to psychiatric symptoms among individuals in detoxification may greatly enhance their outcomes both with regard to sobriety and mental health, especially if detection is timed at the onset of their stay in detoxification and can thus be considered when additional treatment plans are made.

Based on findings from this study, routine screening for severe mental health symptoms appears warranted in detoxification units. Individuals identified with high psychiatric distress could then be assessed more thoroughly through a psychiatric interview, a process that would greatly increase the chance that true coexistence of substance use and other psychiatric disorders would be properly addressed in ongoing treatment. Care will need to be taken to understand the psychiatric symptoms and distress of individuals in detoxification in their greater context of symptom presentation. Even though BSI-based comorbidity rates are high, it must be understood that they are not always reflective of definite coexistence of an alcohol use and other psychiatric disorder for each screened individual. It is possible that some acute mental health symptoms reported are directly related to the detoxification process and ameliorate upon successful completion of detoxification. However, ongoing observation during the individual's stay on the detoxification unit to differentiate temporary from ongoing psychiatric distress will be crucial to the successful long-term treatment of each individual.

Acknowledgments

This research was supported in part by grant number 1H79TI1988, from Substance Abuse and Mental Health Services Administration and grant numbers 5R03DA018601 and 5R01DA10181 from the National Institute on Drug Abuse. Appreciation is extended to Dr. Peter Hartsock at NIDA for his ongoing support and assistance.

References

- Brems C, Johnson ME. Clinical implications of the co-occurrence of substance use and other psychiatric disorders. *Professional Psychology: Research and Practice* 1997;28:437–447.
- Brems C, Johnson ME. Comorbidity in Alaska: Evidence and implications for treatment and public policy. *Alaska Medicine* 2004;46:4–19. [PubMed: 15468989]
- Castel S, Rush B, Urbanoski K, Toneatto T. Overlap of clusters of psychiatric symptoms among clients of a comprehensive addiction treatment service. *Psychology of Addictive Behaviors* 2006;20:28–35. [PubMed: 16536662]
- Derogatis, LR. BSI: Administration, scoring, and procedures manual -II. *Clinical Psychometric Research*; Towson, MD: 1992.
- Fisher DG, Fenaughty AM, Cagle HH, Wells RS. Needle exchange and injection drug use frequency: A randomized clinical trial. *Journal of Acquired Immune Deficiency Syndromes* 2003;33:199–205. [PubMed: 12794555]
- Grant BF, Stinson FS, Dawson DA, Chou SP, Dufour MC, Compton W, Pickering RP, Kaplan K. Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry* 2004;61:807–816. [PubMed: 15289279]
- Havassy BE, Alvidrez J, Owen K. Comparisons of patients with comorbid psychiatric and substance use disorders: Implications for treatment and service delivery. *American Journal of Psychiatry* 2004;161:239–145.
- Johnson ME, Brems C, Burke S. Recognizing comorbidity among drug users in treatment. *American Journal of Drug and Alcohol Abuse* 2002;28:1–19. [PubMed: 11853127]
- Johnson ME, Neal DB, Brems C, Fisher DG. Depression among out-of-treatment injecting drug users as measured by the Beck Depression Inventory-2. *Assessment* 2006;13:168–177. [PubMed: 16672731]

- Kessler RC, Crum RM, Warner LA, Nelson CB, Schulenberg J, Anthony JC. Lifetime co-occurrence of DSM-III-R alcohol abuse and dependence with other psychiatric disorders in the National Comorbidity Survey. *Archives of General Psychiatry* 1997;54:313–321. [PubMed: 9107147]
- Morlan KK, Tan S-Y. Comparison of the Brief Psychiatric Rating Scale and the Brief Symptom Inventory. *Journal of Clinical Psychology* 1998;54:885–894. [PubMed: 9811126]
- National Institute on Alcoholism and Alcohol Abuse. Alcohol use and alcohol use disorders in the United States: Main findings from the 2001–2002 national epidemiologic survey on alcohol and related conditions (NESARC). 8. National Institutes of Health: US Alcohol Epidemiologic Data Reference Manual; 2006.
- Primm AB, Gomez MB, Tzolova-Iontchev I, Perry W, Vu HT, Crum RM. Mental health versus substance abuse treatment programs for dually diagnosed patients. *Journal of Substance Abuse Treatment* 2000;19:285–290. [PubMed: 11027899]
- RachBeisel J, Scott J, Dixon L. Co-occurring severe mental illness and substance use disorders: A review of recent research. *Psychiatric Services* 1999;50:1427–1434. [PubMed: 10543851]
- Substance Abuse and Mental Health Services Administration. Overview of findings from the 2004 National Survey on Drug Use and Health. Author; Rockville, MD: 2005. NSDUH Series H-27, DHHS Publication No. SMA 05-4061 Office of Applied Studies
- Watkins KE, Hunger SB, Wenzel SL, Tu W, Paddock SM, Griffin A, Ebener P. Prevalence and characteristics of clients with co-occurring disorders in outpatient substance abuse treatment. *American Journal of Drug and Alcohol Abuse* 2004;30:749–764. [PubMed: 15624547]

Table One

Participant Characteristics (N=815)

	<i>n</i>	%
Gender		
Male	551	67.6%
Female	264	32.4%
Ethnicity		
African American	53	6.5%
Alaska Native	283	34.7%
American Indian/Native American	25	3.1%
White	418	51.3%
Other	23	2.8%
Missing	13	1.6%
Marital Status		
Single	379	46.5%
Married	100	12.3%
Living with Partner	10	1.2%
Separated or divorced	284	34.9%
Widowed	18	2.2%
Missing	24	2.9%
Educational Attainment		
Eighth grade or less	26	3.2%
Less than high school	166	20.4%
High school graduation or GED	352	43.2%
Some college	183	22.5%
College graduation	49	6.0%
Missing	39	4.8%
Living Arrangements		
Own house or apartment	323	39.5%
Someone else's house or apartment	150	18.4%
Shelter	114	14.0%
Street or outdoors	138	16.9%
Institutionalized	12	1.5%
Criminal justice system	11	1.4%
Other	16	2.0%
Missing	51	6.3%
Employment Status		
Unemployed, Looking for Work	314	38.5%
Unemployed, Not Looking for Work	203	24.9%
Full-Time or Part-Time Job	129	15.9%
Homemaker	9	1.1%
Retired	8	1.0%
Disabled	70	8.6%
Other	38	4.6%
Missing	44	5.4%
Age	Mean=41.1	SD=9.3 Range=18 - 68

Table 2

Means and Standard Deviations for the Current and Normative Samples for all BSI Subscales

	Current Sample				Normative Samples						Out-of-Treatment Drug Users (N=582)					
	Overall (N=815)		Female (n=264)		Male (n=551)		Adult Non-Patient (N=719)		Psychiatric Outpatient (N=1002)		Psychiatric Inpatient (N=310)		Adolescent Non-Patient (N=2408)			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Somatization	1.52	1.07	1.72	1.09	1.43	1.05	.29	.40	.83	.79	1.02	.91	.63	.64	.74	.76
Obsessive-Compulsive	1.69	1.16	1.89	1.15	1.60	1.16	.43	.48	1.57	1.00	1.61	1.07	.93	.75	1.01	.91
Interpersonal Sensitivity	1.47	1.17	1.70	1.20	1.36	1.15	.32	.48	1.58	1.05	1.48	1.11	.99	.85	.84	.88
Depression	1.78	1.23	1.98	1.27	1.68	1.20	.28	.46	1.80	1.08	1.87	1.21	.82	.79	.89	.89
Anxiety	1.74	1.13	1.98	1.17	1.63	1.10	.35	.45	1.70	1.00	1.70	1.16	.78	.68	.85	.85
Hostility	1.10	1.05	1.29	1.07	1.02	1.03	.35	.42	1.16	.93	1.00	.97	1.02	.86	.82	.83
Phobic Anxiety	1.20	1.17	1.39	1.25	1.12	1.12	.17	.36	.86	.88	1.07	1.00	.54	.64	.53	.78
Paranoid Ideation	1.35	1.09	1.51	1.11	1.27	1.07	.34	.45	1.14	.95	1.26	1.23	1.13	.82	1.08	.87
Psychoticism	1.37	1.11	1.54	1.13	1.29	1.09	.15	.30	1.19	.87	1.27	.98	.73	.73	.80	.79
GSI	1.52	0.99	1.72	1.02	1.43	0.97	.30	.31	1.32	.72	1.37	.86	.83	.59	.85	.71
PSDI	2.15	0.86	2.29	0.84	2.09	0.86	1.29	.40	2.14	.61	2.16	.74	1.66	.56	1.60	.65
PST	33.56	16.01	35.89	15.10	32.44	16.34	11.45	9.20	30.80	11.63	31.60	13.40	24.81	12.47	24.50	14.26

Table 3
t-Test Values for Comparisons between the Current Sample and Five Normative Samples for all BSI Subscales

	Adult Non-Patient (n=719)	Psychiatric Outpatient (n=1002)	Psychiatric Inpatient (n=310)	Adolescent Non-Patient (n=2408)	Out-of-Treatment Drug Users (n=263)
Somatization	29.08*	15.39*	7.44*	20.53*	15.08*
Obsessive-Compulsive	27.15*	2.30 ns	1.08 ns	15.29*	11.79*
Interpersonal Sensitivity	24.59*	-2.04 ns	-0.13 ns	8.77*	10.96*
Depression	30.85*	-0.36 ns	-1.13 ns	18.30*	14.89*
Anxiety	30.89*	0.77 ns	0.54 ns	20.88*	16.03*
Hostility	17.93*	-1.25 ns	1.49 ns	1.48 ns	5.35*
Phobic Anxiety	22.68*	6.88*	1.77 ns	14.80*	12.04*
Paranoid Ideation	23.16*	4.25*	1.23 ns	4.20*	4.95*
Psychoticism	28.56*	3.77*	1.42 ns	13.29*	10.62*
GSI	31.70*	4.85*	2.40 ns	17.25*	13.96*
PSDI	24.57*	0.28 ns	-0.18 ns	13.23*	13.00*
PST	32.59*	4.14*	1.95 ns	11.05*	10.91*

* p < .001; ns = not significant

Table 4

Percentages of Men and Women with T-scores of 63 or Greater on Each of the Nine BSI Subscales and Global Severity Index

	Men	Women	Overall
Somatization	74.1%	72.0%	73.4%
Obsessive- Compulsive	65.3%	72.0%	67.5%
Interpersonal Sensitivity	60.8%	59.9%	60.5%
Depression	77.0%	68.6%	74.2%
Anxiety	73.7%	73.1%	73.5%
Hostility	42.8%	52.7%	46.0%
Phobic Anxiety	65.3%	64.8%	65.2%
Paranoid Ideation	56.8%	64.4%	59.3%
Psychoticism	70.2%	76.5%	72.4%
Global Severity Index	75.3%	75.8%	75.5%