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PERSONALITY DISORDERS IN HOMELESS DROP-IN CENTER CLIENTS

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Sixty homeless clients at two drop-in centers in different boroughs in New York City were assessed using the Structured Clinical Interview for DSM-IV Axis I and II disorders and the Positive and Negative Syndrome Scale. Very high rates of all personality disorders were found for Cluster A (73% paranoid, 65% schizoid, 43% schizotypal), B (57% antisocial, 62% borderline, 20% histrionic, 57% narcissistic) and C (50% avoidant, 25% dependent, 57% obsessive compulsive). Axis I mood, anxiety, and substance use disorders were each diagnosed in over half the sample. At least one Cluster A disorder was diagnosed in 92% of the sample, and these disorders were distinguished from Axis I psychotic disorders (20%) with regard to prevalence, patterns of association, and constellation of symptoms. Cluster A disorders were not associated with any Axis I disorder, suggesting diagnostic independence in this sample.

Studies that have reported high prevalence rates of psychiatric disorders in homeless persons have focused primarily on the major Axis I clinical disorders, including substance use, psychotic, mood, and anxiety disorders. Dual and multiple diagnoses are consistently reported and associated with poorer functioning (Breakey et al., 1989; Canton et al., 2005; Drake, Osher, & Wallach, 1991; Fischer & Breakey, 1991; Folsom et al., 2005; Koegel & Burnam, 1988; Koegel, Burnam, & Farr, 1988; Padgett,

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Struening, & Andrews, 1990; Smith, North, & Spitznagel, 1992; Sullivan, Burman, Koegal, & Hollenberg, 2000). Although a small number of studies have recognized the existence of specific personality disorders among the homeless, including antisocial, schizoid, dependent, and borderline (Fischer & Breakey, 1991; North, Smith, & Spitznagel, 1993; Rouff, 2000; Tolomiczenko, Sota, & Goering, 2000), very few have conducted systematic assessment of the full range of Axis II disorders or evaluated their relation to the Axis I diagnoses. This study used structured psychiatric diagnostic interviews to determine the prevalence of personality disorders among homeless persons who were utilizing drop-in center services in two urban programs.

The numerous research reports that have provided Axis II rates based on careful structured clinical interviewing, almost without exception (see Justus, Burling, & Weingardt, 2006; Rouff, 2000), have focused exclusively on antisocial personality disorder (ASPD). Homeless persons have rates of ASPD ranging between 10–40% (Caton et al., 1994, 1995, 2000; Fischer et al., 1986; Jainchill, Hawke, & Yagelka, 2000; North et al., 1993, 1997; North, Pollio, Smith, & Spitznagel, 1998; Reback, Kamien, & Amass, 2007; Smith et al., 1992; Tolomiczenko et al., 2000; Widiger et al., 1996), and this diagnosis tends to be associated with greater problem severity. ASPD is related to an earlier age of onset and chronicity of homelessness (North et al., 1997, 1998), utilization of fewer homelessness services (Polio et al., 1997), and worse discharge planning outcomes (Caton, 1995).

As noted by Tolomiczenko et al. (2000), very few studies have diagnosed the full range of Axis II disorders in a systematic manner, and unstructured assessments have yielded highly variable (10–70%) estimates (Abdul-Hamid, Shunaigat, & Ghubash, 2001; Armstrong, 2002; Bassuk, Rubin, & Lauriat, 1984, 1986; Breakey et al., 1989; Combaluzier & Pedinielli, 2003; Haugland, Siegel, Hopper, & Alexander, 1997; McGuire & Rosenheck, 2004; Martens, 2002; Raynault, Battista, Joseph, & Fournier, 1994; Vacher, Launay, & Petitjean, 2001). In addition, these studies suffer from one or more notable problems, including: reporting nonspecific prevalence data; utilizing unstructured clinical interviews; relying on diagnostic impressions of counselors or case managers; or considering personality disorder as a global construct. In one of the few studies employing structured diagnostic interviews for the full range of personality disorder diagnoses, Justus, Burling, and Weingardt (2006) found that a current diagnosis was related to lower retention and completion of an intensive residential therapeutic community for homeless substance abusing veterans (see also Sumerall, Rate, Lopez, Hunter, & Weaver, 2000). Unfortunately, no prevalence rates were reported.

The absence of reliable and valid personality disorder diagnoses represents an important gap in the literature as these disorders may be both a risk factor for and consequence of chronic homelessness and likely contribute to the difficulties associated with engagement, retention, and utili-

zation of important housing, vocational, mental health, and addiction services (Tolomiczenko et al., 2000). The present study is an extension of an earlier treatment outcome report (Ball, Cobb-Richardson, Connolly, Bujosa, & O'Neall, 2005) completed at a homeless drop-in center program in New York City. In that study, 52 homeless clients were assessed and randomly assigned to receive either an individual psychotherapy focused on their personality and substance use disorders (Ball, 1998, 2003) or the standard group counseling offered at the drop-in center. An important and somewhat unanticipated finding was the extremely elevated rates (88%) of DSM-IV Axis II Cluster A diagnoses. Paranoid (74%), schizotypal (56%), and schizoid (42%) personality disorders were almost 10 times higher than those typically reported in outpatient substance abuse treatment settings (Verheul, van den Bosch, & Ball, 2005). However, this previous report raised important concerns about the reliability of these elevated prevalence estimates because: a diagnosed personality disorder and substance abuse were eligibility criteria for the study; the confounding influence of Axis I disorders (other than substance abuse) was not assessed or controlled; a single site was sampled; and a diagnostic instrument was used that has been criticized for overdiagnosis of Axis II disorders (Hyler, Skodol, Kellman, Oldham, & Rosnick, 1990; Wilber, Dammen, & Friis, 2000).

The current study was an attempt to replicate and extend these findings by addressing some of these limitations. Specifically, we evaluated the prevalence of both Axis I and II diagnoses using structured clinical interviews of these DSM-IV disorders. In addition to evaluating the impact of cooccurring Axis I disorders, we also included a more detailed assessment of psychotic (positive and negative) symptoms given the particular focus on the personality disorder Cluster (A) considered to overlap significantly with schizophrenia. Finally, we recruited less selective (with regard to personality disorder or substance abuse) samples of homeless clients from two drop-in centers from different boroughs of New York City. With these methodological improvements in place, we predicted that we would find somewhat lower, but still prevalent rates of Cluster A personality disorders that would be consistent at both drop-in centers. We also hypothesized that Axis II disorders would be better understood as important cooccurring diagnoses rather than being subsumed or redundant with their symptomatically-related Axis I "near neighbors," i.e., Cluster A and Psychotic disorders, Cluster B and Mood and Substance Use disorders, Cluster C and Anxiety disorders.

METHOD

PARTICIPANTS

Participants were 60 homeless adults receiving services at one of two (n = 30 per site) drop-in centers in New York City. John Heuss House is located in the lower Manhattan financial district, and serves up to 150 people on

a daily basis in a 24-hour drop-in center with a particular focus on mentally and medically ill homeless clients. The Living Room is a 24-hour drop-in center located in the South Bronx and serves up to 81 clients per day. Both programs offer meals, laundry facilities, showers, emergency shelter, case management, medical, and psychiatric services. Study inclusion criteria were 18 years of age and the ability to read the informed consent and successfully complete a 10-item true/false consent quiz. Exclusion criteria were active thoughts or plans of suicide, acute psychosis, and imminent threats of violence to people or destruction of center property. Only one individual was excluded because of active psychosis.

Homelessness status was determined through routine program intake questions of the two agencies. This included standard questions about current living situation, length of homelessness, reason for homelessness, length of time and time since living at stable address, history of homelessness episodes, and availability of alternative living arrangements. Although exact statistics were not available, both programs indicated that the majority of their clients were homeless for over half of the time over the past 2 years and thus would meet state or federal definitions of chronic homelessness.

MEASURES

1. Computer-assisted structured clinical interview for Axis I (CAS-CV; First, Gibbon, Spitzer, & Williams, 1998)

The interviewer-administered CAS-CV assessed 40 DSM-IV Axis I psychiatric disorders. The CAS-CV is suitable for adults with an 8th grade reading level, and computer assistance ensured consistency of interviewer questions, probes, queries, and clarification of response ambiguity.

2. Computer-assisted structured clinical interview II personality questionnaire (SCID-PQ) and expert system (ES; First, Gibbon, Spitzer, Williams, & Benjamin, 2000)

A patient questionnaire (SCID-PQ) consisting of 119 Yes/No questions was administered first by the interviewer to screen for personality disorders. Each endorsed item was then automatically prompted by the computer (ES) for further evaluation by the interviewer using standard probes, queries, and clarifications to confirm if diagnostic criteria were met based on their persistence, pervasiveness, maladaptivitiy, and independence from Axis I symptoms or states. We reported on the 10 DSM-IV Axis II diagnoses.

3. Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein, & Opler, 1987)

The PANSS is a 30-item semi-structured clinical interview that evaluated the positive and negative features of schizophrenia. Several scoring systems have been proposed, and the authors chose the Bell, Lsyaker, Beam-Goulet, Milstein, and Lindenmayer (1994) system because it incor-

porates more of the PANSS items and has strong support for the reliability and validity of a five component structure of schizophrenic symptoms: (a) Positive; (b) Negative; (c) Cognitive; (d) Emotional Discomfort; and (e) Hostility.

PROCEDURES

A sign-up poster was displayed at each drop-in center's client community board to invite participation and briefly described the study as involving a 3–4 hour assessment and providing compensation in the form of a $30 public transportation card. Each week at specific dates and times listed on the sign-up sheet, the first author called successive names from the list until an available client was identified. This process continued until all names on the list had been called at least twice, and then a new sign-up sheet was posted and the procedure repeated until 30 clients were assessed at each site. Once identified, all participants provided informed consent following a full description of the study.

The three structured interviews were administered by the first author, a doctoral student in clinical psychology with prior research and clinical experience with homeless, mentally ill, and substance abuse clients. In addition, the interviewer received instruction and training from the lead developer of the SCID I and II (Michael First, M.D.) and a highly experienced trainer for the PANNS (David Bowie, Ph.D.). Training on each measure involved review of all appropriate manuals and videos, administration and scoring, as well as on-site practice interviews. The interviewer met weekly with the senior author to clarify symptom and diagnostic issues related to participant interviews.

DATA ANALYSIS

Given the low frequency of many of the specific Axis I disorders, participants were categorized as being diagnosed or not diagnosed with any: (1) Psychotic (schizophrenia, schizoaffective, or psychotic disorder not otherwise specified); (2) Mood (major depressive, bipolar, dysthymia, or cyclothymia); (3) Anxiety (panic, agoraphobia, generalized anxiety, obsessive compulsive, post-traumatic stress, simple, or social phobia); or (4) Substance Use (alcohol or drug) disorder. Descriptive statistics were used to characterize the samples on demographics, clinical indicators, and Axis I and II diagnoses. t-tests or Chi squares compared the two recruitment sites on these indicators and evaluated the comorbid association of Axis I and II diagnoses. t-tests evaluated differences in PANSS scores between those diagnosed and not diagnosed with Axis I and II disorders. We adopted an alpha level of $p < .01$ to provide some control for multiple comparisons.

RESULTS

OVERALL AND SITE SPECIFIC DEMOGRAPHIC AND CLINICAL INDICATORS

Table 1 lists demographic and clinically relevant data on the total sample and separately for the two drop-in recruitment sites. Participants assessed were predominately male, unmarried, African American, and middle-aged. Self-reported lifetime periods of homelessness averaged almost five years as did the duration of current unemployment. Participants averaged 1.4 ($SD = 2.7$) prior psychiatric hospitalizations, and 43% reported current psychiatric treatment. Participants also reported high rates (40%) of prior substance abuse treatment, with 32% reporting current treatment. As Table 1 also shows, a significant minority of participants was currently taking psychotropic medications. Demographic and clinical indicators were mostly comparable across the two programs (see Table 1). There were significant differences between the two sites only on the self-reported total duration of homelessness, $t(58) = 3.1$, $p < .004$, and ethnicity, $t(58) = -4.0$, $p < .001$.

PREVALENCE OF AXIS I AND II DIAGNOSES

Table 2 lists the rates of categorical Axis I and II diagnoses at the two drop-in center sites and for the total sample. Overall, 62% met lifetime criteria for a substance dependence diagnosis. Thirty-four percent met lifetime criteria for alcohol dependence (3% for lifetime abuse without dependence), 50% met lifetime criteria for drug dependence, and 23% met lifetime criteria for both drug and alcohol dependence. The diagnostic rates for specific substances were: 37% Alcohol; 5% Heroin; 30% Cocaine, and; 12% Cannabis. In terms of the other Axis I diagnoses, 20% met criteria for any psychotic disorder, 55% met criteria for one or more mood disorders, and 62% met criteria for one or more anxiety disorders. As also can be seen in Table 2, there were several differences between the two sites in the frequency of specific Axis I disorders. Specifically, one site had higher rates of drug dependence, $t(58) = -2.7$, $p < .009$, major depression, $t(58) = -3.9$, $p < .001$, and generalized anxiety disorder, $t(58) = -2.7$, $p < .009$, whereas the other site had a higher rate of dysthymia, $t(58) = 2.9$, $p < .006$.

With regard to Axis II, Cluster A personality disorders (paranoid, schizoid, schizotypal) were found in almost all participants (92% had at least one diagnosis), and Cluster B (83% had at least one of antisocial, borderline, histrionic, or narcissistic) and C (68% had at least one of avoidant, dependent, obsessive-compulsive) disorders also were highly prevalent. All but one participant assessed met criteria for at least one Axis II disorder, and multiple diagnoses were common (average of 5.8, $SD = 3.2$). Over half of the personality disorders assessed had rates exceeding 50%. Despite drop-in center differences in their city location, client stated durations of homelessness, program stated focus on medically or psychiatric ill clients,

TABLE 1. Demographic and Clinical Information for Two Drop-in Center Sites

	John Heuss House (*N* = 30)		The Living Room (*N* = 30)		Total Sample (*N* = 60)	
	Mean	***SD***	**Mean**	***SD***	**Mean**	***SD***
Age (years)	41.9	9.8	40.7	8.7	41.3	9.2
Education (years)	12.1	2.4	10.9	1.7	11.5	2.1
Total Homelessness (months)	80.5	80.0	31.0	35.3	55.7	66.2
Total Prison (months)	11.4	27.8	18.0	45.7	14.7	37.6
Current unemployment (months)	57.7	61.7	62.0	74.6	59.9	67.7
	N	**%**	***N***	**%**	***N***	**%**
Gender						
Male	23	82.5	18	60.0	41	68.3
Female	6	15.0	12	40.0	18	30.0
Transgender	1	2.5	0.0	0.0	1	1.7
Ethnicity						
White	6	20.0	2	6.7	8	13.3
African American	21	70.0	13	43.3	34	56.7
Hispanic-Puerto Rican	3	10.0	12	40.0	14	26.6
Other	0	0.0	3	10.00	3	5.0
Married	1	3.3	6	20.0	7	11.7
Substance use (past month)	5	16.7	13	43.3	18	30.0
Current Medications						
Antipsychotic	10	33.3	6	20.0	16	26.7
Antimanic	7	23.3	6	20.0	13	21.7
Antidepressant	6	20.0	5	16.7	11	18.3
Antianxiety	1	3.3	3	10.0	4	6.7
Sleep	4	13.3	3	10.0	7	11.7
Pain	2	6.7	4	13.3	6	10.0
Other (Medical)	12	40.0	12	40.0	24	40.0

and some of the Axis I disorders, a very similar pattern of Axis II diagnoses were found across the sites (see Table 2).

ASSOCIATIONS BETWEEN AXIS I AND AXIS II DIAGNOSES

Table 3 lists the Chi Square associations between the ten specific Axis II diagnoses and the four combined Axis I categories for any Psychotic, Mood, Anxiety, or Substance Use disorder diagnosis. None of the Cluster A personality disorders were associated statistically with any of the Axis I disorders. Dependent was the only Axis II disorder significantly associated (using our adjusted $p < .01$) with an Axis I Psychotic disorder. Higher rates of Psychotic diagnoses were found in participants with dependent (47%, $n = 7$) than those not diagnosed with dependent personality disorder (11%, $n = 5$). Borderline was the only Axis II disorder related to a Substance Use disorder with a borderline personality disorder diagnosis more frequently associated with the presence of substance abuse or dependence (76%, $n = 28$) than among those without a borderline diagnosis (39%, $n = 9$, see Table 3).

No Axis II diagnoses were related to the presence of an Axis I Mood disorder, although borderline approached significance. In contrast, several Axis II disorders were related to the presence of an Axis I Anxiety disorder. Anx-

TABLE 2. Categorical Frequency of Axis I and II Diagnoses at Drop-in Centers

	John Heuss House (*N* = 30) Diagnosis		The Living Room (*N* = 30) Diagnosis		Total Sample (*N* = 60) Diagnosis	
	Frequency	**%**	**Frequency**	**%**	**Frequency**	**%**
Axis I Diagnoses						
Schizophrenia	4	13.3	2	6.7	6	10.0
Schizoaffective	1	3.3	2	6.7	3	5.0
Psychotic Disorder NOS	2	6.7	1	3.3	3	5.0
Major Depressive	2	6.7	14	46.7	16	26.7
Dysthymic	9	30.0	1	3.3	10	16.7
Bipolar I	3	10.0	2	6.7	5	8.3
Bipolar II	0	0.0	1	3.3	1	1.7
Cyclothymia	2	6.7	1	3.3	3	5.0
Alcohol Abuse/Dependence	12	40.0	10	33.3	22	36.7
Drug Abuse/Dependence	11	36.7	19	63.3	30	50.0
Panic Disorder	1	10.0	2	6.7	3	5.0
Panic Disorder with Agoraphobia	2	6.7	0	0.0	2	3.3
Obsessive-Compulsive	2	6.7	1	3.3	3	5.0
Post-Traumatic Stress	8	26.7	8	26.7	16	26.7
Agoraphobia	3	10.0	6	20.0	9	15.0
Social Phobia	7	23.3	7	23.3	14	23.3
Specific Phobia	2	6.7	1	3.3	3	5.0
Generalized Anxiety	4	13.3	13	43.3	17	28.3
Somatoform	1	3.3	0	0.0	1	1.7
Eating Disorder	0	0.0	2	6.7	2	3.3
Axis II Diagnoses						
Paranoid	22	73.3	22	73.3	44	73.3
Schizoid	18	60.0	21	70.0	39	65.0
Schizotypal	17	56.7	9	30.0	26	43.3
Antisocial	15	50.0	19	63.3	34	56.7
Borderline	15	50.0	22	73.3	37	61.7
Histrionic	8	26.7	4	13.3	12	20.0
Narcissistic	18	60.0	16	53.3	34	56.7
Avoidant	12	40.0	18	60.0	30	50.0
Dependent	6	20.0	9	30.0	15	25.0
Obsessive-Compulsive	15	50.0	19	63.3	34	56.7

iety disorders were present more often among participants diagnosed with avoidant (83%, $n = 25$), borderline (84%, $n = 31$), or antisocial (77%, $n = 28$) than among participants not diagnosed with avoidant (40%, $n = 12$), borderline (26%, $n = 6$), or antisocial (43%, $n = 11$) personality disorder (see Table 3).

In order to provide the most conservative estimate of Axis II prevalence, diagnostic rates were recalculated for those participants who did not have a diagnosis of the related ("near neighbor") Axis I disorder. Among those participants ($n = 48$) who did not have any Psychotic disorder, the rates of Cluster A disorders (69% paranoid, 65% schizoid, 38% schizotypal) remained high and were only 3–5% lower than in the total sample. With regard to Cluster B, the removal of either Mood or Substance Use disorder cases had a minimal effect on histrionic and narcissistic personality disorders, but decreased rates of antisocial and borderline. Antisocial personality disorder was diagnosed in 44% of participants without any Mood disor-

TABLE 3. Association Between the Presence Versus Absence of Combined Axis I Categories and Specific Axis II Diagnoses

	Axis I—Categories							
	Psychosis		Mood		Anxiety		Substance use	
Axis II Diagnoses	X^2	*p*-value	X^2	*p*-value	X^2	*p*-value	X^2	*p*-value
Paranoid	2.58	.108	.50	.481	2.96	.085	.01	.936
Schizoid	.02	.892	.71	.399	.28	.597	2.70	.101
Schizotypal	3.33	.068	.03	.875	4.52	.034	.00	.986
Antisocial	2.05	.152	2.99	.084	7.27	**.007**	2.64	.104
Borderline	5.71	.017	3.80	.051	19.97	**.000**	8.01	**.005**
Histrionic	1.67	.197	.83	.364	.16	.690	1.13	.288
Narcissistic	.02	.896	1.45	.228	.00	.986	.30	.604
Avoidant	1.67	.197	.61	.436	11.92	**.001**	3.45	.063
Dependent	8.89	**.003**	.02	.881	5.29	.021	2.84	.092
Obsessive-Compulsive	2.05	.152	.03	.875	1.19	.276	.30	.604

Note: $n = 60$; $df = 1$; Any Psychosis = Schizophrenia, Schizoaffective, or Psychosis not otherwise specified; Any Mood = Major Depressive, Dysthymia, Bipolar I, Bipolar II, or Cyclothymia; Any Anxiety = Obsessive-Compulsive, Post-Traumatic Stress, Panic, Panic with Agoraphobia, Agoraphobia, Specific Phobia, Social Phobia, or Generalized Anxiety; Any Substance = Alcohol Abuse/Dependence or Drug Abuse/Dependence
Bold = p-values indicate statistical significances at $p < .01$

der ($n = 27$) and 43% of those without any Substance Use disorder ($n = 23$) in comparison to 57% in the total sample. Borderline personality disorder was diagnosed in 48% of those without any Mood disorder and only 39% of those without any Substance Use disorder in comparison to 62% in the total sample. With regard to Cluster C, avoidant personality disorder was diagnosed in only 22% of those without any Anxiety disorder ($n = 23$) compared to a 50% rate in the total sample. Dependent personality disorder decreased to 9% (from 25% in the total sample) and less change was noted for obsessive-compulsive personality disorder (57% to 48%).

AXIS I AND II DIAGNOSES AND SCHIZOPHRENIA SYMPTOMS

Table 4 lists t-tests comparing the five PANSS components between participants who did versus did not meet diagnostic criteria for the four Axis I categories and the ten specific Axis II diagnoses. Using our more conservative alpha, none of the PANSS symptoms were significantly elevated in participants diagnosed with an Axis I Psychotic, Mood, or Substance Use disorder. A diagnosis of any Anxiety disorder was significantly associated with higher positive, emotional discomfort, and hostility symptoms. In contrast, PANSS scores were significantly associated with many Axis II diagnoses. Greater positive and hostility symptoms were found for most personality disorder diagnoses. Dependent personality disorder was related to higher positive, negative, cognitive, and emotional discomfort symptoms. Borderline personality disorder was related to higher positive, cognitive, emotional discomfort, and hostility symptoms.

TABLE 4. PANSS Score Differences for Presence versus Absence of Combined Axis I Categories and Specific Axis II Diagnoses

	Dimensional Five PANSS Scores									
	POS		NEG		COG		EMO		HOS	
	t-test	*p*-value	*t*-test	*p*-value	*t*-test	*p*-value	*t*-test	*p*-value	*t*-test	*p*-value
Combined Axis I Categories										
Psychotic	–2.00	.049	–.40	.692	–.07	.946	–.92	.360	–1.82	.074
Mood	–.80	.430	.60	.270	–1.96	.055	–1.66	.102	–2.15	.036
Anxiety	–2.93	**.005**	–1.83	.072	–2.43	.018	–5.48	**.000**	–3.14	**.003**
Substance use	–.18	.854	–.97	.335	–1.80	.077	–2.54	.014	–1.66	.102
Specific Axis II Diagnosis										
Paranoid	–3.21	**.002**	–1.13	.259	–1.21	.229	–1.40	.169	1.20	.234
Schizoid	–.70	.503	–1.73	.089	–.78	.440	–2.02	.048	–.89	.377
Schizotypal	–5.58	**.000**	–1.87	.067	–1.60	.116	–1.25	.218	–2.23	.031
Antisocial	–2.42	.018	–.74	.465	–1.56	.125	–1.82	.073	–4.95	**.000**
Borderline	–4.67	**.000**	–2.29	.026	–4.17	**.000**	–5.19	**.000**	–6.21	**.000**
Histrionic	–2.45	.029	–1.07	.288	–1.46	.150	–.54	.594	–3.91	**.000**
Narcissistic	–2.28	.026	.47	.637	.18	.86	–.31	.76	–2.96	**.005**
Avoidant	–3.05	**.003**	–2.21	.031	–3.71	**.000**	–4.59	**.000**	–3.24	**.002**
Dependent	–2.76	**.008**	–3.83	**.000**	–3.60	**.001**	–3.17	**.002**	–1.46	.150
Obsessive-Compulsive	–2.72	**.008**	–.51	.612	–.81	.42	–1.25	.22	–2.67	**.010**

Note: PANSS = Positive and Negative Syndrome Scale; POS = Positive; NEG = Negative; COG = Cognitive; EMO = Emotional discomfort; HOS = Hostility
Bold = p-values indicate statistical significances at $p < .01$

DISCUSSION

In two different samples of homeless persons, lifetime Axis I Mood, Anxiety, and Substance Use disorders were diagnosed in over half of the participants, and Psychotic disorders were lower in frequency. Our Axis I results were consistent with previous homelessness studies which have reported overall prevalence in the 50–75% range with 20–35% having severe mental illness, 30–60% alcohol abuse, 10–40% drug abuse, and 10–20% dual diagnoses (Breakey et al., 1989; Drake et al., 1991; Fischer & Breakey, 1991; Folsom & Jeste, 2002; Koegel et al., 1988; Susser, Struening, & Conover, 1989). The rates of specific Axis II disorders exceeded the rates of specific Axis I disorders and multiple diagnoses were the rule (e.g., over half of the sample met criteria for over half of the disorders). Our high rates of antisocial, borderline, and avoidant personality disorder were either consistent with prior research using structured interviews (Caton et al., 1994, 1995, 2000; Fischer et al., 1986; Jainchill et al., 2000; North et al., 1993, 1997, 1998; Reback et al., 2007; Smith et al., 1992; Tolomiczenko et al., 2000; Widiger et al., 1996) or in line with the well-established comorbidity of these Axis II disorders with the Axis I mood, anxiety, and substance use disorders in nonhomeless samples (Oldham, Skodol, & Bender, 2005). However, the rates of Cluster A disorders were considerably elevated relative to prior studies of Axis I and II comorbidity. For example,

the rates of Cluster A were 5–10 times higher than those found in previous diagnostic and treatment studies with substance abusers (Verheul et al., 2005).

These findings were not simply attributable to diagnostic overlap or redundancy between Cluster A (at least one of which was diagnosed in 92%) and Psychotic disorders (diagnosed in only 20%) in the sample. None of the three Cluster A disorders were associated with any of the Axis I diagnostic categories. Our conservative estimation of personality disorder prevalence for cases without a "near-neighbor" Axis I disorder indicated that that the presence of any Mood or Substance Use disorder increased the rates of antisocial or borderline personality disorder, and the presence of any Anxiety disorder increased rates of avoidant and dependent personality disorder. The presence versus absence of any Psychotic disorder had a negligible effect on the rates of Cluster A or any other Axis II disorders. The PANSS subscales were unrelated to an Axis I Psychotic, Mood, or Substance Use disorder, but higher scores were found for participants with any Anxiety disorder. Borderline, avoidant, and dependent personality disorder were related to most of the PANSS scales. With regard to Cluster A, only the PANSS positive symptom scale was related to paranoid and schizotypal personality disorders.

Although extensive research and clinical attention has focused on the Axis I disorders, very few studies have diagnosed the full range of Axis II disorders in a systematic, structured manner, and even fewer service initiatives have considered personality disorders when evaluating outcomes or planning programs (Tolomiczenko et al., 2000). Like our previous report (Ball et al., 2005), the current study suggests that this is a very serious oversight. Assertive community treatment counselors provided unstructured ratings of estimated psychiatric diagnoses in the context of a large multi-site demonstration project for homeless persons with severe mental illness (McGuire & Rosenheck, 2004). Although psychotic, mood, and substance use disorders were reported in over half of the sample, counselors estimated that only 22% met criteria for a personality disorder (unspecified). Another large multisite study of 3,595 homeless veterans (Goldstein, Luther, Jacoby, Haas, & Gordon, 2008) used trained outreach case workers to estimate diagnoses based on an unstructured interview and medical record review. The rate of personality disorders was listed as 9%. Participants were furthered subtyped using cluster analysis, and only 2% were classified as "personality disorder" in comparison to 85% who were classified as "addiction." We believe this reflects either a serious lack of knowledge about personality disorders or significant bias among homelessness researchers and service providers against labeling homeless persons with a personality disorder diagnosis.

The inadequate focus on personality disorder diagnosis in homeless studies is difficult to understand when one considers that the full range of personality disorders (not just antisocial) are highly comorbid with the Axis I disorders commonly seen in this population. The present study rep-

licated the very high rates of Axis II personality disorder diagnoses found by Ball and colleagues (2005) among homeless persons receiving substance abuse treatment within another drop-in center in New York City. There were several strengths of the current study as we designed it specifically to address the limitations of this prior research. First, we used structured clinical interviews to evaluate both Axis I and II diagnoses and also included a detailed assessment of psychotic symptoms, given our specific interest in better understanding the nature of Cluster A personality disorders and their potential overlap with schizophrenia. In addition, we recruited unselected (with regard to personality disorder or substance abuse) samples of homeless clients from two drop-in centers from different boroughs of New York City. These methodological improvements enhanced our confidence in reporting elevated rates of personality disorders in homeless persons, especially Cluster A disorders. Despite differences between the two recruitment sites in chronicity of homelessness and the several Axis I disorders, there were no significant differences in Axis II rates.

However, the present study has a number of limitations. First, a single research interviewer conducted all the assessments with a self-selected group of volunteers at two drop-in centers. Second, the generalizability of the results is somewhat limited based on the small sample and the disproportionate male to female ratio. Third, the sample consisted of homeless drop-in center clients from one of the largest, most complex cities in the world that is often considered (accurately or not) a magnet for highly disenfranchised and displaced individuals. This may result in higher rates of certain types of personality pathology that are not present in homeless clients residing in other geographical settings or receiving other homeless services (e.g., shelters). Fourth, although we used a carefully structured interviewing method, the reliability and validity of personality disorder diagnoses in the context of the extremely stressful and frequently traumatic living situation of homelessness is unknown (Koegel & Burnam, 1992). An ongoing study is addressing these limitations by using two very different urban settings with two trained interviewers and a more comprehensive assessment battery that will allow for a broader and more dimensional measurement of personality and psychopathology indicators.

In addition, our evaluation was narrowly focused on establishing prevalence and independence of Axis I and II diagnostic categories and schizophrenia symptoms from the SCID and PANSS and included neither an assessment of important social factors nor a detailed history of homelessness. This study was not designed to address important, perhaps more fundamental, questions that require further research: (1) Should many cases of personality disorder in homeless persons be understood more as a consequential than a contributing factor to homelessness? and (2) Can reliable and valid personality disorder diagnoses be made (even when controlling for Axis I) when individuals are living in a traumatic state of homelessness? Some of the paranoid, withdrawn, and bizarre Cluster A symptoms may be adaptive or at least understandable given the extreme

challenges of living on the streets or in a shelter (Fischer & Breakey, 1991). Although a personality disorder diagnosis requires onset prior to adulthood, our data do not allow us to rule out the possibility that some high prevalence disorders (e.g., paranoid, schizoid, obsessive-compulsive) may be better understood as a result rather than a cause of homelessness. Although many symptoms of ASPD could be a secondary consequence of substance abuse or survival-oriented behaviors related to homelessness, there is little evidence that homelessness causes ASPD. Childhood diagnoses of conduct disorder and chronic patterns of criminality, violence, and incarceration are more indicative of long-term patterns of deviance (North et al., 1993, Gelberg, Linn, & Leake, 1988; Martell, Rosner, & Harmon, 1995; Solomon et al., 1992).

Nonetheless, it must be emphasized that the problems of homelessness cannot be attributed solely, or even primarily, to the presence of a personality disorder or any other form of mental illness, but rather occur in the context of many contributing social factors (Draine, Salzer, Culhane, & Hadley, 2002). The extent to which individuals with severe and persistent personality problems are at greater risk for the social problems associated with homelessness and the degree to which chronic homelessness contributes to the development or maintenance of personality disorder symptoms are important question for future research. Future research also should investigate what types of services best meet the needs of such a complex, multi-problem group of individuals while also carefully considering the important structural factors (e.g., poverty, lack of housing, unemployment, crime, family disruption, and traumatic environments) that impede access, utilization, retention, and effective use of services. The severe, longstanding deficits in social, emotional, cognitive, perceptual, and behavioral functioning that define personality disorder appear to characterize chronically homeless persons, and likely interfere with effective service utilization and the maintenance of stable housing and employment. Although homeless persons with severe Axis I conditions obviously need a broad array of services, the Axis II disorders deserve special attention because these persons and those providing services often do not acknowledge or recognize the presence of these chronic, debilitating diagnoses. Much research is needed on this clinically overlooked and underserved group of homeless persons.

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