

Access to Inpatient or Residential Substance Abuse Treatment Among Homeless Adults With Alcohol or Other Drug Use Disorders

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OBJECTIVES. We conducted a theoretically guided study of access to inpatient or residential treatment among a probability sample of homeless adults with alcohol or drug use disorders in Houston, Texas.

METHODS. This study used a cross-sectional, retrospective design with data collected from a multistage random sample of 797 homeless adults age 18 or older who were living in Houston shelters and streets in 1996. Structured, face-to-face interviews produced screening diagnoses for alcohol and drug use disorders, treatment use data, and candidate predictors of treatment use. Logistic and linear regression analyses were performed on the subset of 326 homeless persons with either alcohol or drug use disorder.

RESULTS. 27.5% of persons with substance use disorder had accessed inpatient or residential treatment during the past year. Controlling for additional need factors such as comorbidity, persons having public health insurance

and a history of treatment for substance problems had greater odds of receiving at least one night of treatment. Contrary to expectation, contact with other service sectors was not predictive of treatment access. Schizophrenia and having a partner appeared to hinder access. Greater need for treatment was associated with fewer nights of treatment, suggesting retention difficulties.

CONCLUSIONS. This study adds to previous findings on access to health care among homeless persons and highlights a pattern of disparities in substance abuse treatment access. Health insurance is important, but enhancing access to care involves more than economic considerations if homeless persons are to receive the treatment they need. Referral relationships across different service sectors may require strengthening.

Key words: Access; substance abuse treatment; homeless. (Med Care 2001;39:1158–1169)

Despite their high levels of need for health care services, many homeless people do not receive adequate or appropriate care.^{1–3} Health problems are extensive in the homeless population and often not addressed until severe enough to require

costly urgent care and hospitalization.^{4,5} The health disorder of addiction represents no exception in terms of consequences, prevalence, and access. Alcohol and drug use disorders exact high personal, social, and economic costs,^{6–8} and these

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disorders are more common among homeless people than housed individuals.^{9–12} Relative to their need, homeless persons with alcohol and other drug use disorders are underserved by the substance abuse treatment system.^{10,11,13} Because of the high costs of these disorders and the demonstrated effectiveness of treatment,^{14–19} research to increase understanding of treatment access for homeless adults with substance problems is of paramount importance. Highlighting the necessity of treatment is that substance use disorders can exacerbate the severity of homelessness and also block exits from that condition.²⁰

Studies have described obstacles to substance abuse treatment for homeless people at both the individual and structural levels^{5,10,21–24} and have suggested that barriers to treatment tend to be especially pronounced for certain segments of this population, such as those with comorbid disorders of both substance abuse and mental illness.^{25–30} However, previous research has faced limitations that interfere with a careful understanding of treatment access. To our knowledge, only one study to date has investigated access among homeless persons with diagnosable substance use disorder,¹⁰ and only four have used multivariate analytic techniques to understand the relative importance of multiple predictors of treatment access.^{5,10,23,31} Previous work has additionally been limited by use of nonrepresentative samples of homeless people^{23,32} and lack of regard for the influence of multiple comorbidities and other service use on substance abuse treatment access. Also missing from much of the earlier research is investigation of the *amount* of treatment services homeless people use (important in light of abundant findings that length of time in substance abuse treatment is related to better treatment outcomes),^{33,34} and a distinction between inpatient or residential treatment and outpatient treatment use.¹⁰ We focus in this study on developing a more precise understanding of inpatient or residential treatment access.

The present study overcomes limitations of previous research and enables a refined focus on access to treatment in a sizable, probability-based sample of homeless persons in Houston, Texas, a major metropolitan area whose homeless population has been scarcely studied. An additional strength of the current study is its theoretical grounding in a model of health services utilization^{35,36} that has guided several previous studies of access to care among homeless individuals,^{5,10,23}

and that has recently been updated for vulnerable populations.³⁷ According to this model, access is a function of predisposing, enabling, and need characteristics. The model facilitates interpretation of findings within a health policy context: Access is equitable when utilization can be explained by need;³⁵ access explained by characteristics other than or in addition to need may indicate areas for policy and system change. Further, we focus our examination of access to treatment services among homeless persons with diagnoses of substance use disorder, those for whom access is particularly relevant. Investigation of access among those with treatment need facilitates greater precision in practice and policy recommendations.

Because health care access among homeless persons has been associated with a number of factors in addition to need,^{5,10,23,31,38,39} we hypothesize that the predisposing characteristics of severity of homelessness and psychiatric disorders will hinder access to inpatient or residential substance abuse treatment, and that the enabling characteristics of health insurance and recent use of services in other sectors will enhance the probability of access. Contact with other public sector service providers may represent opportunities for referral to substance abuse treatment. Knowledge of characteristics that distinguish homeless persons who participate more or less intensively in treatment (ie, amount) is extremely limited, but we expect that homeless severity and psychiatric disorder will be associated with less use, and that health insurance will be associated with a greater quantity of use.

Materials and Methods

The sample for the current study participated in a larger investigation sponsored by the National Institute of Mental Health that examined public sector costs of the homeless mentally ill.⁴⁰ Results from this study are based on secondary analyses of those data sponsored by the National Institute on Alcohol Abuse and Alcoholism.⁴¹

Subjects and Procedures

Data for this study were collected between January 1996 and September 1996, from 797 homeless adults, age 18 or older, who were living in shelters and outdoor settings in Houston, Texas.

Homeless persons were surveyed in these settings and administered a screening interview. If they were determined to be eligible for the study (ie, homeless and over age 17), they were administered a 90-minute structured, face-to-face interview for which they were paid \$25. Interviews were conducted in both English (89%) and Spanish (11%). Of the 1,038 unique individuals screened, 999 (96%) were eligible to participate. Of these, 622 persons sampled from shelters (86% of those approached) and 175 of persons sampled from streets (63% of those approached) completed the 90-minute interview.

Respondents were considered homeless and thus eligible for this study if, in any of the last 30 days, they had slept in (1) a setting defined as a temporary shelter (excluding doubling up with family or friends) or not traditionally used for shelter (streets, parks, all-night establishments, abandoned buildings, transportation depots), or (2) a longer-term program for the homeless that defined stays as temporary (using Department of Housing and Urban Development criteria) and for which individuals were not required to pay for their housing. We included persons who were currently living in their own places but who had not done so for each of the past 30 days to avoid excluding those who regularly spend the latter portion of the month on the streets or in shelters. For the present analysis, we restrict the sample to those homeless persons with a probable diagnosis of alcohol or other drug use disorder ($n = 326$).

Sample Design

This investigation used a cross-sectional, retrospective design with data collected from a multi-stage random sample of homeless adults in the shelters and streets of Houston, Texas. Shelter sampling was conducted in two stages. First, nights within shelters were sampled proportional to size; second, visits by homeless persons on those shelter-nights were sampled so that the product of the first and second stage sampling probabilities would be constant for all visits, thus producing a self-weighting sample of shelter visits. The street-sampling plan, also self-weighting, was conducted in three stages. After extensive interviews with Houston police, we first chose census tracts in Houston, selected blocks within sampled census tracts, and then approached all

homeless persons on those blocks. This visit-based sample of shelter and street visits was subsequently reweighted to a person-based sample, based on self-reported use of shelters and streets. A purposive street sample supplemented the probability-based one to increase sample size; these two samples did not differ significantly in terms of key demographics and thus were combined for purposes of analysis.

Analytic weights were developed to adjust for differential sampling probabilities of individuals in shelters and streets, and differential nonresponse by shelters. The analytic weight for each respondent is equivalent to an estimate of the number of persons represented by that respondent in the target population.

Measures

Dependent Variables—Access to Treatment Services. We operationalized substance abuse treatment access in two ways: one, whether any inpatient or residential treatment was used and two, the amount of inpatient or residential treatment used among those who had at least one night of treatment. Respondents reported on the number of nights, if any, they had spent during the past year in a Houston or Harris County alcohol or drug inpatient or residential treatment program and were provided examples of area programs to assist them in answering the question (eg, Salvation Army's Harbor Light residential program and the Houston Recovery Campus inpatient program). Previous research has demonstrated that homeless persons can accurately report their use of services.⁴²⁻⁴⁴ Although homeless persons in the current study were also asked to report days of outpatient treatment in Houston or Harris County during the previous year, outpatient visits were rare, leaving us with insufficient power to examine predictors of outpatient care.

Independent Variables—Predisposing, Enabling, and Need Characteristics. Independent variables were framed in terms of the theoretical model as predisposing, enabling, or need characteristics. Predisposing variables included demographics, social structure, general health and physical functioning, and psychiatric disorder (major depression, bipolar, schizophrenia). Enabling characteristics included personal, family, and community resources. Regarding need characteristics, the subsample for analyses of treatment access is in

need by virtue of it being comprised of homeless persons with diagnoses of past-year alcohol or other drug use disorder (n = 326). Other need factors included comorbid diagnoses of both alcohol and drug dependence and perception of unmet need for substance abuse treatment. Variables are described in Table 1.

Data Analysis

Frequency distributions for categorical variables and means and standard deviations for continuous

variables were calculated to describe the background and substance use characteristics of the homeless persons who participated in this study. We used weighted sample proportions and means to estimate population parameters and performed weighted bivariate and multivariate analyses. We adjusted all standard errors and statistical tests to compensate for the differential weighting using linearization methods⁴⁵ available in the Stata⁴⁶ software package. Numbers of cases reported are unweighted. We considered all bivariate and multivariate test results significant at the $P < 0.05$ level.

TABLE 1. Measurement of Predisposing, Enabling, and Need Variables

Variable
Predisposing
Demographics: age, sex, whether currently living with a partner, whether living with children past year ⁵⁴
Social structure: ethnicity, education, severity of homelessness (>12 months homeless in lifetime or >6 months homeless in past year, 2 or more episodes of homelessness in lifetime) ^{54,55}
General health (very good or excellent vs. fair to poor) ⁵⁶⁻⁵⁸
Any limitations on physical functioning ⁵⁶
Any chronic conditions (cirrhosis, hypertension, hepatitis, arthritis, diabetes, or anemia past year)
Any need for help with every day tasks (Sullivan, Dumenci, Burnam, et al. Submitted manuscript)
Psychiatric disorder: 12-month diagnosis of major depression, bipolar, schizophrenia ⁶⁰⁻⁶²
Enabling
Personal and family: income past month, any important friends or family in Houston/Harris County area, any friends with steady job or home, any health insurance (current Medicaid, gold card providing coverage for public sector indigent care through Harris County Hospital District, other health insurance) ^{†54}
Community service contacts:
Any time in jail last year, any treatment received in Houston/Harris County emergency room for alcohol, drug, or other problems last year, any outpatient care for physical health problems last year, any substance abuse treatment in Houston area between 2 and 3 years ago. ⁵⁴
Wanted but did not receive help with housing, benefits, physical health, mental health last 6 months
Need
12 month diagnosis of alcohol or drug dependence ^{‡63}
12 month diagnoses of both alcohol and drug dependence
Wanted but did not receive help with alcohol or drug problems last 6 months
Severity of substance use disorder, past 30 days: Any days of alcohol use, any days of other drug use, number of days drinking >5 drinks/day; drug use severity and alcohol use severity indexes ^{§54,64,65}

*Scores dichotomized at mean (84.15) of non-institutionalized United States population.⁵⁹

†Too few homeless persons had "other health insurance" to assess its independent association with treatment access, thus it was combined with Medicaid and Harris County indigent care in analyses.

‡Analytic subsample comprised of homeless persons with 12 month diagnosis of alcohol or drug dependence.

Scores of 3 to 7 on UM-CIDI Short Forms denote probable cases; 0 to 2, non-cases. Short Forms operationalize Criteria A and B of DSM-III-R Psychoactive Substance Use Disorder.⁶³

UM-CIDI Alcohol Dependence SF: sensitivity = 0.69, specificity = 0.99, kappa = 0.78

UM-CIDI Drug Dependence SF: sensitivity = 0.80, specificity = 0.99, kappa = 0.78

§Drug use severity = days of use of given drug multiplied by severity of that drug; alcohol use severity = days of use multiplied by amount of use.⁶⁴⁻⁶⁵

Any use of inpatient or residential treatment. To understand characteristics important in differentiating homeless persons who did and did not have at least one night of inpatient or residential treatment, we performed bivariate analyses (ie, χ^2 tests and t-tests, as appropriate) followed by multiple logistic regression analyses.

The theoretical model posits that when treatment access is explained by characteristics other than or in addition to need, areas for policy and system change may be indicated. Thus, we first regressed use of treatment on the further indicators of need for treatment. As a data reduction step, we performed principal components analysis on the seven need variables to extract linear combinations and achieved two orthogonal components with eigenvalues greater than 1.0. Scoring coefficients indicated that the first component reflected need for treatment for alcohol problems (ie, any alcohol use, binge drinking, and alcohol use severity), and the second reflected need for treatment for other drug problems (ie, any drug use, drug use severity) and perceptions of unmet need for treatment. Comorbid diagnosis of both alcohol and drug dependence loaded equally and poorly (ie, under 0.30) on both components and thus was maintained as a separate variable. Use of at least one night of inpatient or residential treatment was regressed on these two components and comorbid diagnosis, and importance of need to access was indicated with a Wald test.

In a second logistic regression analysis, controlling for need, we examined the overall contribution of the predisposing and enabling variables to access (via the Wald test), and the contributions to access of each of the individual predisposing and enabling variables. Given the large number of predisposing and enabling variables, we screened and omitted those associated with receiving services at the $P \geq 0.20$ level in bivariate analyses.

Amount of inpatient or residential treatment. To understand amount of treatment used (ie, nights of inpatient or residential treatment), we focused on the subsample of 130 of 326 homeless persons with substance use disorder who used treatment at least once during the previous year. Inpatient or residential treatment nights was transformed to the natural log to improve the distribution. Using *t* tests, we documented characteristics associated with amount of inpatient or residential treatment services used.

Multiple linear regression analysis to understand amount was also guided by the theoretical

model. Because we focused on the subset of 130 individuals who received inpatient or residential treatment, we repeated the principal components analysis to extract linear combinations of the original seven need variables for use in the regressions. Two orthogonal components resulted (eigenvalues > 1.0), the first reflecting need for both alcohol and drug treatment and the other reflecting unmet need for treatment and comorbidity of alcohol and drug use disorders. These two components were entered into a linear regression equation predicting amount of inpatient or residential treatment, and a Wald test indicated importance of need to access. Predisposing and enabling variables related to treatment amount at the $P < 0.20$ level in bivariate analyses were entered into a second linear regression equation with the two need components. Again controlling for need, we examined the contribution of the predisposing and enabling variables as a set and individually.

Results

Any Use of Outpatient Treatment

Of the 326 homeless participants in this study with alcohol or drug use disorders, only 5.6% reported making any outpatient visits during the previous year. Further, very few (3.1%) of the participants reported receiving outpatient treatment only.

Any Use of Inpatient or Residential Treatment

During the previous year, 27.5% of the 326 participants with alcohol or drug use disorders received inpatient or residential substance abuse treatment in Houston or Harris County. Compared with persons who did receive inpatient or residential treatment, those who did not were significantly less likely to be black, non-Hispanic as opposed to another ethnicity (85.7% vs. 59.9%, $P = 0.001$); to have Medicaid, Harris County indigent care, or other health insurance (79.1% vs. 42.7%, $P = 0.001$); to have received outpatient care for a physical health problem last year (24.7% vs. 14.3%, $P = 0.047$); and to have received any substance abuse treatment during the period between 2 and 3 years ago (30.0% vs. 11.6%,

$P = 0.001$). Because most insurance was Medicaid or Harris County indigent care, we investigated whether this relationship was maintained when other health insurance was omitted from the analysis. Results were identical. Also, in contrast to those who received inpatient or residential treatment, homeless persons who did not were more likely to be male (88.9% vs. 78.8%, $P = 0.041$), to be living with a partner (15.3% vs. 5.9%, $P = 0.027$), and to have poor or fair general health (48.8% vs. 31.6%, $P = 0.024$). Although differences in the following variables were not significant, it deserves mention that during the previous year, 53% of all substance-disordered homeless persons spent at least one night in jail, 31% made a nonsubstance related emergency room visit, and 63% reported an unmet need for substance abuse treatment.

In terms of need for treatment, homeless persons who received at least one residential or inpatient night were less likely than those who did not to have used alcohol (43.1% vs. 73.0%, $P = 0.001$) or other drugs (50.8% vs. 67.9%, $P = 0.015$) during the past 30 days. Treatment users also had significantly fewer days of recent binge drinking and had lower alcohol use severity index scores, although distributions of these individual continuous variables were poor.

Table 2 depicts results of multiple logistic regression analyses performed to understand whether treatment was received, as a function first of need and then of predisposing and enabling variables. Need made a significant contribution to whether one used residential or inpatient treatment during the past year, and introduction of predisposing and enabling variables significantly added to the model's ability to predict treatment use. In terms of the individual contributions of these variables while controlling for need, odds that a black, non-Hispanic person accessed treatment were more than three times greater than the odds that a person of another ethnicity accessed treatment. Living with a partner was associated with odds of treatment access that were more than three times lower than for a single person; odds that those with schizophrenia received treatment were similarly lower. Among the enabling variables, those with Medicaid, Harris County indigent care, or some other health insurance had odds of accessing treatment more than four times greater than for persons without these resources. Having received any substance abuse treatment during the 2 to 3 years before the study also

appeared to enhance the prospects of receiving treatment in the last year.

Amount of Inpatient or Residential Treatment

Among the homeless persons who had at least one night of inpatient or residential treatment, the mean number of nights was 54.0 (SD = 6.5) (mean of log number of nights = 3.17, SD = 0.17). Comparing the log number of inpatient or residential treatment nights, black, non-Hispanic homeless persons spent significantly fewer nights in treatment than persons of other ethnicities ($P = 0.001$). Persons who reported recent alcohol use and recent drug use received fewer nights of treatment ($P = 0.001$). Number of binge drinking days, and alcohol use severity and drug use severity index scores were negatively related to nights of treatment (respectively: $r = -0.19$, $P = 0.048$; $r = -0.36$, $P = 0.002$; $r = -0.31$, $P = 0.003$).

Results of regressing the logged number of inpatient or residential treatment nights, and then the set of predisposing and enabling variables, on need are shown in Table 3. Need accounted for 15% of the variance in amount of treatment used. Collectively or individually, predisposing and enabling variables that were correlated with amount of treatment at $P < 0.20$ in bivariate analyses did not contribute significantly to explaining variance in amount of treatment at the multivariate level. Although individual examination of need factors is not our focus in this study, it is noteworthy that bivariate analyses showed that those with more severe drug or alcohol use in the past 30 days received less treatment. Pearson product moment correlations between amount of use and each need variable contributing to this component were also negative.

Discussion

The prevalence of past-year alcohol and other drug use disorders indicates substantial need for treatment among homeless persons in one of the largest metropolitan areas in the southern United States. That only a quarter of substance-disordered homeless persons had accessed inpatient or residential treatment indicates a need that is largely unsatisfied. Our previous work with homeless persons in Los Angeles revealed similar

TABLE 2. Results of Multiple Logistic Regression Analyses to Determine Use of Any Inpatient/Residential Treatment Services During the Past Year Among 326 Homeless Persons With Alcohol or Drug Use Disorders

Predictors	Any Inpatient/Residential Treatment	
	Odds Ratio	(95% CI)
Need*		
Need for alcohol treatment (principal component 1)	0.67	(0.53, 0.86)
Need for drug abuse treatment (principal component 2)	1.16	(0.84, 1.61)
Comorbid alcohol and drug use disorders	4.09	(1.93, 8.67)
Predisposing [†]		
Male	0.56	(0.26, 1.24)
Black non-Hispanic (vs. other ethnicities)	3.33	(1.53, 7.26)
Currently living with partner	0.27	(0.09, 0.81)
Poor or fair general health	0.86	(0.32, 2.33)
Any chronic physical health condition	0.63	(0.27, 1.46)
Above average physical functional status	1.10	(0.46, 2.66)
Past year diagnosis of schizophrenia	0.28	(0.10, 0.75)
Enabling		
Have friends with steady job or home in Houston/Harris County	1.49	(0.57, 3.86)
Currently have Medicaid, gold card or other health insurance	4.42	(1.98, 9.85)
Any time in jail, past year	1.26	(0.62, 2.57)
Any outpatient care for physical health problem in HCC, past year	0.79	(0.34, 1.84)
Any AOD treatment 2–3 years ago in HCC	2.75	(1.29, 5.86)

F(15,334) = 5.35; P = 0.0000.

*Independent contribution of need variable set: F(3,346) = 11.88, P = 0.0000.

[†]Independent contribution of predisposing and enabling variable set: F(12,337) = 3.56; P = 0.0001.

TABLE 3. Results of Multiple Linear Regression Analyses to Predict Amount of Inpatient or Residential Treatment Services (Log No. Nights) Used During Past Year, Among 130 of 326 Homeless Persons With Alcohol or Drug Use Disorders Who Used Inpatient or Residential Treatment

Predictors	B	(95% CI)
Need*		
Need for alcohol or drug treatment (principal component 1)	-0.29	(-0.44, -0.15)
Comorbid alcohol and drug problem, and perception of unmet need for treatment (principal component 2)	0.09	(-0.25, 0.43)
Predisposing [†]		
Black, non-Hispanic (vs. other ethnicities)	-0.25	(-0.80, 0.29)
Poor or fair general health	-0.56	(-1.36, 0.24)
Any chronic physical health condition	0.43	(-0.13, 0.99)
Depression, past 12 months	0.15	(-0.52, 0.83)
Enabling		
Currently have Medicaid, gold card or other health insurance	-0.22	(-1.00, 0.56)
Have important family in Houston/Harris County	-0.41	(-1.01, 0.20)
Have friends with steady job or home in Houston/Harris County	0.59	(-0.10, 1.27)

F(9,127) = 3.48; P = 0.0007; R² = 0.238.

*Independent contribution of need variable set: F(2,134) = 8.07; P = 0.0005; R² = 0.15.

[†]Independent contribution of predisposing and enabling variable set: F(7,129) = 1.93; P = 0.069.

findings,⁴¹ and estimates from studies across the nation have revealed disproportionately high rates of alcohol and drug use disorders among homeless persons compared with community-based populations.^{47,4,48} In respects other than their notable rates of substance use disorder, homeless persons in our sample look much like those who have participated in studies in other areas of the country^{47,4,49,48} in that they are predominantly male, persons of color (and, within that group, predominantly black), and additionally suffer disproportionately high rates of mental illness. Although single-site studies cannot easily be generalized to the nation, emerging patterns of findings from studies conducted across the nation point to a social problem that is not isolated. To our knowledge, this is the first investigation of access to substance abuse treatment for homeless persons in Houston, Harris County, Texas.

Need was an important and appropriate determinant of access for homeless participants in this study. However, among homeless persons who demonstrated some need for treatment (in that they had a screening diagnosis of past-year alcohol or other drug use disorder), predisposing and enabling variables also determined whether one accessed treatment, suggesting inequity in the health services system. This contribution of predisposing and enabling variables remained even after controlling for other indicators of treatment need and comorbidity of alcohol and drug use disorder.

Confirming one of our hypotheses, the enabling characteristics of public health insurance and Harris County indigent care appeared to facilitate access; in fact, these resources emerged as the strongest predictor of access relative to other predictors. A reasonable recommendation, and one consistent with other studies, is that homeless individuals should be connected to Medicaid and to all health care benefits to which they are entitled. This recommendation comes at a particularly appropriate yet challenging time as localities turn to managed care in their attempt to provide public sector services for the persistent numbers of indigent citizens.

Consistent with findings from other studies that have examined homeless persons' treatment access,⁵ ²³ the current investigation showed that access to care involves more than economic considerations. We hypothesized that previous or concurrent involvement in other public sector systems would facilitate treatment access for homeless persons. Although this prediction was not sup-

ported, we did find that use of alcohol or drug abuse treatment in Houston/Harris County during the preceding 2- to 3-year period was important to past year treatment. This finding may reflect the importance of familiarity and knowledge of a particular service system; it may also reflect a tendency by these substance-disordered homeless persons to cycle in and out of treatment.

Epidemiological studies have shown that larger proportions of people with drug problems are found in the criminal justice and general health care systems than in the substance abuse treatment system.⁵⁰ That the community enabling variables of jail stays, emergency room visits, and outpatient medical care visits did not predict access to treatment suggests a disjuncture and lack of communication among these service systems. Perhaps few referrals of homeless persons in Houston are made to substance abuse treatment from other systems, although criminal justice and welfare systems have been found to be important pathways to drug abuse treatment in the general population.⁵⁰

Although it is possible that some study participants received treatment while in jail, significant treatment exposure in this setting would have been unlikely. The large majority of participants (82%) spent no more than 10 days in jail during the previous year. Relative to other populous states, Texas appears to provide fewer jail-based treatment services: 36.5% of Texas jails provided any treatment in 1997, compared with 56.5% in California and 63.9% in New York, the two other most populous states in the nation.⁵¹ Similarly, our emergent, complementary qualitative investigation of service providers to Houston homeless persons suggests that there were few opportunities for homeless respondents in our study to have received treatment during outpatient primary medical care visits (M.S. Ridgely & P. Mendel, verbal communication, 2001), though these data do not permit the assertion that no homeless primary care patients in Houston receive substance abuse counseling or referral. Unpublished quantitative data from this study further suggest a limited opportunity for treatment in the context of primary care: only 17% of study participants with substance use disorder reported any outpatient primary medical care visits in the past year. We believe it even more unlikely that treatment would have been received during an emergency room visit. Providers in jails, emergency rooms, and outpatient primary care settings may benefit from

training in brief assessment techniques and knowledge of any local substance abuse treatment services available to homeless persons so that opportunities for referrals can be maximized.

It is also possible that referrals to treatment from Houston jails, emergency rooms, and outpatient medical providers are being made but homeless persons do not or cannot take advantage of them, or that a limited capacity of substance abuse treatment resources in the Houston area restricts the number of referred persons who receive treatment. Estimates calculated from NASADAD state profile data for fiscal year 1996⁵² reveal that per 1,000 capita expenditures for state-supported alcohol and other drug treatment services in Texas totaled \$4,850, compared with \$15,336 in California and \$49,154 in New York. These estimates suggest that substance abuse treatment resources in the state of Texas may be fewer than in some other populous states. Although homeless persons in our study appear similar to those in other studies in terms of substance use and other characteristics, the relative scarcity of treatment services in Texas during our study period suggests that homeless persons' access to treatment in Houston might be lower than in other states where public substance abuse services are more generously funded.

Among the predisposing factors we tested, severity of homelessness was not important to access. Our variables may not have adequately captured this construct. However, homelessness for persons in this study may have been devastating and uniform, thus diluting any variations and potential impact of severity by our definition. Persons with schizophrenia were less likely to access treatment than persons without this disorder. It is well-known that co-occurrence of substance use and mental health disorders presents significant challenges for providers and for individuals wishing to receive help for their substance abuse from a program designed to address that problem only or primarily.²⁵⁻³⁰ Our findings and subsequent recommendation echo those of other researchers: homeless individuals with co-occurring psychiatric disorders require outreach and an integrated suite of services to address both problems simultaneously. That diagnoses of depression and bipolar disorder were not associated with access may point to our inability to measure the severity of these disorders at the time that treatment access was attempted. Symptoms of

schizophrenia among homeless participants may have precluded service-seeking.

Extremely few homeless persons with alcohol or drug use disorders used outpatient substance abuse treatment during the past year, whereas more than a quarter accessed inpatient or residential treatment. Preliminary results from our qualitative investigation of service providers to homeless persons in Houston shed light on this finding (M.S. Ridgely and P. Mendel, verbal communications, 2001). In our initial interviews with providers, they reported that the lack of stable residence is an important barrier to participation in substance abuse treatment programs. Referrals are therefore typically made to inpatient or residential programs to enhance prospects of a beneficial treatment experience. Although we cannot know if these Houston providers' awareness of homeless persons' multiple needs is representative of the homeless service providers in that city, it does seem to reflect a growing consensus that homeless persons require a full and integrated menu of supportive services.⁵³

Our analyses indicated that how much inpatient or residential treatment a homeless person receives is a question that should be addressed separately from whether one receives inpatient or residential treatment. Only the set of need variables appeared to influence amount of inpatient or residential treatment services used by the subset of homeless persons who had spent at least one night in treatment during the past year, and the direction of that finding was contrary to what we would have expected. Having a greater severity of drug or alcohol problems during the past 30 days (expressed as a linear combination of individual need components) was negatively associated with the amount of treatment one received. A finding based on cross-sectional, correlational analyses cannot be conclusive; further, severity was assessed for the past 30 days whereas the treatment interval covered a 12-month period. This finding nevertheless highlights the need for more thorough investigation to determine the degree to which those persons experiencing the most acute need for treatment are also those who are least likely to stay in treatment. Studies focusing only on access in terms of gaining entry to treatment may be overlooking the critical issue of treatment retention.

Our study relied exclusively on self-report data that were gathered at one point in time. Our data additionally precluded separate analysis of outpatient substance abuse treatment access because so few persons had used Houston/Harris County outpatient treatment services during the previous

year. Additionally, although we maintained the important distinction between outpatient visits and nights of inpatient or residential treatment, we could not separate inpatient (hospital-based) from residential treatment. Potential differences in access between inpatient and residential treatment should be investigated in future studies. Access to hospital-based treatment could arguably be different than to a therapeutic community or to residential programs affiliated with shelter services (eg, Salvation Army). Another study limitation is lack of data on self- or mutual-help involvement such as attendance at Alcoholics or Narcotics Anonymous meetings. Such involvement might ease access to more formal treatment; alternately, it might be preferred over more formal treatment.

Homeless respondents were asked in a single question about Medicaid and possession of a gold card, which gave them access to Harris County Hospital District indigent services. Thus, although we can say that public benefits were important to access, we are not able to determine whether there are differences in access between these two types of public support. Clearly, further investigation of the "safety net" available to homeless persons in Houston is necessary. This research must inform efforts to understand access to inpatient versus residential treatment services, as reimbursements may differ for these two kinds of overnight care.

Despite these limitations, this study, conducted in a southern metropolitan area of the United States, adds to previous findings on access to health care among homeless persons, highlights a pattern of disparities in access for this population, and underscores the importance of health insurance. Our investigation has also revealed a possible dearth of linkages between substance abuse treatment and other common providers of services to homeless people.

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