

# Self-Reported Changes in Drug and Alcohol Use After Becoming Homeless

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Homelessness is associated with premature mortality and high levels of morbidity,<sup>1-3</sup> despite the fact that homeless persons utilize health care systems at very high rates.<sup>4-7</sup> Much of this high rate of use has been attributed to substance abuse,<sup>8,9</sup> which, in a study of homeless persons in Alameda County, California, was reported to be 8 times more prevalent among the homeless than among the general population.<sup>10</sup> Also in this study, more than half (52.4%) of homeless respondents had a current substance use disorder. Current drug disorders were more common among respondents who were younger and who had been homeless longer. Whereas in the general population low educational attainment, unemployment, and marital status are associated with substance use, homelessness and recent institutionalization have been identified as significant factors in substance use among homeless persons.<sup>11</sup>

However, we know much less about the relationship between homelessness and substance abuse than we do about the incidence or prevalence of substance abuse disorders among homeless persons. What effect does homelessness have on the amount of drugs and alcohol being consumed? How is a drug addiction supported in the context of the extreme poverty associated with being homeless? What are the individual and societal costs of addiction among the homeless? Models attempting to define the relationship between substance abuse and homelessness have noted a bidirectional relationship, with both social selection and social adaptation taking place.<sup>12</sup> Substance abuse has been linked indirectly to actual loss of housing but linked directly to a breakdown of social bonds,<sup>13</sup> whereas chronic homelessness has been associated with an earlier age at onset of drug and alcohol use disorders.<sup>14</sup> An appreciation of the dynamics and causative factors associated with homelessness is necessary if we are to develop better-informed public policies and medical and social interventions.

**Objectives.** We identified substance use patterns and factors associated with increased substance use after users become homeless.

**Methods.** We carried out a 2-city, community-based survey that used population-proportionate sampling of 91 sites with random selection at each site.

**Results.** Five hundred thirty-one adults were interviewed; 78.3% of them met *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition* criteria for substance abuse or dependence. Most of those who met the criteria reported using drugs and alcohol less since they became homeless, commonly because they were in recovery. Factors independently associated with increased use were no health insurance (odds ratio [OR]=1.6; 95% confidence interval [CI]=1.02, 2.58), alcohol abuse or dependence (OR=3.5; 95% CI=1.85, 6.78), and selling plasma (OR=2.6; 95% CI=1.32, 5.14) or panhandling (OR=3.0; 95% CI=1.65, 5.55) to acquire drugs.

**Conclusions.** Becoming homeless plays a role in self-reported substance use. Multiservice treatment programs and tailored interventions for homeless persons are needed. (*Am J Public Health.* 2004;94:830-835)

In this article we present data from a 2-city, community-based study of urban homeless adults that describes the effects of self-reported trends and patterns of substance use on homeless status, means of acquiring drugs and supporting an addiction, and interactions with the criminal justice system. Our hypothesis in this study was that drug and alcohol use would increase once a person became homeless, reflecting the increased stresses and social isolation of being homeless and the role of substance abuse in causing homelessness.

## METHODS

We conducted a cross-sectional survey of homeless adults in Pittsburgh and Philadelphia, Pa, from April to August 1997. Selection was performed with probability-proportionate sampling of interview sites and random selection of interviewees at the each site.

### Study Population

Inclusion criteria were being 18 years of age or older and homeless (defined as being unsheltered or living in an emergency shelter, transitional housing unit, or "doubled-up" with

friends or family) for most of the previous 3 months. Individuals were excluded if they were incoherent, abusive, psychotic, or acutely intoxicated at the time of interview. Each participant received \$5 in cash or the equivalent in bus tokens and a listing of area health and social service providers after completing the interview.

### Survey Design

To capture the full spectrum of homeless persons, 91 interview sites (Pittsburgh: 39 sites; Philadelphia: 52 sites) were used for this study. Sites were selected on the basis of recommendations by homeless providers in each city and from listings compiled by the Pittsburgh Office of Hunger and Homeless Services and the Philadelphia Office of Emergency Sheltering Services. The 91 sites represented 69.5% of all sites identified. Sites were not used if permission to conduct interviews was not obtainable or if the site had too few (<7) clients. The sites were grouped as unsheltered enclaves (including abandoned buildings, cars, and outdoors) and congregate eating facilities (n=28), emergency shelters (n=36), and transitional housing or single-

room-occupancy dwellings ( $n=27$ ). Three to 5 sites within each group were selected every 2 weeks with probabilities proportional to size sampling based on previously enumerated site capacities to determine the frequency of site selection. Random sampling of individuals was then performed at each site.

### Subject Identification and Recruitment

Selection of interviewees at a site used 1 of 4 selection plans depending on the type of site and the number of people present at the time of the interview. When only 1 subject was encountered, that person was approached and screened for eligibility. If fewer than 7 people were at the site, the interviewer assigned each person a number from 1 to 6 and a die was tossed to determine which person was interviewed. For those sites with a sign-in list or at which a list could be created, the interviewers were given a randomly assigned number used to select the person from the list to screen. Finally, for sites with no sign-in list with 7 or more individuals present, the interviewers selected a fixed environmental marker (e.g. a doorway, bench, table, etc.) and counted people from that point, then used the same randomly assigned number to select the person for screening. Markers were typically a park bench for outdoor sites or a chair or couch for indoor sites. To ensure that each person was interviewed only once, a list of all previously interviewed participants (with social security numbers and birth dates) was distributed bimonthly to the interviewers.

### Survey Instrument

We used a version of the National Technical Center Telephone Substance Dependence Needs Assessment Questionnaire, modified for face-to-face interviews and with questions specific to homelessness added.<sup>15</sup> The survey included questions on demographic characteristics, past and current alcohol and drug use, self-reported medical and mental health comorbidities, prior substance abuse-related treatments, interactions with the criminal justice system, means of acquiring drugs, and a 19-item, Likert-scored assessment of current health and social service needs. All additions to the questionnaire either were used in our previous Homeless Health Utilization Survey,<sup>4</sup> a prior survey of homeless persons in Los An-

geles County, California, conducted by Robertson et al.,<sup>16</sup> or were pilot tested in sample interviews of homeless individuals before use. Determination of substance use disorders was based on *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition*<sup>17</sup> (*DSM-III-R*) diagnostic criteria for alcohol and drug dependency with software developed for the National Technical Center questionnaire.

### Data Collection

Interviews were conducted on-site in as private a setting as possible, in person and one-on-one, by 4 formerly homeless research assistants to facilitate a better acceptance of the survey and to create a more comfortable environment for respondents to truthfully answer questions. Each interviewer received extensive training before beginning the study as well as intermittently during the study to maintain consistency among interviews. All interviews were audiotaped, with 10% of each interviewer's tapes randomly selected for review to ensure data integrity. Weekly debriefing sessions were also conducted with interviewers in both cities to discuss problems and issues related to site selection, participant recruitment, or the survey instrument.

### Methods of Analysis

To provide a more inclusive assessment of need within this population, the unit of analysis in this study included both individuals with current substance abuse and individuals with substance dependence. Preliminary analyses identified no significant differences between persons with current abuse and persons with dependence. This combining of abuse and dependence categories to identify the cohort was also used in an earlier community-based study that examined substance abuse among homeless persons.<sup>10</sup>

Categorical data were compared with either a  $\chi^2$  test or the Fisher exact test. Continuous variables were compared with the Student *t* test. A *P* value of less than .05 on the basis of 2-sided tests was considered statistically significant. To identify independent risk factors for increased use of drugs or alcohol after becoming homeless, we analyzed demographic characteristics, reasons for homelessness, substance use patterns, and self-reported means of getting money with a logistic regression model for

each group of variables. Independent factors obtained in each group analysis were included in a global logistic regression model. All statistical analyses were conducted with SPSS version 10.0 for Windows (SPSS Inc, Chicago, Ill).

## RESULTS

A total of 531 persons, 267 in Pittsburgh and 264 in Philadelphia, were interviewed, representing a survey response rate of 93%.

### Demographics

As shown in Table 1, the majority of respondents were in their late 30s, African American, male, and single. Most had at least a high school diploma or equivalent, and more than three fourths had been sheltered or homeless (emergency shelter, transitional housing, or doubled-up with family or friend) for most of the previous 3 months. Almost 25% reported being veterans. Although the majority of respondents reported having been homeless for less than 12 months, almost 1 in 3 had been homeless for more than 3 years. Overall, 60.8% had health insurance, typically Medicaid coverage. Almost two thirds of the respondents reported having been diagnosed with 1 or more medical problems (hypertension: 25.0%; arthritis/musculoskeletal condition: 14.0%; respiratory disorder: 13.0%). Similarly, almost half reported that they had been diagnosed with 1 or more mental health problem (depression: 39.0%; anxiety disorder: 15.0%; posttraumatic stress disorder: 12.0%). No difference was found in age, gender, or sheltering arrangement among respondents in these 2 geographic areas. Significantly more African Americans were interviewed in Philadelphia than in Pittsburgh (87.1% vs 75.7%,  $P<.01$ ). More Pittsburgh homeless than Philadelphia homeless had at least a 12th-grade education (78.2% vs 61.8%,  $P<.01$ ), were working in some capacity (38.2% vs 25.0%,  $P<.01$ ), and reported being disabled (59.1% vs 46.2%,  $P=.01$ ).

### Substance Abuse/Dependence Patterns

Overall, 78.3% of respondents met *DSM-III-R* criteria for substance abuse or for dependence on alcohol, drugs, or a combination of alcohol and drugs. More Philadelphia homeless than Pittsburgh homeless screened

**TABLE 1—Demographics, Reasons for Homelessness, Self-Reported Comorbidities, and Substance Use Disorders Among Respondents in Pittsburgh and Philadelphia**

Characteristics	Percentage of Respondents		P
	Pittsburgh (n = 267, Mean Age = 40.3 y)	Philadelphia (n = 264, Mean Age = 39.1 y)	
<b>Demographics</b>			
Race: African American	75.7	87.1	<.01
Gender: male	78.3	81.8	.31
Education: ≥ 12th grade or general equivalency diploma	78.2	61.8	<.01
Marital status: single/divorced/widowed	97.4	94.4	.08
Veteran	27.3	21.2	.10
Health insurance: none	41.4	37.1	.31
Sheltering status (3 mo): unsheltered	24.1	23.5	.87
Duration of homelessness (mo)			
≤ 12	39.9	45.5	.19
13–36	32.0	26.9	.20
> 36	28.2	27.7	.90
<b>Reasons for homelessness (major reason on 5-point Likert scale)</b>			
No money	75.3	71.9	.37
No job	66.3	68.8	.53
Alcohol/drug use	50.0	67.3	<.01
Psychiatric problem	31.1	25.5	.15
Family crisis/domestic dispute	20.6	30.8	.01
<b>Self-reported comorbid conditions</b>			
Chronic medical conditions			
1 condition	24.7	30.3	.15
≥ 2 conditions	31.9	33.2	
Psychiatric conditions			
1 condition	22.1	20.5	.65
≥ 2 conditions	22.8	25.0	.55
Current <i>DSM-III-R</i> <sup>17</sup> substance abuse/dependence	73.8	83.0	.01

positive for substance abuse or dependence (83.0% vs 74.8%,  $P < .01$ ), with the difference predominantly resulting from higher rates of cocaine use. Alcohol, cocaine, and heroin were the most commonly reported substances of abuse, with alcohol being the most commonly abused substance both individually and in combination with other drugs. Almost half of all respondents met criteria for abuse or dependence of only 1 substance, whereas 31.7% abused combinations of 2 drugs, and 23.1% abused or were dependent on 3 or more substances (Table 2).

### Means of Acquiring Drugs and Legal Consequences

When respondents were asked to select from a list of different means they had used to

be able to afford specific drugs (selling belongings, working for a dealer, diverting funds from daily sustenance, exchanging sex for drugs), responses revealed a consistent pattern (Table 3). Diverting funds from daily sustenance or from an entitlement (i.e., using rent or food money, selling or trading food stamps) was the most common practice, regardless of the drug in question (range: 46.6%–76.4%). This was followed by selling one's belongings, working for a drug dealer in exchange for drugs, and stealing. Panhandling and begging for money was reported by almost half of those using heroin and cocaine but by fewer respondents using marijuana. Diverting child support money and exchanging sex for drugs were the least commonly reported means of acquiring drugs, although they were still

self-reported by a substantial minority of respondents (range: 26.2%–38.5%). Heroin users consistently reported using all of these means at higher rates than did cocaine users, whereas marijuana users reported engaging in them the least. There was no difference in reported rates for any behavior between cities.

Overall, 18.3% of respondents reported that they had been arrested for a crime in the past 12 months. Of those who had been arrested ( $n = 96$ ), almost two thirds reported being arrested once during that time period (63.4%), and 36.1% reported spending more than 30 days in jail during the previous 12 months. Reasons for arrest that were directly related to drug and alcohol use (disorderly conduct, threatening behavior, public drunkenness, possession of an illegal substance, possession with intent to sell, and driving under the influence) accounted for 87 (53.0%) of the 164 arrests. Arrests for prostitution, shoplifting, and robbery, which may be indirectly related to substance abuse, accounted for 38 arrests (23.2%). There was no difference between cities in either the overall number of individuals arrested or for the crimes committed, except for shoplifting (Pittsburgh 8.7% vs Philadelphia 33.3%,  $P < .01$ ) and possession of an illegal substance with intent to sell (Pittsburgh 2.2% vs Philadelphia 17.6%,  $P = .01$ ).

When respondents were asked to rate reasons for becoming homeless, 3 of 9 potential reasons were identified as "a major reason" by more than half of respondents: no money (73.4%), no job (67.4%), and alcohol or drug use (58.4%). Psychiatric problems were rated as a major problem by 28.2%, and family crisis/domestic dispute was a major reason for 25.6% of respondents. Significantly more homeless persons in Philadelphia than in Pittsburgh reported drug or alcohol use and family crises as major reasons (30.8% vs 20.6%;  $P = .01$ ), with no other differences noted between cities.

### Substance Use After Becoming Homeless

As shown in Table 4, the majority of respondents with current substance abuse or dependence (69.5%) reported using less or the same amount of drugs and alcohol after becoming homeless compared with their use before becoming homeless. Individuals who

**TABLE 2—Substance Abuse/Dependence Patterns Among Current Users**

	Percentage of Respondents		P
	Pittsburgh	Philadelphia	
1 drug only	39.8	31.1	.04
Alcohol only	25.5	9.8	<.01
Cocaine only	9.0	14.8	.04
Heroin only	3.0	3.8	.61
2 drugs	22.4	27.3	.19
Cocaine + alcohol	13.5	22.3	.01
Alcohol + marijuana	4.5	1.5	.04
Heroin + cocaine	3.7	3.0	.65
3 drugs	11.6	24.6	<.01
Cocaine + marijuana + alcohol	8.6	11.0	.35
Heroin + cocaine + alcohol	1.1	4.5	.02
Heroin + cocaine + marijuana	0.4	1.5	.20
Heroin + marijuana + alcohol	0.7	1.1	.63

**TABLE 3—Self-Reported Methods for Obtaining Drugs**

Method	Percentage of Respondents		
	Marijuana (n = 133)	Cocaine (n = 267)	Heroin (n = 65)
Selling/trading food stamps	46.6	69.7	70.8
Selling drugs/working for a dealer	48.9	59.9	72.3
Using rent/food money	48.1	76.4	75.4
Selling belongings	37.6	68.2	72.3
Stealing	31.6	61.4	69.2
Panhandling/begging	22.6	37.4	49.2
Using child support money	13.5	26.2	38.5
Exchanging sex for drugs	0.0	28.5	33.9

reported more drug and alcohol use were significantly more likely to be nonveterans, to be without health insurance, to have been homeless longer than 12 months, and to have been arrested in the previous 12 months. They were also significantly more likely to report no money, no job, no entitlement assistance, and drugs and alcohol as major reasons for their homelessness. They were more likely to use alcohol or heroin and to report panhandling, stealing, or selling plasma to support their addiction. In the multiple logistic regression model, only no health insurance (odds ratio [OR]=1.6; 95% confidence interval [CI]=1.02, 2.58), alcohol abuse/dependence (OR=3.5; 95% CI=1.85, 6.78), panhandling (OR=3.0; 95% CI=1.65, 5.55), and selling plasma (OR=2.6; 95% CI=1.32, 5.14) were independently associated with using more

drugs or alcohol after becoming homeless. Significantly higher proportions of Pittsburgh homeless reported using more (33.0% vs 23.1%,  $P<.01$ ) or the same amount of alcohol (33.0% vs 19.4%,  $P<.01$ ) after becoming homeless compared with their Philadelphia counterparts, with no other differences noted.

For respondents reporting less use of drugs or alcohol, the most commonly cited reason for the decrease was that they were in recovery (50.6%), followed by not being able to afford the substance now that they were homeless (21.6%). For respondents who reported using more alcohol or drugs since becoming homeless, mental health issues (21.2%), typically self-reported anxiety or depression, were commonly cited reasons for each drug category. The “homeless environment” was cited as a reason for drinking more alcohol by

18.0% of Pittsburgh respondents and 2.4% of Philadelphia respondents ( $P=.02$ ).

**DISCUSSION**

The data presented here describe and contextualize the relationship between substance abuse and homelessness in 2 urban cities. As has been noted in previous studies, substance use is extremely prevalent among homeless persons and can be a major precipitant of homelessness.<sup>4,10,18</sup> However, the relationship between homelessness and substance abuse is also complex, with no clear cause or effect association uniformly identified in previous studies.<sup>12,13</sup> In our study, more than three fourths of the urban community-based sample met *DSM-III-R* criteria for substance abuse or dependence, and more than half reported that substance abuse played a major role in their becoming homeless. Our finding that 69.5% of respondents with a substance use disorder reported decreased or the same amount of use after they became homeless is noteworthy and somewhat surprising. It indicates that substance use among homeless persons is not a static condition, but rather one that is influenced by many variables, including cost, co-occurring mental illness, availability of treatment, and other features unique to homelessness. More respondents had reduced their cocaine and heroin use than their alcohol intake; for those individuals who did report a decline in substance use, a substantial proportion attributed the reduction to their being in recovery. For those who reported an increase in their substance use after they become homeless, the increase often was in response to self-reported mental health symptoms. This apparent self-medication highlights the co-occurrence of mental health issues with substance abuse among homeless persons<sup>19</sup> and the need for dual-diagnosis-specific and other integrated care approaches. Not surprisingly, increases in substance use after becoming homeless were noted more commonly with alcohol than with other substances, a finding perhaps related to cost or availability. Begging, panhandling, and selling plasma to support one’s addiction and not having health insurance were independently associated with increased substance use after becoming homeless. Whether these factors are causal or reflect

**TABLE 4—Differences Between Individuals Reporting More Drugs or Alcohol Use Upon Becoming Homeless and Those Reporting Less or the Same Amount of Drug and Alcohol Use**

Demographics	Less or Same Use (n=289)	More Use (n=127)	P	OR (95% CI)
Age	38.3 (±7.9)	40.2 (±9.3)	0.05	
Race: African American	86.8 (243)	83.7 (103)	0.42	
Gender: male	83.4 (241)	83.5 (106)	0.99	
Education: < 12 <sup>th</sup> grade	34.6 (100)	30.2 (38)	0.38	
Single/divorced/widowed	96.9 (280)	96.9 (123)	0.99	
Veteran	28 (81)	16.5 (21)	0.01	
Health Insurance: none	36.9 (106)	52.8 (67)	<0.01	1.6 (1.02, 2.58)
Homeless ≥ 12 months	37.4 (108)	50.4 (64)	0.01	1.4 (0.88, 2.25)
Unemployed	64.7 (187)	63.8 (81)	0.86	
Arrested in last 12 mo.	17.3 (50)	27.6 (35)	0.02	1.4 (0.82, 2.48)
Reasons for homeless				
No money	67.7 (195)	84.3 (107)	<0.01	
No job	62.2 (179)	81.9 (104)	<0.01	
Alcohol/drug use	64.1 (184)	78.7 (100)	<0.01	1.68 (0.98, 2.87)
Psychiatric problem	29.9 (86)	29.1 (37)	0.88	
Family crisis	27.1 (78)	29.1 (37)	0.67	
No general assistance	23.6 (68)	40.2 (51)	0.01	
No medical assistance	18.5 (53)	33.9 (43)	0.01	
Substance use:				
Alcohol	65.4 (189)	89.8 (114)	< 0.01	3.5 (1.85, 6.78)
Cocaine	59.9 (173)	60.6 (77)	0.88	
Heroin	17 (49)	9.4 (12)	0.05	
Marijuana	28.4 (82)	26.8 (34)	0.74	
Two or more drugs	54.3 (157)	63 (80)	0.88	
Means of support:				
Steady job	14.9 (43)	5.5 (7)	<0.01	
Odd jobs	31.1 (90)	42.5 (54)	0.03	
Social security	18 (52)	10.2 (13)	0.05	
General relief/welfare	36.7 (106)	43.3 (55)	0.20	
VA benefits	3.8 (11)	1.6 (2)	0.23	
Friends/family	21.1 (61)	29.1 (37)	0.08	
Begging/panhandling	8.7 (25)	29.9 (38)	< 0.01	3.0 (1.65, 5.55)
Hustling/stealing	13.8 (40)	30.7 (39)	< 0.01	2.6 (1.32, 5.14)
Selling plasma	7.2 (21)	22.8 (29)	< 0.01	

a consequence of increased substance use is not discernable from our data. However, these findings do indicate that specific interventions and accommodations may be needed to connect this subgroup of homeless persons with necessary and appropriate services.

Our data also describe many of the societal costs of homelessness and substance abuse, underscoring the importance of policies that address the immediate and basic needs of homeless persons and that assist individuals in escaping poverty. For the majority of respon-

dents, acquiring drugs after becoming homeless typically involved at least 1 illegal activity placing them and their families at significant risk. Although these self-reported responses are likely to have underreported criminal behavior, the proportion reporting an arrest within the past 12 months that was either directly or indirectly related to substance abuse and the criminal activities associated with acquiring drugs was substantial. The high percentage of individuals reporting that they diverted funds from food stamps, rent money,

and child support is frustrating but should be understood in context. Previous studies found that most arrests of homeless persons were for less severe offenses related to maintaining subsistence.<sup>20</sup> Other studies found that receipt of disability benefits was not associated with an increase in substance abuse but was associated with an improvement in quality of life.<sup>21,22</sup>

The most commonly reported reason for decreasing the use of drugs or alcohol in this survey was that the person was in recovery. None of the interviews occurred at substance abuse treatment facilities, and only 12.5% of individuals who reported the same or reduced use after becoming homeless were currently living in transitional housing settings in which substance abuse services might have been linked to their sheltering. Although homeless persons are receiving drug and alcohol treatment, they are still homeless despite their recovery efforts. This situation highlights the importance of linking substance abuse treatment for homeless persons to housing<sup>23</sup> and other wraparound service needs. This linking should include medical and mental health care, permanent housing, education assistance, or work readiness programs. Strategies for homeless persons need to include more outreach and on-site treatment collocated in emergency shelters, soup kitchens, and other congregate sites. Having health insurance was independently associated with using less drugs and alcohol and presumably plays an important role in treatment availability. Public policies that restrict health insurance eligibility among homeless persons or that make treatment difficult to receive even with coverage are likely to have a negative effect at both an individual and a societal level.

It is noteworthy that significant differences were observed between homeless persons in Pittsburgh and those in Philadelphia. Higher rates of substance use were found in Philadelphia, and more Philadelphia homeless persons identified drug and alcohol use as a major cause of their homelessness. Pittsburgh homeless persons more often reported using alcohol and also using alcohol more after becoming homeless. We suspect that some of the differences, especially in cocaine use, may be related to the relative proximity of Philadelphia to other eastern cities and to a seaport where access to the drug may be easier and costs lower. Many of the demographic

differences likely reflect general population differences between the 2 cities. It is also important to note that at the time of this survey, Philadelphia had a central processing system for homeless persons seeking emergency shelter and thus was more likely to have on-site counselors and interventionists in their shelter facilities. The availability of this system may have contributed to the greater self-reporting of need and greater insight into the association between substance use and homelessness found among Philadelphia respondents.

Our study had several limitations. We relied on self-reported data from a cross-sectional survey. Given the sensitive nature of some of the questions, underreporting was likely to have affected some results. Self-reported mental health conditions were likely underreported because of the social stigma associated with many mental health conditions and because we had asked only for conditions diagnosed by a health professional, which assumes access to that level of care. Questions regarding substance use patterns may also reflect biased self-reporting, because respondents may have felt compelled to report reduced use, particularly if they were interviewed in a setting in which reduced use was promoted. Using formerly homeless community health workers as interviewers minimized some of this bias by facilitating a more trusting environment for collecting information. We did not objectively measure or quantify actual substance use changes, which are subject to both recall and reporting bias. The use of standardized *DSM-III-R* criteria to determine current abuse and dependence provided some objectivity in estimating the prevalence in this sample. Our sampling strategy was deliberately intended to capture a broad spectrum of urban homeless persons and to reflect the heterogeneity of the population. Although the use of 91 sites does reflect a methodological rigor, it is possible that the overrepresentation of larger sites may have created a selection bias. Finally, the sample was from 2 urban mid-Atlantic cities. Significant differences noted between the 2 samples underscore a potential for regional variability to be accounted for when making generalizations.

In summary, these data provide a more in-depth description of the role of substance abuse in homelessness. These findings support the need to make substance abuse treatment

more available and linked to the broader objectives of helping individuals achieve stable housing. ■

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### Contributors

T.P. O'Toole designed and supervised the study, supervised the data analysis, and wrote the article. J.L. Gibbon supervised data collection and contributed to the statistical analysis. B.H. Hanusa assisted in the study design and statistical analysis. M.J. Fine assisted in the study design, data analysis, and editing of the article. P.J. Freyder assisted in the study design and data interpretation. A.M. Conde assisted in the statistical analyses and data interpretation.

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### Human Participant Protection

This study received approval from the University of Pittsburgh psychosocial study review board and the University of Pennsylvania institutional review board. All participants provided informed consent.

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