ESTIMATING THE PREVALENCE OF SUBSTANCE ABUSE AMONG PEOPLE WHO ARE HOMELESS

Ronaldo Iachan, Michael L. Dennis, and Robert M. Bray, Research Triangle Institute
P. O. Box 12194, Research Triangle Park, NC 27709-2194

1. Introduction

Surveying homeless and transient people about their substance use presents a number of methodological challenges. These challenges include issues of population coverage, definitions of sampling frames, issues of multiplicity, definitions of homelessness and approaches to measuring substance use. In this paper, we describe methods and selected findings from a survey of the homeless and transient population in the District of Columbia (DC) Metropolitan Statistical Area (MSA) that address a number of these issues. The current survey was part of the Washington, DC, Metropolitan Area Drug Study (DC*MADS) that was sponsored by the National Institute on Drug Abuse (NIDA). The main objectives of DC*MADS were to

- estimate the prevalence, correlates, and consequences of drug abuse among the diverse populations residing in the metropolitan area, and
- develop a research model for similar data collection about drug abuse in other major metropolitan areas.

The DC*MADS Homeless and Transient Population study involved interviews with people who were in shelters, used soup kitchens or food banks, or were living in outdoor encampments. The survey data included their demographics, history of homelessness, illicit drug use, alcohol use, criminal activity, physical health, mental health, employment, receipt of services, and entitlement participation.

2. Sample Design

The sample design involved selections over both time and space to develop estimates for the homeless and transient population on an "average" day between February and June 1991. Four temporal samples of 16 days each were selected in the months of February, March, April, and June 1991. Spatially, there were one to two samples from each of the four sample frames: two samples of shelters, one sample of soup kitchens, one sample of encampment clusters, and two samples of street census tracts and blocks. Details of the sample design may be found in Iachan and Dennis (1993).

The temporal sample was selected as a stratified random sample of 16 days for each of the four months. Temporal strata were weeks with four days randomly sampled within each week. First-stage, spatial sample units were randomly assigned to selected days, so that the mean over the sampled days is an unbiased estimate of the average daily number of homeless people (during a given month or the entire data collection period). This approach also eliminated the need to estimate multiplicity across sampled days.

The shelter and soup kitchen samples were selected in two stages. The winter and spring samples of shelters were stratified by size, the size measure being shelter capacity. The first stage units for the soup kitchen sample were selected with probabilities proportional to size, the size measure being the expected number of persons served for a particular meal at a single site.

The two seasonal street samples were selected in three stages; sample tracts and blocks were selected with stratified random sampling in the first two stages. Tracts and blocks (in the sampled tracts) were classified as high, medium, or low according to expert ratings. The two block samples, selected for the winter and for the spring data collection, were selected from a single sample of tracts. Encampments, defined in terms of contiguous census blocks were identified by the same local experts who provided the ratings for the street sample.

3. Field Procedures

Selected persons were approached by trained interviewers and asked to take part in the study. Interviews, which were anonymous and conducted in-person, lasted an average of 40 minutes. Respondents received $10 as compensation for their time and participation.

A total of 908 interviews were conducted in four sampling frames:

- 477 interviews with residents sampled from 93 shelters;
- 224 interviews with patrons sampled from 31 soup kitchens and food banks;
- 143 interviews with homeless people found in 18 encampments identified by local providers; and

- 64 interviews with homeless people in an area probability sample of 432 census blocks in the DC MSA.

After data collection and editing, the data were weighted to represent the entire homeless and transient population of the DC MSA. The survey weights were adjusted for institutional nonresponse, individual nonresponse, and overlap between the frames within the sample day. The institutional response rate for shelters and soup kitchens combined was 82.6%. The response rate for eligible individuals across the four frames was 86.1%. More detailed information on the methodology and results is available in the study's final report (NIDA [Dennis, Iachan, Thornberry, & Bray], 1993).

4. Characteristics of the Homeless Population

Table 1 presents estimates of the demographic characteristics of the DC MSA's homeless and transient population in 1991. The table includes separate estimates for each of the four sampling frames (i.e., shelter, soup kitchen, encampment, and street), and a multiplicity-adjusted total population estimate in the final column. Highlights include the following:

- The homeless and transient population was predominantly male (75.9%), with the percentage of males being lowest in shelters.
- Nearly half of the population was 35 years of age or older. The highest percentage of persons over age 35 was found in encampments.
- The population was predominantly black (75.8%). Whites were more likely to be in encampments than in the soup kitchens or shelters.
- An estimated 21.5% of the population was employed full-time. This ranged from only 6.4% of the street respondents to 24.0% in the shelter and soup kitchen samples.

Examination of the different frames showed differences in substance use estimates. Compared with the census shelter estimates (Barrett, Anolik, & Abramson, 1992), people in the DC MSA shelters were more likely to be male, older, black, and to have more than a high school education.

To contrast the different frames further, the estimated percentage of people in each sampling frame who could be classified into groups defined by the McKinney Act (Interagency Council on the Homeless, 1991) were computed. These groups are defined as people who are either physically or mentally ill, heavy alcohol drinkers, past month drug users, unemployed, veterans, youth, or family members. An estimated 57.5% of the population had any alcohol, drug, or mental problems, including 27.5% who were heavy alcohol drinkers, 34.3% who were drug users, and 28.1% who had a mental illness history. The rates of reporting one or more of these problems were significantly lower in shelters (42.7%) than in soup kitchens (66.1%), street locations (71.1%), or encampments (72.8%).

5. Coverage for Different Frames

Analyses indicated differences in coverage of the homeless population by the four sampling frames. Because the sampling frames overlap, the gains of adding new frames were evaluated by examining the marginal increase in subpopulation coverage that they offered. Table 2 shows the percentages of the subpopulation covered by a shelter frame, a shelter plus a soup kitchen frame, those two plus an encampment frame, and those three plus a street frame (ordered by the unit cost per interview in each frame). As in Table 1, this table presents estimates of population totals in the first row, and an overall population total estimate that is adjusted for multiplicity.

The population coverage by frame indicates that shelters alone covered 56.3% of the total population on an average day. The addition of soup kitchens raised the coverage to 93.2%. By including also encampments, the three frames combined covered 94.2% of the total population. Cumulative coverage was lower for heavy alcohol users (86.5%) and the unemployed (90.2%); it was higher for veterans (97.4%) and drug users (98.1%).

The results suggest that the contribution of street block samples was typically in the 5% to 15% range, and that shelters alone do not adequately cover the population or major subgroups of interest. The addition of soup kitchens and encampments generally brought the population coverage to more than 90% and always to more than 80%. Thus, studies of the homeless that use only a single frame will miss substantial parts of the homeless and transient population and will yield prevalence data that are not good representations of the population.

6. Estimating Substance Abuse Prevalence

Like general population characteristics, the rates of substance abuse also varied by sampling frame. People found in soup kitchens were more likely to report past month illicit drug use (50.2%) than those found in outdoor encampments (40.9%;z=1.80,p=.07), other street locations (24.4%;z=2.60p=.01), or shelters (18.8%;z=5.45,p=.00) (NIDA [Dennis, Iachan, Thornberry & Bray], 1993). The relatively lower

rates found in shelters are hardly surprising given that many shelters have "do not admit" policies regarding current drug users and appear to be at least partially successful in enforcing them.

Recent attention has also focused on the fact that compared to longitudinal sampling, cross-sectional sampling appears to generate higher rates of problems such as substance abuse (Culhane, Dejowski, Ibanez, Needham, Macchia, 1993). The present study provided mixed support for this position. On the one hand, there was little difference in the rates of past month illicit drug use among people homeless for their first time, whether they had been so for less than six months or more than six months (27.0% vs 23.7%;z=0.44,p=.66). On the other hand, the rates were higher for people who had previously been homeless regardless of whether they were currently homeless (42.8% vs. 27.0%; z=2.22,p=.03).

In view of these differences, it is easy to postulate that differences across studies in institutional policies, geographic and temporal sampling issues explain much of the wide variation in the published rates of substance abuse among homeless people observed by Fisher (1989). Another major problem in homeless studies is variation in how substance abuse is measured and defined (Dennis, 1991; Dennis & Iachan, 1992). Not surprisingly, different time periods and different levels of use result in notably different estimates.

Figure 1 show how the rates of alcohol, drug and needle use vary by recency and/or severity. Although 80% of the homeless population admitted to having used drugs in their lifetime, 57.7% reported using drugs in the past year and 34.3% reported using it in the past month. Clearly, the time reference is important when assessing drug use prevalence. Level of use also varies considerably. Some 69.8% reported using any alcohol in the past month, but only 27.5% were classified as heavy alcohol users. It is also clear that the rates vary depending on the drugs asked about. Furthermore, comparison of heroin and needle use rates suggest that the common practice of equating these two numbers is clearly inappropriate. Thus, a clear understanding of drug use and related behaviors requires focused measures that specify the reference period and level of use.

7. Conclusion

This paper has demonstrated the importance of geographic sample mix, time, and definition in estimating the prevalence of substance abuse among homeless people. Since many studies do not specify either the time period, severity, the specific drugs that have been taken, or the route of administration when asking about drug use (e.g., some studies ask simple global questions such as Are you a drug user?, Have you used drugs?), they can hardly be expected to produce consistent (or even reliable) estimates. Future studies should pay greater heed to addressing these issues and, at a minimum, reporting the limitations of their sampling and instrument designs.

8. References

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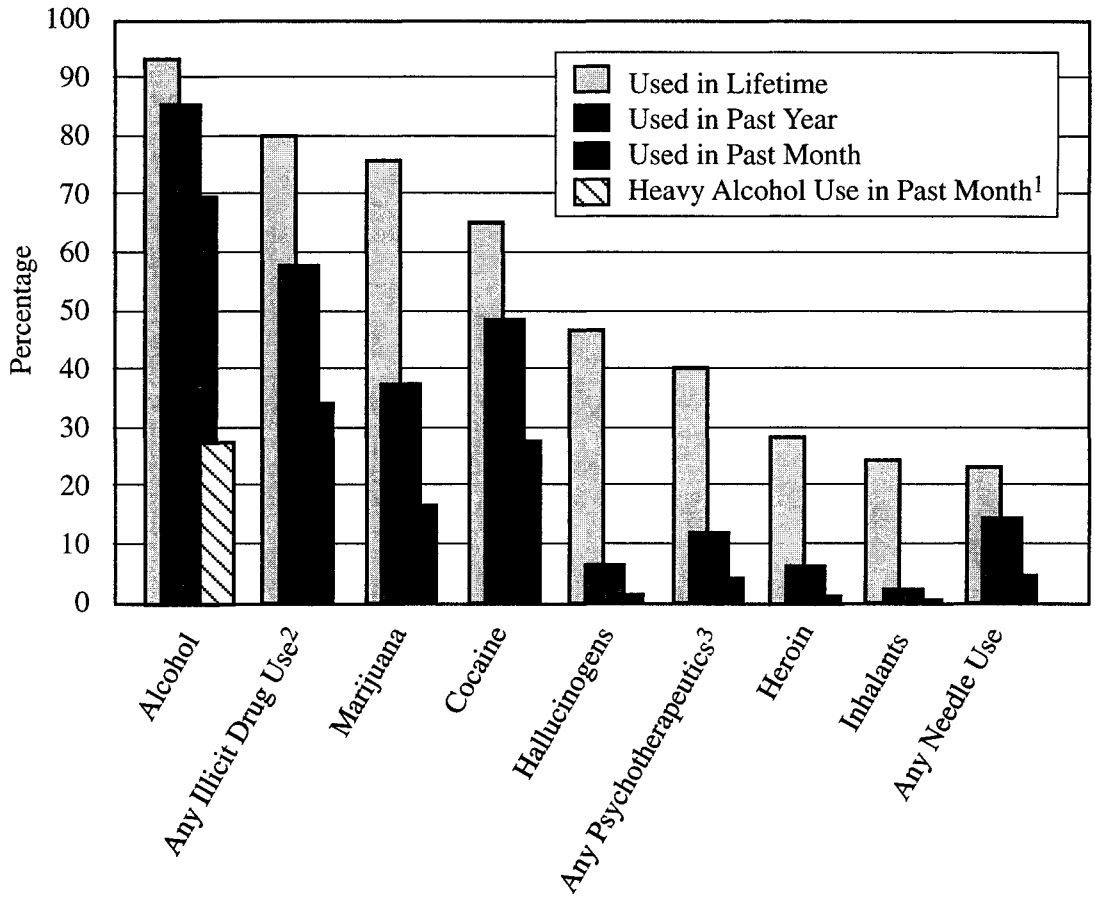
Table 1. Demographic Characteristics of the Homeless and Transient Population in the DC MSA, by Sample Type and Overall

Demographic Characteristic	Shelter	Soup Kitchen	Encampment Cluster	Street	Total
Population estimate	5,844	6,771	174	2,129	10 ,387
Sex					
Male	64.8	86.3	87.7	86.5	75.9
Female	35.2	13.7	12.3	13.5	24.1
Age group					
12-25 years	17.0	13.0	6.6	17.2	15.0
26-34 years	35.3	36.2	31.8	44.8	36.8
35+ years	47.7	50.8	61.6	38.0	48.2
Race/ethnicity					
White	15.2	16.6	25.3	5.6	16.5
Black	76.5	77.9	65.4	84.1	75.8
Hispanic	7.4	4.6	4.0	0.8	5.9
Marital status					
Single	55.8	57.1	55.0	75.5	59.7
Married	8.6	8.6	11.8	1.3	8.3
Divorced/widowed	35.6	34.3	33.2	23.3	32.1
Location					
DC	74.4	69.6	91.6	88.7	71.0
Maryland	8.6	17.1	2.1	9.4	14.0
Virginia	17.0	13.3	6.3	1.8	15.0
Adult education					
Less than high school	32.9	45.4	36.0	48.6	40.1
High school graduate	42.3	36.2	38.2	41.3	39.3
Any college	24.8	18.4	25.8	10.1	20.6
Current employment					
Full-time	24.0	24.0	11.5	6.4	21.5
Part-time	14.5	11.7	14.0	4.9	12.2
Unemployed	41.1	58.9	53.6	82.5	54.1
Other	20.4	5.4	20.9	6.2	12.2

Table 2. Cumulative Coverage of the Homeless Population and Selected McKinney Act Groups, by Population Segments

Selected McKinney Act Group	Shelter	Shelter Soup Kitchen	Shelter/ Soup Kitchen Encampment	Total Population Size
Population Estimate	5,848	9,681	9,785	10,387
Total Homeless and Transient Population	56.3	93.2	94.2	10,387
Literally Homeless	68.8	91.5	92.8	8,356
Any McKinney Act Group	55.7	93.0	94.0	10,036
Physically ill	56.9	92.2	93.1	7,284
Any alcohol drug, or mental problems	50.8	91.9	93.1	5,591
Heavy alcohol drinker	40.4	85.3	86.5	2,721
Past month drug user	47.8	96.9	98.1	3,567
Mental illness history	49.4	92.6	93.7	2,875
Unemployed	51.5	89.4	90.2	5,498
Veteran	65.6	95.9	97.4	2,316
Youths	60.4	84.7	85.4	538
Family	61.5	95.0	95.2	2,342

Figure 1 Recency of Alcohol, Drug and Needle Use among the DC MSA Homeless and Transient Population



[1]Having five or more drinks on 5 or more days a week while homeless in the past month; not asked for lifetime or past year.

[2]Use of marijuana or hashish, cocaine (including crack), inhalants, hallucinogens (including PCP), or heroin, or nonmedical use of psychotherapeutics at least once.

[3]Nonmedical use of any prescription-type stimulant (including methamphetamine), sedative, tranquilizer, or analgesic; does not include over-the-counter drugs.

Source: Adapted from NIDA (Dennis, Iachan, Thornberry and Bray; 1993, p4-4, 5-9).