# SUBSTANCE ABUSE AMONG RUNAWAY AND HOMELESS YOUTH

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## 1. Introduction

The Research Triangle Institute (RTI) has conducted a national study of runaway and homeless youth for the Administration on Children, Youth and Families (ACYF) of the Department of Health and Human Services. This paper summarizes findings from several components of this study, and emphasizes substance use and other risk behaviors.

The following section presents findings from a nationally representative shelter survey and a purposive street survey. The sample design for these surveys is described in Iachan and Ringwalt (1992). In brief, 640 interviews were completed with shelter youth and 600 interviews with street youth. The third section describes results of a validation substudy conducted for a subsample of street survey respondents. The substudy analysis is based on a comparison of urine specimens taken from subsample respondents with the survey data they provided on drug and alcohol use.

## 2. Results From the Street and Shelter Surveys

In this section we will emphasize findings related to drug and alcohol use, as well as other risk behaviors including physical victimization, criminal activities and suicide attempts. Because of the purposive nature of the street sample, any comparisons between the street and the nationally representative shelter subpopulations must be made with care. While we contrast the characteristics of the two samples, we will not perform statistical tests of hypotheses. Another caveat is that our measures of drug use are based on youths' self-reports, to assess the accuracy of which the study included the validation substudy described in the next section.

Exhibit 2.1 summarizes the demographic characteristics of youth in the two samples. While the shelter sample is predominantly black, female and includes young adolescents, the street sample comprises mostly white, male, an older youths. It's important to keep these underlying differences in mind when comparing the two samples.

Exhibit 2.2 presents estimates of reported drug use among shelter and street youth. The survey collected drug use information for two time frames: (a) 30 days before the youth left home, and (b) while the youth was away from home (most recent time). Exhibit 2.2 shows prevalence estimates for these two time frames. Prevalences for street youth in the latter reference period (while away from home) are greater than 70 percent for alcohol, tobacco and marijuana.

Because the two samples have different demographic profiles, the direct comparisons of drug use active street and shelter youth invited by Exhibit 2.1 may be misleading. Instead, it may be more illuminating to compare within subgroups as shown in Exhibit 2.3. This exhibit reveals that even controlling for race, gender and age, illicit drug prevalences are much higher in the street than in the shelter sample. Comparisons between subgroups within each study component are also possible from Exhibit 2.3. In either sample, for example, self-reported drug use is higher among whites than among African-Americans. This difference is statistically significant, for youth in the shelter sample as is the difference between males and females.

We also computed measures of drug dependency as assessed by the youth. Approximately 45 percent of the street youth and 30 percent of the shelter youth reported dependency on tobacco, and about 20 percent of street youth and 12 percent of shelter youth reported dependency on alcohol. For cocaine and marijuana, dependency rates were about 12 percent in the street sample but were lower in the shelter sample (4 percent and 9 percent, respectively). Drug and alcohol treatment is reportedly higher for street than for shelter youth. While about 21 percent of street youth had received drug treatment, the analogous percentage for shelter youth was 12 percent. Approximately 5 percent of the youth in both samples were currently in a treatment program.

In addition, we assessed the relationship between alcohol and drug use and suicide attempts. The percentage of youth reporting that alcohol or drug use caused a suicide attempt in the past 12 months was 18 percent in the street sample and 7 percent in the shelter sample. Similar percentages were found for the youths using alcohol or drugs before attempting suicide.

Another area of investigation concerned how suicide ideation varies by whether youth used alcohol and other drugs. In the shelter sample, the percentage of youth who ever planned suicide was 35 percent among drug users and 27 percent among non-users. Similar percentages in the street sample were 43 percent among users as opposed to 17 percent among

non-users. Youth actually attempting suicide in the street sample were 36 percent of users relative to 9 percent of non-users.

Both physical victimization rates were also significantly higher among drug users than non-users in the shelter and street populations. For instance, the percentage attacked was 56 percent for users and 20 percent for non-users. Further, the percentage of street youth sexually victimized was 30 percent for users and 10 percent for non-users. For criminal activities, the same pattern emerged users had much higher rates than non-users, particularly in the street population. The percentage of street youth committing theft, for example, was 86 percent for drug users compared to 53 percent for non-users. Approximately 70 percent of users had carried a hidden weapon, while the percentage for non-users was 33 percent. For assault, the percentages for users and non-users in the street sample was about 46 percent and 19 percent, respectively.

## 3. Validation of Self Reports of Drug Use

The main objective of the validation study was to determine the extent of under-reporting of self-reports of drug use among the youths we contacted. The validation study sample is a subset of the street sample insofar as this set was confined to 5 of the 10 MSAs included in the street survey sample, and was limited to a subsample of 110 youths in these 5 cities. In these sites, the youths we selected were asked to contribute urine specimens following the interview for an additional $10 cash incentive.

Like the larger street sample the evaluation study was based on a purposive sample, mostly to facilitate the logistics of data collection. The estimated rates of reporting error presented below apply to the substudy sample, and cannot be generalized to the runaway and homeless youth population.

### 3.1 Reporting Errors

Reporting errors are of two basic types. Overreporting occurs when the youth reports overstate the true use, and underreporting occurs when the youth reports understate the true use. Reasons for these errors include telescoping and other memory errors as well as deliberate distortions, and these error sources may contribute to over- as well as under-reporting.

To assess over- and under-reporting, our analysis compared self-reports with laboratory measurements. Clearly, the latter measurements are by no means a reflection of "true use" in the reference period. Not only are the lab measurements subject to errors in the two indicated directions (false negatives and false positives) but they often measure quantities that the quantity used by the youth, or assess use within a shelter period option than that encompassed by like survey question may exceed the drug use items in the survey questionnaire. For any validation method that relies on a separate set of measurements or tests, it should be ensured that the methods are measuring the same parameters as the question solicit. Otherwise, any systematic differences in the measurements should be recognized, and where possible taken into account. We will refer to the assessed discrepancy between the self-reports and the lab measurements as (estimated) over-reporting and under-reporting errors. We emphasize that this simplification should not be interpreted as use of the urine test measurements as a gold standard; clearly it is not.

The most important qualification of relevance to this study is the discrepancy between the detection time window in the lab measurements and the reference period ascertained by the questionnaire items. Each drug measured by the lab has its own time window for detection, i.e., the time period when use of the drug enables detection by the lab. For a few drugs, this time window may cover most of the 30-day reference period used in the questionnaire. For most drugs, however, this time window will be substantially narrower than the 30-day, being often as short as a day or two, depending on dosage, methods of administration and measurement, and frequency and longevity of use.

The second caveat of concern is that there was an imperfect correspondence between the substances measured by the lab and those asked in the survey questionnaire. Again, this problem seems inherent in that the two drug classifications were constructed for varying purposes: while ours involved drug categories that could be easily recognized by the survey respondent, the lab's was based on discrete chemicals that could be detected in a laboratory environment. To resolve this problem at least in part, required identifying the subset of chemicals (as measured by the lab) that are associated with each drug category listed in the survey.

### 3.2 Results of the Substudy

A preliminary step in the analysis was the preparation of a mapping of the set of chemicals measured by the lab into the questionnaire drug items. For seven of the thirteen drugs matched for both sets of measurements (survey and lab tests), Exhibit 3.1 shows the percentage of the youth specimens (n=110) that tested positive. The highest percentages were for tobacco (59%), crack/cocaine (16%) and marijuana (14%).

Exhibit 3.2 presents a schematic representation of the discrepancies between self-reports and the laboratory measurements. This exhibit suggests the computation of the following rates of under-reporting:

- a reverse underreporting rate, c/(c+d);
- a direct underreporting rate, c/(a+c).

The direct underreporting rate gives the proportion of all positive lab detections that were reported by the youth. The reverse underreporting rate gives the proportion of all positive self-reports that were detected by the lab measurements. Exhibit 3.3 presents the direct and reverse rates of underreporting for six of the thirteen drug categories. For the remaining categories, some cell sizes were either zero or too small to permit computation of meaningful rates. Because the "no-no" diagonal entry "d" (see Exhibit 3.2) is much greater than the "yes-yes" diagonal entry for almost all drug categories, the direct rates will be typically much larger than the reverse rates. For example, Exhibit 3.3 shows that for inhalants the reverse rate was 4 percent and the direct rate was 75 percent. This exhibit also shows that the reverse rates for underreporting the use of crack and other cocaine were 10 percent and 13 percent, respectively. These underreporting rates indicate that about one-tenth of the non-use reports by youth for either of these drugs were found erroneous, i.e., the presence of drugs was detected in the lab tests.

## 4. Conclusion

This paper presented selected findings from a national study of runaway and homeless youth conducted by RTI. Findings were presented separately for the two main components of the study: a shelter survey and a street survey. The findings reveal a pattern of high use of drugs and alcohol and prevalence of other risk behavior (e.g., physical victimization and suicide behavior), particularly for the street subpopulation.

We also discussed results from a validation substudy conducted for a subset of street survey respondents. The substudy compared youth's self-reports of drug use with laboratory analyses.

The rates for overreporting tend to be dramatically higher than those for underreporting in general. Two reasons for this phenomenon were pointed out earlier: both the time windows and the drug category definitions were narrower for the lab test measurements. In designing and implementing a drug validation study, one should seek an analysis lab method with low false negative error rates even if these occur at the expense of false positive errors.

**Exhibit 2.1 Characteristics of Shelter and Street Youths**

| Demographic Characteristic | Shelter | Street |
|---|---|---|
| **Sex** | | |
| Male | 39.3% | 60.5% |
| Female | 60.7% | 39.5% |
| **Race/ethnicity** | | |
| White | 31.7% | 45.9% |
| Black | 40.7% | 27.4% |
| Hispanic | 19.7% | 17.7% |
| Other | 7.9% | 9.0% |
| **Age** | | |
| 12-13 | 17.3% | 4.0% |
| 14-15 | 30.4% | 12.4% |
| 16-17 | 17.9% | 21.7% |
| 18-19 | 21.5% | 32.8% |
| 20-21 | 12.8% | 29.1% |

**Exhibit 2.2 Drug Use Before and After Leaving Home**

| Substance | Shelter | | Street | |
|---|---|---|---|---|
| | 30 Days Before Left Home | Away from Home | 30 Days Before Left Home | Away from Home |
| Tobacco | 43.5% | 52.7% | 65.2% | 77.3% |
| Alcohol | 37.0 | 54.1 | 60.2 | 78.9 |
| Marijuana | 24.4 | 38.9 | 51.6 | 72.1 |
| Crack cocaine | 3.2 | 5.4 | 10.0 | 25.9 |
| Other cocaine | 4.1 | 7.6 | 8.1 | 24.6 |
| Inhalants | 4.1 | 8.8 | 5.9 | 21.9 |
| Hallucinogens | 4.8 | 11.3 | 17.6 | 35.5 |
| Heroin | 1.0 | 1.0 | 2.6 | 13.7 |
| Any psychotherapeutics | 7.9 | 15.5 | 14.8 | 40.8 |

**Exhibit 2.3 Illicit Drug Use Within Subgroups**

| Demographic Characteristics | Shelter | | Street | |
|---|---|---|---|---|
| | N | % | N | % |
| **Sex** | | | | |
| Male | 273 | 67.1 | 363 | 88.2 |
| Female | 367 | 56.1 | 237 | 83.8 |
| **Age** | | | | |
| 12-13 | 97 | 41.7 | 24 | 62.5 |
| 14-15 | 152 | 59.5 | 74 | 87.7 |
| 16-17 | 106 | 63.0 | 129 | 81.3 |
| 18-19 | 185 | 65.8 | 195 | 86.2 |
| 20-21 | 100 | 75.3 | 173 | 93.1 |
| **Race** | | | | |
| White | 189 | 74.8 | 275 | 90.9 |
| Black | 279 | 47.6 | 164 | 75.5 |
| Hispanic | 122 | 60.4 | 106 | 91.5 |
| Other | 50 | 68.9 | 54 | 87.0 |

**Exhibit 3.1 Percent of Youth Participating in Drug Validation Study Who Tested Positive for Drug Use**

| Drug | Percent (N=110) |
|---|---|
| Tobacco | 59 |
| Alcohol | 3 |
| Marijuana | 14 |
| Crack/other cocaine | 16 |
| Methamphetamine/Stimulants | 6 |
| Sedatives | 2 |
| Analgesics | 5 |

**Exhibit 3.2 Matching and Non-matching Patterns for Validation Study**

| | Detected by Lab | | |
|---|---|---|---|
| Report by Youth | Yes | No | Total |
| Yes | a | b | a+b |
| No | c | d | c+d |
| | a+c | b+d | n = a+b+c+d |

**Exhibit 3.3 Rates of Underreporting**

| | Underreporting | |
|---|---|---|
| Drug | Direct Rate | Reverse Rate |
| Tobacco | 8% | 18% |
| Inhalants | 75% | 4% |
| Crack | 33% | 9% |
| Cocaine | 44% | 11% |
| Stimulants | 50% | 5% |
| Pain killers | 40% | 3% |