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A SNAPSHOT OF SUBSTANCE ABUSE AMONG HOMELESS AND RUNAWAY YOUTH IN DENVER, COLORADO

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ABSTRACT: We report on results of a one-day survey measuring rates of substance use and HIV risk behaviors among the homeless youth population of Denver, Colorado. On March 15, 2001, staff of Urban Peak, conducted a single-day survey of homeless and runaway youth in the Denver metropolitan region, going to locations known to be frequented by this population. All youth encountered were asked to fill out a brief survey asking about past nine month use of the following substances: alcohol, marijuana, cocaine, methamphetamine, heroin, hallucinogens, ecstasy and ketamine, and HIV risk behaviors. Chi-square analyses of the association of substance used and gender, age, living situation, and ethnicity were conducted. In addition, the use of any club drug was examined. One-hundred-eighty-six homeless or runaway youth were surveyed; 74 percent were between 16 and 25. Rates of use over the last nine months were as follows: alcohol, 69 percent; marijuana, 75 percent; methamphetamine, 18 percent; cocaine, 19 percent; heroin, 12 percent; hallucinogens, 30 percent; ecstasy, 25 percent; and ketamine, 13 percent. Eleven percent reported trading sex for drugs, money, food, or shelter; and 13 percent reported sharing needles.There were significant associations between living situation and use of marijuana, cocaine and hallucinogens. Prevalence rates of club drugs show 75 percent, 77 percent and 77 percent of homeless or runaway youth ihaving used ecstasy, ketamine and hallucinogens one to three times per month over the last nine months, respectively. Prevalence rates of substance use among homeless youth in the Denver metropolitan are similar to rates reported in other larger metropolitan areas. Routine screening for every substance needs to be part of the assessment for all homeless youth. Initial data points to a need for more research exploring protective factors among this population and to better understand the prevalence of club drug use.

KEY WORDS: homeless; runaway; youth; drugs; alcohol; Denver; Urban Peak.

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INTRODUCTION

An estimated 1.6 million youth are homeless each year in the United States.[1] Homeless and runaway youth abuse substances at a much higher rate than the general population of adolescents in the United States.Based on data from the National Longitudinal Survey of Youth, repeat runaways are 7–12 times more likely to have a history of substance abuse than non-runaways or those who have runaway only once.[2] A limited body of research describes rates of substance abuse among homeless and runaway youth in large metropolitan centers such as Los Angeles, San Francisco and New York.[3-4] In a study conducted in San Francisco, Clements et al.[3] found that one-third of the street youth recruited reported ever injecting drugs and lifetime use of multiple drugs including D-lysergic acid diethylamide (96% percent), marijuana (90% percent), alcohol (81% percent), cocaine (70% percent), and methmethamphetamine (70% percent). Kipke et al.[5] classified over 70% percent of the Los Angeles homeless youth in their sample as having alcohol and/or drug abuse disorders, based on *DSM III* criteria. Booth et al.[6] attribute 36% percent of AIDS cases to injection drug use and categorize this behavior as a growing public health risk.

In addition to substance abuse, homeless youth experience high levels of physical and sexual abuse, pervasive mental illness, and engage in risky sexual behavior.[5,7,8,9] A national study of 364 homeless adolescents found that 60% percent of girls and 23% percent of boys reported sexual abuse before leaving home.[9] Cauce et al.[9] also found that 51% percent reported being physically abused prior to leaving home and 62% percent were afraid of being hit. In addition to concerns about mental illness and substance use, Other researchers have focused on the risk of sexually transmitted infections (STIs) among the general adolescent population. Shane[10] reported that nationally, 85% percent of STIs occur among teenagers and young adults.There is not consensus in the literature regarding rates of survival sex (the exchange of sex for drugs, money, food, clothing and shelter.[2,10,11] In a study of health risks among homeless adolescents, Rew[11] asserts that this behavior is relatively common. In contrast, Whitbeck and Hoyt[2] found survival sex to be rare among their sample. Shane[10] agrees and argues that claims of extraordinarily high levels of sexual exploitation among homeless and runaway youth are unfounded.Yates et al.[12] estimate that approximately 26% percent of the homeless and runaway youth in their sample were involved in survival sex.

Whether research conducted on homeless youth generalizes to smaller urban areas is unknown.Homeless youth populations in cities such

as Denver are growing.[13,14] In 1997, a count conducted by the Metro Denver Homeless Initiative and the State of Colorado found 197 youths (under the age of 21) sleeping on the streets of Denver.[14] In 2001, the survey counted almost 400 homeless youth sleeping on the streets, a 100% percent increase over a threefour-year period.[14]

We report on rates of substance use and HIV risk behaviors among homeless youth in the Denver metropolitan area.This study was motivated by the clinical perception of a dramatic increase in the number of youth who are using injection drugs, as well as using "harder" drugs, such as heroin. Our aim was to characterize rates of substance use among homeless and runaway youth in Denver, Colorado.

Urban Peak

Similar to other cities, homeless and runaway youth in Denver, Colorado, comprise a dynamic, complex population who face considerable obstacles and a challenging environment. Of the 805 youth accessing services via Urban Peak in 2002, 321 of these young people received mental health treatment.[1] The services that the population of homeless and runaway youth at Urban Peak accessed most readily in 2002 include overnight shelter (nightly average, 34), street outreach (7,414 duplicated contacts), case management (805 individual youth) and education and employment services (school, 73; GED, 19; jobs acquired, 147).[15] Among other obstacles facing this population, Van Leeuwen et al.[16] point to the high infectivity rates of young people on the streets of Denver, Colorado (11.6% percent and 2.7% percent for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* respectively).This combination of health care needs, employment and education needs, mental health care and substance abuse treatment speak to the complex obstacles that prevent young people from permanently exiting the streets.

Ethnic minoritesminorities are over-represented, compared to the general population of Colorado. According to the 2002 *Urban Peak Annual Report*, the ethnic classification of among the youth receiving services at Urban Peak is as follows: Caucasion (53 percent); African American (17 percent); Latino/a (11 percent); Native American (3 percent); and "Other"/Multiracial (16 percent). One percent of the population self-identifies as transgendered and 18 percent are under the age of 18.

In response to the growing number of youths living on the streets of Denver, Urban Peak began serving this population in 1987 with a mission to assist homeless and runaway youth in permanently exiting the streets. It is currently the only licensed homeless and runaway youth shel-

ter in Colorado serving young people between the ages of 15 and 20. Fifty percent of the agency's funding comes from federal, state and local grants and 50 percent from individual, foundation and corporate support. Many of the youth served by Urban Peak engage in illegal activities to sustain themselves. Assistance with exiting the streets is critical for the prevention of ongoing criminal behaviors. Urban Peak estimates that it costs the state of Colorado approximately $53,655 to maintain one youth in the criminal justice system for one year and that residential treatment costs $53,527 annually for one youth.[15] In contrast, in 2002 it cost Urban Peak $5,378 to permanently move a young person off of the streets.[15]

Recognizing the complexity of factors related to adolescent homelessness, Urban Peak offers a comprehensive array of services. These include a 40-bed residential shelter, an on-site medical clinic, mental health and drug and alcohol assessments and treatment services, daily cooked meals, employment counseling and placement, GED training, scholarship for higher education, permanent housing, and community and street outreach. Each client, whether staying in the shelter or using only non-residential services, is assigned a case manager and has an active case plan.

METHODS

Subject Recruitment

This survey was conducted by staff of Urban Peak in conjunction with the Urban Peak Outreach Team.The Urban Peak (UP) Outreach Team provides street outreach services seven days a week to the homeless and runaway youth population in the greater Denver metropolitan area. The primary focus of street outreach is to build relationships with street youth to remove barriers that inhibit them from accessing services at the shelter. The UP Outreach Team regularly visits locations frequented by homeless youth. Outreach counselors distribute condoms, bleach kits, dental dams, hygiene products, and referrals. Counselors also screen clients for Human Imunodeficiency Virus (HIV), sexually transmitted infections (STDsSTIs), and pregnancy.

This study consisted of a survey distributed on March 15, 2001, from 8 a.m. until midnight, where teams of interviewers went out on the streets of Denver to survey as many homeless and runaway youth as possible. Each survey team was accompanied by a member from the UP Outreach Team and the survey was distributed in conjunction with traditional outreach. It was also distributed at Urban Peak three separate times

throughout the day in an effort to capture a comprehensive sample of both youth living on the streets and residing at the shelter.

Because of the rapport that the Urban Peak Outreach Team has established with the youth on the streets, there were no subjects that declined the survey. All youth encountered during survey distribution were provided access to routine outreach supplies (sodas, McDonalds gift certificates, hygiene products, condoms, bleach kits). There was no incentive provided to participate in the study. Youth were informed upon introduction that the survey was optional; the decision not to participate in the survey would not exclude youth from receiving the full range of outreach services. The survey was conducted anonymously. These procedures were approved by the Colorado Multiple Institutional Review Board.

Survey Instruments

A self-administered questionnaire was adapted from the Treatment Episode Data Set (TEDS) survey. The survey was tested on a few youth at the Urban Peak Shelter for their ability to comprehend it. A number of modifications were made after feedback from the youth and then a final version was used for the survey, which took approximately 5–10 minutes to administer to youth on the street. Questions included whether the youth had taken any of eight different substances within the past nine months, the frequency of administration, and the route of administration. The substances asked about include alcohol, marijuana, ampehetamine, cocaine, heroin, hallucinogens, ecstasy and ketamine. The survey questions were based upon the clinical impressions of the staff and outreach worker about substances that were commonly reported by youth. It was not intended as a comprehensive survey of all possible substances youth could use.

The Urban Peak staff collecting data from homeless and runaway youth participated in a two-hour training to ensure interviewer consistency. A pilot survey was also distributed to five youth that were residents at Urban Peak, to ensure that the questions were clearly phrased, and revisions were made accordingly. To protect confidentiality, no identifying numbers or codes were included on the survey. To guard against duplication, every participant was asked if they had filled out one of these surveys prior in the day.

Analysis

Data from the survey was entered into a Microsoft Access database. The database was queried for descriptive information about the sample

demographic information and rates of substance use, as well as HIV risk behaviors. We also conducted a series of Chi-square analyses in SAS Version 8.1 (2001). All analyses were two-tailed and a p-value of less than 0.05 was considered significant. Fisher's exact test was used when appropriate for associations with inadequate cell sizes to conduct a chi-square test. We constructed a number of variables from the existing data including a binary age variable that dichotomized the groups into a "18 or younger" and "over 18" categories. In addition we created a composite variable that encapsulated "any club drug" which included hallucinogens, ketamine, and ecstasy. Finally, we also created a dichotomous ethnicity variable that placed subjects into a "Caucasian" or "other" ethnicity variable. We tested for the association between the frequency of use of each substance and age, gender, living arrangement, and ethnicity. In addition, we examined the frequency of use of the "any club drug" variable.

RESULTS

One hundred eighty six homeless or runaway youth completed the survey. Seventy-four percent of the subjects were between the ages of 16–25, 18 percent "15 or younger," and 8 percent "over 26." Sixty-five percent were male and 35 percent female. Thirty-seven percent identified themselves as Caucasian, 25 percent African-American, 18 percent Hispanic, 6 percent American-Indian, 12 percent multi-racial, and 2 percent "other." Forty-two percent of the respondents circled that they were living with their family, 58 percent were not. Of those who said they were not living with their families: 8 percent endorsed "couch surfing," 18 percent ldquo; living with friends(s)," 29 percent "other," 2 percent "other family," 2 percent "squat," 9 percent "street," and 33 percent "Urban Peak." Table 1 presents rates of use of each substance and the frequency of use for those subjects who endorsed using. Thirteen percent of the subjects also endorsed ever sharing needles and 11 percent endorsed trading sex for money, drugs, or shelter.

Tests for Association Between Frequency of Substance Use

We found no significant association between any of the substances used and ethnicity or gender. There were significant associations for marijuana, cocaine, and hallucinogen use and living situation. The youth who reported not living with their family reported significantly more use of marijuana, cocaine, and hallucinogens. Being over 18 was also associated

TABLE 1

Homeless and Runaway Youth Trends (past nine months) in Use of Illicit Drugs in Denver, Colorado

1a Substance Use (since the summer of 2000)*

Alcohol	*Methamphetamine*	*Crack/Cocaine*	*Marijuana*
69% (109)	18% (29)	19% (31)	75% (119)
Heroin/Opiates	*Hallucinogens*	*Ecstasy*	*Ketamine*
12% (19)	30% (47)	25% (39)	13% (20)

*Survey administered March 15, 2001.

1b Frequency of Substance Use (N in parentheses)

	Daily	*3–6 Times per Week*	*1–2 Times per Week*	*1–3 Times per Month*
Alcohol	12% (13)	11% (12)	19% (20)	57% (60)
Marijuana	52% (67)	14% (18)	12% (16)	22% (28)
Methamphetamine	19% (8)	7% (3)	14% (6)	59% (25)
Cocaine	2% (1)	16% (5)	19% (6)	78% (25)
Heroin	26% (6)	8% (2)	22% (5)	44% (10)
Ketamine	0% (0)	9% (2)	14% (3)	77% (17)
Ecstasy	3% (1)	6% (2)	17% (6)	75% (27)
Hallucinogens	0% (0)	10% (5)	13% (3)	77% (17)

with more frequent hallucinogen use. These results are shown in Table 2. The frequency of reported use of "any club drug" was that 58 percent reported never using, 31 percent reported using 1–3/month, 7 percent reported using 1–2/week, and 4 percent reported using 3–6/week.

DISCUSSION

This study has four main results. First, although differing in time frames from other surveys, prevalence rates of substance use among homeless youth in the Denver metropolitan area are similar to rates reported in other larger metropolitan areas.[3,4] Clements' et al.[3] study of homeless and runaway youth in San Francisco found that one-third of the street youth

TABLE 2

Significant Associations Between Frequency of Use of Marijuana, Cocaine, and Hallucinogens and Livings Situation

2a Cocaine Use and Living Situation

Frequency Living with Family	*Daily*	*3–6/Week*	*1–2/Week*	*1–3/ Month*	*Never*	*Other*
No	0	4	4	17	55	2
Yes	1	0	0	3	44	0

Fisher's exact P < .01.

2b Marijuana Use and Living Situation

Frequency Living with Family	*Daily*	*3–6/Week*	*1–2/Week*	*1–3/Month*	*Never*	*Other*
No	36	9	10	20	12	4
Yes	19	6	4	7	19	0

Chi-square P < .04.

2c Hallucinogen Use and Living Situation

Frequency Living with Family	*Daily*	*3–6/Week*	*1–2/Week*	*1–3/Month*	*Never*	*Other*
No	0	5	4	27	43	1
Yes	0	0	1	6	43	0

Fisher's exact P < .005.

2d Hallucinogen Use and Age

Frequency Living with Family	*Daily*	*3–6/Week*	*1–2/Week*	*1–3/Month*	*Never*	*Other*
18 and Under	0	1	1	13	53	0
Over 18	0	4	5	23	35	1

Ficher's exact P < .01.

recruited reported ever injecting drugs; in contrast, twelve percent of the subjects in Denver report having used heroin during the last nine months. While 90 percent of the subjects in Clements et al.[3] study report lifetime use of marijuana, 75 percent of the subjects in our study report having used this drug in the last nine months.

Second, in this sample, there were significant association between living situation and the use of marijuana, cocaine, and hallucinogens. This preliminary data speaks to the protective factors of living at home and the risk that a young person faces when living on the streets for any period of time in Denver. Table 2 (a, b, c, d) demonstrates that a young person reporting not living with their family is two times more likely to have used marijuana monthly, five times more likely to have used hallucinogens monthly and six times more likely to use cocaine monthly. Table 2d illustrates the protective effect of age in that a young person over the age of 18 is twice as likely to have used hallucinogens monthly than someone 18 years old or younger. This finding blends with the protective effects of living with family in that the older the youth, the more likely they are to be on their own and without family. This also suggests that the longer a youth lives on the streets, the more likely they are to engage in substance use.

Third, approximately 11 percent of youth reported trading sex for money or drugs. This is consistent with Whitbeck and Hoyt[2] and Shane[8] who report that rates of survival sex among this population are relatively low. However, factoring in social desirability, it is probable that subjects in our survey under-reported their involvement in survival sex, which implies that over one in ten youth living on the streets in Denver, Colorado, are engaging in some form of prostitution.

Fourth, this preliminary data sheds some light on the prevalence of club drug use among homeless and runaway youth in Denver, Colorado. A topic that is virtually unexamined with respect to this population, these initial findings suggest that while daily rates of use of club drugs are relatively low, these substances are still very much accessible to this population (see Table 1b.2). In the past nine months, our sample reported having used the following club drugs at least once: 12 percent, heroin/opiates; 30 percent, hallucinogens; 25 percent, ecstasy; 13 percent, ketamine; 18 percent, methamphetamine (see Table 1a.1). Sizing this up with the general adolescent population, the *National Drug Control Strategy*[17] reports lifetime use of heroin among eight graders at 2.3 percent, tenth graders at 2.3 percent and twelfth graders at 2 percent. The fact that 12 percent of this population reports heroin/opiate use in the last nine months speaks to the risk factors that this population faces on the streets of Denver.

Implications

The primary implication of the substantial use of substances by homeless and runaway youth, including use of many "hard" drugs such as methamphetamine, cocaine and heroin, is that in order for shelters to serve these youth, comprehensive substance abuse screening, assessment, and treatment services need to be available. The primary implication of our second result, namely the association between age and hallucinogen, cocaine and marijuana use suggests that clinicians should suspect substance use, including use of substances commonly injected, even in youth under 18, and females, who are homeless. Routine screening for every substance needs to be part of the assessment for all homeless youth, regardless of age, gender or ethnicity. Furthermore, routine Hepatitis C and HIV screening is also important.

The primary implication of our third result, suggests that survival sex is clearly an issue in a mid-size metropolitan area such as Denver. Subsequently, given that at least one in every ten youth living on the streets is exchanging sex for drugs, money, food, clothing and shelter, more extensive resources must be made available to provide additional shelter beds and case management services to offer this population alternatives to the streets. Finally, the primary implication of our fourth result reiterates the implication of our second result in that prevalence of club drug use is high among homeless and runaway youth compared to the general adolescent population and it is necessary for service providers to screen for "harder" and less common drugs such as ecstasy, ketamine, heroin and methamphetamine among this population in order to more effectively address their substance dependence and to assist them in exiting the streets.

Limitations

Since this study was conducted with only volunteer resources, it does suffer from a number of substantial methodological limitations. A principal one is that, compared to other surveys of homeless youth, this was not conducted with the same degree of methodological rigor. Also, because the survey instruments were largely designed to respond to a clinical perception of what substances youth were using, and was also designed to be brief and usable with ongoing outreach services, comparing it with other more comprehensive surveys has inherent limitations.

The finding with respect to the protective effects of living situation raises the need for further research and more specific survey questions to more effectively understand this dynamic.With 42 percent of youth interviewed on the streets endorsing that they are currently living with family,

the need to understand the specifics of this living situation is important. Are youth living with their biological parents? Grandparents? Siblings? Extended family? The need to understand how subjects describe family composition and what these living situations look like, is important to better understand the implications of this protective effect with respect to substance dependence.

The intention of this survey was not to draw strong statistical inferences about this population, but to offer some perspective on the rates of substance abuse among this population in Denver for the first time. The information collected in this survey is intended to provide some initial raw data regarding rates of use among this population that until now was unavailable. While the sample is not probability-based, the Metropolitan Denver Homeless Initiative estimates that there are approximately 400 homeless youth sleeping on the streets on any given night.[14] With 186 subjects responding to the survey, the researchers captured approximately 47 percent of the entireestimated population with this survey.

Another limitation of our survey was that it consisted of only one "point-in-time" and due to lack of resources, we were not able to conduct a more comprehensive survey. As a result, information specific to demographics is not included in this survey including acculturation data and data regarding other family members. This limits the generalizability of our findings, although we do believe it provides a "snapshot" of substance use among homeless youth in the Denver area.

Important data elements were not included due to flaws in the survey design and future surveys include other substances of abuse such as inhalants, about which little is known for homeless youth. The *National Drug Control Strategy Report*[17] estimates that approximately 2 percent of twelfth graders used inhalants during the past month.

In designing the questions around frequency of use, the authors wanted to use a significant time frame that the subjects could reflect back on to gauge their rate of use. Given the transience of this population, their concept of time and ability to reflect on past use can be challenging. Since the survey was distributed in March 2001, we asked the youth to estimate rates of use since the previous summer (nine months prior), since it was our clinical impression that this time point would be easy for youth to remember back to.

CONCLUSIONS

As an initial, first step, this study is important as it identifies a definite need for substance abuse treatment among homeless and runaway

youth in Denver, Colorado. Clearly, more comprehensive research is needed to better understand rates of use and substance abuse behaviors among this growing population. While adolescents differ in a number of ways from older adult homeless persons with respect to length of time on the streets and duration of substance dependence, there is no systematic research available to assist professionals working with this population in designing programs to address their age and situation specific needs. Gaining a clearer understanding of their living situations and the precipitating factors of them becoming homeless is necessary in designing more effective programs in assisting this population in exiting the streets and more importantly in preventing them from becoming homeless in the first place. This preliminary data set points to the need for further research around substance abuse among this population teasing out the factors that lead to their substance dependence as well as treatment mechanisms that they will respond to. Even this initial survey points to some protective factors that exist among this population with respect to living situation. There is clearly a need to further dissect this topic and determine what living situations are most advantageous to preventing young people from engaging in substance use. With 42 percent of the sample reporting that they are currently living with family, this paper identifies a need to better understand the context of these living situations and how they factor in to substance abuse risks among homeless youth. Furthermore, the data point to a need to further dissect the prevalence of club drug use among this population. Rates of use, such as heroin, are significantly higher than the general adolescent population and point to a deficit in the literature especially with respect to a homeless and runaway youth population in mid-size metropolitan cities such as Denver.

The major motivation for this study was that Urban Peak has successfully transitioned homeless youth without substance use to independent living, even though many of these youth suffer from major psychiatric illnesses.[15] In 2002, of the 805 youth served at Urban Peak, 53 percent of them permanently exited the streets.[15] While a model currently exists to assist young people with mental illness in transitioning into more independent living situations, many transitional living options are not available for homeless youth who are actively abusing substances. Unfortunately, no systematic research has carefully looked at this dynamic to date. How to treat substance-dependent homeless youth, is of course, also an area that, to our knowledge, has not been addressed in the literature, although contingency-based housing has been shown to be successful with homeless adults.[18] The results of this study regarding rates of use among homeless and runaway youth in a mid-size metropolitan area point to a need to

better understand these high-risk behaviors in order to design effective treatment strategies.

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