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Correlates of Engaging in Survival Sex among Homeless Youth and Young Adults

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Using a sample of 1,625 homeless youth and young adults aged 10 to 25 from 28 different states in the United States, this study examines the correlates of having engaged in survival sex. Findings suggest that differences exist based on demographic variables (gender, age, race, and sexual orientation), lifetime drug use (inhalants, ValiumTM, crack cocaine, alcohol, CoricidinTM, and morphine), recent drug use (alcohol, ecstasy, heroin, and methamphetamine), mental health variables (suicide attempts, familial history of substance use, and having been in substance abuse treatment), and health variables (sharing needles and having been tested for HIV). In addition to replicating previous findings, this study's findings suggest that African American youth; gay, lesbian, or bisexual youth; and youth who had been tested for HIV were significantly more likely to have engaged in survival sex than White, heterosexual youth, and youth who had not been tested for HIV, respectively. Implications for interventions with youth and suggestions for future research are discussed.

With few legitimate ways of supporting themselves on the streets, many homeless youth and young adults end up engaging in survival sex or are coerced into sex work by pimps as a last resort for survival on the streets (Family and Youth Services Bureau, 1995; Haley, Roy, Leclerc, Boudreau, & Boivin, 2004; Silbert & Pines, 1981; Tyler, Hoyt, Whitbeck, & Cauce, 2001b; Weisberg, 1985). Although there is evidence that various risk and resiliency factors influence the survival strategies available to and chosen by homeless youth and young adults (Hagan & McCarthy, 1997; Tyler, Whitbeck, Hoyt, & Cauce, 2004; Whitbeck, Chen, Hoyt, Tyler, & Johnson, 2004; Whitbeck, Hoyt, Yoder, Cauce, & Paradise, 2001), simply being on the streets is associated with a significant increase in the likelihood of being offered money, drugs, shelter, or food for sex (Edwards, Iritani, & Hallfors, 2006; Janus, McCormack, Burgess, & Hartman, 1987; Tyler et al., 2001b).

In this article, we examine correlates of engaging in survival sex in a sample of homeless youth and young adults from 28 different states in the United States and the District of Columbia (DC). The last multicity, large sample, published study that examined the predictors of survival sex with this population was based on youth samples from 1992 (Greene, Ennett, & Ringwalt, 1999). As such, this article revisits the topic to determine

if the patterns discerned from the sample of approximately 15 years ago still persist today or if the predictors of survival sex among homeless youth and young adults have changed. Although many of the variables that we examine mirror the correlates included in models by Greene et al., we also examine additional variables that were not incorporated in their study, including sexual orientation, additional illicit substances, HIV and hepatitis C testing, and having a transgender identity and, by doing so, expand the existing scholarship.

Vernacular

The terms *prostitution*, *sex work*, and *survival sex* have been used interchangeably in the academic literature at times, but more often used to mean various forms of transactional sex (Leclerc-Madlala, 2003). De Zalduondo (1991) suggested that *prostitution* and *commercial sex* are most commonly used to mean an exchange of sex for payment—most often money—and that this exchange occurs on a more or less professional basis. Where that exchange is not necessarily such a straightforward cash transaction and where the exchange is not pursued on a professional basis, but is seen more as a consequence of poverty and economic dependence, the term *survival sex* is more frequently used (Muir, 1991). Numerous arguments come into play about which term is most appropriate to describe the

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behavior and in what contexts for homeless youth and young adults; however, this larger question of terminology is beyond the scope of this article. Based on Greene et al.'s (1999) findings regarding patterns of difference in prevalence of transactional sex among various subsamples of homeless youth (e.g., more likely among street youth than shelter youth), we have chosen to employ the term *survival sex*, and define that to mean the exchange of sex for food, money, shelter, drugs, and other needs and wants. (For scholarship problematizing the terms used to describe transactional sex from a feminist and cross-cultural perspective, see de Zalduondo [1991], Leclerc-Madlala [2003], Parker [2001], and Wardlow [2004].)

Literature Review

In this section, we examine what is known about the prevalence of survival sex among homeless youth and young adults; variations based on demographics such as age, gender, race, and sexual orientation; and then turn our attention to the relationship between survival sex and substance use, mental health issues, and physical health and safety. Although the majority of the studies reviewed are cross-sectional and do not allow for the determination of causality, what emerges is a picture of significant risk for homeless youth becoming involved in survival sex as a means of support and, for those involved, significantly greater likelihood of negative psychosocial outcomes. It is not surprising then, that Greene et al. (1999) suggested that, "The dangers inherent in survival sex make it among the most damaging repercussions of homelessness among youth" (p. 1406).

Prevalence of Survival Sex

Although the estimates of the prevalence of survival sex among homeless youth and young adults vary widely based on a number of factors, it is fairly well-established that the behavior is not uncommon among the population in the United States, and the evidence further suggests that most youth do not engage in the behavior prior to becoming homeless (McCarthy & Hagan, 1991). However, with each additional spell of homelessness or with increased length of time being homeless, the likelihood of turning to survival sex as a subsistence strategy significantly increases (Greene et al., 1999; Johnson, Aschkenasy, Herbers, & Gillenwater, 1996; McCarthy & Hagan, 1992; Milburn, Rotheram-Borus, Rice, Mallet, & Rosenthal, 2006; Tyler, Hoyt, Whitbeck, & Cauce, 2001a; Whitbeck et al., 2004).

One aspect of homelessness that seems to differentiate level of risk for engaging in survival sex is whether the youth and young adults stay in youth shelters or live on the street. In samples that did not differentiate but,

rather, looked at homeless youth, in general, rates have typically been reported between 11% and 41%—with some variation depending on city, sampling methodology, and sample characteristics (Anderson et al., 1996; Bailey, Camlin, & Ennett, 1998; Forst, 1994; Greenblatt & Robertson, 1993; Greene et al., 1999; Halcón & Lifson, 2004; Johnson et al., 1996; Kipke, O'Connor, Palmer, & MacKenzie, 1995; Martinez et al., 1998; McCarthy & Hagan, 1992; Pfeifer & Oliver, 1997; Stricof, Kennedy, Nattell, Weifuse, & Novick, 1991; Tyler et al., 2004; Yates, MacKenzie, Pennbridge, & Cohen, 1988). Prevalence appears to be lower among youth staying in shelters, ranging from 9.5% to 19.0% (Greene et al., 1999; Roy, Haley, Leclerc, Boudreau, & Boivin, 2007; Sugerman, Hergenroeder, Chacko, & Parcel, 1991), than among street youth, with reported rates ranging from 10% to 54% (Anderson, Freese, & Pennbridge, 1994; Clements, Gleghorn, Garcia, Katz, & Marx, 1997; Goodman, 1988; Greene et al., 1999; Johnson et al., 1996; Sullivan, 1996). It is not clear whether this difference in prevalence is solely a matter of the need to support oneself being greater among street youth than shelter youth, or if there are other underlying factors that partially explain the difference in prevalence.

Survival Sex and Demographics

Gender. Although many studies have examined the relationship between gender and survival sex, conflicting findings exist in the literature. Studies finding that female homeless youth were more likely than male homeless youth to engage in the behavior have typically been smaller samples and restricted to single geographical locations (McCarthy & Hagan, 1992; Tyler et al., 2004). This pattern of restricted sampling also exists in some studies that have found male homeless youth to be more likely than female homeless youth to engage in survival sex (Johnson et al., 1996; Rotheram-Borus et al., 1992). However, two multi-site studies with larger samples have also found males to be engaged in survival sex more frequently than females (Anderson et al., 1996; Greene et al., 1999).¹ Almost no studies have compared transgender homeless youth with male- and female-identified homeless youth, but studies of trans-youth that do exist indicate that survival sex is a common experience for these youth (Grossman & D'Augelli, 2006). One additional problem with the existing literature on gendered patterns of survival sex is that most statistical models have not controlled for sexual orientation. Given that findings in the literature on other areas of psychosocial outcomes suggest differential risks for heterosexual females, heterosexual males, sexual

¹However, the Greene, Ennett, and Ringwalt (1999) study found this pattern of increased risk for males to hold only for the shelter sample, but not for the street sample.

minority females, and sexual minority males (Davies, Rogers, & Whiteleg, 2009; Gangamma, Slesnick, Toviss, & Serovich, 2008; Hequembourg & Brallier 2009; Kite & Whitley, 1996), failure to include sexual orientation may be obscuring important gendered patterns of risk for engaging in survival sex.

Race and ethnicity. As with gender, the findings regarding the relationship between survival sex and race and ethnicity have been mixed. No racial differences in likelihood of engaging in survival sex emerged in samples of homeless youth and young adults from New York City (Rotheram-Borus et al., 1992) or San Francisco (Hickler & Auerswald, 2009), whereas other studies have found differences. In Chicago, Johnson et al. (1996) found that African American homeless youth were more likely than homeless youth of other racial backgrounds to engage in survival sex; whereas in Washington, DC, Ennett, Bailey, and Federman (1999) found that African American youth were significantly less likely to engage in survival sex than youth from other racial groups. In Greene et al.'s (1999) large, multi-site study, the shelter-only sample of youth who self-identified as White or as "other races" were more likely to engage in survival sex than youth from other racial groups, whereas racial differences did not emerge among the street-only sample. Hickler and Auerswald's mixed-methods study of racial differences among homeless youth raises interesting questions about the qualitative differences in homeless youth of different racial backgrounds. They found that both African American and White homeless youth reported significant family dysfunction. African American youth, however, were more likely to be homeless "as a consequence of poverty, substance abuse and the failure of social services" (Hickler & Auerswald, 2009, p. 826), to continue to have ties with nuclear and extended family members, and to have been removed from their families by social services. White youth, on the other hand, were more likely to have left home to "escape an unbearable situation" (Hickler & Auerswald, 2009, p. 826) and were more likely to have relationships with family members that consisted of only occasional phone contact. If these patterns of qualitative differences vary across different regions of the United States because of geographically based economic differences and differences in social services, some of the racial differences in engaging in survival sex may be an artifact of these larger structural variations.

Age. Unlike the findings regarding gender and race and ethnicity, research has much more consistently shown that older homeless youth are more likely to engage in survival sex than younger homeless youth, and that the likelihood of participating in survival sex increases with age (Greene et al., 1999; Johnson et al., 1996; Whitbeck, et al., 2004). The age at which a

youth left home also appears to have an impact on their likelihood of engaging in survival sex, with youth who left at younger ages being more likely to participate than youth who left at older ages (Hagan & McCarthy, 1997; Tyler et al., 2001a).

Sexual orientation. As with age, there is fairly consistent evidence that homeless gay and bisexual males engage in survival sex at significantly higher rates than their heterosexual male counterparts (Feinstein, Greenblatt, Hass, Kohn, & Rana, 2001; Kipke, Montgomery, Simon, Unger, & Johnson, 1997; Klein, 1999; Kruks, 1991; Lankenau, Clatts, Welle, Goldsamt, & Gwadz, 2005; Pennbridge, Freese, & MacKenzie, 1992; Sullivan, 1996; Whitbeck et al., 2004). Recent findings with homeless youth and young adults with substance abuse diagnoses suggest, however, that lesbian and bisexual females are not significantly more or less likely than heterosexual females to engage in survival sex (Gangamma et al., 2008). For gay and bisexual male youth, homophobia is thought to be a precipitating factor in their participation in survival sex. Many are forced to leave their homes due to their caretakers' homophobia and seek out gay-affirming communities; however, they often end up on the streets and engage in survival sex as a last resort (Grossman, 1997; Hunter, 2008; Lock & Steiner, 1999; Luckenbill, 1985; Mallon, 1997; Smith, Seal, & Hartley, 2004; Sullivan & Schneider, 1987).

Survival Sex and Substance Use

Numerous studies have examined the correlation between engaging in survival sex and use of alcohol and other substances (e.g., see Greene et al., 1999; Kipke, Montgomery, & MacKenzie, 1993; Stein, Milburn, Zane, & Rotheram-Borus, 2009; Yates, MacKenzie, Pennbridge, & Swofford, 1991). Some studies have examined recent usage, whereas others have examined lifetime usage. Similarly, some have asked about illicit drug usage, in general, whereas others have specified certain drugs or families of drugs. What emerges is a fairly well-established relationship whereby use of substances is associated with increased likelihood of engaging in survival sex.

Significant relationships between substance use and survival sex have been demonstrated in the general homeless youth population (Greene et al., 1999; Halcón & Lifson, 2004; Yates et al., 1991), as well as among homeless youth accessing services at a community-based health clinic (Kipke et al., 1993). The practice of trading sex for drugs occurs in rural, as well as urban, areas (Forney & Holloway, 1990), and the correlation between survival sex and substance use appears to hold true for both males and females (Huba et al., 2000). Greene et al. also demonstrated that the presence of an illicit drug user in the homeless youth's social

network is positively associated with the youth having engaged in survival sex, and that youth who reported network pressure to engage in survival sex were also more likely to report having used illicit drugs. In addition, youth from substance-using families appear to be at increased risk of engaging in survival sex than those from non-substance-using families (Greene et al., 1999).

Studies that have focused on specific drugs have found alcohol use to be associated with increased likelihood of engaging in survival sex (Greene et al., 1999; Kipke et al., 1993; and for heavy alcohol users, see Halcón & Lifson, 2004), as well as marijuana (Bailey et al., 1998; Greene et al., 1999; Kipke et al., 1993), cocaine and other stimulants (Bailey et al., 1998; Greene et al., 1999; Kipke et al., 1993; Newman, Rhodes, & Weiss, 2004), and narcotics (Kipke et al., 1993). Probably one of the strongest established relationships is between the use of injection drugs and participating in survival sex (Clements et al., 1997; Greene et al., 1999; Kipke et al., 1993; Sugerman et al., 1991; Weber, Boivin, Blais, Haley, & Roy, 2002). In their sample of Chicago homeless youth, Johnson et al. (1996) found that use of IV drugs was more common in those who had engaged in survival sex than those who had not. Similarly, Martinez et al. (1998) examined the prevalence of survival sex among different subgroups of homeless youth and found that 28.3% of current IV drug users, 21.6% of past users, and 11.7% of non-IV drug users reported having engaged in survival sex at some point.

Survival Sex and Mental Health

Among homeless youth there are clear associations between survival sex and mental health issues, as well as with histories of child maltreatment. Homeless youth who engage in survival sex are at a greater risk for depression than their counterparts who have not (Yates et al., 1991). Having a previous psychiatric hospitalization has been found to be associated with an increase in likelihood of engaging in survival sex, whereas meeting the clinical criteria for conduct disorder was associated with a 13-fold increase of likelihood in one particular study (Whitbeck et al., 2004). Likewise, survival sex is associated with previous suicide attempts (Greene et al., 1999), with one eight-city study finding that homeless youth and young adults who engaged in survival sex were 4.5 times more likely to have attempted suicide than those who had not engaged in the behavior (Walls, Potter, & Van Leeuwen, 2009).

Childhood physical and sexual abuse by parents and caregivers is correlated with increased likelihood of trading sex for survival (Silbert & Pines, 1981; Tyler et al., 2001b; Whitbeck et al., 2004), suggesting that the vulnerability arising from abuse makes homeless youth easy targets for predators who try to get them to enter a life

of sex work (Bagley & Young, 1987; Tyler et al., 2001b; Widom & Kuhns, 1996). Newman et al. (2004) found that among drug-using men who have sex with men, those who experienced child maltreatment were 2.5 times as likely to trade sex as those who had not been abused. Relationship with parental figures may also act as a protective factor. In their examination of familial influences on various problem behaviors among homeless youth, Stein et al. (2009) found that having a good maternal relationship was associated with a decreased likelihood of engaging in survival sex, although the same relationship did not exist between having a good paternal relationship and likelihood of survival sex.

Survival Sex and Health

As with mental health, participation in survival sex activities is associated with increased physical risks. Sexually transmitted infections (STIs) are common among homeless youth and young adults, with survival sex being one of the contributing factors of this increased prevalence (Busen & Engebretson, 2008), and with STIs being more common among youth who engage in survival sex than those who do not (Allen et al., 1994; Greene et al., 1999; Halcón & Lifson, 2004; Johnson et al., 1996). Similarly, risk for contracting HIV is significantly higher (Bailey et al., 1998; Clements et al., 1997; Gangamma et al., 2008; Halcón & Lifson, 2004). Johnson et al. (1996) found that homeless youth who had engaged in survival sex had the second highest HIV risk rating, following only those homeless youth and young adults who were IV drug users. Both Pfeifer and Oliver (1997) and Marshall et al. (2008) found that youth in their samples who had traded sex for drugs or money were significantly more likely to be HIV-positive than youth who had not.

Whereas Thomson (1997) found that 73% of homeless youth from a San Francisco drop-in shelter who had engaged in survival sex reported condom use, other studies have found condom use and other HIV-preventative health behaviors to be negatively associated with participation in survival sex (Clements et al., 1997; Sugerman et al., 1991). Rew, Chambers, and Kulkarni (2002) identified survival sex as one of the specific environmental barriers to practicing protected sex for homeless youth. Freese (1995) found that sex-partner reactions and barriers (costs, availability, etc.) were predictive of both condom usage as well as intention to use condoms among youth involved in survival sex.

In addition to STIs, victimization is another physical risk associated with survival sex. Youth engaging in this behavior are more likely to have been physically victimized, frequently by their pimps and customers (Janus, Archambault, Brown, & Welsh, 1995; Whitbeck et al., 2004), as well as sexually assaulted (Tyler et al., 2001a; Whitbeck et al., 2004). Homeless female youth

in one study were both more likely to engage in survival sex and to have been sexually victimized than homeless male youth (Tyler et al., 2001b). The pattern of victimization also appears to be gendered. For example, females who engaged in survival sex were almost five times more likely to report sexual victimization by a known assailant than were homeless male youth who engaged in survival sex (Tyler et al., 2004). Homeless male youth who engaged in survival sex, on the other hand, were more than six times as likely to report sexual victimization by strangers than were homeless female youth who engaged in the behavior (Tyler et al., 2004).

Method

Participants

Beginning in the year 2000, Urban Peak—a Denver-based social service agency providing a comprehensive array of services to homeless youth and young adults—began coordinating public health surveys to document risk factors and trends among homeless youth. The initial pilot survey focused solely on Denver, and the 2002 survey expanded to include Colorado Springs and Boulder. In 2004, the agency received funding to expand the survey outside the state of Colorado. Agency staff and volunteers teamed up with researchers at the University of Colorado Health Sciences (UCHS) and, through the agency's involvement with the National Network for Youth and the National Youth Policy Council, identified agency partners in five different states (Illinois, Minnesota, Missouri, Texas, and Utah) who were interested in participating. The 2005 survey focused on the Eastern portion of the United States and included sites in Connecticut, Florida, Maine, Maryland, New Hampshire, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Washington, DC. Finally, in 2007, the survey focused primarily on Western states and included sites in Alaska, Arizona, California, Colorado, Hawaii, Idaho, Louisiana, Montana, Nevada, Utah, Washington, and Wyoming.

Urban Peak staff trained participating agency staff in other sites on the survey protocol via conference calls. All homeless youth—whether in shelters, on the street, or in agency settings where support services were provided—encountered by staff on the day of the survey administration were approached and asked to participate in the survey. The only criteria for participating were current homelessness and being 25 years old or younger.

Staff members in all sites made every effort to avoid duplication, although no identifiers or contact information were captured as part of the survey. Participation in the surveys was completely voluntary. In addition, as part of the consent process, potential

participants were instructed that their answers would be kept confidential, that they could select to skip any question with which they were not comfortable, and that their decision as to whether to participate would not influence their eligibility for services. Agency staff arranged to read the survey in private areas for youth who had reading difficulties or language barriers. If youth appeared to have difficulty understanding the questions, staff would provide explanation or clarification as needed. The survey consisted of one page of questions (back and front), and took less than 10 min to complete for most participants. The survey questionnaire was developed by Urban Peak in conjunction with its research committee, and was based on previous surveys that the organization conducted with its own client population. The protocol was reviewed and approved for administration by the UCHS institutional review board. (For complete information on the survey protocols and administrations, see Boyle, Van Leeuwen, & Yancy [2005]; Vance [2007]; Van Leeuwen [2002]; and Van Leeuwen, Boyle, & Yancy [2004].) Secondary data analyses were further approved under the University of Denver's institutional review board.

As the majority of questions asked on the 2004, 2005, and 2007 multicity surveys were identical, this study combines these three waves of data into one dataset that includes answers from more than 1,600 homeless youth and young adults in 28 different states and DC. Although there is a possibility that a youth or young adult could have participated in more than one of the surveys, the likelihood of that is fairly small given the transient nature of the population, the length of time between survey administrations, and the focus on different regions of the United States in each subsequent data collection wave.

The full sample consists of 1,755 homeless youth and young adults. From the full sample, 44 (2.5%) records were discarded, as they were missing data on the dependent variable, resulting in a sample of 1,711 respondents. From this, an additional 186 records (10.6%) were dropped, as they were missing data on one of the demographic variables used in the analyses, leaving 1,625 respondents. Finally, multiple imputation by chained equations (van Buuren, Boshuizen, & Knook, 1999) was used to address the remaining missing values. Of the records with missing data, more than 80% were missing data on only one variable, and the rest had three or fewer variables missing.

Measures

Respondents were asked to indicate their age, which was included in the statistical models as an interval level variable, and to identify their gender with three potential responses: *female*, *male*, or *transgender*. For race and ethnicity, respondents were given the options of describing themselves as *Anglo or White*, *African*

American, Latino or Hispanic, Native American, Asian Pacific Islander, or “other.” Respondents were asked if they identified as gay, lesbian, or bisexual.

Two sets of questions regarding drug use were asked—one about lifetime use and the other about use in the last month. Among the list of drugs were alcohol, ecstasy, methamphetamine, morphine–codeine–Vicodin™–Demerol™, inhalants, crack–freebase, Valium™–Librium™–Xanax™, DXM (dextromethorphan)–Coricidin™ (“Triple C” [Coricidin Cough & Cold, which contains DXM]), heroin, and ketamine (“Special K”).² Three mental health variables from the survey were included in our models. First, respondents were asked whether they had ever attempted suicide. Next, they were asked whether they had a family history of alcohol or drug issues, and then whether they had ever been in treatment for alcohol or drug problems.

The final set of correlates explored addressed physical health issues. As a follow-up question to one regarding IV drug use, respondents were asked whether they had ever shared needles. Finally, they were asked if they had ever been tested for HIV and for hepatitis C. The dependent variable was captured by asking respondents whether they had ever “traded sex for money, food, drugs, shelter, clothing, etc.”

Results

Descriptive Statistics

Table 1 contains information regarding the descriptive statistics of the sample. Females made up 47.1% ($n = 766$) of the sample, and respondents who identified as transgender made up 0.7% ($n = 11$) of the sample. Almost one half (49.9%, $n = 810$) of the respondents identified as White, 22.4% ($n = 364$) as African American, with all other races and ethnicities representing <10.0% of the sample. Ages ranged from 10 years to 25 years old, with a mean age of 18.3 ($SD = 2.7$). One-fifth (20.0%; $n = 325$) identified as gay, lesbian, or bisexual. The Colorado subsample represents 23.6% ($n = 385$) of the sample.

Shifting now to the variables regarding lifetime usage of substances, we found that the most commonly used substance—alcohol—had been used at some point in their life by 74.6% ($n = 1,212$) of the sample, followed by ecstasy at 32.2% ($n = 523$), methamphetamine at 24.1% ($n = 391$), morphine, codeine, Vicodin, and Demerol at 23.9% ($n = 388$), and inhalants at 21.2%

($n = 344$). The remaining five drugs examined in the multivariate models had prevalence rates below one fifth of the sample. The top four substances in terms of lifetime usage also emerged as the top four in terms of recent usage. Alcohol was used by 52.4% ($n = 851$) in the last 30 days, ecstasy by 8.3% ($n = 134$), methamphetamine by 6.0% ($n = 98$), and morphine, codeine, Vicodin, and Demerol by 5.7% ($n = 92$).

Table 1. Descriptive Statistics

Variable	%
Gender	
Female	47.1
Male	52.2
Trans	0.7
Race and ethnicity	
Native American	5.6
African American	22.4
Latino	8.3
White	49.9
Bi- or multiracial	3.6
Asian	1.7
Other	8.6
Sexual orientation	
Gay, lesbian, or bisexual	20.0
Heterosexual	80.0
Drugs	
Alcohol	
Lifetime	74.6
Recent	52.4
Ecstasy	
Lifetime	32.2
Recent	8.3
Methamphetamine	
Lifetime	24.1
Recent	6.0
Morphine (and others)	
Lifetime	23.9
Recent	5.7
Inhalants	
Lifetime	21.2
Recent	3.0
Crack	
Lifetime	20.4
Recent	5.4
Valium™ (and others)	
Lifetime	19.4
Recent	3.8
Dextromethorphan	
Lifetime	12.3
Recent	2.3
Heroin	
Lifetime	11.9
Recent	2.8
Ketamine	
Lifetime	10.4
Recent	1.7
Attempted suicide	33.7
Familial substance abuse	68.5
Substance abuse treatment	25.6
Tested for HIV	57.4
Tested for hepatitis C	52.1
Shared needles	5.2

²Other drugs were included in the survey, but were eliminated from models presented in this article because they did not emerge as significant in the context of the multivariate models. Among others, these included cocaine, cigarettes, marijuana, mushrooms, gamma hydroxybutyric acid (more commonly known as GHB), phencyclidine (more commonly known as PCP), lysergic acid diethylamide (more commonly known as LSD or acid), and OxyContin™.

Slightly more than one third of the respondents reported that they had attempted suicide at some point (33.7%; $n = 548$). A history of a severe substance use problem in their families was reported by 68.5% ($n = 1,113$), and 25.6% ($n = 416$) reported having been in substance abuse treatment at some point. More than one half of the respondents reported that they had taken tests to determine their exposure to HIV (57.4%; $n = 932$) and hepatitis C (52.1%; $n = 847$). Slightly more than 5.0% (5.2%; $n = 84$) reported that they had shared needles.

Finally, with regard to the dependent variable, 9.4% ($n = 153$) reported that they had engaged in survival sex—that is, they had, at some point in their life, exchanged sex for money, foods, drugs, shelter, or clothing.

Inferential Statistics

In this section, we examine six different logistical regression models predicting the likelihood of having engaged in survival sex. We start with a model that includes only demographics (gender, age, race, and sexual orientation) to give us a baseline. From there, we examine models that include the baseline model with variables capturing (a) lifetime drug usage, (b) recent drug usage, (c) mental health experiences, and (d) health-related behaviors. The final model was derived by including all variables that had reached at least a marginal level of significance ($p < .10$) in the previous models (not shown). For the sake of parsimony, the model was then reduced by eliminating any variable that no longer reached a level of significance using a backward stepwise approach, resulting in the final model.

Model 1: Baseline model. In the baseline model, we included only demographic variables to predict the likelihood of engaging in survival sex. Table 2, Model 1 provides the information on these results. With regard to gender, we find that females in the sample are no more or less likely to engage in survival sex than males in the sample, but respondents who identify as transgender are 5.6 times as likely to engage in survival sex than males ($p = .019$). (However, the reader should remember that the subsample of transgender individuals is small, and so caution should be exercised regarding this finding.)

Each year, increase in age is associated with an almost 10% increase in likelihood of engaging in survival sex ($p < .01$). The only racial difference that emerged in likelihood was among those who identified their racial categorization as “other.” They were 2.0 times as likely as Whites to have a history of engaging in survival sex. Respondents who identified as gay, lesbian, or bisexual were 2.7 times as likely as heterosexually identified respondents to engage in survival sex ($p < .001$). Overall, the baseline model predicts 5.3% in the variability in likelihood of having engaged in survival sex among homeless youth.

Model 2: Lifetime drug use. In the second model (see Table 2, Model 2), we added the 10 variables that capture lifetime drug use to the baseline model. The pattern found in the baseline model with regard to gender holds, whereby females are not significantly different and transgender-identified individuals are significantly more likely ($p < .05$) to have engaged in survival sex than males. Similarly, the pattern regarding sexual orientation stays the same as well. The age variable, however, is no longer significant. Two differences emerge with regard to race that were not present in the baseline model. Once we control for lifetime drug usage, African American homeless youth are almost 2.5 times as likely to have engaged in survival sex as White homeless youth, and those who indicated “other” as their race are almost 2.4 times as likely as Whites.

Homeless youth and young adults who had ever used ecstasy, ketamine, or heroin were no more or less likely to have engaged in survival sex than homeless youth and young adults who had not used those drugs. Lifetime usage of four drugs examined was associated with significant increases, with usage of one additional drug associated with a marginally significant increase in the likelihood of engaging in survival sex. Respondents who had ever used alcohol were almost 2.5 times as likely ($p < .01$), those who had used crack were 2.4 times as likely ($p < .001$), those who had used inhalants were 2.1 times as likely ($p < .05$), and those who had used morphine, codeine, Vicodin, or Demerol were 1.8 times as likely ($p < .05$) to have engaged in survival sex than those who had not used the drugs. Respondents who used methamphetamine were 1.5 times as likely as those who had not to have done so, but this result was only marginally statistically significant ($p < .10$). Lifetime usage of two drugs was associated with statistically significant decreases in likelihood of having engaged in survival sex. Respondents who used DXM–Coricidin (Triple C) were less than one half as likely ($p < .05$), and those who had used Valium, Librium, or Xanax were one third as likely ($p < .05$) to have engaged in survival sex. The addition of the lifetime drug use variables increases the amount of variability explained to 15.8%.

Model 3: Recent drug usage. In the third model (see Table 2, Model 3), we added the variables capturing recent usage of the 10 drugs to the baseline model. This new model explains 10.0% of the variability in the likelihood of having engaged in survival sex.

Patterns related to gender, age, and sexual orientation remain the same as the baseline model, with the addition of the recent drug usage variables to the model. As with the model where lifetime drug usage variables were added, we find that African Americans are almost 1.5 times as likely ($p < .05$), and those who identified as “other” for their race were 2.2 times as likely ($p < .001$), as Whites to have engaged in survival sex.

Table 2. Logistic Regressions Predicting Survival Sex Behavior

Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Female	1.01	(0.222)	1.16	(0.325)	1.19	(0.300)	0.88	(0.261)	1.01	(0.211)	0.95	(.314)
Transgender	5.64*	(4.167)	6.41*	(4.957)	7.74**	(5.529)	3.35*	(2.049)	3.82 ^m	(2.840)	2.69	(2.035)
Age	1.09**	(0.034)	1.00	(0.030)	1.07*	(0.035)	1.06*	(0.031)	1.04	(0.027)	1.02	(0.031)
African American	1.25	(0.222)	2.48***	(0.437)	1.49*	(0.277)	1.75**	(0.331)	1.43 ^m	(0.275)	2.20***	(0.406)
Latino	0.77	(0.345)	0.80	(0.327)	0.86	(0.397)	0.88	(0.407)	0.88	(0.341)	0.96	(0.409)
Native American	1.20	(0.357)	1.08	(0.422)	1.10	(0.411)	1.06	(0.310)	1.61	(0.569)	1.21	(0.384)
Bi- or multiracial	1.22	(0.414)	0.76	(0.366)	1.21	(0.393)	0.95	(0.441)	1.43	(0.503)	0.82	(0.454)
Asian American	0.36	(0.304)	0.59	(0.539)	0.39	(0.266)	0.47	(0.380)	0.42	(0.355)	0.36	(0.356)
Other race	2.04***	(0.372)	2.39***	(0.465)	2.21***	(0.388)	1.98***	(0.369)	2.08***	(0.424)	2.14***	(0.382)
Gay, lesbian, or bisexual	2.73***	(0.471)	1.97**	(0.430)	2.02***	(0.413)	1.91***	(0.347)	2.39***	(0.431)	1.70**	(0.317)
Alcohol (lifetime)			2.48**	(0.716)								
Ecstasy (lifetime)			1.54	(0.561)								
Methamphetamine (lifetime)			1.53 ^m	(0.352)							2.23**	(0.586)
Inhalants (lifetime)			2.10*	(0.796)							2.79**	(0.972)
Crack (lifetime)			2.41***	(0.553)								
Valium TM (lifetime)			0.36*	(0.155)							2.23**	(0.586)
Dextromethorphan (lifetime)			0.48*	(0.152)								
Heroin (lifetime)			1.26	(0.408)								
Ketamine (lifetime)			1.06	(0.200)								
Morphine (lifetime)			1.79*	(0.456)								
Alcohol (recent)					0.57*	(0.137)						
Ecstasy (recent)					0.46*	(0.155)						
Methamphetamine (recent)					0.53**	(0.117)						
Inhalants (recent)					0.73	(0.425)						
Crack (recent)					0.88	(0.394)						
Valium (recent)					1.24	(0.715)						
Dextromethorphan (recent)					0.98	(0.518)						
Heroin (recent)					0.44*	(0.147)					0.37***	(0.113)
Ketamine (recent)					6.22 ^m	(6.855)						
Morphine (recent)					0.58	(0.235)						
Suicide attempt							3.25***	(0.608)			3.24***	(0.628)
Familial history of substance abuse							3.42***	(0.909)			3.10***	(0.921)
Substance abuse treatment							1.75**	(0.312)				
Tested for HIV									2.96**	(1.029)	2.61**	(0.930)
Tested for hepatitis C									0.66 ^m	(0.144)	0.52***	(0.930)
Shared needles									5.11***	(1.586)		
Pseudo R^2	.053		.158		.100		.145		.108		.196	

Note. $N = 1,625$.

^mMarginal significance.

$p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Usage of five of the drugs in the last 30 days is not associated with a significant increase or decrease in likelihood of engaging in survival sex among homeless youth and young adults. They include (a) inhalants, (b) Valium, Librium, or Xanax, (c) crack, (d) DXM–Coricidin (Triple C), and (e) morphine, codeine, Vicodin, or Demerol. Use of both alcohol and ecstasy in the last 30 days is significantly associated with a decreased likelihood of having engaged in survival sex ($p < .05$ for both). Likewise, use of heroin in the prior 30 days was associated with a 56% decrease in likelihood, and use of methamphetamine was associated with a 47% decrease in likelihood of having engaged in survival sex ($p < .05$ and $p < .01$, respectively). Respondents who had recently used ketamine were marginally significantly more likely to have engaged in survival sex than those who had not (odds ratio [OR] = 6.20; $p < .10$).

Model 4: Mental health. The fourth model contains the baseline model combined with the three mental health-related variables (see Table 2, Model 4). In this model, transgender individuals are still significantly more likely to have engaged in survival sex than males ($p < .05$), whereas females are no more or less likely to have done so. Age also maintains its significance ($p < .05$), with an almost 6% increase in likelihood associated with every year increase in age. Both African American homeless youth and young adults, as well as homeless youth and young adults who identify their race as “other,” are significantly more likely to have engaged in survival sex than homeless White youth and young adults ($p < .01$ and $p < .001$, respectively).

Homeless youth and young adults in the sample who reported that they had attempted suicide at some point in their life were almost 3.3 times as likely ($p < .001$) as

homeless youth and young adults who had not attempted suicide to have engaged in survival sex. Similarly, those who reported a history of severe substance problems in their families were 3.4 times as likely ($p < .001$) as those who did not report such a familial history. Those youth and young adults who had been in substance abuse treatment at some point in their lives were close to 1.8 times as likely as those who had never been in substance abuse treatment to have engaged in survival sex ($p < .01$). The addition of the mental health-related variables to the model raises the variability explained by the model to 14.5%.

Model 5: Health-related. Table 2, Model 5 displays the results from the model that includes variables regarding health-related variables in addition to the baseline model. Comparing this model to the baseline model with only the demographic variables, we find that only the pattern in the baseline model related to sexual orientation remains the same ($p < .001$). With regard to gender, females are still no more or less likely than males to have engaged in survival sex, but those who identify as transgender are now only marginally significantly more likely than males to have engaged in survival sex. Controlling for health-related variables, we find that African Americans are marginally more likely than Whites (OR = 1.40; $p < .10$), and those who chose the “other” race option from the response set were slightly more than twice as likely than Whites ($p < .001$), to have engaged in survival sex.

Respondents who reported that they had shared needles with others were 5.1 times as likely ($p < .001$) as those who had not shared needles to report a history of survival sex, whereas those who reported having been tested for HIV were almost 3.0 times as likely ($p < .01$) as those who had never been tested for HIV to have done so. Those who reported having been tested for hepatitis C were marginally significantly less likely (OR = 0.66; $p < .10$) to report having engaged in survival sex than those who had never been tested for hepatitis C. This model explains 10.8% of the variability in the dependent variable.

Model 6: Full model (reduced). In the final model (see Table 2, Model 6), we have added all variables examined that were at least marginally significant in previous models to the baseline model, and then reduced the model using a backward stepwise procedure to arrive at a reduced model that explains 19.6% of the variability in the likelihood of having engaged in survival sex.

In the full model, neither gender nor age are explanatory. Homeless youth and young adults who identify as African Americans and those who identify as “other” race are significantly more likely than homeless youth who identify as White to engage in survival sex ($p < .001$ for both). African Americans were 2.2 times as likely, and other-raced respondents were 2.1 times as

likely to engage in survival sex. Homeless gay, lesbian, and bisexual youth were 1.7 times as likely to have engaged in survival sex as homeless heterosexual youth.

Lifetime usage of three drugs was associated with survival sex behavior. Two of the drugs were associated with increased likelihood. Those who had used inhalants were close to 2.8 times as likely ($p < .01$), and those who had used methamphetamine were 2.2 times as likely ($p < .01$) as those who had not used the drugs to have done so. Those who had ever used Valium or similar drugs were approximately two thirds as likely (OR = 0.36; $p < .01$) as those who had not used this group of drugs to report a history of engaging in survival sex. Recent usage of only one drug (i.e., heroin) maintained significance in the full model. Those who reported using heroin in the last 30 days were 63% less likely to report engaging in survival sex than those who reported that they had never used heroin (OR = 0.37; $p < .001$).

Both a history of attempting suicide and a family history of severe substance problems were associated with increased likelihood of engaging in survival sex. Those who attempted suicide were 3.2 times as likely ($p < .001$), whereas those who had a familial history of severe substance problems were 3.1 times as likely ($p < .001$) than those who did not report these experiences to have done so. Having tested for HIV was associated with a 2.6 increase in likelihood ($p < .01$), whereas having tested for hepatitis C was associated with a 0.49 decrease in likelihood ($p < .001$).

Limitations

The results presented here should be considered in light of a few limitations. First, although the sample included homeless youth and young adults from 28 different states and DC, the sample cannot be assumed to be representative of homeless youth and young adults. It is likely, given the sampling approaches used, that the majority of respondents were homeless in urban areas, and the sample is influenced further by the size of the Colorado and Denver urban area subsample. Second, the sample similarly likely has an overrepresentation of youth who receive services at community-based social service agencies, either in shelter programs or who receive support services through outreach programs. As such, we would expect an underrepresentation of homeless youth and young adults who do not seek services at youth agencies or who avoid street outreach teams. Third, because housing status was unavailable in the dataset used for these analyses, we were unable to include this variable, which has been found to be one of the strongest predictors of survival sex in previous studies (see Greene et al., 1999). As with all cross-sectional studies, our findings cannot be interpreted as necessarily indicating causality. Finally, because of the need to keep the survey questionnaire

brief, our variables are single-item variables that may fail to capture the multidimensionality of some of the concepts that we have examined.

Discussion

Many of the findings, particularly those examining psychosocial factors, that emerged in this study mirror the findings found by Greene et al. (1999), which used a multicity sample of homeless youth from 1992, suggesting that the correlates of survival sex among this population may not have changed much in the past 15 years. Unfortunately, our data did not contain information on whether the youth were currently living in youth shelters or were living on the streets; and, as such, we were not able to compare these two subsamples of homeless youth as the previous study was able to do.

Previous literature has been mixed on the association of gender and survival sex among homeless youth and young adults. Greene et al. (1999) found that males were more likely to engage in survival sex than females among their shelter youth subsample, but not among their street youth sample. In our models, we consistently found no differences between males and females, but fairly consistently found that trans-identified homeless youth and young adults had significantly greater likelihood of reporting survival sex than their male counterparts. The emergence of gender differences in the Greene et al. study may be an artifact of failure to include sexual orientation in their models, particularly in light of recent findings suggesting Gender \times Sexual Orientation differences (Gangamma et al., 2008). Similarly, our lack of finding of gender differences between females and males may be the result of our inability to control for housing status of the youth. Replication of this study with variables capturing both sexual orientation and housing status would be helpful in clarifying this issue.

Similarly, the scholarship has been mixed with regard to race, with significant differences emerging in some samples, but not in others. We found for the most part, however, that once we began to control for psychosocial variables, African American homeless youth and young adults were significantly more likely to engage in survival sex than White homeless youth and young adults. Youth who identified as "other" race were significantly more likely to have engaged in survival sex in the demographics-only baseline model, as well as the rest of the models. Data were not available to help us discern what factors might undergird these racial and ethnic differences. It could be that these youth and young adults have fewer options for supporting themselves than do White homeless youth, or that they come from different social class backgrounds, reducing the resources they had at their disposal for survival purposes. Clearly, further exploration of these racial differences could shed light on these results.

Although increases in age were a significant predictor of increases in likelihood of having engaged in survival sex in the baseline model, as well as the models that also captured recent drug and alcohol use and the mental health variables, it lost significance in the models capturing lifetime drug and alcohol usage and the physical health-related variables. Given the correlations between these sets of variables, it may be that it is not age, in and of itself, that increases the risk, but that age provides greater exposure risks to opportunities to be homeless for a longer period of time or to engage in drug and alcohol use, which are associated with increased risks of engaging in survival sex.

Consistent with previous findings, we found that gay, lesbian, and bisexually identified homeless youth and young adults were significantly more likely than heterosexually identified youth to have engaged in survival sex. Based on Gangamma et al.'s (2008) recent work, further exploration of this finding might demonstrate an interaction effect whereby the relationship between sexual orientation and survival sex depends on gender. This represents another area of exploration that would benefit from future research.

Although there is fairly consistent evidence of the relationship between alcohol and drug use and survival sex, much of the scholarship does not reach the level of specificity we were able to examine by drug or by the difference between lifetime usage and usage in the last 30 days. Plotting the relationships between survival sex and drug usage by type of drug usage (lifetime vs. recent) that emerge in these data results in a 2×2 diagram (see Table 3). Alcohol and methamphetamine usage were the two substances that demonstrated a significant relationship both in lifetime, as well as recent, usage; this

Table 3. Relationship for Usage Pattern of Drugs (Lifetime and Recent) and Engagement in Survival Sex

Recent Usage of Substance by Participant	Lifetime Usage of Substance by Participant	
	Survival Sex = Yes	Survival Sex = No
Survival sex = yes	Alcohol Methamphetamine ^a	Heroin Ketamine ^b
Survival sex = no	Ecstasy Inhalants Crack Valium TM Dextromethorphan Morphine	Cocaine ^c Cigarettes ^c Marijuana ^c Mushrooms ^c Gamma hydroxybutric acid ^c Phencyclidine ^c Lysergic acid diethylamide ^c OxyContin ^{TMc}

^aMarginally significant ($p < .10$) in lifetime usage.

^bMarginally significant ($p < .10$) in recent usage.

^cNot included in multivariate models because it failed to reach levels of significance.

suggests that they may be substances of particular concern for risk in survival sex engagement. Two substances, heroin and ketamine, emerged as significant predictors for recent usage, but not for lifetime usage; this suggests that current users might be at different levels of risk, whereas past use may not be as significantly related to survival sex. A number of substances fell into the category where a history of usage, but not recent usage, was correlated with participation in survival sex: ecstasy, inhalants, crack, Valium, DXM, and morphine. Finally, usage of a number of other substances was not found to be significant in predicting survival sex in either the lifetime or recent usage categories. These included cocaine, cigarettes, marijuana, mushrooms, gamma hydroxybutyric acid (more commonly known as GHB), phencyclidine (more commonly known as PCP), lysergic acid diethylamide (more commonly known as LSD or acid), and OxyContinTM. Given that some of the substances (e.g., DXM) are associated with increased likelihood of use during early adolescence, these patterns of usage may potentially be signs of greater psychiatric morbidity or increased likelihood of a range of psychosocial risks.³ Future research on the trajectory of drug use patterns might shed important light on the relationship between drug usage and survival sex. It is also important to remember that these results emerged in multivariate contexts while controlling for lifetime and recent usage of other substances, rather than in models where each of these substances were the only substance being tested in the model. As such, this suggests that those that emerged as significant have the strongest relationships as predictors of engaging in survival sex.

As with the existing literature, we found that a history of suicide attempts, familial substance abuse, and having been in substance abuse treatment were all significant predictors of engaging in survival sex, reinforcing the connection between more serious mental health issues and the behavior. It seems probable that family history of substance abuse preceded the engagement in survival sex, but the temporal relationship between suicide attempts and survival sex, or between substance abuse treatment and survival sex, could theoretically go in either direction, or could be related to a common underlying, unmeasured variable. Capturing temporal sequencing of events or conducting longitudinal studies would contribute to a better understanding of the relationship between these experiences.

Similarly, it seems plausible that there are numerous permutations of the relationships between getting tested for HIV and hepatitis C antibodies, as well as sharing needles. IV drug use could easily precede engaging in survival sex and be a factor that drives a homeless youth to engage in survival sex in order to support an addiction. On the other hand, a youth involved in survival sex

may find increased opportunity to engage in IV drug use as part of the sexual experiences with their customers.

Implications for Practice and Research

Some homeless youth and young adults may see survival sex as a necessity. Engaging youth who are considering participating in survival sex in a dialogue prior to their involvement about the potential risks associated with the behavior may be helpful in either preventing their involvement or reducing some of the risks associated with the behavior. With these youth, brainstorming other possible options and referrals to resources to meet their basic needs may alleviate some of the pressure they feel to engage in survival sex.

Working with youth and young adults already involved in survival sex to assist them in decreasing or discontinuing their involvement, or in educating them on methods of reducing risks associated with the behavior, may be a potentially effective intervention. Interventions that support the youth in practicing negotiation of safer sex practices, developing strategies to keep their friends informed of their whereabouts while with customers, or defending themselves against aggressive behavior may be skill sets that are particularly useful in the context of survival sex. However, as Greene et al. (1999) noted, one structural issue contributing to the prevalence of survival sex among this population is the lack of alternatives for youth in meeting their economic needs. Activities such as job training, job creation, and job placement, as well as advocacy for systems that are more responsive to the economic needs of these youth are similarly needed approaches.

At an even more fundamental level, work that addresses the issues in families that lead to youth leaving home or being thrown out of the home are important in decreasing homelessness and the subsequent need for survival sex. This includes intervention and availability of services for drug and alcohol abuse treatment for youth and their family members, abuse prevention services, and similar types of family support and counseling. It also underscores the need to address social justice issues, such as sexism and heterosexism, and how they play a role in the dysfunctions of families that lead to homelessness for youth and young adults.

Service providers working with youth need to recognize the differential level of risks for some groups of youth. Trans-identified homeless youth may be particularly vulnerable to engagement in survival sex, as may gay, lesbian, and bisexual youth. Given the dearth of research on sexual orientation and the almost complete absence of research on gender identity, much work needs to be done to understand the risk factors that contribute to this disproportionate impact on these youth and young adults. Supportive services that address the unique needs of sexual minority youth on the street are lacking.

³Thanks to an anonymous reviewer for pointing out this possibility.

Youth workers should not assume that survival sex is predominately a risk for homeless females, as our results suggest a similar risk pattern emerges for homeless males. The conflicting findings regarding race and ethnicity make it difficult to discern potential racial differences in risks for survival sex, and more extensive study is needed in this area. In the context of Hickler and Auerwald's (2009) findings of qualitative differences in racial groups of homeless youth and their connection to their families of origin, exploration of reasons for leaving home, as well as current contact with family members, may provide additional opportunities for intervention. One thing that is clear and consistent in our findings and previous work is that increases in age appear to be associated with increased risks.

The relationship between drug usage and survival sex is complex. However, our results do suggest that alcohol and methamphetamine use may play an especially critical role in survival sex participation. Screening for use of these drugs may be particularly important in identifying youth at increased risk for survival sex. Future research aimed at untangling the sequencing, as well as the multicollinear relationships between usage of various drugs and survival sex, could contribute in significant ways to this literature.

This study further underscores many of the findings that Greene et al. (1999) found in their 1992 study of homeless youth and young adults, and furthers the scholarship on the phenomenon of survival sex among the population of homeless youth in the United States with the inclusion of variables not examined in the earlier study. What emerges is a constellation of psychosocial risks associated with survival sex that represents a very dangerous context for homeless young people. Although the best case scenario would be a comprehensive array of interventions that prevent youth and young adults from becoming homeless, in the absence of such an investment in children and families in the United States, it is clear that much needs to be done to address the economic needs that encourage many young people to turn to survival sex.

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