Published in final edited form as:

J Aggress Maltreat Trauma. 2016 ; 25(9): 909–920. doi:10.1080/10926771.2016.1223245.

Trading Sex for Money or Compensation: Prevalence and Associated Characteristics from a Sexually Transmitted Infection (STI) Clinic Sample

Lara B. Gerassi^a, Melissa Jonson-Reid^a, Katie Plax^b, and Gaurav Kaushik^c

^aBrown School of Social Work, Washington University in St. Louis, St. Louis, Missouri, USA

^bDepartment of Pediatrics, Washington University School of Medicine, St. Louis, Missouri, USA

^cSupporting Positive Opportunities with Teens, St. Louis, Missouri, USA

Abstract

The purpose of this study was to determine the prevalence and individual risk factors of people who trade or sell sex among sexually active individuals seeking HIV and sexually transmitted infection (STI) testing. Using electronic agency records, an analysis of the characteristics of 5,029 youth and adults who voluntarily obtained HIV and STI testing was conducted. Multiple imputation procedures for missing data from 3 variables and logistic regression were conducted. A total of 128 individuals reported having traded sex. Nine variables had statistically significant associations with trading sex. Individuals who identified as White and female had lesser odds of trading sex, whereas individuals who were transgender, were living in a shelter, had been sexually assaulted, had a previous STI, had high-risk sex, or used drugs had greater odds of trading sex. Elevated levels of high-risk behavior in addition to sexual trauma should be considered in intervention research and community health practice. Implications for service providers and researchers are discussed.

Keywords

adolescent; adult; clinical issues; trauma

No study to date has examined the prevalence of trading sex among sexually active people who might be seeking services beyond homeless shelters (Watson, 2011), and the prevalence of and circumstances in which individuals trade sex for financial or other compensation remains generally unknown. Several studies do suggest that homeless and low-income youth and young adults experience increased risk for trading sex for food, money, drugs, or shelter to survive (Greene, Ennett, & Ringwalt, 1999; Lankenau, Clatts, Welle, Goldsamt, & Gwadz, 2004; Marshall, Shannon, Kerr, Zhang, & Wood, 2010; Watson, 2011), a practice also referred to as *survival sex* (Gerassi, 2015; Warf et al., 2013). Some studies suggest that individuals who trade sex do not necessarily do so voluntarily, as they can be coerced, manipulated, or forced (Tyler & Johnson, 2006). Additionally, individuals who have a

history of incarceration are more likely to report a history of trading sex than those without such a history (Khan et al., 2008).

Although the likelihood of sexual risk behaviors has been found to be elevated among youth who have been involved in foster care, have been maltreated, or are runaways who self-report abuse ((Ahrens, Katon, McCarty, Richardson, & Courtney, 2012; Auslander, Mcmillen, Elze, Thompson, & Stiffman, 2002; Gerassi, Jonson-Reid, & Drake, 2016), abusing substances (Clatts, Goldsamt, Yi, & Gwadz, 2005), or delinquent activity, these studies do not include trading sex as a sexual risk behavior. Research indicates elevated rates of survival sex in (typically young) men who have sex with men (MSM; Clatts et al., 2005; Lankenau et al., 2004) and young women and girls regardless of sexual orientation (Harding & Hamilton, 2009; Nixon, Tutty, Downe, Gorkoff, & Ursel, 2002). Research on individuals who report trading sex finds increased risk for sexual victimization in addition to mental, physical, and sexual health risks in this population (Chen, Tyler, Whitbeck, & Hoyt, 2004; Hudson & Nandy, 2012; Kidd & Kral, 2002). Trading sex is closely linked to substance use (Otto-Salaj, Gore-Felton, McGarvey, & Canterbury, 2002), in addition to depression (Hudson & Nandy, 2012) and sexually transmitted infections (STIs; Khan et al., 2008). Some scholars have also documented trading sex for basic needs as a pathway into prostitution (Miller et al., 2011; Potterat, Rothenberg, Muth, Darrow, & Phillips-Plummer, 2001).

Despite this knowledge base, we still lack understanding of how best to identify such youth in the community. The focus on prevalence studies specific to trading sex has been among homeless youth, as one national study that examined the prevalence of survival sex specifically among street and shelter youth is dated over 15 years ago (Greene et al., 1999). Other existing, nonnational studies examining the prevalence of survival sex report a 10% to 20% rate, specifically among homeless youth (Halcon & Lifson, 2004; Van Leeuwen et al., 2004). Despite the associations between trading sex and STIs (Khan et al., 2008), we do not know if individuals who trade sex are seeking services to address this issue within the community. This study seeks to help fill this gap in knowledge by examining the prevalence and risk factors of individuals who trade sex for money or compensation among sexually active youth and adults seeking health care screenings for HIV/STI.

Methods

Sample

Data were collected through an organization in a St. Louis that provides free services including medical care, case management, counseling, education and vocational programs, a drop-in center, and HIV and STI testing. Although the organization only provides center-based services to individuals age 24 or younger, the HIV/STI testing at outreach locations provides services to all individuals, regardless of age. Survey data were collected from the organization and 20 outreach locations across the metropolitan area where screenings and intake questions were conducted in a private location from 2008 to 2014. Data were then compiled at the organization and an anonymized data set provided for cleaning and analysis. Individuals who indicated they had never had sexual contact with males or females were removed from the sample ($n = 508$). As there was a small total number of individuals who

did not identify as White, Black or African American, or multiracial, but were identified as other or unknown, they were deleted from the sample (a total between all groups amounting to $n = 176$). Human subject approval was granted by Washington University in St. Louis and the organization.

Measures

A binary variable, indicating whether a person had traded sex for either payment or other compensation, served as the variable of interest for this study (1 = traded sex, 0 = did not trade sex). Demographic variables included race (0 = White, 1 = African American or Black, 2 = more than one race), age (0 = ages 14–17, 1 = 18–22, 2 = 23–29, 3 = 30+), and sex or gender identity (0 = male, 1 = female, 2 = transgender). Information was asked as to whether participants have sex with males, females, or both. This provided three sexual history categories of males (0 = males who have sex with males only, 1 = males who have sex with females only, 2 = males who have sex with both), three sexual history categories of females (3 = females who have sex with males only, 4 = females who have sex with females only, 5 = females who have sex with both). With a very small sample size of individuals who identified as transgender, one category was created to reflect these individuals, but subpopulations regarding sexual history could not be entered in the model (6 = transgender). Housing status was coded as missing (0); group home or housing program (1); living with a parent (2); living with a friend, other family member, or foster parent (3); homeless or living in a shelter (4); roommate or school (5), or lives alone (6). Education was coded as in school (0), graduated from high school or general education diploma (GED) (1), in college (2), or had graduated college (3). A measure determined whether participants were employed (0) or unemployed (1).

Participants were asked several questions regarding their drug, alcohol, and sexual histories. Drug use was coded as 1 = yes, 0 = no; having a previous STI to their knowledge was coded as 1 = yes, 0 = no; and if they have ever been sexually assaulted was coded as 1 = yes, 0 = no. They were then asked if they ever knowingly had sex with an individual who is HIV positive (1 = yes, 0 = no) or considered to be a high-risk sex partner (1 = yes, 0 = no). Participants also reported if they ever had sex while abusing alcohol (1 = yes, 0 = no). Results of STI results from that day were coded 1 = positive, 0 = negative.

Analyses

All data cleaning and analyses were conducted in SAS 9.4. Descriptive and bivariate analyses were used to examine sample characteristics, in addition to determining relationships between outcome and independent variables. There were no missing data for independent and outcome variables with the exception of housing, as well as education and job statuses. All relevant variables were retained for multivariate analyses.

We looked for evidence that data were missing at random (MAR) to conduct multiple imputation analyses by assessing the relationships between missing data and observed variables within the data set (Allison, 2005). We created a missing data variable (yes–no) and checked for statistically significant associations. As there were statistically significant

associations between other predictor variables in the model and the missingness variable, we decided to conduct an imputation model.

We used multiple imputation with SAS 9.4 PROC MI and PROC MIANALYZE (SAS Institute, 2013). Multiple imputation procedures cannot completely remove the bias that could arise from missing data, but help to reduce such bias. Missing housing values were imputed using all other variables in the models, with the exception of the dependent variable, trading sex. We created 10 imputed data sets for the 5,029 respondents to minimize bias. All models were significant ($p < .0001$), with Wald chi-square estimates ranging from 262.55 to 266.71, with $df = 23$. The c statistic for the models ranged from .88 to .89, indicating acceptable model fit. A second regression model combined results from 10 imputed data sets and determined which of the 23 variables (dummy coded and dichotomous) were significantly associated with self-reported trading sex behavior. The process of combining results from different imputed sets results in valid statistical inferences that properly reflect the uncertainty due to missing values ("SAS Institute, 2013). The relative efficiency of parameter estimates ranged from 96.71% to 99.94%, ensuring that the measures met levels of desirability. All demographics, comorbid disorders, trauma histories, and youth outcome variables (with the exception of trading sex) were entered into the model with the exception of sexual orientation due to small, unstable cell frequencies.

Results

The final study sample consisted of 5,029 individuals, of whom 128 (2.5%) reported trading sex for financial compensation. The overall sample was comprised of 21% Whites, 75% Blacks or African Americans, and 4% biracial or multiracial individuals. Forty-one percent identified as males, 58% identified as females, and 1% identified as transgender. Eleven percent reported being male who had sex with males only, 27% reported being males who had sex with females only, and 4% reported being males who had sex with both males and females. Fifty percent reported being females who had sex with men, 1% reported being females who had sex with females, and 7% reported being females who had sex with both males and females. At their first visit, 13% ranged in age from 14 to 17, 59% were between 18 and 22, 20% ranged from 23 to 29, and another 8% were age 30 or older. In the sample, 3,914 respondents provided a housing response before multiple imputation procedures were conducted, 2% of whom lived in a group home or residential program, 52% lived with parents, 9% lived with a nonparent relative or friend, 4% were homeless or living in a shelter, 19% lived with a roommate or at school, and 14% lived alone. Similarly, 1,068 respondents had missing educational status data, 20% were currently in school, 34% had a high school diploma or GED, 38% were in college, and almost 7% had graduated college. With 1,175 reported missing for the employment variable, 49% reported being employed and just over half (51%) reported being unemployed.

Bivariate findings for individuals who trade sex

All variables examined according to endorsement of trading sex are summarized in Table 1. Differences in characteristics that were statistically significant are discussed here. Over half (68%) of individuals who traded sex identified as male, $\chi^2(2, N = 5,029) = 155.36, p < .$

0001. Of the 22 individuals in the sample who identified as transgendered, 10 of them indicated they were compensated for sex, accounting for 8% of the participants who endorsed traded sex, and females encompassed 24%. Sexual orientation or gender identity was statistically significant, $\chi^2(6, N = 5,029) = 193.03, p < .0001$. Twenty percent of those who did trade sex identified as MSM and 15% identified as males who have sex with women. Nine percent endorsing trading sex were females who indicated having sex with both males and females, and 15% were males who have sex with males and females. Another 8% endorsing trading sex identified as transgender.

Despite missing data for housing, education, and job status, all three variables were statistically significant. Youth still living at home were less likely to report trading sex (37% vs. 52% of those not living with a parent), and self-reported trading sex behavior was higher among those in shelters or reporting homelessness (13% vs. 3%), $\chi^2(5, N = 3914) = 31.50, p < .0001$. Of those who traded sex and reported education level, 31% had not yet completed high school as compared to 20% of those who did not trade and 19% were in college as opposed to 39% who did not trade, $\chi^2(3, N = 3,961) = 13.48, p = .004$. Only 35% of individuals who did trade sex reported being employed as compared to 65% of individuals who did not trade sex, $\chi^2(1, N = 3,854) = 5.72, p = .02$.

Twenty-eight percent of the individuals who traded sex reported having used drugs compared to 6% of those who did not trade, $\chi^2(1, N = 5,029) = 95.54, p < .0001$ and 50% reported having sex while abusing alcohol as compared to 18% of those who did not, $\chi^2(1, N = 5,029) = 83.66, p < .0001$. Twenty-three percent reported having sex with someone they knew to be HIV positive as compared to 4% of individuals who did not trade sex, $\chi^2(1, N = 5,029) = 95.38, p < .0001$, and 53% reported having sex with a high-risk partner as compared to 10% of those who did not trade sex, $\chi^2(1, N = 5,029) = 216.79, p < .0001$. Seventy percent of individuals who reported trading sex behaviors indicated having an STI previous to this testing as compared to 41% of those who did not report trading sex, $\chi^2(1, N = 5,029) = 42.97, p < .0001$. Five percent of individuals who traded sex tested positive at the current testing as compared to 2% of individuals who did not trade sex, $\chi^2(1, N = 5,029) = 7.85, p = .005$. Thirty-six percent of the trading sex group reported having been sexually assaulted as compared to 10% of those who did not trade sex, $\chi^2(1, N = 5,029) = 86.46, p < .0001$.

Multivariate model findings

Nine variables had statistically significant relationships with the trading sex outcome variable (see Table 2). Individuals who identified as White had approximately two times lesser odds of trading sex ($OR = .46, CI [-1.35, -.20], p = .008$) than individuals who identified as African American or Black. Individuals who identified as female had 4.3 times lesser odds of trading sex than males ($OR = .23, CI [-1.94, -.96], p < .0001$), and individuals who identified as transgender had over 10 times greater odds of trading sex ($OR = 10.51, CI [1.24, 3.46], p < .0001$). Individuals who reported being homeless or living in a shelter had 2.5 greater odds of trading sex than those living with a parent ($OR = 2.53, CI [.03, 1.83], p = .04$). Participants who were first tested above the age of 29 had three times

greater odds of trading sex than individuals in their teens (OR = 3.00, CI [.09, 2.11], $p < .0001$).

Individuals who reported having been sexually assaulted had 3.5 times greater odds of trading sex than those who did not (OR = 3.48, CI [.76, 1.73], $p < .0001$). Respondents who reported knowledge of a previous STI had 2.8 greater odds of trading sex than those who did not (OR = 2.78, CI [.57, 1.47], $p < .0001$). Individuals who reported having sex under the influence of alcohol had 1.7 greater odds of trading sex (OR = 1.73, CI [.11, .98], $p = .01$). Respondents who stated that they participated in high-risk sex had 4.3 greater odds of trading sex (OR = 4.31, CI [1.03, 1.90], $p < .0001$). Individuals who reported using drugs had 2.4 times greater odds of trading sex (OR = 2.44, CI [.39, 1.40], $p = .005$). All other relationships were not significant.

Limitations

There are several important limitations to consider. The prevalence rate found in this study is lower than that reported in studies specific to homeless youth (Halcon & Lifson, 2004; Van Leeuwen et al., 2004). This might be because this sample includes a broader sample of sexually active youth than prior investigations. However, it is also possible that some individuals who had traded sex did not answer accurately due to the sensitive nature of these questions. Further study is needed with general population samples to understand what the prevalence is among both homeless and nonhomeless youth. It was also impossible to discern which youth might have engaged in trading sex one time as compared to those who chronically use survival sex as a means to obtain basic needs. Moreover, the survey did not include questions about the age of onset of trading sex. Additionally, participants were asked questions with regard to their risk behaviors in their lifetime generally, which cannot determine timing of events. Multiple imputation procedures could still produce bias in the research despite the precautions and efforts made to minimize them as much as possible (SAS Institute, 2013). Finally, this study took place in a Midwestern, urban area and might not be generalizable to another population or community.

Implications

Despite its limitations, our study found that individuals who trade sex have some distinct associative differences in regard to living conditions, sexual behaviors, and outcomes compared to those who do not trade sex. Our study aligns with existing research suggesting that individuals who trade or sell sex often do so to meet housing and other basic needs (Greene et al., 1999; Tyler, 2009; Tyler & Johnson, 2006). However, although the proportion of youth endorsing trading sex was higher among those reporting being homeless and sheltered, not all those endorsing trading sex were homeless. This suggests that health providers offering STI testing in the community could be a promising avenue for reaching a population that does not necessarily encounter homeless services. Additionally, STI testing clinics might also link individuals at risk to services such as substance abuse treatment that could prevent sexually active youth from beginning to trade sex.

Individuals who traded sex reported vastly higher rates of drug use as well as engaging in sex with a high-risk partner or engaging in sex under the influence of alcohol than those who

did not trade sex, which is consistent with prior research (Hudson & Nandy, 2012; Van Leeuwen et al., 2004). Specifically, drug use is commonly associated with trading and selling sex (Clatts et al., 2005; Miller et al., 2011). It is unknown whether or not the substance use and risky sexual behavior developed prior to trading sex or concurrently. Individuals who disclosed trading or selling sex were more likely to report experiences with sexual assault, previous STIs, and high-risk sex. Nearly 1 in 5 women (18.3%) and 1 in 71 men (1.4%) nationally have been raped at some point in their lives (Black et al., 2011), yet 35% of those who traded sex in this sample reported sexual assault. This is consistent with existing research indicating that individuals who report trading sex are at increased risk for sexual victimization, in addition to other risks (Chen et al., 2004). It is unknown whether trading sex preceded sexual assault or followed sexual assault when trading sex (or both). These findings also describe risky encounters for HIV transmission and could help shape future HIV prevention and intervention efforts through sexual assault and substance use screenings, support, and referral to services.

Although it is unknown when individuals in this study began trading sex, most of the individuals in the study were young or emerging adults (ages 18–29). This is a time when individuals are aging out of youth services and might be particularly at risk of falling through gaps in intervention services and aging out of foster care services, when applicable (Ahrens et al., 2012; Hudson & Nandy, 2012). Our findings suggest that it could be important to repeatedly ask questions about trading sex from adolescence through young adulthood. Despite the high percentage of individuals who disclose having contracted a previous STI among all subjects, self-disclosed history of previous STI was a strong association for trading sex behavior in this model. It is unclear whether health providers routinely ask about trading sex when informing youth that they are diagnosed with an STI or even HIV. These individuals might be associated with higher risks for continuing to transmit the infections if they are not properly supported in safer sex practices, as they appear to also be more likely to engage with multiple partners.

The low number of transgender individuals in this sample, which produced a rather high odds ratio, is consistent with current research, but in need of future study, as not enough is known or understood about this population's sex trading patterns. Consistent with preexisting studies (Clatts et al., 2005; Lankenau et al., 2004), MSM reported trading sex at much higher rates, as did females who have sex with both males and females. A possible explanation is that this population might face greater issues associated with housing due to lack of family support (Hudson & Nandy, 2012; Maliszewski & Brown, 2014). Further work should be conducted to understand the issues specific to this population to inform customized prevention approaches.

Conclusion

This study serves as an important contribution to the extant literature in understanding the associations of individuals who endorse trading or selling sex and seek services in the community for STI/HIV testing. Building on our knowledge of the associations between trading sex and HIV/STIs (Khan et al., 2008), this study fills a gap in understanding the prevalence and risk factors of sexually active individuals in community health care settings.

Consequently, health care providers in such settings could play an important role in better identifying and serving individuals at risk for trading and selling sex.

Acknowledgments

The authors would like to thank the STI clinic providers for all of their hard work in this field.

Funding: Lara B. Gerassi is funded by the National Institute on Drug Abuse (NIDA) TranSTAR T32 Doctoral Fellowship (DA015035).

References

- Ahrens KR, Katon W, McCarty C, Richardson LP, Courtney ME. Association between childhood sexual abuse and transactional sex in youth aging out of foster care. *Child Abuse & Neglect*. 2012; 36(1):75–80. DOI: 10.1016/j.chiabu.2011.07.009 [PubMed: 22265906]
- Allison PD. Imputation of categorical variables with PROC MI. *Case Analysis*. 2005; 30(1):1–14. Retrieved from <http://www2.sas.com/proceedings/sugi30/113-30.pdf>.
- Auslander WF, Mcmillen JC, Elze D, Thompson R, Stiffman A. Mental health problems and sexual abuse among adolescents in foster care. *Relationship to HIV Risk Behaviors and Intentions Adolescents in Foster Care*. 2002; 6(4):351–359.
- Black, MC., Basile, KC., Breiding, MJ., Smith, SG., Walters, ML., Merrick, MT., Stevens, MR. National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report. Atlanta, GA: 2011. National Intimate Partner and Sexual Violence Survey 2010 Summary Report.
- Chen X, Tyler KA, Whitbeck LB, Hoyt DR. Early sexual abuse, street adversity, and drug use among female homeless and runaway adolescents in the Midwest. *Journal of Drug Issues*. 2004; 34(1):1–21. DOI: 10.1177/002204260403400101
- Clatts MC, Goldsamt L, Yi H, Gwadz MV. Homelessness and drug abuse among young men who have sex with men in New York City: A preliminary epidemiological trajectory. *Journal of Adolescence*. 2005; 28:201–214. DOI: 10.1016/j.adolescence.2005.02.003 [PubMed: 15878043]
- Gerassi L. From exploitation to industry: Definitions, risks, and consequences of domestic sexual exploitation and sex work among women and girls. *Journal of Human Behavior in the Social Environment*. 2015; 25:591–605. DOI: 10.1080/10911359.2014.991055 [PubMed: 26726289]
- Gerassi L, Jonson-Reid M, Drake B. Sexually transmitted infections in a sample of at-risk youth: Roles of mental health and trauma histories. *Journal of Child & Adolescent Trauma*. 2016; 9:209–216. [PubMed: 27746853]
- Greene JM, Ennett ST, Ringwalt CL. Briefs: Prevalence and correlates of survival sex among runaway and homeless youth. *American Journal of Public Health*. 1999; 89:1406–1409. DOI: 10.2105/AJPH.89.9.1406 [PubMed: 10474560]
- Halcon LL, Lifson AR. Prevalence and predictors of sexual risks among homeless youth. *Journal of Youth and Adolescence*. 2004; 33(1):71–80. DOI: 10.1023/A:1027338514930
- Harding, R., Hamilton, P. *Working Girls: Abuse or Choice in Street- Level Sex Work? A Study of Homeless Women In Nottingham*. British Journal of Social Work; London, UK: 2009. p. 1118-1137.
- Hudson AL, Nandy K. Comparisons of substance abuse, high-risk sexual behavior and depressive symptoms among homeless youth with and without a history of foster care placement. *Contemporary Nurse*. 2012; 42:178–186. DOI: 10.5172/conu.2012.42.2.178 [PubMed: 23181370]
- Khan MR, Wohl DA, Weir SS, Adimora AA, Moseley C, Norcott K, et al. Miller WC. Incarceration and risky sexual partnerships in a southern US city. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*. 2008; 85(1):100–113. DOI: 10.1007/s11524-007-9237-8 [PubMed: 18027088]
- Kidd SA, Kral MJ. Suicide and prostitution among street youth: A qualitative analysis. *Adolescence*. 2002; 37(146):412–433.

- Lankenau SE, Clatts MC, Welle D, Goldsamt LA, Gwadz MV. Street careers: Homelessness, drug use, and sex work among young men who have sex with men (YMSM). *The International Journal of Drug Policy*. 2004; 16:10–18. DOI: 10.1016/j.drugpo.2004.07.006
- Maliszewski G, Brown C. Children and youth services review familism, substance abuse, and sexual risk among foster care alumni. *Children and Youth Services Review*. 2014; 36:206–212. DOI: 10.1016/j.childyouth.2013.11.021
- Marshall BD, Shannon K, Kerr T, Zhang R, Wood E. Survival sex work and increased HIV risk among sexual minority street-involved youth. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*. 2010; 53:661–664.
- Miller CL, Fielden SJ, Tyndall MW, Zhang R, Gibson K, Shannon K. Individual and structural vulnerability among female youth who exchange sex for survival. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*. 2011; 49(1):36–41. DOI: 10.1016/j.jadohealth.2010.10.003 [PubMed: 21700154]
- Nixon K, Tutty L, Downe P, Gorkoff K, Ursel J. The everyday occurrence: Violence in the lives of girls exploited through prostitution. *Violence Against Women*. 2002; 8:1016–1043. DOI: 10.1177/107780120200800902
- Otto-Salaj LL, Gore-Felton C, McGarvey E, Canterbury RJ. Psychiatric functioning and substance use: Factors associated with HIV risk among incarcerated adolescents. *Child Psychiatry and Human Development*. 2002; 33:91–106. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12462349>. [PubMed: 12462349]
- Potterat JJ, Rothenberg RB, Muth SQ, Darrow WW, Phillips-Plummer L. Pathways to prostitution: The chronology of sexual and drug abuse milestones. *Journal of Sex*. 2001; 35:333–340. DOI: 10.1080/00224499809551951
- SAS Institute. MIANALYZE procedure. 2013. Retrieved from <http://support.sas.com/rnd/app/stat/procedures/mianalyze.html>
- Tyler KA. Risk factors for trading sex among homeless young adults. *Archives of Sexual Behavior*. 2009; 38:290–297. DOI: 10.1007/s10508-007-9201-4 [PubMed: 17653839]
- Tyler KA, Johnson KA. Trading sex: Voluntary or coerced? The experiences of homeless youth. *Journal of Sex Research*. 2006; 43:208–216. DOI: 10.1080/00224490609552319 [PubMed: 17599243]
- Van Leeuwen JM, Hopfer C, Hooks S, White R, Petersen J, Pirkopf J. A snapshot of substance abuse among homeless and runaway youth in Denver, Colorado. *Journal of Community Health*. 2004; 29:217–229. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/15141897>. [PubMed: 15141897]
- Warf CW, Clark LF, Desai M, Rabinovitz SJ, Agahi G, Calvo R, Hoffmann J. Coming of age on the streets: Survival sex among homeless young women in Hollywood. *Journal of Adolescence*. 2013; 36:1205–1213. DOI: 10.1016/j.adolescence.2013.08.013 [PubMed: 24215967]
- Watson J. Understanding survival sex: Young women, homelessness and intimate relationships. *Journal of Youth Studies*. 2011; 14:639–655. DOI: 10.1080/13676261.2011.588945

Table 1**Bivariate Findings for Individuals Who Trade Sex.**

	Did not trade	Traded sex
Total	97.5% (<i>n</i> = 5,029)	2.5% (<i>n</i> = 128)
Race		
White	21%	16%
Black	73%	80%
More than one race	4%	3%
Sex ^{**}		
Male	40%	68%
Female	59%	24%
Transgender	1%	8%
Age at first visit or testing ^{**}		
14–17	13%	8%
18–22	60%	41%
23–29	20%	27%
30+	7%	24%
Sexual orientation ^{**}		
Males: Have sex with males only	10%	20%
Males: Have sex with females only	20%	15%
Males: Have sex with both	4%	15%
Females: Have sex with males only	51%	15%
Females: Have sex with females only	1%	0
Females: Have sex with both	7%	9%
Transgender	<1%	8%
Housing (<i>n</i> = 3,838) ^{**}		
Group home/housing program	2%	7%
Parent	52%	37%
Family member, friend, or foster parent	9%	13%
Homeless or shelter [*]	3%	13%
Roommate or school	20%	20%
Alone	14%	11%
Education (<i>n</i> = 3,961) [*]		
In school	20%	31%
High school graduate or GED	34%	42%
In college	39%	19%
Graduated college	7%	8%
Employment (<i>n</i> = 3,777) [*]		
Unemployed	51%	65%
Employed	49%	35%
Risk variables		

	Did not trade	Traded sex
Used drugs **	6%	28%
Had sex with alcohol abuse **	18%	50%
Had sex with HIV-positive partner **	4%	23%
Had sex with high-risk sex partner **	11%	53%
Youth outcomes		
Has been sexually assaulted **	10%	35%
Previous STI **	41%	70%
Positive STI test result *	2%	5%

Note: GED = general education diploma; STI = sexually transmitted infection.

*
 $p < .05$.

**
 $p < .0001$.

Table 2

Logistic Regression Results.

Parameter	Variance			Relative eff.	Estimate	SE	Odds ratio	95% CI	t	p value
	Between	Within	Total							
Intercept	0.08	0.36	0.45	221.63	-5.05	0.67			-7.55	<.0001
Race (vs. Black)										
White**	0.00	0.08	0.09	17802.00	-0.78	0.29	0.46	-1.35 -0.20	-2.64	.01
More than one	0.00	0.37	0.37	179931.00	-0.93	0.61	0.39	-2.13 0.26	-1.53	.13
Sex/gender (vs. male)										
Female***	0.00	0.06	0.06	93557.00	-1.45	0.25	0.23	-1.94 -0.96	-5.77	<.0001
Transgender***	0.00	0.32	0.32	57773.00	2.35	0.57	10.51	1.24 3.46	4.16	<.0001
Housing status (vs. parent)										
Residential	0.07	0.27	0.35	199.10	1.10	0.59	3.01	-0.06 2.27	1.87	.06
Guardian	0.04	0.12	0.17	112.42	0.12	0.41	1.12	-0.70 0.93	0.28	.78
Shelter*	0.03	0.18	0.21	346.54	0.93	0.46	2.53	0.03 1.83	2.03	.04
Roommate	0.04	0.08	0.12	85.44	0.11	0.35	1.11	-0.59 0.80	0.31	.76
Alone	0.03	0.11	0.14	180.78	-0.06	0.38	0.94	-0.80 0.69	-0.15	.88
Unemployed (vs. employed)	0.03	0.05	0.08	59.12	0.27	0.27	1.30	-0.28 0.82	0.97	.34
Education status (vs. graduated college)										
In high school	0.06	0.23	0.29	185.45	0.39	0.54	1.48	-0.68 1.47	0.73	.47
In college	0.05	0.18	0.24	168.15	-0.41	0.49	0.66	-1.38 0.55	-0.85	.40
HS Grad/GED	0.05	0.18	0.23	164.94	-0.13	0.48	0.87	-1.09 0.82	-0.28	.78
Age (vs. 14-17)										
18-22	0.01	0.17	0.18	3009.40	0.12	0.42	1.13	-0.71 0.95	0.28	.78
23-29	0.01	0.21	0.22	2542.20	0.46	0.47	1.59	-0.46 1.38	0.99	.32
30+*	0.03	0.23	0.26	545.30	1.10	0.51	3.00	0.09 2.11	2.14	.03
Positive test result	0.00	0.29	0.29	28996.00	-0.23	0.54	0.80	-1.29 0.84	-0.41	.68
Self-report										
Previous STI***	0.00	0.05	0.05	77478.00	1.02	0.23	2.78	0.58 1.47	4.52	<.0001
Sex under alcohol abuse**	0.00	0.05	0.05	67088.00	0.55	0.22	1.73	0.11 0.98	2.47	.01

Parameter	Variance			df	Relative eff.	Estimate	SE	Odds ratio	95% CI		t	p value
	Between	Within	Total									
Sexual assault***	0.00	0.06	0.06	18911.00	0.998	1.25	0.25	3.48	0.76	1.73	5.04	<.0001
Sex with HIV-positive person	0.00	0.08	0.08	50957.00	0.999	0.44	0.29	1.55	-0.12	1.00	1.53	.13
Sex with high-risk partner***	0.00	0.05	0.05	287679.00	0.999	1.46	0.22	4.31	1.03	1.89	6.58	<.0001
Drug use*	0.00	0.06	0.07	23658.00	0.998	0.89	0.26	2.44	0.39	1.39	3.48	.0005

Note: GED = general education diploma; STI = sexually transmitted infection.

* $p < .05$.

** $p < .01$.

*** $p < .001$.