HHS Public Access

Author manuscript

J Community Health. Author manuscript; available in PMC 2018 February 01.

Published in final edited form as:

J Community Health. 2017 February ; 42(1): 90–100. doi:10.1007/s10900-016-0234-2.

Exchange of Sex for Drugs or Money in Adolescents and Young Adults: An Examination of Sociodemographic Factors, HIV-Related Risk, and Community Context

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Abstract

The goal of this research was to examine associations among sociodemographic factors, HIV risk, and community context (e.g., economic insecurity, job training, housing instability, crime victimization, and perceived community norms) in adolescents and young adults who ever exchanged sex for drugs or money. Anonymous survey data were collected using ACASIs at community venues where adolescents and young adults congregate in resource-challenged, STI prevalent, urban, US neighbor-hoods. Conventional descriptive statistics, Fisher's exact tests, and generalized estimating equations approaches were used to examine associations. Participants (1818, 95.5 % of those screened eligible) were, on average, aged 21.0 years; 42.2 % were males, and 4.6 % were transgender. Almost one-third (32.1 %) identified as gay or lesbian, 18.1 % identified as bisexual; 66.2 % were Black and 21.0 % were Hispanic; 1.3 % was 'living on the street'. A sizeable proportion reported HIV-related risk: 16.3 % exchanged sex, 12.6 % had sex with someone they knew to be HIV-infected, 7.8 % had sex with someone who injected drugs, and 1.3 % injected drugs. Multivariate comparisons identified a number of variables (e.g., being male or transgender, homelessness, sex with a partner who has HIV, STI history, unemployment, job training access, housing instability, crime victimization, perceived community norms) that were significantly associated with exchange of sex ($p < 0.05$). This research contributes to the knowledge-base regarding exchange of sex among adolescents and young adults, particularly as it relates to community context. Longitudinal studies to describe the trajectory of social, health, and physical risks and consequences are needed for development of effective evidence-based prevention strategies.

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Conflict of interest The authors declare that they have no conflict of interest.

Research Involving Human Participants and/or Animals This research involved human subject participants.

Informed Consent Informed verbal consent was obtained to protect the anonymity of study participants, which was approved by each participating site's Institutional Review Board.

Keywords

Adolescents and young adults; Exchange of sex; Community context; STI/HIV risk

Introduction

Adolescents and young adults are at increased risk of acquiring the human immunodeficiency virus (HIV) and other sexually transmitted infections (STIs). Although one-fourth of sexually active individuals in the United States (US) are between ages 15–24 years, they account for half of the estimated 20 million new STIs diagnosed in the US annually, including diagnoses of gonorrhea (70 %), chlamydia (63 %), and human papilloma virus (49 %) [1, 2]. In 2014, 22 % of all new HIV infections diagnosed in the US were among adolescents and young adults (aged 13–24); 80 % were among gay/bisexual young men with a high burden identified in African American/Black (55 %) and Hispanic/Latino (23 %) young gay/bisexual men [3]. It has been widely documented through national surveillance data [4–6] and numerous scientific studies, including several of those published by our group [7–10] that many of the behaviors that place adolescents and young adults at risk for STIs/HIV are influenced by the social and environmental conditions (community context) in which they live and socialize [9–20]. One such behavior that is highly influenced by adolescents and young adults' community context is exchange of sex for drugs, money, food or shelter (hereafter exchange of sex), which is often associated with multiple sex partners [17–21], inconsistent condom use [15, 20], injection [11, 18] and other substance use [11, 15–19], and a prior diagnosis of STIs or HIV [11, 15, 22].

A number of studies have documented the prevalence and correlates of exchange of sex among adolescent and young adults. For example, data from the National Longitudinal Study of Adolescent to Adult Health (ADD Health) found that 3.5 % of adolescents ever exchanged sex for drugs or money (67.9 % were among adolescent boys). Those who exchanged sex were significantly more likely to have: runaway from home in the previous year, used a wide range of substances including those that were injected, had anal intercourse, experienced sexual coercion, reported depression, and had an STI/HIV diagnosis [11]. In a prospective study of young adults in ADD Health study, the onset of exchange of sex for drugs or money was identified in 2.3 % of the participants (62.6 % were young men). Black race, occurrences of childhood abuse, marijuana use, running away from home, homelessness, and shoplifting were predictive of exchange (selling) of sex [15].

Other research has focused on exchange of sex (also defined in the literature as trading sex or survival sex) has primarily targeted homeless and runaway adolescents and young adults [13, 14, 18, 20, 23, 25, 26] and varying correlates identified in these populations. A number of the studies found that exchange of sex varied by sexuality with little variation identified by gender. For example, Stein et al. [24], reported that 5.0 % of male and 6.0 % female homeless and runaway youth exchanged sex, while Marshall et al. [20] found a 6-month prevalence of 11.3 % among street-involved youth (e.g., homeless youth who sold drugs or engaged in prostitution) with comparable rates identified among males and females. However, Gwadz et al. [25] documented a 33.8 % lifetime estimate of exchange of sex

among homeless youth (35.9 % females, 31.7 % males). Another study focused on homeless male adolescents indicate that 15 % identified as gay [14], and Marshall et al. [20] reported that 13.4 % of the street-involved youth in their study were ‘sexual minorities’. Other correlates of exchange of sex among homeless and runaway adolescents and young adults, include histories of physical and sexual abuse, drug use, and family dysfunction [13, 19, 23, 26, 27]; other findings have identified mental health (e.g., suicide attempts, depression), sharing needles for substance use, and prior history of HIV testing as correlates of exchange of sex in homeless youth [13, 19].

The goal of this research was to examine the prevalence and correlates of exchange of sex for drugs or money in adolescents and young adults, which is consistent with the definition in the national ADD Health research [11, 15]. Specifically, as part of a larger study of the National Institutes of Health-funded Adolescents Medicine Trials Network for HIV/AIDS Interventions’ (ATN) we examined associations among sociodemographic factors, HIV-related risk, community context by ever exchanged sex. Community context assessed recent (past years) economic insecurity, job training, housing instability, crime victimization, and perceived community norms; to our knowledge these variables are not reflected in current literature.

Methods

Study Design and Recruitment Procedures

Data were collected through the Connect to Protect (C2P) program, the local community mobilization effort of the Adolescent Medicine Trials Units (AMTUs) of the ATN; see [28–30] for detailed descriptions of C2P. Each AMTU (Tampa, Los Angeles, Washington DC, Philadelphia, Chicago, Bronx, New Orleans, Miami, Memphis, Houston, Detroit, Baltimore, Boston, and Denver) collected anonymous survey data using audio computer-assisted self-interview (ACASI) technology in 2012 and 2013. At each AMTU, the C2P community coalitions used publicly available data and geographic information software (GIS) to map health, crime, STIs, and demographic information to help staff select target groups and community venues [31, 32]. All AMTUs focused on low-income, urban neighborhoods with high rates of STIs among adolescents and young adults. Seven AMTUs targeted young men who have sex with men (some also included transgender individuals in their recruitment strategy), and seven targeted adolescent and young adult women. Study staff conducted outreach at each targeted venues at varying times to screen, recruit, and consent participants for completion of the survey until a predetermined sample size (ranging between 120 and 160) for each AMTU was achieved. Although the types of venues varied (e.g., youth-serving organizations, bars, clubs), the screening and recruitment procedures were standardized across all AMTUs. Study participants were provided modest remuneration in gift cards or cash ranging between $20 and $50, which was locally determined. The Institutional Review Boards of each AMTU approved all study procedures including a waiver of signed consent for participants to protect their anonymity.

Study Participants

Study eligibility included being aged 12–24 years and having a self-reported history of engaging in consensual sex (oral, anal, or vaginal) in the 12-month period prior to survey administration. Individuals presenting as emotionally unstable or under the influence of substances were ineligible for study participation, as were those who reported prior study participation.

Measures

Since the overall purpose of the survey was to evaluate the intermediate- and long-term impact of C2P's community mobilization efforts to reduce STIs and HIV in adolescents and young adults in the targeted communities survey measures were derived from our prior research [7–10, 29, 33, 34], and other measures were developed to assess individual-community- and structural-level measures associated with HIV. For purposes of this analysis, only measures that were hypothesized to be associated with the dependent measure of interest, 'ever exchanged sex for drugs or money' were selected. The survey took, on average, 60 minutes to complete depending on participants' responses and skip patterns that were built into the ACASI.

The measures considered in this analysis are listed below and detailed in Tables 1 and 2.

Sociodemographic Characteristics—Sociodemographic characteristics included: (1) age; (2) birth and identified sex; (3) race and ethnicity; (4) sexual orientation; (5) educational attainment; (6) history of homelessness; (5) current living situation; and (6) relationship status. *HIV-related Factors* HIV-related measures assessed lifetime sexual experiences, including: (1) exchange of sex for drugs or money; (2) sex with a partner suspected of having HIV; (3) sex with a partner known to have HIV; (4) sex with an injection drug user; and history of (5) injection drug use; (6) STIs; and (7) HIV testing. *Community Context* To assess social conditions and community resources (community context), participants were queried about economic insecurity, housing instability, community violence, and perceived peer norms, including: (1) frequency of moving/changing residences since kindergarten; (2) history of utilizing community housing; (3) current source of income; (4) unemployment in the past year; (5) access to vocational/job training; (6) unemployment/employment after participating in a vocational/job training program; (7) access to jobs/employment; (8) being a victim of crime in the past year; (9) perception of crime in the community in the past year; and (10) perception that most peers in their community exchanged sex for money, drugs, food, or a place to sleep.

Statistical Analyses

Conventional descriptive statistics (frequencies, proportions) were used to describe study measures. Fisher's exact test was used to assess bivariate associations between sociodemographic, HIV risk, and community context measures and the dependent measure. In order to identify key factors associated with this measure, a generalized estimating equations (GEE) approach was used to fit a multivariable logistic regression model of associations of community context measures and HIV risk behaviors with 'ever exchanged sex for drugs or money' compared with 'never exchanged sex for drugs or money'. This

approach addressed possible correlations in responses given by participants recruited from the same AMTU by treating each AMTU as a distinct cluster.

An initial model was constructed that included sociodemographic and HIV risk-related factors, and community context measures; all variables reported in Tables 1 and 2 were included in the model. Variables were eliminated from the initial model using a stepwise selection process; all covariates were retained in the final model if they had a significance of $p < 0.05$. All analyses were performed using SAS, Version 9.4 [35].

Results

Study Recruitment

Study staff approached 3108 adolescents and young adults at targeted community venues to participate in the anonymous ACASI survey. Of these, 2327 (75.9 %) agreed to be screened for study participation; 1903 (81.7 %) of those screened were identified as eligible. Of the eligible individuals, 1893 (99.5 %) consented to participate and 1818 ultimately provided data on the dependent variable.

Participants' Characteristics

Participants' sociodemographic characteristics and HIV-related risk factors are shown in Table 1. The median age of participants was 21.0 years; 42.2 % were males, and 4.6 % were transgender (most reported a birth sex of male). Almost one-third (32.1 %) identified as gay or lesbian and 18.1 % identified as bisexual. A majority (66.2 %) of participants identified as Black, non-Hispanic and 21.0 % identified as Hispanic. Only a small proportion (1.3 %) of participants were 'living on the street', but nearly one-third (29.5 %) had experienced homelessness. A sizeable number of participants reported HIV-related risk: 16.3 % exchanged sex, 12.6 % had sex with someone they knew to be HIV-infected, 7.8 % had sex with someone who injected drugs, and 1.3 % also injected drugs. Nearly one-third (32.1 %) reported a history of having an STI, and a majority (82.6 %) tested for HIV previously.

Table 2 also shows the participants' perceptions of and experiences with various social conditions and community resources in the past year; over half (54.1 %) experienced unwanted unemployment and 18.1 % utilized community-housing services. Regarding perceived community norms, 44.4 % of participants perceived more crime occurred in their community in the past year, and 59.7 % perceived that many peers in their community have exchanged sex.

Bivariate Comparisons by Exchange Sex

There was a statistically significant difference ($p < 0.05$) between participants who had exchanged sex compared with those who reported no such history for every variable examined except participants' current relationship status (Table 1). There were also significant associations ($p < 0.05$) identified between ever and never exchanged sex by each of the community context variables examined (Table 2). For example, exchange of sex was, overall, associated with participants' experiences of unintended employment in the past year and less confidence in their ability to find a job if they were looking for one. Also,

participants who exchanged sex were more likely to have used community housing services in the past year, and to have changed residences six or more times since kindergarten. Lastly, participants who exchanged sex were more likely to perceive that many peers in their community also exchanged sex.

Multivariate Comparisons By Exchange Sex

Multivariate comparisons are described in Table 3. As indicated, a number of variables were significantly associated with sociodemographic and HIV-related factors and community context measures by exchange of sex ($p < 0.05$), after adjusting for other covariates in the model.[1]

Sociodemographic Factor

Being male [adjusted odds ratio (AOR) = 1.8, 95 % confidence interval (CI) 1.2–2.5], transgender (AOR = 4.0, 95 % CI 2.6–6.1), having a lower education level than what is commensurate with participant's age (AOR = 2.4, CI 1.6–3.6), having experienced homelessness (AOR = 2.0, CI 1.5–2.6), and in a relationship > 1 year (AOR = 1.4, CI 1.1–1.8) were all significantly associated with a greater odds of exchange of sex.

HIV-Related Risk Factors

A number of other HIV-related risk factors were significantly associated with exchange of sex. That is, having: sex with a partner who was suspected of being HIV positive (AOR = 2.2, CI 1.5–3.3), sex with a partner that injects drugs (AOR = 3.7, CI 2.2–6.2), and been diagnosed with an STI (AOR = 2.4, CI 1.7–3.5), and tested for HIV (AOR = 1.6 CI 1.2–2.1) were all associated significantly with an increased odds of exchange of sex.

Community Context

Several variables that describe the participants' community context were also associated significantly with a higher probability of exchange of sex in the multivariate analysis. Specifically, participants who exchanged sex had a higher odds of not participating in a training program (AOR = 2.7, CI 1.8–4.0) or not finding a job after participating in a vocational or job-training program (AOR = 3.2, CI 2.1–4.8) compared to having found a job through such a program in the past year. Additionally, those who exchanged sex had an increased odds of experiencing unintended unemployment (AOR = 1.7, CI 1.2–2.2) and utilizing community housing services such as taking up residence in a shelter or other alternative housing (AOR = 1.9, CI 1.2–3.0), and were more likely to be a victim of a crime, all in the past year (AOR = 3.2, CI 2.3–4.4). Lastly, participants who exchanged sex were significantly more likely to perceive that many peers in their community exchanged sex for money, drugs, food or a place to sleep (AOR = 3.5, CI 2.1–5.8).[2]

[1]The variable "ever injected drugs," though significantly associated with exchange of sex in the bivariate analyses, was removed from the multivariate model due to small cell sizes leading to model instability. Likewise, the variable "primary source of money" was excluded due to the potential for collinearity introduced by the response option of a sexual partner providing money to the participant.
[2]Several additional models were fit to the data to assess the sensitivity of the final model to the selected changes in the variables that were included in the model. The results of these models did not appreciably differ from the results presented in Table 3.

Discussion

Exchange of sex poses significant risk for STIs/HIV and is highly influenced by the community context in which adolescents and young adults live and socialize [9–20]. Among our participants who were recruited from urban community-based venues, 16.3 % exchanged sex for drugs or money. This far exceeds the prevalence identified in the national ADD Health studies of adolescents and young adults [11, 15], and higher than the prevalence identified in homeless and runaway youth [24] and homeless street-involved youth [20], but much lower than the lifetime estimate reported in another sample of homeless youth [25]. Overall, our participants who exchanged sex were proportionately more likely to be: older, male, non-Black, a sexual minority (lesbian, bisexual, gay and transgender, questioning), living in non-familial situations, and to have a history of homelessness and a lower level of educational attainment then what is expected for their age, have other HIV risks, and have social and environmental living conditions that reflected a lack of job opportunities, housing instability, and being a victim of crime. By in large, these findings are consistent with prior ADD health research [11, 15], and other studies that specifically targeted groups of homeless and runaway youth [20, 24, 25], suggesting that for our participants, especially those who have no reliable sources of income or experience other economic vulnerabilities, exchange of sex may be a means of survival and may not be solely a volitional act.

Our multivariate analyses indicated that participants who exchanged sex were more likely to be male and transgender individuals. Young people who are male, who identify as gay, bisexual, or transgender have disproportionately high rates of STIs/HIV [1–3, 36], and many are at increased risk for homelessness or unstable housing as a result of family discord or abandonment [37], which are risk factors for HIV [38]; thus, demonstrating the numerous challenges these young individuals face continually, which may also increase their likelihood of exchanging sex. Additionally, participants who exchanged sex were more likely to have other HIV risks, including injecting drugs, and having sex with someone suspected of or known to have HIV. While these behaviors often co-occur, given the cross-sectional nature of this research we are unable to determine whether these behaviors took place in the context of exchanging sex or were solely related to non-transactional sexual partnerships. Moreover, little data currently exist that describes the sexual partners of these young individuals or their STI/HIV status, suggesting the need for future research in this area. Also, as expected, participants who exchanged sex were significantly more likely have injected drugs; this finding is consistent with other research [11, 15, 18, 19], and may be a primary contributing factor for exchanging sex. We also found that exchange of sex was significantly associated with a history of STIs; other studies have also documented this association [11, 15, 22]. Likewise, we found a significant association between HIV testing and exchange of sex. Although HIV testing is a primary focal point of national public health recommendations to prevent HIV [39, 40], it is unclear in the context of this research whether HIV testing served as feedback for participants to determine their HIV status before or after exchanging sex or provided a means for monitoring risk over time through repeat testing. Our findings demonstrate that our participants are at increased risk for STIs/HIV, however, we are unable to determine the extent to which their risk is solely attributable to

exchange of sex or results from their social and sexual networks. Furthermore, given the cross-sectional nature of this research we are not able to determine the temporal order of these behaviors. To better under the temporal order of the contributing factors qualitative research that examines factors that lead young people to exchange sex will help to shed light on the social determinants of this behavior, indicate ways to identify young people who are at risk and link them appropriate health and social services, and will to help guide the development of prevention strategies.

A unique aspect of this research was our examination of recent community context factors. As expected, each of these factors was significantly associated with exchange of sex among our study participants, suggesting that, synergistically, the social environment including access to resources matters and warrants more in depth examination. Specifically, we found that participants who exchanged sex were more likely to be unemployed, unable to find a job even after participating in a job-training program, and relied on others for income. Moreover, perceiving that many young people in their community also exchanged sex could be related to having a familiarity with peers within their social network who engaged in similar behaviors or perhaps it was a matter of them perceiving that many young people within their community are faced with similar economic challenges and life circumstances that makes transactional sex a necessary part of their lives. Being a victim of a crime, and experiencing unemployment, and use of community housing services may all be related to prior and/or current homelessness, which present economic challenges that might position these young individuals to exchange sex to support themselves or and perhaps to support their drug use. Other researchers have identified an association between exchange of sex and violence [19], while others have related exchange of sex to housing instability and homelessness [16, 17]. However, there is limited available data on such factors as unemployment and job training access and utilization for adolescents and young adults in resource-challenged urban communities as it relates to exchange of sex. Further research is needed to better understand these factors. Also, by addressing these and other social and environmental factors at the community level may help to reduce the need for young people to exchange sex, especially as a means for survival.

In addition to the issue of temporality mentioned above, a number of other limitations should be noted. This research used a nonprobability recruitment strategy and a cross-sectional methodological design so causal inferences should not be inferred. Moreover, data were collected from urban community venues and as such our findings may not be generalizable to adolescents and young adults who do not frequent or rarely frequent these venues or who may reside in rural communities. Additionally, other variables that were not included in this research such as, family dysfunction, physical abuse, sexual coercion, and mental health may be important to understanding associations among homelessness and housing instability and their association with exchange of sex. Despite these limitations, this research contributes to the knowledge base regarding exchange of sex among adolescents and young adults particularly as it relates to community context. Future research that targets adolescents and young to address factors leading to their initiation of exchange of sex, the conditions under which they exchange sex, and how often and for how long they exchange sex is warranted. Longitudinal studies to describe the trajectory of social, health, and

physical risks and consequences are sorely needed so develop effective, evidence-based prevention strategies for young people who exchange sex.

Acknowledgments

We acknowledge the contribution of the investigators and staff at the following Adolescent Medicine Trials Units (AMTUs) that participated in this research: Children's Hospital of Los Angeles (Marvin Belzer, MD, Miguel Martinez, MSW/MPH, Julia Dudek, MPH, Milton Smith, BA); John H. Stroger Jr. Hospital of Cook County and the CORE Center (Lisa Henry-Reid, MD, Jaime Martinez, MD, Ciuinal Lewis, MS, Atara Young, MS, Jolietta Holliman, Antoinette McFadden, BA); Children's Hospital National Medical Center (Lawrence D'Angelo, MD, William Barnes, PhD, Stephanie Stines, MPH, Jennifer Sinkfield, MPH) Montefiore Medical Center (Donna Futterman, MD, Bianca Lopez, MPH, Elizabeth Spurrell, MPH, LCSW, Rebecca Shore, MPH); Tulane University Health Sciences Center (Sue Ellen Abdalian, MD, Nadrine Hayden, BS; St. Jude Children's Research Hospital (Patricia Flynn, MD, Aditya Guar, MD, Andrea Stubbs, MPH); University of Miami School of Medicine (Lawrence Friedman, MD, Kenia Sanchez, MSW); Children's Hospital of Philadelphia (Steven Douglas, MD, Bret Rudy, MD, Marne Castillo, PhD, Alison Lin, MPH); University of South Florida (Patricia Emmanuel, MD, Diane Straub, MD, Amanda Schall, MA, Rachel Stewart-Campbell, BA; Cristian Chandler, MPH, Chris Walker, MSW); Baylor College of Medicine, Texas Children's Hospital (Mary Paul, MD, Kimberly Lopez, DrPH; Wayne State University (Elizabeth Secord, MD, Angulique Outlaw, MD, Emily Brown, MPP); Johns Hopkins University, School of Medicine (Allison Agwu, MD, Renata Sanders, MD, Marines Terreforte, MPA); The Fenway Institute (Kenneth Mayer, MD, Liz Salomon, EdM, Benjamin Perkins, MA, M.Div.); and University of Colorado (Daniel Reirdan, MD, Jamie Sims, MSW, Moises Munoz, BA).

We appreciate the scientific review provided by members of the Community Prevention Leadership Group of the ATN. We are also grateful to the ATN Coordinating Center at the University of Alabama (Craig Wilson, MD; Cynthia Partlow, MEd, and Jeanne Merchant, MPH) who provided scientific and administrative oversight; the ATN Data and Operations Center at Westat, (James Korelitz, PhD, Barbara Driver, RN, Rick Mitchell MS, and Marie Alexander, BS) who provided operations and analytic support; and the National Coordinating Center at Johns Hopkins University, Department of Pediatrics (Jessica Roy, MSW, Rachel Stewart-Campbell, MA, MPH) who provided national-level oversight, technical assistance, and staff training. Additionally, we acknowledge Anthony Kung, BA and Rich Fallon, MA from the Division of Adolescent and Young Adult Medicine, University of California, San Francisco, who provided administrative assistance to Cherrie Boyer, PhD. We are indebted to our community partners for their assistance and guidance. Most of all, we thank the young people who gave of their time to participate in this research.

Funding This research was funded by the Adolescent Medicine Trials Network for HIV/AIDS Interventions (ATN) from the National Institutes of Health [U01 HD 040533 and U01 HD 040474] through the Eunice Kennedy Shriver National Institute of Child Health and Human Development (Bill Kapogiannis, MD), with supplemental funding from the National Institutes on Drug Abuse (Richard Jenkins, PhD) and Mental Health (Pim Brouwers, PhD, Susannah Allison, PhD).

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Table 1

Frequency and bivariate comparisons of sociodemographic, HIV-risk, social, and community context by exchange sex for drugs or money

Variables	Exchange sex for drugs or money			*p* value
	Ever n = 297 (16.3 %)	**Never n = 1521 (83.7 %)**	**Total N = 1818 (100 %)**	
Age (years)				
13–17	12 (4.0 %)	214 (14.1 %)	226 (12.4 %)	<0.0001
18–20	79 (26.6 %)	545 (35.8 %)	624 (34.3 %)	
21–24	206 (69.4 %)	762 (50.1 %)	968 (53.2 %)	
Sex/gender				
Female	97 (33.0 %)	867 (57.2 %)	964 (53.3 %)	<0.0001
Male	162 (55.1 %)	601 (39.6 %)	763 (42.2 %)	
Transgender (male or female)	35 (11.9 %)	48 (3.2 %)	83 (4.6 %)	
Race/ethnicity				
Black, non-Hispanic	178 (59.9 %)	1026 (67.5 %)	1204 (66.2 %)	0.0373
Hispanic	67 (22.6 %)	316 (20.8 %)	383 (21.1 %)	
White, non-Hispanic	18 (6.1 %)	62 (4.1 %)	80 (4.4 %)	
Mixed race	21 (7.1 %)	82 (5.4 %)	103 (5.7 %)	
Other	13 (4.4 %)	35 (2.3 %)	48 (2.6 %)	
Sexual orientation				
Straight	80 (27.6 %)	758 (50.2 %)	838 (46.6 %)	<0.0001
Gay/lesbian	123 (42.4 %)	455 (30.2 %)	578 (32.1 %)	
Bisexual	74 (25.5 %)	251 (16.6 %)	325 (18.1 %)	
Questioning	13 (4.5 %)	45 (3.0 %)	58 (3.2 %)	
Current living situation				
Your own place	89 (30.0 %)	496 (32.7 %)	585 (32.2 %)	<0.0001
Parents or other family	102 (34.3 %)	837 (55.1 %)	939 (51.7 %)	
Someone else's home	53 (17.8 %)	77 (5.1 %)	130 (7.2 %)	
Foster care/rooming	26 (8.8 %)	50 (3.3 %)	76 (4.2 %)	
Street	13 (4.4 %)	10 (0.7 %)	23 (1.3 %)	
Some other place not mentioned	14 (4.7 %)	49 (3.2 %)	63 (3.5 %)	
Ever homeless				
Yes	183 (61.6 %)	353 (23.2 %)	536 (29.5 %)	<0.0001
No	114 (38.4 %)	1168 (76.8 %)	1282 (70.5 %)	
Highest grade/education completed				
≤8th grade	7 (2.4 %)	36 (2.4 %)	43 (2.4 %)	0.0017
>8th grade/did not graduate high school	70 (23.6 %)	269 (17.7 %)	339 (18.7 %)	
High school graduate	88 (29.6 %)	580 (38.2 %)	668 (36.8 %)	
GED	30 (10.1 %)	85 (5.6 %)	115 (6.3 %)	
Some college/technical school	102 (34.3 %)	548 (36.1 %)	650 (35.8 %)	
Education commensurate with age[a]				

Variables	Exchange sex for drugs or money			*p* value
	Ever n = 297 (16.3 %)	**Never n = 1521 (83.7 %)**	**Total N = 1818 (100 %)**	
Yes	246 (82.8 %)	1428 (93.9 %)	1674 (92.1 %)	<0.0001
No	51 (17.2 %)	93 (6.1 %)	144 (7.9 %)	
Current relationship status (lasting > 1 year)				
Yes	104 (35.0 %)	574 (37.8 %)	678 (37.4 %)	0.3940
No	193 (65.0 %)	944 (62.2 %)	1137 (62.6 %)	
Ever had sex with someone suspected of having HIV				
Yes	132 (45.7 %)	197 (13.2 %)	329 (18.5 %)	<0.0001
No	157 (54.3 %)	1297 (86.8 %)	1454 (81.5 %)	
Ever had sex with someone known to have HIV				
Yes	99 (34.6 %)	125 (8.3 %)	224 (12.6 %)	<0.0001
No	187 (65.4 %)	1373 (91.7 %)	1560 (87.4 %)	
Ever had sex with someone who injects drugs				
Yes	74 (25.1 %)	67 (4.4 %)	141 (7.8 %)	<0.0001
No	221 (74.9 %)	1452 (95.6 %)	1673 (92.2 %)	
Ever injected drugs into vein/under skin				
Yes	19 (6.5 %)	5 (0.3 %)	24 (1.3 %)	<0.0001
No	275 (93.5 %)	1492 (99.7 %)	1767 (98.7 %)	
Ever had an STI				
Yes	162 (54.5 %)	419 (27.7 %)	581 (32.1 %)	<0.0001
No	135 (45.5 %)	1094 (72.3 %)	1229 (67.9 %)	
Ever tested for HIV				
Yes	267 (92.4 %)	1213 (80.7 %)	1480 (82.6 %)	<0.0001
No	22 (7.6 %)	290 (19.3 %)	312 (17.4 %)	

[a]The measure “education commensurate with age” is derived from the respondent’s age and last grade completed. Participants were classified as having an education commensurate with age unless they were age ≥16 and had not completed a grade higher than 8th grade, or were age ≥20 and had not completed high school or received a GED

Table 2

Community context by exchange sex for drugs or money

Variables	Exchange sex for drugs or money			*p* value
	Ever n = 297 (16.3 %)	**Never n = 1521 (83.7 %)**	**Total N = 1818 (100 %)**	
Unintended unemployment, past year				
Yes	217 (73.1 %)	763 (50.3 %)	980 (54.1 %)	<0.0001
No	80 (26.9 %)	753 (49.7 %)	833 (45.9 %)	
Could find a job, if looking for one				
Agree	130 (43.8 %)	802 (52.8 %)	932 (51.3 %)	0.0052
Disagree	167 (56.2 %)	716 (47.2 %)	883 (48.7 %)	
Past year found job through training program	25 (8.4 %)	208 (13.7 %)	233 (12.9 %)	0.0002
Did not find job though training program after participation	79 (26.7 %)	260 (17.1 %)	339 (18.7 %)	
Did not participate in job training program	192 (64.9 %)	1049 (69.1 %)	1241 (68.5 %)	
Primary source of money				
Parents or other family member	49 (16.7 %)	583 (38.5 %)	632 (35.0 %)	<0.0001
A person I am having sex with	65 (22.1 %)	39 (2.6 %)	104 (5.8 %)	
Own job	90 (30.6 %)	700 (46.3 %)	790 (43.7 %)	
Friends	37 (12.6 %)	60 (4.0 %)	97 (5.4 %)	
Other, not mentioned	53 (18.0 %)	131 (8.7 %)	184 (10.2 %)	
Participation in vocational/job training program, past year				
Found a job through training program	25 (8.4 %)	208 (13.7 %)	233 (12.9 %)	0.008
Did not find a job though training program, but participated	79 (26.7 %)	260 (17.1 %)	339 (18.7 %)	
Did not participate in training program	192 (64.9 %)	1049 (69.1 %)	1241 (68.5 %)	
Utilized community-housing services, past year				
Yes	116 (39.1 %)	213 (14.0 %)	329 (18.1 %)	<0.0001
No	181 (60.9 %)	1306 (86.0 %)	1487 (81.9 %)	
Times changed homes since kindergarten				
0–2	41 (13.8 %)	528 (34.8 %)	569 (31.4 %)	<0.0001
3–5	76 (25.6 %)	554 (36.5 %)	630 (34.7 %)	
6+	180 (60.6 %)	435 (28.7 %)	615 (33.9 %)	
Perception of crime in community, past year				
Less crime	63 (21.4 %)	379 (25.1 %)	442 (24.5 %)	
About the same amount of crime	75 (25.5 %)	487 (32.2 %)	562 (31.1 %)	0.0049
More crime	156 (53.1 %)	645 (42.7 %)	801 (44.4 %)	
Victim of a crime, past year				
Yes	136 (45.8 %)	223 (14.7 %)	359 (19.8 %)	<0.0001
No	161 (54.2 %)	1294 (85.3 %)	1455 (80.2 %)	
Perception that many peers community exchange sex for money, drugs, food, or place to sleep				
Agree	250 (84.2 %)	834 (54.9 %)	1084 (59.7 %)	<0.0001
Disagree	12 (4.0 %)	227 (15.0 %)	239 (13.2 %)	
Don’t know/unsure	35 (11.8 %)	457 (30.1 %)	492 (27.1 %)	

Table 3

Multivariate comparisons among sociodemographic, HIV risk, social, and community context by exchange sex for drugs or money

Variables	Adjusted model	
	AOR (95 % CI)	*p* value
Sex/gender		
Female	Ref	0.027
Male	1.8 (1.2–2.5)	
Transgender	4.0 (2.6–6.1)	
Education commensurate with age		
Yes	Ref	0.018
No	2.4 (1.6–3.6)	
Current relationship status (lasting > 1 year)		
Yes	1.4 (1.1–1.8)	0.022
No	Ref	
Ever homeless		
Yes	2.0 (1.5–2.6)	0.004
No	Ref	
Ever had sex with someone suspected of having HIV		
Yes	2.2 (1.5–3.3)	0.022
No	Ref	
Ever had sex with someone who injects drugs		
Yes	3.7 (2.2–6.2)	0.008
No	Ref	
Ever had an STI		
Yes	2.4 (1.7–3.5)	0.003
No	Ref	
Ever tested for HIV		
Yes	1.6 (1.2–2.1)	0.025
No	Ref	
Participation in vocational/job training program, past year		
Found a job through training program	Ref	0.008
Did not find a job though training program, but participated	3.2 (2.1–4.8)	
Did not participate in training program	2.7 (1.8–4.0)	
Unintended unemployment, past year		
Yes	1.7 (1.2–2.2)	0.011
No	Ref	
Victim of crime, past year		
Yes	3.2 (2.3–4.4)	0.004
No	Ref	
Utilized community housing services (shelter/alternative housing), past year		
Yes	1.9 (1.2–3.0)	0.037

Variables	Adjusted model	
	AOR (95 % CI)	*p* value
No	Ref	
Perception peers in community exchange sex for money, drugs, food, or place to sleep		
Agree	3.5 (2.1–5.8)	0.005
Don't know/unsure	1.3 (0.7–2.5)	
Disagree	Ref	