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Predictors of Sexual Risk Behaviors Among Newly Homeless Youth: A Longitudinal Study

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Abstract

Purpose—To longitudinally examine the association between newly homeless youth individual factors (sociodemographic characteristics, depression, substance use) and structural factors, such as living situation (family, institution, non-family) with sexual risk behaviors.

Methods—A cohort of newly homeless youth from Los Angeles County (N=261; ages 12–20 years) were interviewed at baseline, 3, 6, 12, 18, and 24 months. At each assessment youth were asked about symptoms of depression (using the Brief Symptom Inventory), substance use, living situation, and sexual risk behaviors (number of sexual partners and condom use). Random effects models were used to determine the effects of predictors on the number of sexual partners and on condom use over time, by gender.

Results—At baseline, 77% of youth had been sexually active, increasing to 85% of youth at 24 months of follow-up. For predictors of multiple sexual partners, among male youth, these included living in non-family settings and using drugs; among females, living situation was not predictive of

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Robert E. Weiss, Ph.D.: Served as lead biostatistician for the study and participated in data analysis and interpretation, and writing of the methods and results sections of the manuscript.

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having multiple sexual partners but drug use was. For condom use, among females, living in a non-family setting and drug use decreased the odds of always using condoms; for males, no factors were found to be predictive of condom use.

Conclusions—Living with non-family members and drug use appear to be the most salient in explaining sexual risk among newly homeless youth. Our findings indicate that interventions aimed at reducing sexual risk behaviors, and thereby reducing STDs and HIV among newly homeless youth, need to help youth in finding housing associated with supervision and social support (family and institutional settings) as well as aim to reduce drug use.

Keywords

Adolescent; Homeless Youth; Sexual Behavior

INTRODUCTION

Adolescent homelessness is a national concern. According to a survey, based on a representative national sample, 7.6% of adolescents have been homeless at some time in the previous year [1]. Homeless youth are known to engage in risky sexual behaviors [2] that increase their risk for sexually transmitted diseases (STDs) and human immunodeficiency virus (HIV). Some homeless youth may be at additional risk due to their history of childhood sexual abuse, early sexual debut, depression, alcohol and drug abuse, living on the street, as well as a lack of connectedness to trusted adults and family [2–4]. In addition, previous studies report that sexual risk behaviors vary by gender and by sexual orientation. Homeless adolescent females compared to males, engage in more sex acts [5], are more likely to trade sex for money, food, drugs, or shelter [6], and are less likely to use condoms [7]. Homeless young males who have sex with other males report having more sexual partners than males who have sex with females only [7]. Most studies to date on homeless youth sexual risk behaviors have been cross-sectional and not longitudinal studies. While the previous studies mentioned have examined the association between homeless youth individual factors and their association with sexual risk, few studies have examined the association between structural factors (living situation) and sexual risk behaviors. Therefore, the goal of this study is to longitudinally examine the association between newly homeless youth (NHY) individual factors (sociodemographic characteristics, depression, substance use) and structural factors (living situation) with sexual risk behaviors.

NHY are distinguished from chronically homeless youth by the duration of time that they have spent away from home. NHY have been away from home for more than one day but less than six months [10]. Knowledge about the characteristics of NHY has recently increased and it is now known that the characteristics of these youth vary from those who are chronically homeless. NHY tend to return home by 12 months (65%) [11], they typically leave home due to family conflict (not sexual abuse), and only 1.4% report trading sex for money, food, drugs, or shelter [12]. Since a large percentage of newly homeless youth may return home by 12 months and since the living situation may change over time, with some youth remaining at home and others running away from home again, at a future time, a longitudinal evaluation of newly homeless youth may allow for an examination of the effect of living situation on sexual risk behaviors.

Previous studies on adults indicate that being homeless or living in unstable housing is a source of chronic stress where the stress of daily survival needs predominates and can supersede efforts to reduce HIV risk [8–9]. According to one cross-sectional study on homeless youth that examined the effect of living situation on sexual risk, youth living in street were found to be more likely to engage in risky sexual behaviors than those living in shelters [2]. However, to

date, no study has examined the effect on sexual risk, over time, for homeless youth who return home. A need exists for longitudinal studies to consider the effect of living situations (returning home vs. remaining homeless) on NHY sexual risk behaviors to determine if sexual risk is indeed reduced for youth who return home.

Social Cognitive Theory [13] suggests that complex behaviors (i.e., engaging in positive health practices to avoid disease) are associated with perceived self-efficacy (the belief that one can perform the desired behavior) and outcome expectancies (the belief that engaging in a particular behavior leads to the desired outcome). According to this theory, positive sexual health practices such as consistent use of condoms and sexual self-care behaviors, such as avoiding casual sex with multiple partners, represent one endpoint of a complex process that involves cognitive-perceptual factors (i.e., sexual knowledge, future time perspective, perceived health status, self-efficacy for using condoms, intentions to use condoms, perceived social support) and behavioral factors in assertive communication and help-seeking to avoid or manage STD symptoms. Based on Social Cognitive Theory [13] and previous studies on homeless youth sexual risk behaviors [3–7], for this study, two hypothesis will be evaluated: 1) youth living in housing situations without parental supervision and support will report more sexual partners and less condom use (for this study social support is implied by youth living with family members; actual social support was not measured); 2) youth who are substance abusers will report more sexual partners and less condom use.

METHODS

Participants

The homeless youth sample in this paper includes the entire cohort of youth from a longitudinal study that examines youths' pathways into and out of chronic homelessness in Los Angeles County, California (N=261). To be included in the longitudinal study, youth had to meet the following criteria: 1) age ranging from 12–20 years; and 2) spent more than one night away from home without the parent's or guardian's permission if under 17 or had been told to leave; 3) had been away from home for 6 months or less. Informed consent was obtained from all participants, including emancipated minors and those 18 years and older. For participants who were minors, en locus parentis consent was obtained from a member of the outreach (recruitment) team who was present, and assent was obtained from the minor. Participants were recruited and interviewed over an 18 month period from 2001 to 2002. Each youth was paid \$20 to participate in the initial one-hour baseline interview and this amount increased by \$5 on subsequent assessments for a total of \$40 at the 24-month follow-up.

Procedures

Interviewers were sent out in pairs to predetermined sites, including shelters, drop-in centers, and street hangouts, that covered the entire geographic region of Los Angeles County to screen and recruit homeless adolescents; only shelters that housed unaccompanied youth were surveyed. Sites were selected systematically. First, potential recruitment sites for homeless adolescents were identified by interviewing line and supervisory staff in agencies that served homeless youth. Thirty sites were identified including 17 shelters and drop-in centers and 13 street hangout sites. The 30 sites were audited at pre-selected times and days per week over three different week-long time periods to determine the numbers of homeless adolescents that could be found at each site. All sites were included as recruitment sites because the audit demonstrated sufficient numbers of homeless adolescents could be found at each site. A previous paper reports extensively on the sampling scheme [12].

Interviewers determined if youth were eligible for study by using a 13-item screening instrument. All homeless youth who were eligible and agreed to participate were included in

study. Out of all youth who were screened, 34 were found to be ineligible to participate and 5 youth who were eligible refused to participate in the baseline assessment. The follow-up rate (percentage of those surveyed at baseline) was 84% at 3 months, 88% at 6 months, 83% at 12 months, 82% at 18 months, and 71% at 24 months. If a youth was lost to follow-up for one assessment, attempts were made to locate the youth for the next follow-up assessment.

Participants were assured confidentiality and the informed consent process was reviewed. Participants were advised that interviewers were required to report physical or sexual abuse (if under 18 years) and serious suicidal or homicidal feelings. The interviewers received 40 hours of training. Interviews were conducted in English (96%) or Spanish (4%). To minimize bias, risk behaviors were assessed only over the previous three months and all sensitive data were collected using Audio-Computer Assisted Self-Interview (ACASI) in which the participant hears the questions and responds on a computer. Previous studies have found reliability of self reported sexual behavior to be higher when the period of recall is shorter [14]. The use of ACASI has been shown to increase the accuracy of responses obtained in self-administered questionnaires [15–16]. The study fulfilled all human subjects guidelines and was approved by the Institutional Review Board at the University of California, Los Angeles. A certificate of confidentiality was obtained from the NIH.

Measures

Demographic characteristics were assessed at baseline. Living situation, substance use, emotional distress, and sexual risk behaviors were assessed at each assessment period: baseline, 3, 6, 12, 18, and 24 months. All measures used in this study have been previously used with adolescents [17–22]. The measures are discussed below.

Demographic Characteristics

Demographic characteristics, age, race/ethnicity, gender and sexual orientation at baseline were used in this analysis. Race/ethnicity was asked as a single choice item: White or Caucasian, Black or African American, Hispanic or Latino, American Indian or Alaskan Native, Asian or Pacific Islander, mixed race, or other single race. Because of the low percentages of American Indian, Alaskan Native, Asian, and Pacific Islander (2.3%), these youth were combined with Caucasian youth. In addition, because of the low percentage of mixed race youth (13%), the youth who self-identified as partly Hispanic or partly African-American were categorized with their respective ethnic minority group, as in other studies [17]. Latino youth were also subcategorized based on whether they were born in the U.S. or not. Participants were asked if they self-identified as: heterosexual, bisexual, gay/homosexual, lesbian or undecided/unsure. To ensure that there was no confounding between sexual orientation and gender, a single variable was created with four categories female heterosexual, female lesbian/bisexual, male heterosexual, and male gay/bisexual. Due to the small number of females who were lesbians (1%), they were not categorized separately from other females.

Housing

Housing is a time-varying covariate in this analysis. Youth were asked “Where are you currently living?” The housing categories were collapsed into three domains: family setting (birth family, foster family, adoptive family, step-family, grandparent’s home, relative’s home), non-family setting (friend’s home, hotel/motel, street/squat/abandoned building, own apartment, other), and institutional setting (family group home, boarding school, shelter, juvenile detention center/jail, Job Corps facility, psychiatric facility).

Emotional Distress

Emotional distress is a time-varying covariate in this analysis. The depression and anxiety subscales of the Brief Symptom Inventory (BSI) were used to assess this at each interview. The BSI has been previously validated in adolescent and adult populations [18–19]. Six depression items and six anxiety items of the BSI were asked at baseline and in all follow-ups, using the past week as the response period. The BSI subscales were scored according to standard scoring methods and norms were used to determine whether participants had reached the appropriate cutoff scores for depression and anxiety. For the analysis sample, the Cronbach's alpha was 0.83 for the depression scale and 0.77 for the anxiety scale.

Substance Use

Substance use (alcohol, marijuana, hallucinogen, amphetamines, cocaine/crack, and heroin) is a time-varying covariate in this analysis. Substance use was assessed at each interview using measures from the National Institute on Drug Abuse [20]. Based on responses to the question, "About how many days have you used [drug] in the past 3 months, 90 days?" participants were categorized as users or non-users (used on zero days) for each of the seven substances. Substance use was then defined using a single variable with four mutually-exclusive categories: no drug use, alcohol/marijuana use only, hard drug use without injection (hallucinogens, amphetamines, cocaine/crack, heroin), and intravenous drug use.

Sexual Risk Behaviors

Sexual risk behaviors are time-varying covariates in this analysis. Youth were asked about their sexual-risk taking behaviors in the past 3 months at each assessment: number of sexual partners and condom use. Youth were asked, "With how many different people have you had vaginal sex in the past 3 months?" A similar question was asked about anal sex. The numbers for vaginal and anal sex were combined to determine the total number of sexual partners. Items on condom use in the past three months were also asked separately for vaginal and anal sex, and responses were combined into one variable: never/sometimes use as opposed to always use.

The two variables, number of sexual partners and condom use were the primary measures of sexual risk behavior that were asked for each assessment period. These measures have been previously used to assess sexual risk in youth [21–22].

In addition, youth were asked about the type of sexual partners they had in the past 3 months. Youth were asked, "If you think about your sexual partners and relationships during the past 3 months, have you had: one serious partner and no other partners (monogamous), more than one serious partner and no casual or anonymous partners, one or more serious partners and you were open to other casual or anonymous partners, or no serious partners and one or more casual or anonymous partners? Youth's responses were combined into one variable: one serious partner (monogamous) vs. casual partners (all other categories).

Data Analysis

Youth's sociodemographic and risk characteristics were examined by gender. The relationship between predictors and gender were tested with chi-square tests of independence and two sample t-tests. The number of sexual partners and condom usage were examined by demographics and risk factors using longitudinal random intercept models [23], either logistic (condom usage) or log linear (number of sexual partners). Each predictor was tested separately and then all predictors were combined into a single full model. The full model was run separately for each gender to test our hypothesis that the predictors of number of partners and condom usage would be different for males and females. For condom use, an interaction

between drug use and type of partner was found and a composite variable was created for drug use/type of partner. This composite variable had four categories: no drugs/one serious partner, drug use/casual partners, drug use/one serious partner, no drugs/casual partners. Variables that were not predictive at the $p < .05$ level or were collinear with other variables were deleted from the final models.

One participant was excluded from the analysis of the number of partners because of missing data, leaving 260 participants in the analysis, with up to six observations over time per subject. The number of partners at baseline was highly skewed (mean 1.5 partners, standard deviation 3.4), and a Poisson model was deemed inappropriate for these data. Instead, we took a log transformation (log of partners plus one) then fit our model using the SAS Mixed Procedure (SAS Institute, Cary, North Carolina, 2002). For the analysis of condom use, 53 youth who never had sex during any assessment were excluded, leaving data from 207 participants. The condom use models were fitted using the SAS Glimmix macro (SAS Institute, Cary North Carolina, 1998) using a logistic random intercept model [23]. A previous study used similar longitudinal data analytic methods [24]. As measures of effect sizes, we report odds ratios for the logistic random effects models and the exponential of the coefficients for the log linear models.

RESULTS

Our homeless youth sample included 29.9% African Americans, 33% U.S.-born Latinos, 14.6% foreign-born Latinos, 22.6% Caucasian/Asian/Pacific Islander/American Indian/Alaskan Native youth and 59.8% were female (only 1.0% self-identified as lesbian/bisexual), 33.0% of males self-identified as heterosexual and 7.3% as gay/bisexual (Table 1). The mean age was 15.5 years (S.D. 1.9). At the baseline assessment, 78.2% were living in an institution such as a shelter, 10% with family, and 11.9% in non-family arrangements. Sixteen percent of the youth met BSI criteria for depression or anxiety. A previous study on this cohort of youth indicates that the main reason for leaving home is family conflict [12] and that by 12 months of follow-up, 65% of youth were living back at home [11].

At baseline, 77% of youth had been sexually active, increasing to 85% of youth at 24 months of follow-up. Reports of sexual activity in the past 3 months varied among the youth at the baseline assessment: 51.3% of youth had not been sexually active, 30.7% had one serious sexual partner, 5.0% had multiple serious partners, 7.3% had serious and casual partners, and 5.8% had multiple casual partners. For condom use at baseline, among those having sex, 22% never used condoms, 43% sometimes used condoms, and 35% always used condoms. The mean number of sexual partners was 1.5 (S.D. 3.4) at baseline. Results for each of the two hypotheses are reported below.

Youth living in housing situations without parental supervision and support will report more sexual partners and less condom use

In evaluating the association between living situation and multiple sexual partners, for male youth, those living in a non-family setting were found to be more likely to report more sexual partners than those living with family or in institution, thus, supporting our hypothesis; however, for females there was no significant association between living situation and number of sexual partners (Table 2 and Table 3). Among females, the factors associated with having multiple sexual partners included time in study, age, drug use, and race/ethnicity, with Caucasian/Asian/Pacific Islander/American Indian/Alaskan Native females being more likely to have multiple partners than Latinas (U.S. born or foreign-born).

To assess condom use, we selected youth who had been sexually active and removed those who had never had sex in the 24 months of follow-up, for a sample size of 207. At baseline

77% of youth had been sexually active, but by 24 months of follow-up this percentage had increased to 85%. The association between living situation and condom use was assessed. For females, living in a non-family setting was associated with decreased odds of always using condoms compared to those living with family or in an institution (Table 4); this finding supported our hypothesis. In addition, for females, drug use, regardless of type of sexual partner (whether monogamous vs. casual partner), was associated with decreased odds of always using condoms. For males, no covariates were found to be associated with condom use (Table 5).

Youth who are substance abusers will report more sexual partners and less condom use

For both males and females, drug use was significantly and positively associated with having more sexual partners (Table 2 and Table 3); these findings support our hypothesis. For females, using drugs (regardless of partner type) decreased the odds of always using condoms; this finding supported our hypothesis. For males, however, drug use was not associated with condom use (Table 4 and Table 5).

DISCUSSION

The study findings on the association between living situation and having multiple sexual partners and condom use, confirmed our hypotheses, in part. Living in a non-family setting, compared to living with family or in an institutional setting, was found to be associated with having multiple sexual partners, among males only. Also, living in a non-family setting was found to decrease the odds of always using condoms, among females only. These findings illustrate the importance of addressing structural factors, such as housing, when aiming to reduce homeless youth's sexual risk behaviors (multiple sexual partners or condom use). It is likely that youth who live with family or in institutional settings receive more supervision and more social support than those living with non-family settings and that these factors in turn influence youth's sexual risk behaviors. These findings are consistent with Social Cognitive Theory [13]; social support may influence sexual health practices.

A strong association between alcohol and drug use (marijuana, hard drugs, injecting drugs) and having multiple sexual partners for both males and females was found. This finding is consistent with a previous study on homeless adolescents which found an association between drug use and number of sexual partners [5] and with a study on domiciled adolescents that found that marijuana use and binge drinking were associated with having multiple sexual partners in young adulthood [25]. In our study, Latina females (whether U.S.-born or foreign-born) were less likely to have multiple sexual partners than Caucasian/Asian/Pacific Islander/American Indian/Alaskan Native females. This finding is consistent with previous research on domiciled Latina and Caucasian female adolescents in California [26].

For condom use among females, living in a non-family setting and using drugs decreased the odds of always using condoms; for drug use, this was true regardless of whether type of sexual partner was serious or casual. These findings illustrate that when drug use is taken into account, youth who use drugs are less likely to use condoms, regardless of type of partner (serious vs. casual). These findings differ from previous studies. One previous study on homeless youth found that having one sexual partner was associated with the nonuse of condoms [27]; however drug use was not taken into account. A previous study on domiciled youth reports that the greatest risk for not using condoms is being in a stable relationship with one partner [25].

The follow-up rates for this longitudinal study of newly homeless youth were high over 24-months, considering the difficulty in retaining homeless youth. However, there are certain limitations that need to be discussed. First, since this study focused on a cohort of newly homeless youth and the rate of returning home was high, with 63% of youth having returned home by 12 months, and because there were very few youth living in the street or in their own

apartment, it was not possible to examine the characteristics of youth living in the street or in their own apartment separately from the other living situations; future longitudinal research with a larger cohort needs to examine these differences. Second, due to the size of the study sample and the variation in frequency of use for each drug in the past 90 days prior to each assessment, it was necessary to simplify drug use into users or non-users for each of the seven substances and then to further define substance use using a single variable with four mutually-exclusive categories: no drug use, alcohol/marijuana use only, hard drug use without intravenous drug use, and intravenous drug use. Therefore, in this longitudinal study, it was not possible to evaluate the frequency of substance use, as done in another recent study [28]. Third, the cohort of newly homeless youth reported low rates of trading sex for money over time (3%); this low percentage did not allow for an evaluation between this activity and sexual risk behaviors (having multiple partner and condom use) over time. Fourth, there are potentially other confounding factors, which may have affected our results, but were not measured in this study; these include attitudes towards sexual behaviors (multiple partners, condom use), proportion of time living in each type of housing (family, non-family, institution), and other sociodemographic factors, such as income and education. Finally, all of the data are based on self-reports and therefore may be subject to reporting biases. To minimize bias, risk behaviors were assessed only over the previous three months at each assessment and all sensitive data were collected using ACASI, which has been shown to increase the accuracy of responses obtained in self-administered questionnaires [15–16].

The longitudinal evaluation of this cohort of newly homeless youth shows that living in non-family settings, with its associated lack of supervision and lack of social support, increases newly homeless youth's sexual risk taking behaviors. While gender and some racial/ethnic differences in predictors of sexual risk were found in this study, living with non-family members and drug use appear to be the most salient in explaining sexual risk. Our findings indicate that interventions aimed at reducing sexual risk behaviors, and thereby reducing STDs and HIV among newly homeless youth, need to help youth find housing associated with supervision and social support (family and institutional settings) as well as aim to reduce drug use.

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Table 1

Characteristics of Newly Homeless Youth at Baseline Assessment (N=261).

Categorical variables	All youth (N=261)	Female (n=156)	Male (n=105)	Chi-square	p-value
Living situation					
Family	26	13	13		
Non-family	31	11	20		
Institution	204	132	72	10.7031	0.0047
Gender/orientation					
Female	156	156	0		
Male non-hetero /MSM	19	0	19		
Male hetero	86	0	86	261.00	<.0001
Race/ethnicity					
African American	78	39	39		
US-born Latino	86	60	26		
Foreign-born Latino	38	25	13	7.99	0.0461
Caucasian/Asian	59	32	27		
BSI anxiety or depression					
Yes	42	31	11		
No	206	116	90	4.4254	0.0354
Partner type					
No partners	134	78	56		
One serious	80	54	26		
Multiple serious	13	6	7	5.89	0.2076
Serious & Casual	19	8	11		
Multiple casual	15	10	5		
Drug use					
No drugs	78	49	29		
Alcohol/marijuana	93	59	34	2.85	0.4155
Hard drugs	84	44	40		
Injecting drugs	6	4	2		
Condom use					
Abstinent	134	78	56		
Never	28	21	7		
Sometimes	55	38	17	9.72	0.0077
Always	44	19	25		

Table 1 Characteristics of Newly Homeless Youth at Baseline Assessment (N=261) (cont).

Continuous variables	Mean (Std dev)	Median	Min, Max	t-value	p-value
Age					
Total sample	15.47	15	12, 20		
Female	15.14	15	12, 19		
Male	15.95	16	12, 20	-3.55	0.0005
Number of partners					
Total sample	1.46	0	0, 36		
Female	0.99	0.5	0, 10		
Male	2.14	0	0, 36	-2.72	0.0070

Table 2

Mixed Model of log (no. of partner + 1) over time among females (N=156).

Effect	Value	Estimate	Std Error	Multiplier	T value	p-value	F	p-value
Intercept		-0.592	0.273	0.55				
Time in study		0.075	0.031	1.08	2.43	0.0162		
Heterosexual vs. not		0.122	0.061	1.13	2.01	0.0459		
Living situation	Family	-0.051	0.053	0.95	-0.97	0.3342	2.31	0.1025
	Institution	-0.134	0.065	0.87	-2.07	0.0405		
	Non-family	0	---	1.00	---	---		
Race/ethnicity	African-American	-0.046	0.077	0.96	-0.60	0.5498	3.16	0.0266
	US-born Latino	-0.154	0.070	0.86	-2.20	0.0291		
	Immigrant Latino	-0.222	0.086	0.80	-2.58	0.0110		
	Caucasian/Asian	0	---	1.00	---	---		
Age		0.062	0.016	1.06	3.89	0.0002		
BSI anxiety or depression		0.037	0.061	1.04	0.61	0.5443		
Drug use	Alcohol/marijuana	0.246	0.042	1.28	5.80	<.0001	22.90	<.0001
	Hard drugs	0.438	0.055	1.55	7.93	<.0001		
	Injecting drugs	0.375	0.105	1.45	3.57	0.0005		
	None	0	---	1.00	---	---		

Table 3

Mixed Model of log (no. of partner + 1) over time among males (n=105).

Effect	Value	Estimate	Std Error	Multiplier	T value	p-value	F	p-value
Intercept		0.101	0.435	1.11				
Time in study		0.011	0.046	1.01	0.24	0.8105		
Heterosexual vs. not		-0.031	0.114	0.97	-0.27	0.7887		
Living situation	Family	-0.237	0.081	0.79	-2.93	0.0042	5.06	0.0081
	Institution	-0.243	0.084	0.78	-2.89	0.0047		
	Non-family	0	---	1.00	---	---		
Race/ethnicity	African-American	0.160	0.111	1.17	1.44	0.1525	1.89	0.1366
	US-born Latino	-0.077	0.119	0.93	-0.64	0.5223		
	Immigrant Latino	0.158	0.151	1.17	1.05	0.2964		
	Caucasian/Asian	0	---	1.00	---	---		
Age		0.021	0.024	1.02	0.88	0.3815		
BSI anxiety or depression		-0.040	0.099	0.96	-0.41	0.6853		
Drug use	Alcohol/marijuana	0.346	0.070	1.41	4.95	<.0001	20.05	<.0001
	Hard drugs	0.612	0.084	1.84	7.29	<.0001		
	Injecting drugs	0.835	0.218	2.30	3.83	0.0002		
	None	0	---	1.00	---	---		

Table 4
Glimmix Models of Condom Use (Always vs. Sometimes/Never Use) among females (n=131).

Effect	Value	Estimate	Std Error	OR	T value	p-value	F	p-value
Intercept		-5.081	2.338	0.006	-2.17	0.0317		
Time in study		0.400	0.186	1.492	2.15	0.0322		
Living situation	Family	1.379	0.391	3.971	3.52	0.0005	7.96	0.0004
	Institution	1.872	0.488	6.501	3.84	0.0002		
	Non-family	0	---	1.0	---	---		
Heterosexual vs. not		0.786	0.473	2.194	1.66	0.0973		
Race/ethnicity	African-American	0.643	0.601	1.902	1.07	0.2854		
	US-born Latino	-0.023	0.564	0.977	-0.04	0.9677	0.69	0.5573
	Immigrant Latino	-0.036	0.676	0.964	-0.05	0.9570		
	Caucasian/Asian	0	---	1.0	---	---		
Age		0.135	0.132	1.144	1.02	0.3074		
BSI anxiety or depression		-0.053	0.473	0.948	-0.11	0.9102		
Drug*partner interaction	Drugs/one serious	-0.834	0.347	0.434	-2.40	0.0168	3.51	0.0157
	No drugs/casual	-0.352	0.741	0.703	-0.47	0.6353		
	Drugs/casual	-1.224	0.391	0.294	-3.13	0.0019		
	No drugs/one serious	0	---	1.0	---	---		

Table 5
Glimmix Models of Condom Use (Always vs. Sometimes/Never Use) among males (n=75).

Effect	Value	Estimate	Std Error	OR	T value	p-value	F	p-value
Intercept		1.119	2.784	3.062	0.39	0.6985		
Time in study		-0.331	0.223	0.718	-1.48	0.1404		
Living situation	Family	0.093	0.450	1.097	0.21	0.8372	1.26	0.2870
	Institution	0.730	0.524	2.074	-1.39	0.1661		
	Non-family	0	---	1.0	---	---		
Heterosexual vs. not		-0.657	0.654	0.518	-1.00	0.3166		
Race/ethnicity	African-American	0.920	0.727	2.509	1.27	0.2076	0.79	0.5035
	US-born Latino	0.507	0.745	1.660	0.68	0.4969		
	Immigrant Latino	-0.139	0.938	0.871	-0.15	0.8828		
	Caucasian/Asian	0	---	1.0	---	---		
Age		-0.037	0.161	0.963	-0.23	0.8174		
BSI anxiety or depression		-0.457	0.571	0.633	-0.80	0.4250		
Drug*partner interaction	Drugs/one serious	-0.413	0.591	0.662	-0.70	0.4864	0.64	0.5876
	No drugs/casual	-0.147	0.956	0.864	-0.15	0.8784		
	Drugs/casual	0.101	1	1.106	0.16	0.8697		
	No drugs/one serious	0	---	1.0	---	---		