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Pro-social and problematic social network influences on HIV/AIDS risk behaviours among newly homeless youth in Los Angeles

E. Rice, N. G. Milburn, and M. J. Rotheram-Borus

University of California, Los Angeles, USA

Abstract

We examined the social network composition among newly homeless youth over time and assessed how pro-social and problematic peers affected sexual and drug-using HIV/AIDS risk-behaviours among 183 youth in Los Angeles County, California. The percentage of newly homeless youth who reported that ‘most’ or ‘all’ of their friends were attending school, had jobs, and got along with their families was 73%, 24%, and 50% respectively. Logistic regression models indicated that presence of these pro-social peers reduced HIV risk behaviours at two years; odds of HIV-risk were lower with a greater number of peers who attend school, have a job, or have positive family relationships or if networks change over time to include more of these peers. Presence of problematic peers increased the likelihood of HIV risk-taking; odds of HIV risk behaviours increased with a greater number of peers at baseline who steal, have overdosed, have been arrested, or are in a gang, or if networks change to include more of these peers. Interventions should target newly homeless youth in networks that contain problematic peers, but should strive to harness the naturally occurring pro-social peer influences present in these networks.

There are an estimated 1.6 million homeless youths in the US and an estimated 7.6% of American youth are homeless or runaways every year (Ringwalt et al., 1998). Although recent reports indicate that the prevalence of HIV among the general population of young people in the United States is only 0.2% (Sweeney et al., 1995), the rate of infection among homeless youth far exceeds this number in many urban centres: 5.3% in New York (Stricof et al., 1991), 8.2% in San Francisco (Schalwitz et al., 1990), and 11.5% in Hollywood, CA (Pfeifer & Oliver, 1997).

Adolescent social networks are crucial determinants of their HIV risk-taking behaviours (Belgrave et al., 2000; Chernoff & Davison, 2005; Dishion et al., 1999; Fisher & Misovich, 1990; Rosenblum et al., 2005; Stein et al., 2005; White et al., 1994). Moreover, peer group affiliations predict a wide array of risk-taking behaviours among homeless youth, including drug and alcohol use, unprotected sex, and criminal activity (Kipke et al., 1997; Unger et al., 1998; Whitbeck et al., 1999; Tyler et al., 2000; Rice et al., 2005; McMorris et al., 2002). Traditionally, research on this population has focused on explaining the problematic influence

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Correspondence: Eric Rice, UCLA Center for Community Health, 10920 Wilshire Blvd., Suite 350. Los Angeles, CA 90024. Tel: 310-794-2715. Fax: 310-794-2495. ERice@mednet.ucla.edu.

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of peers on risk taking behaviours, with a limited emphasis on positive impacts of social support or pro-social influence (Unger et al., 1998). The widely accepted explanation for the influence of peers is the risk amplification model, which argues that homeless youth come from dysfunctional and often abusive families; once they leave home, exposure to street life propels them into increasingly negative developmental trajectories that lead to their participation in social networks with problematic peers (e.g. selling sex, injection drug use) who reinforce risk-taking behaviours (Whitbeck et al., 1999; Whitbeck & Hoyt, 1999).

There are conflicting data regarding the characteristics of social networks for homeless youth. Until recently, the social networks of homeless youth have been characterized as relatively small, transient, and homogenous, comprised primarily of other homeless youth in similar situations (Whitbeck & Hoyt, 1999; Ennett et al., 1999). Recent work suggests that homeless youth continue to maintain close relationships with peers who are from their home situation, not just the street (Johnson et al., 2005). Moreover, the extent to which homeless youth continue to be connected to their families and the strength of those bonds are greater than initially thought (Johnson et al., 2005; Milburn et al., 2005).

Given their continued linkage to home-based peers and family networks, the peers of homeless youth may play a role in limiting HIV risk behaviours as well as facilitating risk. If the social networks of homeless youth include peers engaged in pro-social behaviours as well as risky behaviours, then peers may affect the HIV risk behaviours of homeless youth in both pro-social and problematic ways.

We analysed data from a large sample of newly homeless youth (youth on the streets less than six months) from Los Angeles County. Data for this study come from a larger study that assessed the trajectories of newly homeless adolescents over time (Milburn et al., 2005; Brooks et al., 2004; Milburn et al., in press; Witkin et al., 2005). Youth were assessed at baseline and again two years later for recent HIV risk-taking behaviours (engaging in unprotected sex and using hard drugs). We assessed the variation in network composition at baseline and again two years later as well as the effect of pro-social and problematic peers at baseline on risk acts at two years. We also assessed change over time in the composition of peer networks with respect to prosocial and problematic peers and examined the effect increasing numbers of pro-social or problematic peers had on HIV risk behaviours at two years.

Method

Sample

A representative sample of newly homeless adolescents was recruited in Los Angeles County. Three criteria were used to select participants: 1) age ranging from 12 to 20 years; 2) spent at least two consecutive nights away from home without parent/ guardian's permission or been told to leave home; and 3) had been away from home for six months or less. The number of runaway episodes was not included in the operational definition of 'newly homeless' because time out of home is more critical than number of times out of home, as these adolescents often have a pattern of going back and forth between the streets and home before actually leaving home. The baseline sample consisted of 262 newly homeless adolescents.

The sample was generated by a systematic process. First, the research team worked with line and supervisory staff at agencies serving homeless youth in Los Angeles County to generate a list of all potential recruitment sites. The 30 sites identified included 17 homeless shelters or drop-in centres and 13 street hangouts (Brooks et al., 2004). The potential recruitment sites were audited at three different week-long periods at pre-selected times throughout the week to determine the number of eligible participants at each site (Witkin et al., 2005).

Interviewers were sent out in pairs to screen and recruit eligible homeless adolescents at all 30 sites from July 2000 to March 2002. Interviewers approached youth at the different sites and identified themselves as researchers. They asked youth if they would give them a few minutes of their time to talk about their experiences with homelessness. Interviewers used a 13-item screening instrument which masked eligibility criteria, confirmed eligibility, and established the length of time adolescent had been away from home. All newly homeless adolescents who were eligible and agreed to participate were included in the study. The refusal rate for newly homeless adolescents was 9.3%. Results from overall chi-square tests, examining race/ethnicity, gender and age, showed newly homeless adolescents who refused to participate tended to be European-American and older.

Following screening, voluntary informed consent was obtained from each adolescent. Potential participants were informed that physical or sexual abuse, suicidal and homicidal feelings would be reported. Participants who were 18 years or older were administered informed consent. For minors, *loco parentis* consent was obtained from a member of the recruitment team present, and assent was obtained from the minor. The study fulfilled all human subject guidelines and was approved by the Institutional Review Board (IRB) at the University of California, Los Angeles.

All interviews were conducted face-to-face by trained interviewers using an audio-taped computer assisted interview schedule that lasted between 1 and 1½ hours. Training for interviewers was approximately 40 hours, which included lecture, role-playing, mock surveys, ethics training, emergency procedures, and technical training. Participants received \$20 as compensation for their time for the baseline interview and \$30 for the follow-up at two years.

Tracking was done systematically to maintain participant retention. At baseline, participants signed Social Security and General Tracking consent. At baseline and each follow-up, interviewers filled out a locator form asking participants for their primary contact information (e.g. phone number and/or mailing address) as well as the contact information for family, friends, and service providers. One month prior to the opening of participants' assessment windows, retention cards were mailed to remind them of their upcoming interviews. Primary methods for tracking were the retention card mailing and phone calls to the participants and/or their family, friends and service provider contacts. On occasion, interviewers would locate participants out in the streets or at agencies while doing outreach work.

The 183 adolescents (retention = 70%) who completed the two year follow-up assessment comprised the sample for this study. The mean age was 15.3 years ($\pm$ SD=1.8 years). Most were female (63%) and ethnic/racial minorities: 21% African-American, 47% Latino (14% foreign-born Latino), 2% American Indian, less than 1% Asian/Pacific Islander, and 12% mixed-race/ethnicity. There were no core differences with respect to those who could not be interviewed at 24 months and those who were successfully followed up. Results from overall chisquare tests, examining race/ethnicity, gender, hard drug use and unprotected sex at baseline showed no significant associations with loss to follow up. In addition, results from t-tests comparing mean values at baseline of those followed up and those lost to follow up revealed no significant associations with any of the social network variables, age, history of physical abuse, or history of sexual abuse.

Outcome measures

Unprotected sex was measured at the time of the two year interview and assessed *not* using condoms during vaginal and/or anal sex acts in the previous 90 days. Hard drug use was likewise measured at two years and assessed if in the past 90 days a youth had used heroin, cocaine, crack, methamphetamines, or ecstasy.

Social network measures

Social networks were measured at baseline and again at two years. At each interview respondents were asked a series of questions regarding the activities of their friends. They were asked 'How many of your friends: (1) Go to school regularly?; (2) Have jobs?; (3) Get along with their family?; (4) Come from your neighbourhood?; (5) Have tattoos/body piercing?; (6) Are having sex?; (7) Take things (steal from others)?; (8) Have been arrested?; (9) Are in a gang? (10) Have been in jail or the justice system?; (11) Have overdosed?; (12) Inject drugs?; (13) Are doing sex work?; (14) Have HIV?'. Answers to all 14 questions are either: (1) 'none'; (2) 'some'; (3) 'most'; or (4) 'all'. We considered the first four items to assess the presence of pro-social peers behaviours and the remaining 10 items to assess the presence of problematic peers in social networks.

We calculated a change score for each of the 14 network variables by subtracting the value of the response at baseline from the value of the response at two years. The range of scores was thus -3 to 3, with 0 representing no change in network composition along a given dimension and 3 reflecting an increase from the 'none' category to the 'all' category and a -3 reflecting a decrease from the 'all' to the 'none' category.

Analyses

Analyses were conducted using SAS for Windows (SAS Institute, Inc., Cary, NC, U.S.A.). Changes in network composition over time were assessed using McNemar's Test for paired data. A series of 14 separate logistic regressions were performed for each outcome (hard drug use and unprotected sex). Each model controlled for variables that have been shown to be important predictors of risk taking among homeless youth (Kipke et al., 1997; Whitbeck et al., 1999; Tyler et al., 2000; Rice et al., 2005; McMorris et al., 2002), in particular: age, gender, time away from home, history of sexual abuse, history of physical abuse, and whether the youth was still homeless at two years, the frequency distributions for these variables are displayed on Table I. In addition, each model contains two social network variables: the baseline score and the change score for a given network characteristic.

Results

Table II shows much heterogeneity in the social network composition of newly homeless youth at baseline and at the two-year follow up interview. Most youth were embedded in networks that contained peers who engaged in pro-social activities. For example, 73% of the sample responded that either most or all of their friends were currently attending school. Moreover, a minority (37%) of newly homeless youth claimed that none of their friends had jobs, but only 24% responded that most or all of their friends were employed. Finally, 50% of newly homeless youth reported that most or all of their friends 'get along with their family'.

Many of these newly homeless youth were not embedded in problematic networks. For example, 80% of youth claimed that none or some of their friends had ever been arrested. Only 13% claimed that most or all of their friends were in jail or the justice system. Only 10% of youth claimed most or all of their friends were involved in gangs. Moreover, only 7% of newly homeless youth claimed most or all of their friends stole from others. Among newly homeless youth, 90% claimed that none of their friends were doing sex work, 80% claimed that none of their friends injected drugs, 84% claimed that none of their friends had ever overdosed, and 99% claimed that none of their friends had HIV.

There were four network characteristics that saw significant changes over time for newly homeless youth as a whole. There was an overall decrease in the number of youth whose social networks were primarily composed of youth attending school; there was a 20% drop in the all

category. There was a complimentary 20% increase in the percentage of youth who had some friends working. There was a 15% drop in the number of youth who reported all of their friends came from their neighbourhood. Finally, there was a 17% growth in the some category for youth who had friends with tattoos or body piercing.

Overall, a larger number of peers who engaged in pro-social behaviours at baseline reduced the likelihood of engaging in HIV risk behaviours, as displayed in Table III. Over time, as a given youth's social network changed to include more peers engaging in pro-social behaviours, that youth was less likely to engage in HIV risk-taking. Conversely, a larger number of peers engaged in problematic behaviours at baseline increased the likelihood that a youth would engage in HIV risk taking two years later. And over time, as youth became increasingly enmeshed in networks of other problematic youth, they were more likely to engage in HIV risk-taking behaviours.

Table III displays the results of the adjusted odds ratios for recent unprotected sex and recent hard drug use, at the time of the two-year interview. All of these parameter estimates were derived from models that controlled for gender, age, time away from home at baseline, history of physical abuse, history of sexual abuse, and housing status at the two year interview. These are all controls identified as important factors affecting HIV risk among homeless youth (Kipke et al., 1997; Whitbeck et al., 1999; Tyler et al., 2000; Rice et al., 2005; McMorris et al., 2002). For the models of unprotected sex, time away from home had the expected positive effect on the odds of engaging in unprotected sex, and females were significantly more likely to practice unsafe sex. The other controls were not significant in any of the models for unprotected sex at two years. Moreover, none of the control variables had a significant effect on hard drug use in any of the 14 models.

Pro-social behaviours among one's peers decrease the likelihood that newly homeless youth will engage in unprotected sex at the time of their two-year interview. The more friends at baseline who went to school, the less likely a youth would engage in unprotected sex. As a youth's network composition changed to include more youth who attended school, the odds of engaging in unprotected sex decreased, as do the odds of using hard drugs. Similarly, a greater number of working friends at baseline was associated with a decrease in the odds of using hard drugs at two years. A change in network composition to include more working friends likewise decreased the odds of hard drug use at two years. Finally, a greater number of friends who got along with their families at baseline was associated with a decrease in the odds of engaging in unprotected sex and hard drug use at two years. An increase in the number of friends who got along with their families decreased the odds of hard drug use over time.

Conversely, the problematic behaviours of peers increases the odds that newly homeless youth will engage in HIV risk at two years. Specifically, the odds of hard drug use increase with a greater number of peers at baseline who have been arrested, are in a gang, steal from others, or who have overdosed. Moreover, as network composition changed to include more peers who had either been arrested, were in a gang, stole from others, or overdosed, the likelihood that a given youth would use hard drugs at two years significantly increased. It is interesting to note that none of the problematic social network composition variables tested here significantly increased the odds of engaging in unprotected sex.

Discussion

Our analysis makes several important contributions to the understanding of social networks of newly homeless youth, how those networks change over time, and how pro-social as well as problematic peers affect HIV/AIDS risk behaviours over time. First, building on recent work on the social networks of homeless youth (Johnson et al., 2005), our data reveal a great deal

of heterogeneity in the composition of social networks among newly homeless youth. These data call into question the traditional perceptions of homeless youth as being embedded in homogeneous networks comprised largely of other homeless youth engaged primarily in problematic behaviours (Whitbeck & Hoyt, 1999; Ennett et al., 1999). On the contrary, we found that for a majority of newly homeless youth, most or all of their friends were regularly attending school. Moreover, half of newly homeless youth claimed that most or all of their friends had positive relationships with their families.

Second, contrary to the traditional view of the social networks of homeless youth, we found relatively few newly homeless youth were embedded in social networks where peers were engaged in activities that put them at high risk of contracting HIV/ AIDS. Only a small minority of newly homeless youth had any friends at all who were doing sex work. Only 20% of the newly homeless youth surveyed at baseline claimed to have any friends who injected drugs, and only 16% had any friends who had ever overdosed. It is important to note that while these numbers were smaller than might be expected, given previous research, it is still alarming that 10% of any sample of youth would have friends engaged in sex work. Moreover, these small numbers may reflect some important differences in our sample of newly homeless youth relative to other samples of chronic homeless youth (Stricof et al., 1991; Schalwitz et al., 1990; Pfeifer & Oliver, 1997; Kipke et al., 1997; Unger et al., 1998; Whitbeck et al., 1999; Tyler et al., 2000; McMorris et al., 2002; Whitbeck & Hoyt, 1999; Ennett et al., 1999; Johnson et al., 2005; Milburn et al., in press; Witkin et al., 2005; Clatts et al., 1998; Clements et al., 1997; Johnson et al., 1996; Yates et al., 1988; Rotheram-Borus et al., 1991; Fors & Rojek, 1991; Greene et al., 1997; Kipke et al., 1993). One of the most consistent findings on adolescent homelessness is that as time on the streets increases, engagement in high-risk activities increases (Stricof et al., 1991; Whitbeck et al., 1999; Tyler et al., 2000; Clatts et al., 1998; Clements et al., 1997; Johnson et al., 1996; Yates et al., 1988; Rotheram-Borus et al., 1991). Presumably much of this engagement in risk is driven by increasing interaction with risk-taking peers (Whitbeck & Hoyt, 1999). Indeed, increased involvement with risk-taking peers over time increases the propensity for risk taking among individual homeless youth (Rice et al., 2005). By sampling newly homeless youth who had been away from home at a maximum of six months, we observed these youth before they became embedded in high risk networks.

Third, in keeping with the existing literature on adolescent homelessness (Kipke et al., 1997; Whitbeck et al., 1999; Tyler et al., 2000; Rice et al., 2005; McMorris et al., 2002), we found that newly homeless youth who are embedded in social networks with problematic peers are more likely to engage in risk behaviours. In particular, youth embedded in social networks with more peers who steal, are in a gang, have overdosed, or have been arrested were more likely to use hard drugs two years later. Over time, as a given youth's network changed to include more of these problematic peers, the likelihood of using hard drugs at the two-year interview also increased. Unlike some other research which has found that having problematic peers affects sexual risk taking (Tyler et al., 2000), it is important to note that the number of peers who engaged in a wide variety of problematic behaviours did not affect the likelihood of having unprotected sex at the time of the two year interview in our sample. This discrepant finding may again reflect the differences between newly homeless youth and chronic homeless youth. Compared to youth who have been on the streets for more than six months, newly homeless youth engage in less drug use, have better mental health, have fewer health problems, and engage in fewer HIV risk behaviours (Milburn et al., in press).

Fourth, the most important finding of this analysis is that having peers who engaged in pro-social activities decreased the likelihood that newly homeless youth would engage in HIV/ AIDS risk behaviours. Specifically, having more peers at baseline who were going to school or who got along with their families reduced the odds of having unprotected sex at two years. Moreover, if the number of peers going to school grew over time, the odds of having

unprotected sex were reduced. Similarly, having more peers at baseline who had jobs and who got along with their families reduced the risk of using hard drugs at two years. In addition, as the number of peers going to school, employed, or getting along with their families grew, the odds of using hard drugs reduced. These pro-social effects of peers on the behaviours of homeless youth have been overlooked in most previous research because homeless youth are disproportionately engaged in risk activities relative to youth in stable living situations (Fors & Rojek, 1991; Greene et al., 1997; Kipke et al., 1993). It is crucial to realize, however, that even among a population that is so heavily involved in risk-taking, pro-social peers within these social networks play a role in reducing HIV risk behaviours.

There are a few limitations of our study which must be noted. First, our network composition variables were subjective self-reports. While ‘none’ and ‘all’ answers were likely consistent across respondents, the meaning of ‘some’ and ‘most’ is subjective. Second, we did not ask youth to delineate their exact social network and report on the behaviours of every member of that network. These data are drawn from a larger study whose purpose was to assess the trajectories of newly homeless youth over time: data collected on peer networks were a small sub-set of this larger data set. Traditional social network variables were not measured because social networks and social network analysis were not a primary focus of the larger study. Despite the limitations of these network measures, we still obtained consistent significant results with respect to the influence of these network measures on HIV risk behaviours.

This study suggests some important directions for the development of interventions that seek to reduce the HIV/AIDS risk-taking behaviours of newly homeless youth. First, the importance of peers on HIV risk-taking behaviours found here suggests that interventions should target the social networks of homeless youth, not merely individual homeless youth who are deemed to be at risk for contracting HIV/AIDS. Second, given the heterogeneity in social network composition, interventions should address youth who are embedded in social networks with problematic peers. Youth embedded in those networks are the youth most likely to engage in risky behaviours. Finally, within most networks of newly homeless youth, there are peers engaged in pro-social behaviours, who have the capacity to positively influence HIV risk behaviours. HIV prevention interventions should take advantage of these naturally occurring pro-social peers. Harnessing their pro-social influence in the reduction of HIV/ AIDS risk taking will be a fruitful path for effective and lasting intervention design.

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Table I

Outcomes and Control Variables (n = 183).

	Freq	%
Gender		
Female	115	62.8
Male	68	37.2
Race/Ethnicity		
White	32	17.5
African American	39	21.3
Latino	86	47.0
Native American	3	1.6
Asian or Pacific Islander	1	0.6
Mixed Race	22	12.0
Time away from home at baseline interview		
Less than 1 month	106	58.6
1 month	18	9.9
2–3 months	35	19.3
4–4 months	22	12.2
Homeless at 24 Months		
No	115	62.8
Yes	68	37.2
History of Physical Abuse		
No	140	76.5
Yes	43	23.5
History of Sexual Abuse		
No	166	90.7
Yes	17	9.3
Unprotected Sex Past 90 Days		
No	106	58.6
Yes	75	41.4
Hard Drug Use Past 90 Days		
No	152	83.1
Yes	31	16.9

Table II

Network Composition of Newly Homeless Youth at Baseline and 24 Month Follow-Up, Los Angeles County, CA. (n = 183).

How many of your friends	Baseline Network Composition								Change Score		
	None		Some		Most		All		McNemar	Mean	Std Dev
	Freq	%	Freq	%	Freq	%	Freq	%			
Pro-Social Peers											
Go to school regularly?	18	10.1	30	16.9	54	30.3	76	42.7	27.43**	-0.46	1.26
at 24 Months	27	14.9	59	32.6	54	29.8	41	22.7			
Have jobs?	65	36.7	70	39.6	26	14.7	16	9.0	28.52**	0.23	0.99
at 24 Months	29	16.0	106	58.6	29	16.0	17	9.4			
Get along with their family?	14	7.9	75	42.4	34	19.2	54	30.5	5.88	0.05	1.17
at 24 Months	7	3.9	78	43.1	44	24.3	52	28.7			
Come from your neighborhood?	42	23.6	52	29.2	31	17.4	53	29.8	17.53**	-0.39	1.46
at 24 Months	59	32.2	67	36.6	30	16.4	27	14.8			
Problematic Peers											
Have tattoos/body piercing?	49	27.7	58	32.8	37	20.9	33	18.6	21.44**	0.06	1.11
at 24 Months	26	14.2	88	48.1	49	26.8	20	10.9			
Are having sex?	36	21.1	56	32.8	36	21.1	43	25.2	12.46	0.23	1.23
at 24 Months	16	9.6	55	32.9	47	28.1	49	29.3			
Take things (steal from others)?	103	58.5	60	34.1	6	3.4	7	4.0	5.80	-0.11	0.90
at 24 Months	108	60.7	63	35.4	6	3.4	1	0.6			
Have been arrested?	77	43.5	65	36.7	20	11.3	15	8.5	9.69	0.13	1.08
at 24 Months	57	31.3	86	47.3	27	14.8	12	6.6			
Are in a gang?	111	62.7	48	27.1	12	6.8	6	3.4	3.13	0.01	0.89
at 24 Months	114	62.6	48	26.4	15	8.2	5	2.8			
Have been in jail or the justice system?	92	52.0	62	35.0	17	9.6	6	3.4	10.62	0.19	1.03
at 24 Months	72	39.6	79	43.4	22	12.1	9	5.0			
Inject drugs?	141	79.7	32	18.1	1	0.6	3	1.7	7.83	-0.10	0.65
at 24 Months	158	87.8	20	11.1	1	0.6	1	0.6			
Have overdosed?	148	83.6	25	14.1	3	1.7	1	0.6	6.13	0.03	0.61
at 24 Months	145	80.1	33	18.2	1	0.6	2	1.1			

	Baseline Network Composition						Change Score	
	None		Some		Most		All	
	Freq	%	Freq	%	Freq	%	Freq	%
How many of your friends								
Are doing sex work?	159	90.3	15	8.5	0	0.0	2	1.1
at 24 Months	158	89.3	16	9.0	3	1.7	0	0.0
Have HIV?	174	98.9	2	1.1	0	0.0	0	0.0
at 24 Months	174	98.3	2	1.1	1	0.6	0	0.0

* p<.05;
** p<.01.

Table III

Adjusted Odds Ratios for Effect of Network Composition and Change on Likelihood of Unprotected Sex and Hard Drug Use (n = 183).

How many of your friends	Unprotected Sex Past 90 Days			Hard Drug Use Past 90 Days		
	Odds	95% C.I.	Chi-Sq	Odds	95% C.I.	Chi-Sq
Pro-Social Peers						
Go to school regularly?	0.47	0.29	0.77	8.93**	0.56	0.29 1.10 2.80
Change	0.62	0.43	0.89	6.71**	0.61	0.37 1.00 3.88*
Have jobs?	0.95	0.60	1.49	0.05	0.44	0.20 0.94 4.47*
Change	0.84	0.55	1.27	0.69	0.44	0.23 0.84 6.18*
Get along with their family?	0.54	0.35	0.85	7.02**	0.34	0.18 0.65 10.70**
Change	0.78	0.54	1.12	1.77	0.53	0.31 0.91 5.29*
Come from your neighborhood?	0.74	0.49	1.11	2.10	1.27	0.75 2.13 0.78
Change	1.03	0.74	1.43	0.03	1.18	0.77 1.79 0.57
Problematic Peers						
Have tattoos/body piercing?	1.35	0.89	2.06	1.95	1.32	0.76 2.28 0.99
Change	1.20	0.81	1.77	0.85	1.04	0.62 1.73 0.02
Are having sex?	1.48	0.95	2.29	3.02	1.55	0.87 2.77 2.18
Change	1.23	0.85	1.76	1.20	1.61	0.97 2.66 3.45
Take things (steal from others)?	1.17	0.60	2.27	0.21	3.39	1.44 7.99 7.80**
Change	1.22	0.71	2.10	0.51	2.70	1.38 5.26 8.44**
Have been arrested?	1.26	0.78	2.03	0.92	2.71	1.39 5.29 8.50**
Change	0.98	0.65	1.46	0.01	2.07	1.21 3.54 6.99**
Are in a gang?	1.12	0.67	1.86	0.18	2.22	1.14 4.33 5.48*
Change	1.08	0.70	1.66	0.11	2.01	1.19 3.38 6.86**
Have been in jail or the justice system?	1.09	0.64	1.86	0.10	2.15	1.05 4.39 4.40*
Change	1.08	0.73	1.62	0.15	1.69	1.01 2.84 3.98*
Inject drugs?	1.87	0.75	4.64	1.82	2.47	0.85 7.15 2.77
Change	1.54	0.72	3.31	1.23	2.25	0.95 5.32 3.41
Have overdosed?	2.17	0.94	5.00	3.30	3.50	1.40 8.76 7.19**

How many of your friends	Unprotected Sex Past 90 Days			Hard Drug Use Past 90 Days				
How many of your friends	Odds	95% C.I.	Chi-Sq	Odds	95% C.I.	Chi-Sq		
Change	1.43	0.75	2.70	1.18	2.23	1.10	4.53	4.96*
Are doing sex work?	1.03	0.32	3.38	0.00	2.24	0.62	8.08	1.51
Change	1.12	0.47	2.67	0.06	1.83	0.65	5.15	1.30
Have HIV? (Estimates are Unstable)	..	..	..	..	..	..	..	..
Change	..	..	..	..	..	..	..	..

Controls for: Gender, Age, Currently Homeless, Time Away from Home, History of Sexual and Physical Abuse.

* p<.05;
** p<.01.