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Co-Occurring Sexual Risk and Substance Use Behaviors Among Incarcerated Adolescents

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Abstract

Incarcerated adolescents report greater sexual risk than do nonincarcerated peers. High-risk sexual behavior is associated with substance use. To determine how much sexual risk is combined with substance use, 167 incarcerated adolescents reported on their sexual risk behavior in the year before incarceration that involved alcohol or marijuana. For each risk behavior, marijuana use was more likely than was alcohol use. Marijuana use was more common for higher risk behaviors than for lower risk behaviors. Periods of incarceration provide opportunities for intervening on HIV-relevant risk behaviors among adolescents. The context of substance use within high-risk sexual situations ought to be a focus of interventions for incarcerated adolescents.

Keywords

adolescents; sexual risk; substance use; incarcerated populations; correctional health

Adolescents who are involved in the juvenile justice system are at a higher risk of sexually transmitted diseases (including HIV/AIDS) and unplanned pregnancies than are their nondelinquent peers. Various studies of incarcerated adolescents have found that they report initiating sexual intercourse at early ages (American Academy of Pediatrics' Committee on Adolescence, 2001; Peres et al., 2002), high numbers of lifetime and recent sexual partners (Bryan & Stallings, 2002; Magura, Kang, & Shapiro, 1994), inconsistent use of condoms (Nagamune & Bellis, 2002; Rickman et al., 1994), and experimentation with anal intercourse (Gillmore, Morrison, Lowery, & Baker, 1994; Magura et al., 1994). In addition, teens who are incarcerated are more likely to report exchanging sex for drugs or money, or to meet other needs (Wood & Shoroye, 1993), and having sex while under the influence of alcohol or drugs (Magura et al., 1994; Morris, Baker, Valentine, & Pennisi, 1998; Otto-Salaj, Gore-Felton, McGarvey, & Canterbury, 2002) than are nonincarcerated adolescents.

Many, if not most, incarcerated adolescents have experience using substances (primarily alcohol and noninjection drugs). Out of approximately 2.4 million juvenile arrests each year, more than 203,000 are for offenses related to substance use (Snyder, 2002). As is true for many sexually active populations, heightened levels of sexual risk behavior occur in combination

with substance use and intoxication among adolescent detainees (Devieux et al., 2002; Gary et al., 2000; Harwell, Trino, Rudy, Yorkman, & Gollub, 1999; Kingree, Braithwaite, & Woodring, 2002). Castrucci and Martin (2002) found a strong association between regular substance use and sexual risk (including multiple sex partners, inconsistent condom use, and trading sex for money or drugs) among their sample of incarcerated adolescents.

The cross-sectional observational study reported here sought to evaluate the co-occurrence of sexual risk behavior and alcohol and marijuana use among a sample of incarcerated adolescents. Specifically, we were interested in ascertaining the following:

1. The proportion of sexual behaviors that involved the use of alcohol or the use of marijuana. The behaviors under study were sexual intercourse in the past 12 months (a) with someone who was known very well and (b) with someone who was not known well, as well as (c) sexual intercourse without a condom.
2. Which sexual behaviors were more likely to involve the use of substances.

Finally, we were particularly interested in determining psychosocial and substance-related factors that may be associated with substance use in conjunction with condom nonuse.

Method

Participants

The sample was recruited at the Rhode Island Training School between April 2001 and August 2003. It is the state's sole juvenile correctional facility, with a daily census of 195 to 250 teens. Approximately 20% of Rhode Island Training School teens are adjudicated for charges such as possession and sale of a controlled substance or possession with intent to deliver. Residents are also adjudicated for a variety of other offenses, including assault, larceny, robbery, rape, and murder. Each year, approximately 1,000 to 1,200 teens are detained at the facility, and 500 to 600 are adjudicated to the facility. Annual recidivism is about 35%.

Medical, dental, psychiatric, and psychological care is available to the teens, and the facility houses its own education department. The teens receive group treatment as well as individualized attention (as indicated) on a variety of topics (e.g., sex offending, drug dealing, reducing crime, developing empathy, preventing violence, anger management). Adolescents routinely attend an 8-week psychoeducational group treatment for substance use/abuse that meets twice per week for an hour. Enrollment usually begins shortly after adjudication. More in-depth substance abuse services are available as indicated, and Alcoholics Anonymous and Narcotics Anonymous programs are available on a weekly basis. Community religious organizations also have a relationship with the facility. Limited vocational programming is available, as are transitional services that include substance use counseling, case management, mentoring, and other services.

Procedures

All procedures received approval from Brown University's Institutional Review Board and the facility's internal review board.

Screening and consent—The cross-sectional baseline data presented here were drawn from a larger study. In that study, teens were identified as potential candidates immediately after adjudication if they were age 14 to 19 years (inclusive) and they were sentenced to the facility for 4 to 12 months (inclusive). Consent was obtained from legal guardians, and assent was obtained from the adolescents. Guardians and adolescents were informed that all information was entirely confidential, except for plans to escape or hurt self or others, or reports of child abuse.

Adolescents were included in the study if they met any of the following substance use screening criteria: (a) in the year before incarceration, they used marijuana or drank at least monthly; (b) in the year before incarceration, they drank five or more standard drinks for boys or four or more for girls on any single occasion; (c) they used marijuana or drank in the 4 weeks before the offense for which they were incarcerated; or (d) they used marijuana or drank in the 4 weeks before they were incarcerated. Of 188 adolescents approached for the study, 184 (98%) met screening criteria, and 169 (92%) completed our consent procedure. Two adolescents subsequently dropped out of the study, leaving a sample size of 167 participants.

Assessment—Assessment occurred shortly after adjudication and consisted of a 90-minute interview by a trained BS- or MA-level staff member. Interviewers had at least 20 hours of training with 1 hour of individual and 1 hour of group supervision per week. Supervision of interviews was conducted regularly by a PhD-level project member. All assessment data were reviewed by an MA- or PhD-level project member. Adolescents received snacks during assessments. Adolescents were recruited as part of a larger longitudinal study. On completing the larger study, participants received a \$50 gift certificate.

Measures

Demographics—Sociodemographic information recorded included age, gender, race/ethnicity, parent/guardian educational level, and parental incarceration history.

Drug-dependence symptoms and drug-sex expectancies—The number of dependence symptoms for alcohol and marijuana was evaluated using an adaptation of the Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.) Axis I disorders (First, Gibbon, Spitzer, Williams, & Benjamin, 1996) drug use modules. Dependence symptom counts for marijuana range from zero to six and for alcohol from zero to seven. Expectancies regarding the effects of alcohol and marijuana on sexual experience were measured using single items that required participants to indicate the degree to which they agreed that “alcohol improves sex (more enjoyable; feel more romantic or sexual; makes it easier to have sex)” and that “marijuana helps people get along better with others and it can help you feel more sexual (talk more; feel more romantic).” Responses ranged from 1 (*disagree strongly*) to 5 (*agree strongly*). These single items came from the Alcohol Expectancy Questionnaire–Adolescent, Brief (Stein et al., in press) and the Marijuana Effect Expectancy Questionnaire–Brief (Torrealdy et al., in press).

Sexual risks in past 12 months—Participants were asked how many times in the past months (before their incarceration) they (a) had sex with someone they did not know well, (b) had sex with someone they did know well, and (c) had sex without a condom or with an intravenous drug user. All participants denied having sex with an intravenous drug user, so the third item was taken to indicate sex without a condom.

Substance use in conjunction with sexual risk behaviors—Participants were asked to indicate the number of times that they engaged in each of the sexual risk behaviors described above while using (a) alcohol and (b) marijuana.

Data Analysis Plan

For each sexual risk behavior, proportions of the number of times that each occurred in conjunction with alcohol and marijuana were calculated to describe the sample and to make comparisons between substances and between sexual behaviors. Logistic regression analyses were conducted to determine variables (demographic and substance related) that were significantly associated with condom nonuse that involved alcohol and marijuana. Outcomes for these analyses were coded as condom nonuse that “never” involved each substance

compared with all other responses. Analyses were conducted using SPSS 11.5 (SPSS for Windows).

Results

Description of Sample

For details of demographic and sexual behaviors of the study participants, see Table 1. In the 12 months before their incarceration, 52.1% had sex with someone they did not know well, 95.2% had sex with someone they did know well, and 53.3% reported having sex without a condom. Eighty-five percent of the sample reported using alcohol in the past year, with a median of 30 days on which alcohol was consumed, whereas 93.7% reported marijuana use, with a median of 263 days on which marijuana was used.

Co-Occurrence of Sexual Behaviors and Substance Use

For a detailed report of co-occurrence of sexual behavior and substance use, see Table 2. For all three sexual risk behaviors, marijuana use was more common than was alcohol use. In conjunction with sex with someone not known well, 63.2% of the adolescents reported always using marijuana versus 40.2% who always used alcohol. For sex with someone known well, 34.6% always used marijuana and 6.9% always used alcohol. When having sex without a condom, the figures were 46.1% and 14.6%, respectively. Fewer adolescents reported always using substances (either alcohol or marijuana) in conjunction with what might be considered a “lower risk” sexual behavior (sex with someone known well) than with the higher risk behaviors of sex with someone not known well and sex without a condom (see Table 2).

Variables Associated With Condom Nonuse Involving Alcohol and Marijuana

Logistic regression analyses were conducted to determine which demographic and substance-use variables were associated with substance use (alcohol and marijuana, separately) in conjunction with condom nonuse in the past 12 months. Correlates were age, mother’s educational attainment, number of dependence symptoms, and substance-related sexual expectancies. In one analysis, the dependent variable was sex without a condom that never involved alcohol versus condom nonuse that sometimes/always involved alcohol. In the other analysis, the dependent variable was condom nonuse that never involved marijuana versus nonuse that sometimes/always involved marijuana.

The only variable that was significantly associated with condom nonuse that involved alcohol was the number of alcohol-dependence symptoms (see Table 3). For condom nonuse involving marijuana use, significant associations were found for both the number of marijuana-dependence symptoms and marijuana-related sexual expectancies.

Discussion

This study evaluated the co-occurrence of sexual behavior and substance use among a sample of incarcerated adolescents. The finding that marijuana use is far more commonly reported in conjunction with sexual behaviors than is alcohol use is consistent with other studies that have found elevated sexual risk in the presence of marijuana use compared with alcohol use (Castrucci & Martin, 2002; Kingree et al., 2002). Our findings also are consistent with previous work that found greater substance use in conjunction with sexual behaviors with casual sexual partners (i.e., those not known well) compared with primary sexual partners (i.e., those known very well; Misovich, Fisher, & Fisher, 1997). The fact that there were differences in the proportion of sexual risks that involved substances between not well-known and well-known sexual partners suggests that it is not merely owing to greater marijuana use, in general, than alcohol use that influences sexual risk decision making.

Our findings regarding variables associated with substance use in conjunction with condom nonuse illuminate the differences in potential intervention strategies that might be useful for those who use alcohol versus those who use marijuana. Given that the number of dependence symptoms was associated for both alcohol and marijuana, it is clear that sexual risk reduction in this high-risk group will require a focus on reducing substance use in general. For marijuana users, specifically, a focus on changing marijuana-related sexual expectancies may be fruitful in reducing condom nonuse that involves the use of marijuana.

Interpretation of our study's findings should take into consideration some limitations. The data collected were primarily from self-reports and may have been influenced by social desirability or an attempt to inflate and/or minimize report of sexual and/or drug use behaviors. However, interviewers were specially trained to assure participants' confidentiality, and interviews were conducted in confidential, unmonitored settings, both inside the facility and within the community. Recent research on the accuracy of adolescents' reports of sexual behavior indicates good accuracy over moderate periods of time (e.g., 3 months) and using face-to-face interviewing (Durant & Carey, 2000; Jaccard, McDonald, Wan, Dittus, & Quinlan, 2002). Similarly, although self-report of substance use is also subject to underreporting/overreporting, it is one of the most sensitive indicators of substance use. Evidence generally supports accuracy of self-reports (Babor, Webb, Burleson, & Kaminer, 2002). Teens appear to report more misbehaviors than their parents report for them and to self-report more marijuana use than is detected in urinalysis (Dennis et al., 2002).

We acknowledge that our measures of sexual risk behaviors may be oversimplified and fail to capture differences in sexual risk behavior that have been found to be influenced by sexual relationship contexts (Corbin & Fromme, 2002; Katz, Fortenberry, Zimet, Blythe, & Orr, 2000; Rosengard et al., 2001; Rosengard, Adler, Millstein, Gurvey, & Ellen, 2004). For example, we did not assess how frequently condoms were used with partners who were known well or not known well separately. We must also acknowledge that our study used a cross-sectional design, and therefore, we cannot determine causality between sexual risk behaviors and substance use among our sample. Finally, ours is a nonrandom convenience sample of adolescents entering a specific juvenile correctional facility and included few female participants; results may not generalize to adolescents incarcerated in other facilities or geographical locations and may not extend to all incarcerated female juveniles.

Despite these limitations, finding that sexual risk behaviors among incarcerated adolescents involve alcohol and marijuana is useful in developing targets for substance use and sexual risk-reduction interventions. Findings from the larger study, which examined the impact of motivational enhancement therapy on incarcerated adolescents' engagement in substance use treatment and sexual and substance use treatment outcomes, indicate that such strategies can succeed in reducing the number of sexual risk behaviors that involve substance use (Rosengard et al., 2005).

Further research ought to focus efforts on reducing sexual risks in general and focus specifically on the co-occurrence of substance use and sexual behavior. Periods of incarceration represent opportunities to intervene with juvenile detainees in reducing behaviors that affect their own health and the health of those with whom they interact in the community.

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Table 1Description of Sample (*N* = 167)

Variable	<i>M</i> (<i>SD</i>) or <i>n</i> (%)
Demographics	
Age	17.1 (1.1)
Male	150 (87.3%)
Female	17 (9.7%)
Race/ethnicity	
African American	50 (29.9%)
Caucasian	55 (32.9%)
Hispanic/Latino	49 (29.3%)
Other	13 (7.8%)
Criminal history	
Number of prior detentions (records)	2.47 (3.4)
Number of prior incarcerations (records)	0.58 (0.8)
Mother/female caretaker's highest education (median) ^a	3.00
Parental incarceration history	
Neither incarcerated	34 (20.4%)
Both incarcerated	25 (15.0%)
One parent incarcerated	91 (54.5%)
Unable to determine	17 (10.2%)
Substance-related variables	
Number of dependence symptoms	
Alcohol	2.05 (0.14) (range = 0–7)
Marijuana	3.25 (0.12) (range = 0–6)
Sex-related substance expectancies ^b	
Alcohol	2.99 (0.11)
Marijuana	3.42 (0.09)
Risk behavior	
Sexual risks in past 12 months	
Ever had sex with someone you didn't know well (yes)	87 (52.1%)
Ever had sex with someone you knew well (yes)	159 (95.2%)
Ever had sex without a condom (yes)	89 (53.3%)
Substance use in past 12 months	
Frequency of alcohol use (median)	30 days
Frequency of marijuana use (median)	263 days

^a Mother/female caretaker's highest education: 1 = grade school up to eighth grade; 2 = some high school; 3 = graduated from high school; 4 = general equivalency diploma; 5 = some college; 6 = graduated from college.

^b 1 = disagree strongly; 2 = disagree somewhat; 3 = neither disagree or agree; 4 = agree somewhat; 5 = agree strongly.

Table 2
Substance-Related Sexual Risk Events in 12 Months Before Incarceration (N = 167)

	Sex With Someone Not Known Well (n = 87)		Sex With Someone Known Well (n = 159)		Sex Without a Condom (n = 89)	
	%	n	%	n	%	n
With alcohol						
Never	34.5	30	47.2	75	48.3	43
Sometimes	25.3	22	45.9	73	37.1	33
Always	40.2	35	6.9	11	14.6	13
With marijuana						
Never	19.5	17	19.5	31	24.7	22
Sometimes	17.3	15	45.9	73	29.2	26
Always	63.2	55	34.6	55	46.1	41

Table 3Variables Associated With Substance Use and Condom Nonuse in 12 Months Before Incarceration ($n = 89$)

	B	SE	P
Condom nonuse involving alcohol			
Age	.403	.251	.108
Mother's educational attainment	.044	.257	.086
Number of alcohol dependence symptoms	.614	.160	.000
Sex-related alcohol expectancy	.241	.180	.179
Condom nonuse involving marijuana			
Age	.317	.263	.228
Mother's educational attainment	.300	.302	.321
Number of marijuana-dependence symptoms	.565	.195	.004
Sex-related marijuana expectancy	.513	.235	.029