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Alcohol Use and HIV Risk among Juvenile Drug Court Offenders

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Abstract

Juvenile drug courts (JDC) largely focus on marijuana and other drug use interventions. Yet, JDC offenders engage in other high-risk behaviors, such as alcohol use and sexual risk behaviors, which can compromise their health, safety and drug court success. An examination of alcohol use and sexual risk behaviors among 52 male substance abusing young offenders found that over 50% were using alcohol, 37% reported current marijuana use and one-third of all sexual intercourse episodes were unprotected. After accounting for recent marijuana use, the odds of a juvenile having vaginal or anal sex was 6 times greater if they had recently used alcohol. Juvenile drug courts may benefit from delivering alcohol and sexual risk reduction interventions to fully address the needs of these young offenders.

Keywords

Alcohol use; marijuana; juvenile drug courts; HIV; sexual risk; juvenile offenders

Adolescent delinquency is robustly associated with substance abuse (Becker & Grilo, 2006; Dierker et al., 2007; Rowe et al., 2008) and substance use problems are tied to increases in total service costs among delinquent youth (Hussey et al., 2008). The complicated influence of substance use and abuse on involvement in the justice system has resulted in increasing

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utilization of drug court diversion programs (Brown, 2010; Henggeler, 2007). Common diversion strategies implemented in Juvenile Drug Courts (JDC) include urine testing for drug use as well as involvement in substance use treatment programming. However, the mechanism whereby drug courts may impact youth outcomes is unknown and early research has suggested that initial gains of decreased recidivism rates and substance use may be difficult to maintain (Belenko, 2002).

Substance use clusters with a number of co-occurring risky behaviors (i.e., unprotected sexual activity, truancy) that serve to maintain problem behavior in youth (Jessor & Jessor, 1977). Many of these risk behaviors may continue even as close drug court monitoring may be associated with decreases in substance use. Even within substance use/abuse outcomes, attention to alcohol use within drug court programs may be limited as a function of practicalities of monitoring (i.e., additional expense to already costly illicit drug screening) and/or informal perceptions of the relative "seriousness" of alcohol use as compared with other illicit substances. Therefore, research aimed at more fully characterizing the interplay of concomitant risk behaviors in JDC youth may help to elucidate the ways in which drug courts can impact juvenile outcomes thereby further informing JDC treatment development efforts.

One significant concomitant of substance use among youth involved with juvenile justice is engaging in sexual risk behaviors. An estimated 15% of male and 30% of female juvenile detainees are infected with a sexually transmitted infection (STI) at any given time (Kingree, Braithwaite & Woodring, 2000). Other studies of non-incarcerated juvenile arrestees estimated that males have chlamydia and gonorrhea rates of 8%–10.5% whereas females have higher rates, ranging from 12%–19% for either or both infections (Belenko et al., 2008; Dembo, Belenko, Childs & Wareham, 2009). Studies show that sexual risk behaviors (e.g., earlier sex initiation, unprotected sex acts, sex while using substances) and associated differences in attitudes about sex are elevated as a function of arrest history and delinquency (Harwell, Trino, Rudy, Yorkman & Gollub, 1999; Rowe, Wang, Greenbaum & Liddle, 2008; Tolou-Shams et al., 2007). Juvenile-justice involved youth with substance use disorders, including alcohol and marijuana use disorders, engage in significantly more sex risk behaviors than youth without substance use disorders (Harwell et al., 1999; Kingree, Braithwaite & Woodring, 2001; Malow, Devieux, Rosenberg, Samuels & Jean-Gilles, 2006; Teplin et al., 2005) and up to 41% of juvenile detainees report engaging in unprotected sex while drunk or high (Teplin et al., 2005).

Marijuana use has been linked to episodes of unprotected sex (Barthlow, Horan, DiClemente & Lanier, 1995; Kingree et al., 2000; Shafer et al., 1993) and STIs (Hendershot, Magnan & Bryan, 2010). Furthermore, high rates of negative affect, impulsivity and sensation-seeking have been associated with both greater alcohol and marijuana use and unprotected sexual activity among drug-abusing adolescent offenders (Devieux et al., 2002; Lucenko, Malow, Sanchez-Martinez, Jennings & Devieux, 2003; Robbins & Bryan, 2004). A more recent investigation of juvenile detainees found that the associations between alcohol use and sexual risk behaviors differed across subgroups of youth, as predicted by personal attributes, such as high self-esteem, gender, age, and relationship status (Schmiege, Levin, Broaddus & Bryan, 2009). Schmiege and colleagues' study (2009) reinforced not only the importance of exploring the specific relationship between alcohol use and sexual risk behaviors among juvenile offenders, but also the importance of identifying individual-level correlates of this association.

Despite the widespread use of both marijuana and alcohol, documented high rates of sexual risk behaviors and the co-occurrence of these risk behaviors in juvenile detainee populations, juvenile drug courts have rarely incorporated alcohol-specific and/or sexual risk

reduction interventions into their programs. Of the aforementioned studies, most have focused on examining the associations between alcohol use, marijuana use and sexual risk behaviors among detained or incarcerated juveniles. While some studies have focused on juvenile arrestees, to our knowledge, no study has examined alcohol or marijuana use in relation to sexual activity among substance-involved, non-incarcerated juveniles participating in a JDC program. Additionally, no study has examined the relative influence of alcohol use versus marijuana use on sexual risk behaviors in this juvenile offending population. Understanding rates of alcohol use, marijuana use and sexual risk behaviors and their co-occurrence among this specific juvenile diversion population may help inform the development of other (i.e., besides marijuana) relevant risk reduction interventions for juvenile drug court programs.

The goal of the present exploratory study is therefore to conduct a cross-sectional examination of drinking, marijuana use, and sexual risk behaviors reported by youth actively participating in a Juvenile Drug Court Program (JDC). Specifically, we compared youth reporting alcohol use and/or marijuana use while enrolled in the JDC versus youth denying use of any substances during JDC enrollment on other substance use measures and sexual risk behaviors and traits supported in the literature as influencing a range of risk behaviors in youth (i.e., sensation-seeking and impulsivity). Although the literature may suggest that alcohol and marijuana use are both related to sexual risk behavior among juvenile offenders, our experience in talking to JDC study participants (i.e., when running groups) and their case managers (i.e., when they make study referrals) regarding juveniles' alcohol use and risky sexual situations led us to hypothesize that endorsement of drinking during drug court enrollment would be associated with sexual risk behaviors and sensation-seeking and impulsivity traits whereas marijuana use would not.

METHOD

Participants

Participants were recruited from the Juvenile Drug Court (a diversionary as well as post-plea, post-adjudication specialty court for nonviolent adolescents) to participate in a pilot adolescent-only HIV prevention intervention (see Tolou-Shams et al., 2011 for intervention outcomes). One hundred nine adolescents were approached for research participation by study staff unaffiliated with the court. Ninety-four adolescents were enrolled (84 males, 10 females) and 72 adolescents (12–19 years old) provided baseline data on substance use (alcohol, marijuana and/or other drugs) and sexual risk behavior. Given the small percentage of females enrolled, these analyses were limited to males only (n=62) who self-reported on their baseline use of alcohol and marijuana (n=52); 10 participants' substance use data were either missing or provided inconsistent response patterns. Analyses of sexual risk behaviors were limited to the subgroup of those recently sexually active (n=33). The Rhode Island Hospital Institutional Review Board approved all study protocols. Informed consent was obtained from those who were 18 or 19 years old; assent and parental consent were obtained for those under 18 years of age. Audio Computer-Assisted Self-Interviews (ACASI) on laptop computers were completed at a site separate from the JDC to ensure privacy. Assurances of confidentiality were provided for the participants including notifying them that a Certificate of Confidentiality was obtained. In addition, no drug court staff were involved in the data collection process or had knowledge of whether juveniles in their caseload were completing computerized research questionnaires.

Self-Report Measures

Demographics included adolescent age, school enrollment status (drop-out versus enrolled), race, ethnicity, school lunch price (reduced or free versus full price), and length of time in Juvenile Drug Court program.

Recent *sexual risk behavior (past 90 days)* was assessed using a pattern of self-report items found reliable and sensitive to change in other adolescent populations (Donenberg, Emerson, Bryant, Wilson & Weber-Shifrin, 2001), including having ever engaged in sexual intercourse, engaging in recent (past 90 days) sexual activity, proportion of vaginal and/or anal intercourse acts protected by a condom, whether the participant or his/her partner used substances during sex ("never" versus "any use") and total number of sexual partners. A single item assessing whether a condom was used at last sexual intercourse was also included.

Sensation seeking was assessed by an 11-item scale of Impulsive Decision Making, e.g., "I don't even think about it, I just do it" (α=0.68;Donohew et al., 2000), a 16-item General Sensation Seeking sub-scale, e.g., "I would like to have new and exciting experiences, even if they are illegal" (α=0.73) adapted from Zuckerman, Eysenck and Eysenck (1978) and an 11-item scale of Sexual Sensation Seeking, e.g., "I like wild 'uninhibited' sexual encounters" (α=0.89; Kalichman & Rompa, 1995). Higher scores indicated greater sensation seeking and impulsivity. Median splits of scales were calculated (high versus low scale scores) for logistic regression analyses to assist with ease of results interpretation. High scores for sensation seeking, sexual sensation seeking and impulsivity were determined by median scores of greater than or equal to 17, 21, and 26, respectively.

Recent *substance use (past 30 days)* included number of days alcohol was used, the number of drinks per episode, and number of days marijuana was used.

History of *substance use* included whether the participant had ever used alcohol prior to the JDC program, and whether they drank alcohol during the 30 days prior to JDC enrollment. Lifetime use of other drugs (e.g., methamphetamines, cocaine) was also collected.

Data analysis

Adolescents were categorized as drinkers if they reported drinking alcohol at least once during the 30 days prior to baseline (n=27) and as non-drinkers if they denied any alcohol use in the same time period (n=25). Similarly, adolescents were grouped as marijuana users if they reported using marijuana at least once during the 30 days prior to baseline (n= 19) and as non-marijuana users if they denied any marijuana use in the same time period (n=33). The sample size precluded the statistical ability to conduct meaningful and sound 4-way group comparisons of drinkers only (n=13), marijuana users only (n=4), co-occurring marijuana users and drinkers (n=15) and non-users of either alcohol or marijuana (n=20). Thus, separate t-test and a series of independent logistic regression analyses (to derive unadjusted Odds Ratios) were conducted to determine differences between drinkers/non-drinkers and marijuana/non-marijuana users on measures of demographics, sexual risk behaviors, substance abuse, sensation seeking and impulsivity. Alcohol use and marijuana use (and significant covariates of substance use and/or sexual risk behaviors) were then entered into a multivariate logistic regression model to further assess the associations between alcohol and marijuana use and recent sexual risk behaviors.

RESULTS

Of 52 youth (M age 16.0 years; SD=1.45), the majority identified as Caucasian (71%), 18% as African American, 2% as Native Hawaiian/Pacific Islander, 2% as Asian, and 7% as bi/

multiracial. Latinos comprised 17% of the sample. Nineteen percent had dropped out of school (n=10) and of the remaining 42 adolescents enrolled in school, 40% reported receiving free or reduced lunch at school. The average length of JDC enrollment at baseline assessment was 4.00 months (range 0–15; only one juvenile was enrolled in drug court for less than one month at time of baseline assessment). Adolescent drinkers were older than non-drinkers ($t_{(52)} = 2.22$, $p < .05$), but there were no other demographic differences between drinkers and non-drinkers. There were also no demographic differences between marijuana and non-marijuana users.

Table 1 provides unadjusted odds ratios and t-test statistics for drinkers and marijuana users. Drinkers were more likely to have ever been sexually active as well as more likely to have been sexually active in the past 90 days than non-drinkers. There were no group differences in condom use at time of last sexual intercourse, number of partners, or substance use with sex. Compared to non-drinkers, drinkers reported a history of heavier alcohol use (the 30 days prior to entering drug court) and more frequent recent marijuana use. Drinkers endorsed an average of 6 drinking occasions in the past 30 days and an average of 6 drinks per drinking occasion. No differences emerged between drinkers and non-drinkers on measures of general and sexual sensation-seeking or impulsive decision-making.

In terms of marijuana use, marijuana users scored higher on a measure of sexual sensation-seeking than non-marijuana users, but there were no group differences on any sexual risk behavior measures. Alcohol use was more prevalent among marijuana users, particularly prior to enrollment in drug court. The logistic regression model including alcohol and marijuana use (and age which was significantly associated with alcohol use in bivariate analyses) as predictors of vaginal or anal sex was significant [Model X^2 (2, 52)= 9.70, p = .008]. Even when accounting for recent marijuana use, young offenders recently using alcohol had six times the odds of having vaginal or anal sex as those young offenders not recently drinking (alcohol AOR= 5.98, p = .02 versus marijuana AOR = 1.15, p = .86).

DISCUSSION

These exploratory findings suggest that a substantial proportion of adolescents enrolled in a JDC treatment program endorse frequent recent, heavy use of alcohol despite being enrolled in a court-monitored program. Consistent with hypotheses, when examining the effects of alcohol and marijuana use on sexual activity, alcohol use appears to be associated with recent sexual activity for JDC offenders whereas marijuana was not. Although youth who are using marijuana while in the JDC endorse greater sexual sensation-seeking traits, they did not report higher rates of sexual activity or endorse greater sexual risk behaviors. Contrary to hypotheses, alcohol use was not directly associated with unprotected sexual activity or substance use during sex; however, these data suggest that, despite court monitoring, these alcohol-using adolescents are at greater risk for HIV and other STDs by virtue of the greater prevalence of sexual activity and continued substance use. In addition, one-third of all sexual intercourse episodes were unprotected for adolescent drinkers. These adolescents also appear to have a history of alcohol use, perhaps suggesting that alcohol is not initiated while in drug court as a “substitute” for marijuana but rather may be part of a chronic drinking pattern started prior to legal involvement. In fact, adolescent drinkers endorsed more frequent, recent marijuana use than non-drinkers implying that these youth may be more frequent users of multiple substances and therefore require more in-depth and comprehensive intervention from the court and associated providers.

Many drug court programs employ or refer out to successful evidence-based interventions, such as those arising out of the Cannabis Youth Treatment Studies (CYT; Diamond, Leckrone, Dennis & Godley, 2006) that use motivational enhancement and interviewing

techniques solely to reduce marijuana use. While engaging in some alcohol use is not an explicit exclusion criteria for such interventions, the intervention content is not geared toward reducing alcohol use nor is it geared toward addressing polysubstance use or sexual risk behaviors. Our data suggest that youth involved in juvenile drug court treatment programs may benefit from a detailed screening of alcohol use, as adolescents may not meet criteria for alcohol abuse or dependence yet still engage in significant heavy drinking episodes (on average, greater than 5 drinks per episode) that could go unnoticed if the treatment emphasis is on solely reducing marijuana use. In addition, given that these youth are endorsing frequent, heavy alcohol use while enrolled in the juvenile drug court program, routine screening of alcohol use (e.g., through routine breathalyzers) throughout their drug court involvement may be central to reducing risk. Juvenile drug court treatment programs may have better outcomes if greater emphasis occurs on other specific alcohol-related interventions as well as integrated treatments that include sexual risk-reduction content.

Study Limitations and Conclusion

Limitations of the current study include a small sample size which may have attenuated power to detect group differences between alcohol and marijuana users as well as hindered our ability to do 4-way comparisons, which would have given us more detailed information about the relationship between substance use and sexual risk behavior for this population. As such, these findings must be considered preliminary and require replication with larger and more diverse samples. Understanding these associations among female substance abusing offenders is also an important direction for future research. Nevertheless, this pilot study helps to inform the field about initial directions for interventions for juvenile drug court offenders that have traditionally been focused on reducing marijuana use with alcohol use and associated risk behaviors, such as sexual activity, as peripheral to that goal. Ultimately, further research is needed to examine whether alcohol use (1) is a unique contributor to other risk behaviors for this court-involved population and (2) merits greater attention to improve outcomes and decrease cost and burden to family, school, community, public health and legal systems.

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Table 1

Juvenile Drug Court Offenders' Group Comparisons on Substance Use and Sexual Risk-Taking (N= 52)

Variable	Drinkers (n=27)	Non-Drinkers (n=25)	OR[a] or t	95% CI	Marijuana users (n=19)	Non-Marijuana users (n=33)	OR[a] or t	95% CI
	M (SD) or N (%)	M (SD) or N (%)			M (SD) or N (%)	M (SD) or N (%)		
Substance Use (past 30 days and lifetime)								
Alcohol use 30 days prior to JDC (% yes)	23 (85%)	5 (20%)	23.00***	5.42, 97.55	14 (74%)	14 (43%)*	3.8*	1.11, 13.03
Alcohol use (# days)	5.81 (6.55)	_	_	_	4.60 (3.38)	7.33 (9.07)	$t_{(25)}$= 1.08	_
# of drinks per occasion	5.63 (3.92)	_	_	_	6.43 (4.70)	4.77 (2.80)	$t_{(25)}$= 1.12	_
Marijuana Use (#days)	8.48 (11.13)	2.25 (7.21)	$t_{(49)}$= 2.40*	_	15.72 (10.94)	_	_	_
Cocaine Use (ever; % yes)	5 (19%)	1 (4%)	0.18	.02, 1.69	2 (11%)	4 (13%)	1.14	.19, 6.95
Sexual risk behavior and traits[b]								
Ever sexually active (%yes)	24 (89%)	16 (64%)	4.5*	1.05, 19.22	16 (84%)	24 (73%)	2	.47, 8.54
Sexually active (past 90 days)	22 (82%)	10 (40%)	6.60**	1.89, 23.23	14 (74%)	18 (55%)	2.33	.68, 7.98
Last time had sex used condom (% yes)	17 (65%)	15 (83%)	0.39	.09, 1.66	10 (63%)	22 (79%)	0.46	.12, 1.76
Number of partners	2.23 (1.60)	2.00 (2.21)	$t_{(30)}$= .33	_	2.07 (1.54)	2.22 (1.99)	$t_{(30)}$= 0.23	_
Substance use during sex (self; % yes)	15 (68%)	5 (50%)	2.14	.46, 9.90	11 (79%)	9 (50%)	3.67	.76, 17.73
Substance use during sex (partner; % yes)	7 (32%)	2 (20%)	1.87	.31, 11.19	4 (29%)	5 (28%)	1.04	.22, 4.91
General sensation-seeking[c]	18.07 (3.12)	16.12 (4.88)	1.89	.62, 5.65	18.11 (3.67)	16.58 (4.35)	1.87	.60, 5.85
Sexual sensation-seeking[c]	23.97 (8.34)	19.08 (6.08)	2.22	.73, 6.78	25.16 (8.58)	19.58 (6.55)	6.44*	1.82, 22.76
Impulsivity[c]	25.41 (4.10)	24.76 (3.65)	1.2	.40, 3.62	25.53 (4.61)	24.85 (3.42)	1.94	.62, 6.12

*p<.05,

**p<.01,

***p<.001

[a]OR= odds ratios; values represent unadjusted OR's

[b]N's for some variables, e.g., number of partners, is reduced to include only those recently sexually active adolescents (*n* = 33)

[c]OR values are based on median splits of scales to assist with interpretation