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Factors Promoting and Impeding HIV Testing among Adolescents in Juvenile Drug Court

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Abstract

A randomized pilot study compared Risk Reduction Therapy for Adolescents (RRTA) to treatment as usual (TAU); the present study examined whether intervention condition influenced HIV testing, barriers to HIV testing, and HIV communication among adolescents involved in juvenile drug courts overall and by sexual experience. Of 105 participants, 13.3% had HIV pre-treatment testing, whereas 27.2% (of 92 participants) indicated follow-up HIV testing. Sexually active youth in RRTA (but not in TAU) reported a significant increase in HIV testing over time. RRTA demonstrated the greatest increase in HIV testing (8% pre-treatment to 44% follow-up), but not significantly more than TAU. Barriers to HIV testing were observed at consistent rates among adolescents who did not get tested for HIV within either treatment condition. Adolescents in both conditions reported increased communication about HIV at follow-up. HIV testing was positively associated with perceived need for testing and testing resource accessibility. Stigma remained a barrier to testing at follow-up for RRTA (22%) and TAU (21%) participants. The RRTA intervention increased HIV testing and both interventions increased adolescents' communication about HIV; however, barriers persisted, warranting treatment modification.

Keywords

Barriers; parent-child communication; risky behavior; sexual active; substance use; youth

Adolescents with substance use are up to eight times more likely to acquire sexually transmitted infections (STI) than their peers without substance use (Staras, Tobler, Maldonado-Molina, & Cook, 2011). This increased risk is triggered in part by elevated rates of risky sexual behavior following substance use (Belenko & Dembo, 2003). Despite intervention efforts, barriers to HIV/STI testing remain (Maugen, Armistead, & Kalichman, 2000), including limited access to testing resources (Tebb, Pauku, Paidhungat, Gyamfi, & Shafer, 2004) and communication with trusted adults about risky sex and HIV/STI (Sutton, Lasswell, Lanier, & Miller, 2014; Tebb et al., 2004). Further, despite over one-third of

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adolescents in the United States reporting substance abuse (Moss, Chen, & Yi, 2014), no known interventions for youth with substance use have comprehensively included or measured relevant treatment targets for this population, like HIV/STI testing.

Risk Reduction Therapy for Adolescents (RRTA) is a family-focused intervention aimed at reducing sexual risk and substance use behaviors and increasing HIV/STI testing among adolescents with substance use problems (McCart, Sheidow, & Letourneau, 2014). In RRTA, select barriers to HIV testing are targeted by increasing caregiver and adolescent knowledge and communication about HIV and by assisting families in identifying testing resources (Letourneau, McCart, Sheidow, & Mauro, 2017). The present study is a descriptive report of factors promoting and impeding HIV testing and communication about HIV among adolescents who participated in RRTA or treatment as usual (TAU) in a juvenile drug court setting. Further, we examined whether randomly assigned treatment condition (TAU versus RRTA) and sexual experience (i.e., having had sexual intercourse) influenced HIV testing and communication about HIV. The following two research questions were tested: (1) does RRTA increase HIV testing compared with TAU and (2) does sexual experience moderate the effect of the RRTA compared with TAU on HIV testing?

Method

RRTA integrates an evidence-based treatment for adolescent substance use (contingency management; Henggeler, Cunningham, Rowland, & Schoenwald, 2011), with an evidence-informed HIV/STI risk reduction protocol (McCart, Sheidow, & Letourneau, 2009). Briefly, RRTA was delivered to youth-caregiver dyads by one of two Master's-level study therapists. Treatment sessions occurred weekly for 24 sessions, with sessions lasting 60–90 minutes each; altogether RRTA was completed within 6–7 months. RRTA is comprised of both CM and sexual risk reduction. The TAU condition included a group intervention (4 days per week for 12 weeks, 1–2 days a week for another 12 weeks) delivered by state and privately-funded providers (Letourneau et al., 2017). Data for the current study were collected from 2009–2012; our sample of 105 had sufficient power for planned analyses, similar to Letourneau et al. (2017).

At baseline, and at 6- and 12-month follow-up (hereafter referred to as follow-up), participants provided information about HIV testing (e.g., reasons for testing, barriers to testing), and with whom they communicated about HIV (measured using HIV Counseling and Testing Questionnaire modified from Genberg et al., 2008). Participants also provided information on sexual experience, measured using a sexual risk behavior survey (Jemmott 3rd, Jemmott, & Fong, 1992) at baseline and follow-up. RRTA beta cases were excluded ($n=8$). Sample and procedural details, including a CONSORT figure, are described more comprehensively in Letourneau et al. (2017). A series of Three-Way Chi-Square Statistics tested for differences on variables of interest by treatment condition (RRTA, TAU) and by sexual experience (i.e., absent, present) over time. Fisher's Exact Test was used for comparisons including fewer than five observations.

Results

Participants were 105 adolescents (female $n=20$; age $M=14.9$ years) from two juvenile drug courts operating in the southeastern United States and randomized to RRTA ($n=48$) or TAU ($n=57$).¹ Regarding race/ethnicity, 21.0% identified as White Latinx/Hispanic, 5.7% as Black Latinx/Hispanic, 33.3% as White, and 39.1% as Black; most identified as straight/heterosexual (89.1%). The most commonly reported substances among participants were alcohol, marijuana, and polysubstance use (Letourneau et al., 2017).

At baseline, 14 (13.3%) adolescents reported lifetime HIV testing, whereas 25 (27.2%) adolescents reported HIV testing at follow-up. Increased prevalence of HIV testing was associated with perceived need for testing ($p=.047$; Table 1). RRTA did not increase HIV testing rates over time significantly more than TAU. No changes in barriers to HIV testing were observed among adolescents who did not get tested for HIV within either treatment condition. RRTA consistently improved communication about HIV, and improvements were consistently larger than TAU; however, only one significant treatment effect was observed on communicating about HIV for any category. Specifically, RRTA produced significantly more within-family communication than TAU (Table 1). Youth in both conditions reported increased communication with healthcare professionals.

HIV testing was also examined by sexual experience and by intervention condition. Not surprisingly, increases in HIV testing were only observed among sexually active adolescents (Table 2). The effect of RRTA did not consistently differ significantly among sexually experienced and sexually inexperienced participants compared with TAU. Relative to youth reporting no sexual intercourse, sexually active youth reported greater access to testing resources ($p=.015$) and greater perceived need for testing ($p=.037$). Sexually active youth in RRTA (but not in TAU) reported a significant increase in HIV testing over time (from 8% baseline to 44% follow-up). Regarding HIV testing barriers, fewer sexually active adolescents in RRTA reported no perceived need for testing follow-up than in TAU ($p=.001$). In contrast, there was no meaningful change in reporting of specific stigma-related concerns (i.e., worrying about what others think, feeling embarrassed) and doubting confidentiality of results by sexual experience or by intervention condition. Sexual experience did not significantly influence communication about HIV (Table 2).

Discussion

This study aimed to examine factors promoting and impeding HIV testing, and to assess with whom adolescents spoke about HIV, comparing RRTA and TAU youth in juvenile drug court over time. Broadly speaking, findings from the present study suggest sexually active adolescents who use substances may benefit from intervention efforts that increase adolescent-caregiver communication about HIV while also focusing on: 1) the cost and confidentiality of HIV testing and 2) reducing barriers to HIV testing. Accordingly, interventions that target adolescents with substance use should also focus on reducing risky sexual behavior.

HIV testing rates almost doubled over the study period. HIV testing rates did increase more over time in the RRTA condition relative to TAU, although this difference did not reach statistical significance. Yet, among sexually active youth, RRTA was associated with a greater increase in HIV testing than TAU. Providing an intervention that encourages HIV testing (i.e., RRTA) appeared to be effective in increasing testing rates by reducing perceived barriers to HIV testing (Maguen et al., 2000; Tebb et al., 2004).

Additionally, sexual experience did not consistently influence HIV testing among youth in RRTA versus TAU, meaning the interaction of treatment group by sexual experience did not consistently influence HIV testing. Sexually active adolescents indicated increased accessibility and perceived need for testing as predominant reasons for getting tested during treatment. Sexually active youth in RRTA reported that need (e.g., healthcare provider recommendation) was associated with their HIV testing, consistent with one of RRTA's principle goals.

While many barriers were addressed by both interventions, stigma did not decline, suggesting neither intervention effectively addressed stigma related to HIV testing. This may be due to RRTA and TAU not directly targeting stigma. Additionally, approximately half of sexually active youth reported no perceived need for HIV testing, and this rate remained stable. Attitudinal barriers and stigma remain important targets for future intervention.

RRTA was associated with larger increases in communication about HIV than TAU, regardless of sexual experience. Effects were strongest for family members and healthcare professionals, and RRTA increased HIV communication within families significantly compared with TAU. Thus, RRTA may improve communication about HIV, a practice associated with less risky sexual behavior (Sutton et al., 2014). Indeed, sexually active adolescents in RRTA experienced a substantial increase in communication with family members after baseline.

The present study had a small sample size, and recruited participants from two juvenile drug courts, so findings may not generalize to other samples. Further, participants predominantly identified as male and heterosexual. Future research efforts should focus on implementation and evaluation of interventions that encourage and facilitate HIV testing in larger samples, particularly among vulnerable populations, such as sexual minorities reporting sexual risk (Bouris, Hill, Fisher, Erickson, & Schneider, 2015). Finally, RRTA demonstrated a number of successes in reducing barriers to HIV testing; nevertheless, stigma barriers remain despite RRTA's successes and are important future targets as well.

Conclusion

RRTA improved testing rates among sexually active youth, possibly through increased access to testing, changes in perceptions of the need to get tested for HIV, and increased communication within families about HIV. Taken together, findings suggest sexually active adolescents may benefit from enhanced family-focused intervention efforts that address both cost and confidentiality of testing results, and that target adolescent beliefs about not being

at risk. Further work is needed to reduce stigma associated with HIV testing among sexually active adolescents.

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References

- Belenko S, & Dembo R (2003). Treating adolescent substance abuse problems in the juvenile drug court. *International Journal of Law and Psychiatry*, 26(1), 87–110. doi:10.1016/s0160-2527(02)00205-4 [PubMed: 12554002]
- Bouris A, Hill BJ, Fisher K, Erickson G, & Schneider JA (2015). Mother–son communication about sex and routine human immunodeficiency virus testing among younger men of color who have sex with men. *Journal of Adolescent Health*, 57(5), 515–522. [PubMed: 26321527]
- Genberg BL, Kulich M, Kawichai S, Modiba P, Chingono A, Kilonzo GP, . . . Celentano DD (2008). HIV risk behaviors in Sub-Saharan Africa and Northern Thailand: Baseline behavioral data from project accept. *Journal of Acquired Immune Deficiency Syndromes*, 49(3), 309–319. doi:10.1097/qai.0b013e3181893ed0 [PubMed: 18845954]
- Henggeler SW, Cunningham PB, Rowland MD, & Schoenwald SK (2011). *Contingency management for adolescent substance abuse: A practitioner's guide*: Guilford Press.
- Jemmott J, 3rd, Jemmott LS, & Fong GT (1992). Reductions in HIV risk-associated sexual behaviors among black male adolescents: effects of an AIDS prevention intervention. *American Journal of Public Health*, 82(3), 372–377. [PubMed: 1536352]
- Letourneau EJ, McCart MR, Sheidow AJ, & Mauro PM (2017). First evaluation of a contingency management intervention addressing adolescent substance use and sexual risk behaviors: Risk reduction therapy for adolescents. *Journal of Substance Abuse Treatment*, 72, 56–65. [PubMed: 27629581]
- Maguen S, Armistead LP, & Kalichman S (2000). Predictors of HIV antibody testing among gay, lesbian, and bisexual youth. *Journal of Adolescent Health*, 26(4), 252–257. [PubMed: 10734272]
- McCart MR, Sheidow AJ, & Letourneau EJ (2009). Sexual risk reduction component of the Risk Reduction Therapy for Adolescents intervention Family Services Research Center, Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina.
- McCart MR, Sheidow AJ, & Letourneau EJ (2014). Risk Reduction Therapy for Adolescents: Targeting substance use and HIV/STI-risk behaviors. *Cognitive and Behavioral Practice*, 21(2), 161–175. doi:10.1016/j.cbpra.2013.10.001 [PubMed: 25419101]
- Moss HB, Chen CM, & Yi H.-y. (2014). Early adolescent patterns of alcohol, cigarettes, and marijuana polysubstance use and young adult substance use outcomes in a nationally representative sample. *Drug and Alcohol Dependence*, 136, 51–62. [PubMed: 24434016]
- Staras SAS, Tobler AL, Maldonado-Molina MM, & Cook RL (2011). Riskier sexual partners contribute to the increased rate of sexually transmitted diseases among youth with substance use disorders. *Sexually Transmitted Diseases*, 38(5), 413–418. doi:10.1097/olq.0b013e31820279a7 [PubMed: 21139514]
- Sutton MY, Lasswell SM, Lanier Y, & Miller KS (2014). Impact of Parent-Child Communication Interventions on Sex Behaviors and Cognitive Outcomes for Black/African-American and Hispanic/Latino Youth: A Systematic Review, 1988–2012. *Journal of Adolescent Health*, 54(4), 369–384. doi:10.1016/j.jadohealth.2013.11.004 [PubMed: 24388108]

Tebb K, Pauku M, Paidhungat M, Gyamfi A, & Shafer M (2004). Home STI testing: The adolescent female's opinion. *Journal of Adolescent Health*, 35(6), 462–467. doi:10.1016/s1054-139x(04)00068-0 [PubMed: 15581525]

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Table 1:

Factors that Promoted and Impeded HIV Testing among Youth in Juvenile Drug Court

	TAU		RRTA		χ^2 ^{&}	<i>p</i> ^{&}
	Baseline (<i>n</i> = 57)	Follow-up (<i>n</i> = 47)	Baseline (<i>n</i> = 48)	Follow-up (<i>n</i> = 45)		
Got Tested	8	11	6	14	0.69	.406
Access	4	8	2	10	0.01	.999
Need	1	3 ^{a*}	2	10 ^{a*}	4.81	.047
Perceived need	4	7	1	9	0.01	.999
Court mandated	3	1	3	0	1.33	.440
Did Not Get Tested	49	36	42	31	0.69	.406
No perceived need	26	20	25	23	2.52	.113
Not a priority	25	26	25	20	0.46	.498
Fear/stigma	17 ^{a†}	10	7 ^{a†}	10	0.16	.791
Doubt confidentiality	6	6	2	^	1.65	.270
Structural	14	12	12	6	1.66	.198
Talked with Someone	20	29	15	35	2.81	.094
Sexual partner	4	6	4	7	0.01	.946
Family member	11	11 ^{a*}	9	25 ^{a*}	7.23	.007
Friend or Teacher	10	8	8	14	1.08	.298
Health care professional	8	21	5	29	1.01	.314

Note. Participants could endorse multiple factors promoting or inhibiting testing. χ^2 values reported reflect total Three-Way Chi-Square Statistics. Values with the same superscript are statistically different comparing TAU and RRTA:

[†] = $p < .10$,

^{*} = $p < .05$;

[&] = Fisher's exact test used for cells with fewer than five cases. Access = free testing/easy access; Fear/stigma = afraid of needles, nervous about results, stigma about sexual partner's perceptions, stigma about other's perceptions, feeling embarrassed to get tested; Need = health recommendation/risky behavior; No perceived need = believe not at risk; Not a priority = didn't think to get tested, no time, not important; Perceived need = wanted to know/stop worrying; RRTA = Risk Reduction Therapy for Adolescents; Structural = don't know where to go, test cost, test site far; TAU = treatment as usual.

Factors that Promoted and Impeded HIV Testing and HIV Communication by Sexual Experience among Youth in Juvenile Drug Court

Table 2:

	No Sexual Intercourse				Sexual Intercourse				χ^2 & p
	TAU		RRTA		TAU		RRTA		
	Baseline (n=18)	Follow-up (n=12)	Baseline (n=23)	Follow-up (n=18)	Baseline (n=39)	Follow-up (n=35)	Baseline (n=25)	Follow-up (n=27)	
Got Tested	1	1	4	2 ^a	7	10	2	12 ^a	6.64 .012
Access	1	0	2	0 ^a	3	8	0	10 ^a	8.77 .015
Need	1	0	1	1	0	3	1	9	0.53 .505
Perceived need	1	0	1	0	3	7	0	9	6.06 .014
Court mandated	1	0	3	0	3	1	0	0	0.14 .999
Did Not Get Tested	17	11	19	16 ^a	32	25	23	15 ^a	6.64 .012
No perceived need	10	9 ^a	13	15 ^b	16	11 ^a	12	8 ^b	12.01 .001
Not a priority	7	6	10	9	18	20	15	11	3.61 0.67
Fear/stigma	4	1	2	4	13	9	5	6	2.77 .111
Doubt confidentiality	2	1	0	0	4	5	2	2	2.92 .130
Structural	4	4	4	3	10	8	8	3	0.02 .999
Talked with Someone	6	6	7	13	14	23	8	22	0.82 .366
Sexual partner	0	1	1	1	4	5	3	6	1.60 .206
Family member	5	3	5	8	6	8	4	17	0.03 .863
Friend or Teacher	6 ^a	1	3	3	4 ^a	7	5	11	2.13 .145
Health care professional	3	4	2	10	5	17	3	19	0.31 .742

Note. Participants could endorse multiple factors promoting or inhibiting testing. χ^2 values reported reflect total Three-Way Chi-Square Statistics. Values with the same superscript are statistically different comparing TAU and RRTA.

^a = $p < .10$,

* = $p < .05$,

** = $p < .01$;

& = Fisher's exact test used for cells with fewer than five cases. Access = free testing/easy access; Fear/stigma = afraid of needles, nervous about results, stigma about sexual partner's perceptions, stigma about other's perceptions, feeling embarrassed to get tested; Need = health recommendation/risky behavior; No perceived need = believe not at risk; Not a priority = didn't think to get tested, no time, not

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important; Perceived need = wanted to know/wanted to stop worrying; RRTA = Risk Reduction Therapy for Adolescents; Structural = don't know where to go, test cost, test site far; TAU = treatment as usual.