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Brief Report: Sexual Sensation Seeking and its relationship to Risky Sexual Behavior among African-American Adolescent Females

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Introduction

Adolescents continue to report high levels of sexual risk-taking that increase their vulnerability for acquisition and transmission of STDs, including HIV. These behaviors by those under the age of 20 contribute to almost one-quarter of the 15 million newly diagnosed STD cases in the United States each year (CDC, 2000). Approximately 50% of HIV incidence in the U.S. occurs among persons under age 25 (Annenberg Public Policy Center (APPC) and National Institute of Mental Health (NIMH), 1999). Among adolescent populations, racial/ethnic health disparities research indicates that rates of STD/HIV infection are disproportionately high among minorities, particularly African-American adolescent females. Compared to their same-age Caucasian and Hispanic peers, African-American adolescent females have significantly higher rates of chlamydia, gonorrhea, and HIV (APPC & NIMH, 1999; CDC, 2001).

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Although a number of factors have been found to relate to increased sexual risk-taking among adolescents and young adult populations, such as demographic factors (e.g., age, socioeconomic status, education), self-efficacy, attitudes towards condoms, and gender relations (DiClemente et al., 1996; Sheeran, Abraham, & Orbell, 1999; Wingood & DiClemente, 1998), sensation seeking is a noticeably absent construct in the adolescent empirical literature. Sensation seeking has been described as one's preference for "exciting, optimal, and novel levels of stimulation or arousal" (Kalichman et al., 1994, p. 386). In one of the earliest investigations of sensation seeking, Zuckerman, Tushup, and Finner (1976) found that in a sample of predominantly heterosexual male and female college students, those higher in sensation seeking engaged in a wider range of sexual behaviors and had more sexual partners. Recent studies of college samples have reported similar findings (Gullette & Lyons, 2005; McCoul & Haslem, 2001).

In an attempt to identify sexual factors contributing to HIV-risk behavior among of men who have sex with men (MSM), Kalichman et al. (1994) developed the Sexual Sensation Seeking Scale (SSSS; Kalichman et al., 1994). Kalichman et al. (1994) found the SSSS to be useful in predicting number of sexual partners and likelihood of engaging in anal intercourse without condoms among MSM. Researchers have also used the SSSS to examine the relationship between sexual sensation seeking and sexual risk-taking among multi-ethnic MSM (Chng & Geliga-Vargas, 2000) and identify gender differences regarding sexual behavior among heterosexual college students (Gaither & Sellbom, 2003). Overall, sexual sensation seeking has been proven to be a useful constructs in understanding risk of transmission for STDs and HIV among adult populations.

In contrast to the number of studies examining the relationship between sensation seeking and sexual risk-taking among adult samples, few researchers have examined this relationship with adolescent populations. To address this gap in the literature and do so with an at-risk population, this study examined the relationship between sexual sensation seeking and sexual risk-taking behaviors among a clinic-based sample of African-American adolescent females.

Method

Setting

Participants in this study were part of a larger study evaluating a sexual risk-reduction intervention for African-American adolescent females. The analyses reported in this paper are based on data from only the baseline assessment collected prior to randomization and participation in the intervention trial.

From March 2002 through August 2004, recruiters screened self-identified African-American adolescent females seeking reproductive and sexual health services at 3 local teen-oriented community health agencies. Eligibility criteria included being: African-American, female, 15-21 years of age, and sexually active (reporting vaginal intercourse in the previous 60 days). Adolescents who were married, attempting to be or currently pregnant, or who were in a detention center were excluded. The IRB approved the study protocol prior to implementation.

Of the 1558 adolescent females screened, 80% ($N = 1245$) met eligibility criteria. Of those who met eligibility criteria, 57% ($N = 715$) agreed to participate, provided written informed consent¹, and completed a baseline assessment. Of the 313 adolescents not eligible to participate, the majority (54%) were either not sexually active in the previous 60 days or were actively trying to get pregnant (33% and 21%, respectively).

¹Parental consent was waived by the IRB for participants less than 18 years of age.

Participants

Average age of the adolescents was 17.9 years ($SD = 1.7$). The majority of the participants (65.3%) were full-time students, and the remaining 34.7% were not enrolled in school mainly because they had already graduated. A majority of participants had completed 11th grade or higher (57.5%) at baseline. The majority (83.6%) reported being in a current relationship, with the mean length of time in relationship being 15.2 months ($SD = 15.1$).

Procedures

Data collection consisted of a 40-minute survey administered via audio computer-assisted self-interviewing technology. Questions on the baseline survey pertained to: sociodemographic information, sexual history, attitudes and outcome expectancies, psychosocial variables, STD/HIV knowledge, and peer norms. The computerized survey was completed in a group setting, with individual adolescents completing their survey on a laptop computer with headphones to assist those with limited literacy. Also, given the highly sensitive nature of many of the assessment items, a clinician was available on site to speak with an adolescent who seemed distressed by the assessment or who required a specific referral to an appropriate agency available through the community health center. Adolescents were paid \$25 for their participation.

Measures

Sexual Sensation Seeking for Adolescents (SSSA)—To the best of our knowledge, DiClemente et al. (under review) has developed the only instrument assessing sexual sensation seeking specific for adolescents. We chose to employ the SSSA as it was designed to be adolescent and African-American specific in an effort to be more culturally, developmentally, and linguistically appropriate. Additionally, the SSSA was developed and validated for females given the likelihood of gender specific motivations for risk. Sexual sensation seeking was measured with nine Likert-type questions ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). Illustrative questions include, “Having sex with a new partner is exciting to me,” “When it comes to sex, I’m willing to try anything,” and “I enjoy the thrill of having sex in public places.” Higher values were indicative of greater endorsement of the construct. Cronbach’s alpha for the SSSA was .72. Currently, no validity information is available.

Covariates

Age—Since age has been found to be a factor related to sexual behavior (Bachanas et al., 2002; Smith, 1997), it was included as a covariate in the data analysis.

Peer Norms Supporting High Risk Sexual Behavior—Since peer norms supporting high risk sexual behavior have been found to be a factor related to sexual behavior and is included in several prominent theories of risk behavior (DiClemente, 1992; DiClemente et al., 1996), it too was treated as a covariate. It was measured by an 8-item scale. The stem for the first 6 items was: “How many of your friends do you think would think...” Some of the questions included were the following: “... it’s okay to have vaginal or anal sex without a condom?”; “... it’s safe to have sex when you are high on alcohol or drugs?” The last two questions asked the following: “How many of your friends do you think are having sex?”; “Of your friends who are having sex, how many do you think use condoms all the time?” Each of the 8 items was answered on a 5-point Likert-type scale, with responses ranging from *none* to *all*. Responses were coded (or reverse coded) so that high scores indicated higher perception of the construct. Cronbach’s alpha for the scale was .68. Currently, no validity information is available.

Sexual Risk-Taking Outcomes

Frequency of sexual intercourse—Frequency of sexual intercourse has been widely used as a measure of risky sex (Capaldi, Stoolmiller, Clark, & Owen, 2002; Ericksen & Trocki, 1992). To assess this, participants were asked: “*In the past 60 days, how many times have you had vaginal sex?*”

Condom use—Several measures of condom use were employed. First, condom use during the last episode of vaginal sex was assessed. Condom use at last sex provides an assessment of recent condom use that may be less susceptible to recall bias (Catania, Gibson, Chitwood, & Coates, 1990). Participants were asked: a) “*The last time you had sex with your boyfriend, did he use a condom?*” and b) “*The last time you had sex, did you use protection?*” Response choices were “yes” (1) or “no” (0). To assess consistency of condom use, participants were asked, “*Of the times you’ve had vaginal sex in the past 60 days, how many of those times did you use a condom?*” Frequency of condom use was represented as a percent by dividing responses to this question by the total number of vaginal sex experiences in the past 60 days.

Number of partners—Number of penile-vaginal sex partners has also been widely used as a measure of risky sexual behavior (Capaldi et al., 2002). To assess this behavior, participants were asked, “*In your entire life, how many men or boys have you had vaginal sex with?*”

Results

Descriptive and Bivariate Analyses

Scores on the SSSA ranged from 9 to 36, with a mean of 17.53 ($SD = 3.95$). Participants reported an average number of 8.58 ($SD = 18.72$) lifetime partners. Frequency of sexual intercourse experiences during the last 60 days ranged from 0 to 120 with an average of 12.48 ($SD = 15.51$). Frequency of condom use during the last 60 days of sexual intercourse experiences revealed that 26.5% of the participants reported never using condoms. In contrast, 25.3% of participants indicated always using a condom. Approximately 61% of the participants reported their boyfriend used a condom during the last sexual intercourse.

Bivariate correlations were calculated between sexual sensation seeking and each outcome variable. Sexual sensation seeking significantly correlated with each outcome variable in the direction predicted. Analyses revealed that those who had higher sexual sensation seeking scores reported more lifetime sexual partners ($r = .25, p < .01$), higher frequency of sexual intercourse in the last 60 days ($r = .17, p < .01$), lower frequency of condom use in the last 60 days ($r = -.14, p < .01$), and less use of condoms and other forms of protection during the last penile-vaginal sex experience ($r = -.16, p < .01$).

Regression Analyses

To determine whether sexual sensation seeking contributed significant variance beyond that accounted for by previously identified known correlates of sexual risk-taking, multiple regression analyses were performed using hierarchical and logistic regression. For each outcome of interest, age and peer norms supporting high risk sexual behavior were simultaneously entered in the first block. In the second block, sexual sensation seeking was entered alone. Table 1 presents the results of the hierarchical analyses.

For each set of hierarchical regression analyses, the entire model supported the hypothesis that sexual sensation seeking contributed significantly to the variance of the sexual risk-taking factor of interest in a manner beyond what could already be accounted for by the covariates (see Table 1). Sexual sensation seeking was the only factor related to number of lifetime partners, with greater endorsement associated with higher number of lifetime sexual partners.

Older age and greater endorsement of sexual sensation seeking associated with increased frequency of vaginal sex experiences during the last 60 days. Higher perceptions of peer norms supporting high risk sexual behavior and greater endorsement of sexual sensation seeking associated with lower percentage of condom use during the last 60 days².

To evaluate the relationship among the variables of interest and dichotomous measures of risky sexual behavior, logistic regression analyses were conducted (Table 2). For both analyses, increased sexual sensation seeking and perceived peer norms supporting high risk sexual behavior were associated with a decreased likelihood of condom use during last sexual intercourse with a boyfriend and last sexual intercourse with any person.

Discussion

To date, researchers have yet to examine the relationship between sexual sensation seeking and sexual risk-taking among adolescent populations. This study addressed the gap in the STD/HIV empirical literature by examining this relationship among a sample of at-risk African-American adolescent females. This study found that African-American adolescent females who endorsed high levels of sexual sensation seeking attitudes and behaviors also reported high levels of sexual risk-taking behaviors such as frequency of vaginal intercourse, number of sexual partners, and inconsistent condom use. This relationship remained significant after controlling for two empirically and theoretically important confounding variables.

The relationship between sexual sensation seeking and sexual risk-taking for adolescents has important implications for practitioners and researchers. Given that this study represents the first to examine sexual sensation seeking among an identified, at-risk adolescent sample of African-American females, the conclusions, though preliminary, do highlight the need for additional STD/HIV investigations that further explicate the relationship between this construct and sexual risk-taking. Second, if future studies demonstrate that sexual sensation seeking does reliably associate with sexual risk-taking, clinicians (e.g., psychologists, school counselors, social workers) might consider focusing assessments and interventions not just on the sexual risk-taking but also on the factors (e.g., developmental, familial, intrapersonal) that contribute to adolescents wanting to sensation seek. This might translate into specific assessment and intervention protocols that clinicians can implement with patients and share with parents in hopes of delivering a more comprehensive and systems-oriented treatment plan. Intervening on both the risk-taking and the mitigating factors and including the adolescent's social network will ultimately lead to an informed intervention that addresses both the overt behavioral risks as well as the potential underlying mechanisms.

The results of this study, however, are not without limitations. First, self-report raises issues related to response bias (e.g., inaccurate recall, under reporting or over reporting of sexual behaviors). Despite the fact that response biases have been well-documented and continue to be a problematic issue for sexual health research, self-report continues to represent the most widely used and efficient manner to collect such information (Meston, Heiman, Trapnell, & Paulhaus, 1998). Second, the reliability of the instrument assessing peer norms support for high risk sexual behavior ($\alpha = .68$) borderlines the recommended reliability coefficient .70 (Nunnally, 1978). Employing instruments with low reliability reduces the reliability and interpretation of results. Additionally, risky sex in this study included factors such as frequency of sexual intercourse and number of sexual partners. Despite their common use in research as indicators of risky sex, these behaviors by themselves do not inherently represent risky sex, particularly if actions are taken to reduce the risk associated with the transmission of STDs/

²A similar pattern of results was also found when examining frequency of sexual intercourse and percentage of condom use during the last 14 days. These data, however, are not presented but are available by request.

HIV (e.g., effective and reliable condom use with partners, high frequency sex with a monogamous partner). Finally, given the cross-sectional nature of this study, the results only indicate an association between sexual sensation seeking and sexual risk-taking behaviors without delineating a casual relationship. Moreover, the effect sizes, levels of association between constructs of interest, and amount of variance accounted for in the regressions models are small and should be interpreted cautiously.

In conclusion, this study represents the only STD/HIV investigation of sexual sensation seeking employing an adolescent sample. The results, though preliminary, suggest that greater endorsement of sexual sensation seeking relates to an increased likelihood of engaging in potentially risky sexual behaviors. Thus, among an at-risk sample of African-American adolescent females, there are those who might be more likely to face the negative health consequences of sexual risk-taking (e.g., pregnancy, STD/HIV) based on the attitudes they endorse or behaviors they engage in that are consistent with sexual sensation seeking. In light of these findings, future investigations should include methodology (e.g., longitudinal design, precise measures) that permits statistical analyses yielding clinically relevant results.

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Table 1
Hierarchical regressions of sexual sensation seeking and control variables on sexual behavior outcomes

	Number of total lifetime sexual partners				Frequency of vaginal intercourse during the last 60 days				Percent of condom use during the last 60 days			
	ΔR^2	ΔF	df	$\beta^{(final\ step)}$	ΔR^2	ΔF	df	$\beta^{(final\ step)}$	ΔR^2	ΔF	df	$\beta^{(final\ step)}$
Step 1:												
Age	.02	8.33	2,697	.07	.04	11.39	2,555	.14***	.02	4.76	2,552	-.03
Peer Norms				.06				.08				-.10*
Step 2:	.05	34.64	1,696		.02	10.13	1,554		.01	7.97	1,551	
Sexual Sensation Seeking				.22***				.14***				-.12***

*
p < .05
**
p < .01

p < .001

Table 2
Logistic regressions of sexual sensation seeking and control variables on dichotomous sexual behavior outcomes

	The last time you had sex with your boyfriend, did he use a condom?				The last time you had sex, did you use protection?			
	OR	95 % CI	p value		OR	95 % CI	p value	
Age	0.98	(.88-1.08)	.65		0.96	(.87-1.05)	.33	
Peer norms supporting high risk behavior	0.95	(.91-.98)	<.05		0.96	(.93-.99)	<.05	
Sexual Sensation Seeking	0.93	(.88-.97)	<.001		0.92	(.89-.96)	<.001	
Chi-square with all variables entered:		$\chi^2(3) = 24.23, p = <.001$				$\chi^2(3) = 28.27, p = <.001$		