Sexual sensation seeking, transactional sex, and rural African American cocaine users

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Abstract

The purpose of this study was to explore correlates of sexual sensation seeking (SSS) in a sample of rural African American cocaine users. Respondent-driven sampling was used to recruit 251 participants from two impoverished rural counties in eastern Arkansas. Consistent with previous investigations, SSS scores were associated with being younger, being male, having more sexual partners, and having more unprotected sexual encounters in the previous 30 days. Multiple regression revealed SSS was correlated with number of oral sex acts, transactional sex (exchanging sex for food, shelter, drugs, money, or other commodities), and Addiction Severity Index (ASI) drug composite. SSS continues to demonstrate a strong association with sexual risk behaviors in diverse populations, including vulnerable groups like this community. Interventions to reduce unsafe sexual behaviors among high-risk groups, including drug users and individuals who engage in transactional sex, should incorporate approaches that include high sensation seekers’ needs for novelty and variety.
As the related epidemics of HIV infection and other sexually transmitted infections (STI) continue to evolve, rural populations have been increasingly identified as disproportionately affected, particularly ethnic minority individuals in rural areas. HIV, gonorrhea, and chlamydia have been noted as increasingly prevalent in rural populations since 1995, and there is a substantial disparity in infection rates for all of these diseases among African Americans in both predominantly urban and predominantly rural states (Boyer et al., 2006; Hall, Li, & McKenna, 2005).

One aspect of sexual risk-taking that may contribute to HIV and STI risk is sexual sensation seeking (SSS), defined as a tendency to pursue a variety of novel sexual experiences and to downplay the risks that may be associated with such experiences (Kalichman & Rompa, 1995). SSS has been examined in a variety of adult populations including men who have sex with men, female and male college students, African American women, and heterosexuals (Gullette & Lyons, 2006; Monks, Tomaka, Palacios, & Thompson, 2010). SSS is associated with multiple risk behaviors, including engaging in unprotected sex and having multiple sexual partners and, in some investigations, with drug and alcohol use before sex (Gullette & Lyons, 2006; Kalichman & Rompa, 1995). However, the issue of SSS and its relationship to sexual risk behavior is somewhat understudied in rural populations, especially rural minorities.

Rural drug users may represent a population of particular concern for health providers, researchers, and educators. Rural drug-using communities are characterized not only by high rates of drug use, but also by small and closely-related sexual networks as well as by a number of high-risk behaviors, including multiple sexual partners, low rates of condom use, and infrequent HIV/STI testing (Wright, McSweeney, Frith, Stewart, & Booth, 2009; Wright et al., 2007).

Another risk behavior that has been well documented among cocaine users, including those in rural communities, is the existence of a sexual economy that involves repeated transactional sex, which may include trading oral or vaginal sex for food, shelter, or other necessities as well as for drugs or money (Adimora & Schoenbach, 2005; Wright et al., 2007). Typically, transactional sex has been related to lack of financial resources and frequently involves multiple sexual relationships, lack of condom use, and having sex while intoxicated (Dunkle, Wingood, Camp, & DiClemente, 2010). Understanding how transactional sex impacts rural African American women and their partners is important given that African American women experience higher rates of poverty and disparities in HIV risk (Dunkle et al., 2010). Unfortunately, little evidence exists linking SSS to transactional sex.

The purpose of our study was to explore the behavioral correlates of SSS among rural African American cocaine users. We hypothesized that SSS scores would be positively associated with age and male gender, and would be positively associated with rates of self-
reported unprotected sex and number of sexual partners. We also hypothesized that SSS scores would be associated with self-reported transactional sex. Further, we hypothesized that, consistent with other investigations (Kalichman, Cain, Zweben, & Swain, 2003; Kalichman & Rompa, 1995), SSS would be associated with frequency and severity of drug use. Given the importance of incorporating the potentially unique needs of high sensation seekers as well as understanding the role of transactional sex into sexual risk reduction efforts (Kalichman & Rompa, 1995), these findings may facilitate adaptation and development of programs for this underserved and vulnerable population.

Method

Our study used baseline data obtained in a larger randomized controlled trial to test an intervention to reduce sexual risk behaviors among rural African American cocaine users. All study procedures were reviewed and approved by the institutional review board of the University of Arkansas for Medical Sciences. A Certificate of Confidentiality was obtained from the National Institutes of Health, National Institutes on Drug Abuse prior to data collection procedures.

Participants

**Recruitment**—Respondent-driven sampling (RDS; Heckathorn, 1997; Heckathorn, 2002) was used to recruit 251 participants from two contiguous rural counties in the Delta region of eastern Arkansas between February 2009 and February 2011. The counties are predominately African American, with high poverty rates and substantially higher rates of HIV and STIs than other areas of the state (Arkansas Department of Health, 2011a; 2011b). RDS, a variant of snowball sampling, is a sampling strategy that has been used with good results to recruit rural drug users in other studies (Booth, Leukefeld, Falck, Wang, & Carlson, 2006). Using RDS, initial recruits, known as “seeds,” were instructed to give referral coupons to “people like you” and ask those individuals to call the number on the card if they were interested in being in the study. If the person who received a coupon attended an interview and met eligibility criteria, the seed received $10. The new recruit also received three coupons to distribute to others, thus creating recruitment waves to reach more widely into social networks within the community.

**Inclusion and exclusion criteria**—Persons were eligible for the study if they: (a) were ages 18 or older; (b) self-described as African American, Black, or mixed race of African American ancestry; (c) reported using either powder or crack cocaine at least once in the previous 30 days; (d) reported engaging in oral, vaginal, or anal sex at least once in the previous 30 days; (e) reported that they were not currently participating in a drug treatment program; and (f) reported residing in one of the two study counties. Persons were excluded from the study if they (a) were incarcerated, (b) could not provide contact information, (c) were not a resident of either county, or (d) otherwise did not meet inclusion criteria. Of the 324 persons screened, 73 did not meet inclusion criteria, leaving a total sample size of 251.
Measures

The following measures were included in study analyses: (a) demographic data, (b) the Addiction Severity Index (ASI), (c) the NIDA Risk Behavior Assessment Sexual Activity Scale, and (d) the Sexual Sensation Seeking Scale. These measures are described below.

Demographics and Addiction Severity Index (ASI)

Participants were asked to self-identify their gender, date of birth, race, ethnicity, years of education completed, marital status, and income range. They were also asked to identify numbers of sexual partners.

The ASI (McLellan et al., 1992) is a widely used semi-structured instrument with demonstrated reliability and validity among substance abusers (Mäkelä, 2004; McLellan, Cacciola, Alterman, Rikoon, & Carise, 2006). Seven areas are covered by the full ASI: medical, employment/support, drug and alcohol use, legal, family/social, and psychiatric. The drug and alcohol use domains and composite questions on substance use and psychiatric treatment were included in the full interview for the clinical trial. We used the drug and alcohol use domains in our analyses. For these domains, participants reported the number of days in the previous 30 days that they had used alcohol or a specific drug. Powder cocaine and crack cocaine use were assessed separately and entered separately into the regression model.

Risk Behavior Assessment (RBA) Sexual Activity Scale

The RBA Sexual Activity Scale (Needle et al., 1995) is a structured interview that identifies sexual behaviors in which a participant self-reports engaging in the previous 30 days. Sexual risk behaviors assessed include number and gender of partners, types of sex (oral, vaginal, and anal), condom use, and transactional sex. The RBA has been well validated among men and women in diverse samples by multiple NIDA-funded investigators (Pechansky, Hirakata, & Metzger, 2002; Weinhardt, Forsyth, Carey, Jaworski, & Durant, 1998). Transactional sex was scored as yes if a respondent indicated any instance of trading of oral, anal, and/or vaginal sex for food, shelter, drugs, money, or other commodities in the previous 30 days. It was also scored yes if a respondent indicated providing a partner with those commodities in exchange for sex.

Sexual Sensation Seeking (SSS) Scale

The SSS scale developed by Kalichman and Rompa (1995) has 11 Likert-type items on a 4-point scale ranging from 1 (not at all like me) to 4 (very much like me), with higher scores indicating greater endorsement of sexual sensation seeking traits. Kalichman and Rompa (1995) reported an internal consistency of .81 and a test-retest reliability of .73 for the scale, which has been further validated in diverse populations including college students, African American inner city adults, African American adolescents, ethnically diverse young adults, and men who have sex with men (Gaither & Martin, 2003; Spitalnick et al., 2007). For our study, the total score (possible range = 11 to 44) was used in analyses.
Procedures and Data Collection

Baseline assessment was conducted after informed consent was obtained and after participants had been screened and determined to be eligible based on inclusion/exclusion criteria. The baseline assessment was conducted prior to the initiation of any intervention activities in the randomized trial. Trained interviewers in local study offices using computer-assisted personal interviewing (CAPI) technology administered all assessment instruments. Participants were offered refreshments during the 2-hour assessment and a 10-minute break after 1 hour. After completing the interview, participants were asked if they wanted referral cards to give to their friends and, if so, were given three cards. Participants were able to receive up to $10 for each referral. Participants received an assortment of condoms and $15 after completing the interview and $5 for travel.

Data Analysis

Cronbach's alpha was calculated to evaluate the internal consistency of the SSS in this sample. Next, pairwise Spearman's correlations were calculated between pairs of independent continuous variables and t-tests for dichotomous variables with the SSS.

We then conducted multiple regression models to identify significant correlates of the SSS, including variables that were significantly correlated on a bivariate basis or were theoretically associated with HIV risk. These variable correlates were entered into a multiple regression model to identify the most parsimonious model for SSS.

Results

The sample was comprised of 251 participants. The descriptive characteristics of the sample are shown in Table 1. In general, participants were in their late 30s, almost evenly divided between males and females, had graduated from high school or had a GED, and were not married or living with a partner. The sample reported more frequent use of crack cocaine compared to powder cocaine, more days of alcohol use, and used marijuana at about the same rate as crack cocaine. They also received higher scores on the ASI drug composite than on the ASI alcohol composite. They reported an average of 12 unprotected sexual encounters and 2 sexual partners in the previous 30 days. On average they also reported more vaginal sex acts than oral sex acts and few anal sex acts. The average total SSS score was 25.1 (SD = 7.0) and Cronbach's alpha for the scale was 0.74, indicating acceptable internal consistency.

Number of days of use of cocaine and alcohol in the previous 30 days was not significantly correlated with SSS, but days of marijuana use were positively correlated (r = 0.20, p < 0.01, see Table 1). Most sexual risk variables were also highly correlated with SSS, including number of partners, total number of unprotected sexual encounters, transactional sex, and total oral and anal sex acts, but not total vaginal sex acts (Table 1).

Multiple linear regression analysis found a parsimonious model identifying significant independent correlates of SSS total score (see Table 2). They were: being male, age (indirectly), ASI Drug Composite, number of oral sex acts, and transactional sex in the
previous 30 days. The $R^2$ for the model was 0.33. Interaction terms were explored but none were significantly associated with SSS total score.

Discussion

Men in this sample scored higher on SSS than women and age was inversely associated with SSS, a finding that was consistent with several other investigations of this construct (Gullette & Lyons, 2006; Kalichman et al., 2003; Spitalnick et al., 2007). Also consistent with other investigations, the scale demonstrated convergent validity, correlating with sexual risk behaviors including unprotected sex (Gaither & Martin, 2003; Kalichman et al., 2003; Kalichman & Rompa 1995;) and total number of oral sex acts. SSS scores were also significantly associated with transactional sex (i.e., self-reported buying or selling of sex for drugs, money, food, or other commodities). Thus, the SSS scale demonstrated good reliability ($\alpha = 0.74$) and appeared to be valid in this understudied and high-risk population.

Our finding that SSS was also significantly associated with transactional sex is, to our knowledge, the first report of a link between SSS and this particular risk behavior. Although many of our participants who reported engaging in transactional sex reported they engaged in what they termed “survival sex” (i.e., trading sex for food or shelter; Wright, et al., 2009; Wright et al. 2007), our findings suggest that SSS may be associated with a greater willingness to engage in survival sex as well as other forms of transactional sex (e.g., trading sex for drugs or money). Motivation for trading sex for drugs, money, or other commodities has typically been conceptualized as a sexual risk arising in various situations, in response to economic need due to extreme poverty or physiological need due to addiction (Mimiaga, Reisner, Tinsley, Mayer, & Safren, 2009; Vanwesenbeeck, 2001; Wright et al., 2007). Beyond psychological research examining the role of sexual victimization on trading sex, few have examined psychological traits that may influence the decision to participate in transactional sex (Vanwesenbeeck, 2001). Our findings, on the other hand, mirror early research that Impulsive Sensation Seeking scores were higher among sex workers than controls (O’Sullivan, Zuckerman, & Kraft, 1996) and extend those findings to include other forms of transactional sex, such as the survival sex described by our participants. The relationship between SSS and transactional sex should be explored further because more detailed understanding of this link could have important implications for intervening to reduce the risk associated with sex-trading behavior.

Indeed, the link between SSS and high-risk sexual behavior has important implications for risk reduction interventions. For example, individuals who are high in sensation seeking may benefit from interventions that emphasize novel and interesting options for incorporating lower-risk behaviors (e.g., condom use) into sexual activity (Kalichman & Rompa, 1995). Our findings suggest that such intervention approaches for high sensation seekers might also be appropriate and may target a particularly high-risk subgroup within the cocaine-using population.

The link between general sensation seeking and drug use has been inconsistent in the literature (Ames, Zogg, & Stacy, 2002; Zuckerman, 2007), and investigations of the link between SSS and drug use before or during sex have yielded similarly inconsistent findings.
Our investigation identified a positive, but weak, bivariate association between SSS and marijuana use, strong association with the ASI drug composite, and a moderate association with the ASI alcohol composite. The association of SSS with the drug composite remained in multivariate analysis. The lack of association between SSS and cocaine use may have been due to limited variance in our sample because active cocaine use was an inclusion criterion for the study. However, it may also have been that habitual users of cocaine are not seeking novel sensation experiences as much as using the drug to manage the physical and psychological sequellae of addiction. Because the ASI drug composite is a more general measure of drug use severity, it may capture those individuals who are more predisposed toward multidrug use. This finding merits further exploration, perhaps including the relationship between drug use severity and other related constructs that show associations with SSS, such as outcome expectancies for drug and alcohol use (Kalichman et al., 2003). Additional investigations that compare habitual drug users and more casual users may further elucidate the potentially complex relationships among drug use and sexual sensation seeking behaviors, and may provide insight into additional approaches for tailoring behavioral interventions for these subgroups.

Tailoring behavioral interventions toward women, such as emphasizing and establishing new, non-drug using social networks in neighborhoods and communities, may help women to break the cycle of drug abuse and HIV risk behaviors. Also, interventions are needed for women who abuse crack cocaine to secure housing, obtain employment, and have health-related needs met.

Our study had several limitations that should be considered when interpreting the data. First, self-report data are subject to multiple biases, including social desirability and recall bias. The use of CAPI technology and trained interviewers who are particularly comfortable with the target population can reduce this bias to some extent (Weinhardt et al., 1998), but results should still be interpreted with the same caution as other self-report studies. Additionally, this study focused on cross-sectional data, which limits inferences of causality. Indeed, the measures used in our study introduce a phenomenon known as “post-diction” because the SSS scale measures current attitudes and drug use, and sexual behavior measures are retrospective in nature (Albarracin, Fishbein, & Middlestadt, 1998). The problem of post-diction may be somewhat mitigated by the fact that SSS has been well established as a trait construct rather than a state construct and thus would not be expected to be highly variable over time (Kalichman & Rompa, 1995). Nevertheless, longitudinal investigations with larger samples may permit more causal modeling of the links among SSS, drug use, and sexual risk behaviors.

**Conclusion**

Despite these limitations, our study provided additional support for the reliability and validity of the SSS Scale in a rural, impoverished sample of African American cocaine users. Additionally, the important finding that SSS is associated with transactional sex, including trading sex for food and shelter, has important implications for further study to understand how sensation seeking interacts with economic or other environmental pressures to engage in transactional sex. It also suggests that interventions to reduce sexual risk
active drug users and in individuals who are engaging in transactional sex must take sensation seeking into account and incorporate strategies to engage high sensation seekers, who are typically resistant to standard prevention messages.

Acknowledgements

The work described in this manuscript was supported by a research grant (award number R01DA024575) to Katharine E. Stewart from the National Institute on Drug Abuse. It was also supported in part by the Arkansas Center for Minority Health Disparities (award number P20MD002329 from the National Institute on Minority Health and Health Disparities), the Arkansas Prevention Research Center (award number 1U48DP001943 from the Centers for Disease Control and Prevention) and by the UAMS Translational Research Institute (award number 1UL1TR000339 from the National Center for Advancing Translational Science). The content is solely the responsibility of the authors and does not necessarily represent the official views of the funding Institutes and Centers, the National Institutes of Health, or the Centers for Disease Control and Prevention. The authors also wish to express their heartfelt thanks to the staff, Community Advisory Board members, and participants of the JES’ US Project, without whom this work would not have been possible.

References


Key Considerations

- Clinicians need to explore the role of transactional sex to better understand how cocaine users perceive HIV risk.
- Clinicians need to be aware that “post-diction” behavior may mitigate the true risk of acquiring HIV and other STDs among rural populations.
- Clinicians need to consider that survival sex among rural African American cocaine users may be perceived differently than sexual risk behaviors associated with HIV acquisition, thus a different approach to education about HIV risk for these patients may be required.
### Table 1

Sample Description and Correlations with Total Scores on the Sexual Sensation Seeking Scale (SSS) for Rural African American Cocaine Users (N = 251)

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>%</th>
<th>M</th>
<th>SD</th>
<th>SSS&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>38.0</td>
<td>12.7</td>
<td></td>
<td></td>
<td>−0.18&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Males</td>
<td>130</td>
<td>51.8</td>
<td>0.32</td>
<td></td>
<td>***</td>
</tr>
<tr>
<td>High school graduate or GED</td>
<td>143</td>
<td>57.0</td>
<td>−0.01</td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>Married or living with partner</td>
<td>44</td>
<td>17.5</td>
<td>−0.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past 30 days reports:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of sexual partners</td>
<td>2.0</td>
<td>2.2</td>
<td>0.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transactional sex&lt;sup&gt;b&lt;/sup&gt;</td>
<td>67</td>
<td>26.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of unprotected sexual acts</td>
<td>12.0</td>
<td>15.7</td>
<td>0.32</td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>Total oral sex acts</td>
<td>6.4</td>
<td>10.0</td>
<td>0.28</td>
<td></td>
<td>***</td>
</tr>
<tr>
<td>Total vaginal sex acts</td>
<td>9.1</td>
<td>8.2</td>
<td>0.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total anal sex acts</td>
<td>0.5</td>
<td>3.9</td>
<td>0.19</td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>Number of days used crack cocaine</td>
<td>13.7</td>
<td>10.5</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of days used powder cocaine</td>
<td>5.8</td>
<td>8.1</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of days used alcohol</td>
<td>16.0</td>
<td>11.6</td>
<td>0.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of days used marijuana</td>
<td>13.5</td>
<td>12.4</td>
<td>0.20</td>
<td></td>
<td>c</td>
</tr>
<tr>
<td>ASI Drug Composite</td>
<td>0.2</td>
<td>0.1</td>
<td>0.26</td>
<td></td>
<td>***</td>
</tr>
<tr>
<td>ASI Alcohol Composite</td>
<td>0.2</td>
<td>0.2</td>
<td>0.16</td>
<td></td>
<td>c</td>
</tr>
<tr>
<td>SSS Total Score&lt;sup&gt;c&lt;/sup&gt;</td>
<td>25.1</td>
<td>7.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. GED = graduate equivalency exam; ASI = Addiction Severity Index; SSS = sexual sensation seeking.

<sup>a</sup>This column reports correlations with SSS

<sup>b</sup>transactional sex defined as trading oral or vaginal sex for food, shelter, and other necessities as well as for drugs or money

<sup>c</sup>score range from 11 to 44.

* p < 0.05

** p < 0.01

*** p < 0.001
Table 2
Independent Correlates of Sexual Sensation Seeking, Results of Multiple Linear Regression Analysis (N = 237)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regression Coefficient</th>
<th>SE</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>−0.07</td>
<td>0.03</td>
<td>0.023</td>
</tr>
<tr>
<td>Males</td>
<td>3.68</td>
<td>0.78</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Total Oral Sex Acts previous 30 days</td>
<td>0.23</td>
<td>0.04</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Transactional sex*</td>
<td>2.8</td>
<td>0.97</td>
<td>0.004</td>
</tr>
<tr>
<td>ASI Drug Composite</td>
<td>8.9</td>
<td>4.0</td>
<td>0.026</td>
</tr>
</tbody>
</table>

Note. ASI = Addiction Severity Index; N = 237. Items not responded to resulted in missing data, thus difference in sample size.

*a: transactional sex defined as trading oral or vaginal sex for food, shelter, and other necessities as well as for drugs or money.