Full Length Research Paper

Sociosexuality, human immunodeficiency virus (HIV) susceptibility, and sexual behavior among African American women

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Psychosocial correlation of risky sexual behavior is important for the design and implementation of human immunodeficiency virus (HIV)-related prevention and intervention studies. Sociosexuality (individual differences in endorsement of casual sexual behavior) and perceived susceptibility to HIV were examined for their relationship to each other, and in predicting risky sexual behavior among adult, heterosexual African American women using web-based and in-person surveys. This study included 275 geographically diverse women (mean age = 33.60 years), with 81% reported having at least a college degree, and over 50% reported incomes over $45,000. Results indicate that sociosexuality was significantly associated with perceived susceptibility, and both higher levels of sociosexuality and perceived susceptibility were significantly related to engagement in riskier sexual behavior. Age at first voluntary intercourse emerged as an important covariate in predicting risky sexual behavior among the participants. The need to include psychosocial variables associated with risky sexual behavior in sexually transmitted infection (STI) and HIV-related health promotion and intervention studies was discussed.

Key words: Sociosexuality, human immunodeficiency virus (HIV), African American, sexual behavior, perceived susceptibility.

INTRODUCTION

Since human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) has been recognized, the face of the epidemic has changed in the United States (US). The rates are stabilizing and declining in many of the populations which were first impacted and affected, but is steadily increasing in other communities. In 2009, African American women accounted for an estimated 30% of new HIV infections among all African Americans (Centers for Disease Control [CDC], 2010). Of these new cases, 85% reported that they were infected via heterosexual transmission. Behavioral interventions, alone, have not shown the anticipated success in decreasing the health disparities seen with sexually transmitted infection (STI) and HIV rates among African American women. These grave disparities underscore the importance of considering culture, social norms, and situational factors that may affect sexuality, sexual decision-making, and sexual behaviors for this population.

Socialization processes reinforce sociosexual norms and standards of behavior for women, and these, in turn, set the tone for health-protective and health risk behaviors (Hynie et al., 1998). The main purpose of this study is to examine the relationships between two psychosocial variables (sociosexuality and perceived susceptibility) thought to be influential in the manifestation of risky sexual behavior among a diverse group of African American women. Although there are published studies examining the link between sociosexuality and sexual behavior, and perceived susceptibility and sexual behavior, there is a dearth of literature examining both together and their potential...
contributions in predicting risky sexual behavior. The need to understand the psychological and social links to sexual risk behavior is important to inform future STI and HIV prevention and intervention efforts. This is especially true for African American populations that have been disproportionately affected by STIs and HIV.

Sociosexuality

Over four decades after Alfred Kinsey and associates identified the term sociosexual to describe individual differences in attitudes about sexual permissiveness and promiscuity, Simpson and Gangestad (1991) developed a scale to measure these attitudes and behaviors. The Sociosexual Orientation Inventory (SOI) identified sociosexuality as an individual difference variable believed to be associated with the extent to which one endorses sexual behavior outside of a relationship or without an emotional connection. They believed that a person either had restrictive or unrestricted sexuality as measured by attitudes towards casual sex and actual sexual behavior. Individuals with a low (that is, restrictive) sociosexuality are thought to typically insist on commitment and intimacy in a relationship prior to engaging in sex with a partner. These individuals have been shown to have fewer lifetime sexual partners (Ostovich and Sabini, 2004), take more time before having sex with someone, and enact a long-term mating approach (Simpson and Gangestad, 1991).

Conversely, those who exhibit a high sociosexuality (that is, unrestricted) may feel relatively comfortable engaging in sex without commitment or emotional closeness. Unrestrictive individuals reported that they have engaged in sexual activities at a younger age (Yost and Zubrigin, 2006), are more likely to have concurrent sexual partners (Ostovich and Sabini, 2004; Yost and Zubrigin, 2006), and tend to implore short-term mating strategies, express less investment, and have weaker affectional ties (Westerlund et al., 2010). It is unclear if a woman is unrestricted in her endorsement of casual sexual liaisons, whether or not she may perceive her susceptibility to contracting HIV as low. The low perception of susceptibility to infection does not negate the fact that individuals may still engage in protective behaviors such as condom use and monogamy; however, it may indicate a leniency or willingness to engage in risky sexual behaviors such as one night stands or sex with multiple partners.

Perceived susceptibility to contracting HIV

A number of traditional cognitive behavioral change theories (e.g. theory of planned behavior, health belief model, and AIDS risk reduction model) posit that individuals who recognize that their behavior places them at risk for a disease or illness (perceived susceptibility) are more likely to adopt less risky behaviors than those who do not (Kowalewski et al., 1997; Mevissen et al., 2009). Although these theories acknowledge that perceived susceptibility to HIV is essential, the incorporation of other social factors that impact the accuracy of these perceptions are not often included (Kershaw et al., 2003). If a woman is not willing to personalize the risk of HIV, or inaccurately estimates the risk, she may be less likely to engage in protective behaviors. Although perceived susceptibility has been shown to operate similarly across populations; factors that influence the perception of susceptibility (or invulnerability) vary according to population. Many African American women may perceive their risk for contracting HIV to be low, when in fact many of the daily or even occasional behaviors that some engage in put them at extremely high risk (Darbes et al., 2008; Ford et al., 2006). Some of these behavioral choices may be influenced by age, economics, and/or relationship status.

Research on the relationship between one’s perceived susceptibility to HIV and actual sexual behavior is mixed. Some studies indicate that perceived susceptibility is a primary motivator for the initiation of HIV precautionary behaviors (Ellen et al., 2002; Gerrard et al., 1996), while others (Dolcini et al., 1996; Parsons et al., 1997) show only a moderately significant correlation between the two. Perceived susceptibility is a key psychosocial factor that may strengthen or weaken the relationship between sociosexual norms and attitudes, and actual sexual behavior. A high perceived susceptibility of HIV infection, theoretically, should induce protective sexual behavior that protects against STIs, including HIV infection (van der Snoek et al., 2006). This study examines perceived susceptibility not only as a direct link to sexual behavior, but also as a potential moderator between sociosexuality and sexual behavior. Study hypotheses (Figure 1) predict:

1. Women with a more unrestricted sociosexuality will self-report higher perceived susceptibility than those with a more restricted sociosexuality;
2. Women with a more unrestricted sociosexuality would self-report more risky sexual behavior (as measured by the Sexual Behavior Index) than those with a more restricted sociosexuality;
3. Women with a lower perceived susceptibility will engage in more HIV-related risky sexual behavior; and
4. The relationship between sociosexuality and risky sexual behavior will be moderated by perceived susceptibility.

MATERIALS AND METHODS

Participants

To be eligible for the study, individuals had to self-identify as: African American, heterosexual, aged 21 and above, not knowingly pregnant, not knowingly HIV-positive, and sexually active (vaginal
Recruitment and procedures

Recruitment primarily took place online for this study; however, participants were also recruited in person. An Institutional Review Board (IRB) approved email was sent through various community-based organizations, institutes of higher education, listserves with high membership of African American women (e.g., sororities), and through personal contacts. The email provided information pertaining to the study (including the inclusion criteria and estimated time to complete) and contained a link to the Principal Investigator’s survey. The link allowed participants to access the implied informed consent document as well. Once they accessed the survey website, they saw the cover letter which reinforced the purpose of the study, estimated time of completion, and inclusion criteria. Participants were asked to indicate that they understood the information and they met the inclusion criteria. If they agreed to participate in the study, they checked the assent button and an honor pledge which indicated that they had not taken the survey before and would not take it more than once. Participants could print the implied informed consent page for their records.

For those who participated via the Internet, a link was provided in the body of the study invitation which directed participants to the survey webpage. Participants for the web-based survey (via SurveyMonkey®) accessed a secure webpage that provided them with a cover letter which reinforced the purpose of the study, estimated time of completion, and inclusion criteria. Participants were asked to indicate that they understood the information and that they met the inclusion criteria. Implied consent was used because the survey was anonymous, and signatures were not obtained. A remote address (IP) was returned with submission of the survey responses and examined by the researcher to reduce the likelihood of multiple submissions from a single respondent.

In-person recruitment took place by posting IRB-approved fliers in various community-based organizations, public and private sector businesses, and public and private institutes of higher education in Southern California. There was a telephone number and an email address for potential participants to contact the researcher. After being contacted, each person answered questions to confirm eligibility. If she met the criteria, an appointment was scheduled for survey completion. Participants who completed the survey in-person were given a copy of the implied informed consent form. Completion and receipt of the survey indicated participant consent. The present study was part of a larger study so participants were given a packet of study instruments, and instructed to place the survey inside an unmarked manila envelope, which was not opened until the end of the data collection period. The researcher provided verbal confirmation of the confidentiality of responses and provided a copy of the informed consent form to participants. Ninety-two percent of the women responded to an online survey, while 8% chose face-to-face participation. There were no significant differences on main outcome measures based on mode of survey administration.

Measures

Sociodemographic information collected included year of birth, education, employment status, household income, geographic region, age at first voluntary intercourse, and relationship status.

Sociosexual orientation

This was assessed using the published seven-item SOI (Simpson and Gangestad, 1991), designed to measure individual differences in willingness to engage in casual, uncommitted sexual relationships. Two dimensions are assessed with this instrument: sociosexual behavior and attitudes. Three open-ended items asked respondents to report on aspects of their past and anticipated future sexual behavior. An example of a question is “How many sexual partners have you had in the past year?”. Three items assessed attitudinal items evaluated on a Likert scale (1 = strongly disagree to 9 = strongly agree). An example of an item is “I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him.”

One final item, using the same Likert scale, assessed the frequency of sexual fantasies about someone other than current partner. This scale has shown a Cronbach’s alpha of 0.77 in previous studies. All seven items were correlated and this scale was found to be appropriate for the current population with an alpha of 0.72. Higher scores reveal a more unrestricted sociosexual orientation.
Perceived susceptibility

The perceived susceptibility scale was utilized to assess perceived susceptibility to HIV/AIDS. This pre-existing five-item measure is a subscale of a larger sexual risks scale (DeHart and Birkimer, 1998) and asks participants to respond on a 5-point Likert scale (1 = strongly agree to 5 = strongly disagree). The published alpha is 0.84, but analysis with participants in the current study reveals a slightly lower alpha of 0.82. Higher scores indicate higher levels of perceived HIV risk and susceptibility.

Sexual behavior index

The main outcome was an author-developed composite sexual behavior index created by summing the number of lifetime risky behaviors reported by participants. There were six questions with dichotomous responses (yes/no), which included: (1) Have you ever felt obligated to have sex with your partner? (2) Have you ever had more than one sexual partner in a 30-day period? (3) Have you ever had sex with a partner you thought was having sex with someone else? (4) Have you ever had a one-night stand with someone you didn’t know very well? (5) Have you ever had a sexually transmitted infection? and (6) Have you ever been tested for HIV? All ‘yes’ responses for questions 1 to 5 were given a ‘1’ and a ‘no’ response was given a score of ‘0’. This pattern was reversed for the HIV testing question-participants received a ‘0’ for ‘yes’ and a ‘1’ for ‘no’. The final question asked participants to indicate their age at first voluntary sexual intercourse (3 = ‘0 to 13,’ 2 = ‘14 to 16,’ and 1 = ‘17 and older’). The scores ranged from 1 (lowest) to 9 (highest). Due to the eligibility criteria, every participant had been sexually active in the past 12 months; therefore, the theoretical minimum is ‘1’ and not ‘0.’

Data analysis

The analyses were conducted with Predictive Analytics SoftWare (PASW: version19.0 for Windows; SPSS Inc., Chicago, Illinois) statistical software. Descriptive analyses were computed for sociodemographic factors (Table 1) and the three scales of interest (Table 2). After descriptive analyses were conducted, a new variable, socioeconomic status variable (SES), was created by multiplying the education category by the income category to create a scale ranging from 2 to 48 (mean = 25.27, standard deviation [SD] = 12.70). Bivariate associations were conducted to identify which potential covariates were significantly associated with the sexual behavior index (outcome variable). Finally, analysis of variance (ANOVA) and multiple regression analyses were run to test any relationship between the sociodemographic variables and the three summed scales, and the hypothesized relationships.

RESULTS

Participants were 275 geographically diverse self-identified heterosexual African American women ranging in age from 21 to 61 (M = 33.60, SD = 8.89). All four geographical regions across the United States (US) were represented. Of the 275 women, 8.1% (n = 23) indicated they were not born in the US. The mean number of years in the US for these women was 22.3 (range 7 to 41 years). Eighty one percent of the sample had at least a college degree, and over half reported an income of at least $45,000 per year and no children. Table 1 shows the socio demographic information on all participants.

Preliminary analyses

Sociodemographic variables were analyzed for significant relationships with the three summed scales. Three variables, age, age at first voluntary intercourse, and relationship status revealed significant associations with variables of interest. Regression analyses revealed significant negative associations between age and both sociosexuality, F(1, 271) = 8.16, p = 0.005, and perceived susceptibility, F(1, 271) = 5.51, p = 0.020. Younger participants were more unrestricted in their sociosexuality and higher in their perceived susceptibility to STI/HIV. The participant’s age at first intercourse was negatively associated with sociosexuality scores, F(1, 272) = 7.93, p = 0.005, indicating those who were younger when they first had voluntary intercourse reported higher sociosexuality scores (Table 3). An ANOVA revealed that relationship status was positively related to both sociosexuality, F(2, 269) = 7.92, p < 0.001, and perceived susceptibility, F(2, 269) = 18.50, p < 0.001.

Regression model

An initial regression model was run to test the idea that sociosexuality and perceived susceptibility would be predictive of risky sexual behavior (measured by the sexual behavior inventory (SBI)). The overall model was significant, F(2, 271) = 35.64, p < .001, and the two predictors, together, explain 21% of the variance in the SBI. Sociosexuality explained most of this variance (change in $R^2 = 0.195$).

Potential covariates (age, employment, geographical location, relationship status, age at first voluntary intercourse, and SES) were examined in a bivariate analysis for relationships with the SBI. Only age at first voluntary intercourse was significantly related to the SBI ($r = -0.54, p < 0.001$). When the significant covariate was included in the regression model with sociosexuality and perceived susceptibility, the overall model was still significant, F(3, 267) = 68.22, p < 0.001 and the addition of age at first intercourse contributed an additional 22% (overall $R^2 = 0.434$). All three predictors were significantly related to SBI, with age at first voluntary intercourse contributing the most ($\beta = -0.48, t = -10.18, p < 0.001$), followed by sociosexuality ($\beta = 0.34, t = 6.95, p < 0.001$) and then perceived susceptibility ($\beta = 0.12, t = 2.60, p = 0.010$). The effect size attributable to adding the three predictor variables is large (Cohen's $f^2 = 0.75$). In summary, women who have a younger voluntary sexual debut would likely have higher (more unrestricted) sociosexuality and slightly more perceived susceptibility to contracting HIV.

Hypotheses

The first hypothesis predicted that women who were
Table 1. Summary of select demographics.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Entire sampleᵃ</th>
<th>West (n = 84) 32.7%</th>
<th>East (n = 87) 33.8%</th>
<th>South (n = 56) 21.8%</th>
<th>Midwest (n = 30) 11.7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>33.60</td>
<td>36.59***</td>
<td>33.32</td>
<td>30.84***</td>
<td>34.79</td>
</tr>
<tr>
<td>SD</td>
<td>8.89</td>
<td>9.59</td>
<td>7.89</td>
<td>7.51</td>
<td>9.44</td>
</tr>
<tr>
<td>Range</td>
<td>21-61</td>
<td>21-65</td>
<td>22-65</td>
<td>21-58</td>
<td>21-56</td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HSD/GED/Trade school</td>
<td>3%</td>
<td>6%</td>
<td>1%</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>Some college</td>
<td>16%</td>
<td>17%</td>
<td>13%</td>
<td>12%</td>
<td>23%</td>
</tr>
<tr>
<td>College graduate or higher</td>
<td>81%</td>
<td>77%</td>
<td>86%</td>
<td>88%</td>
<td>70%</td>
</tr>
<tr>
<td>Employed (%Yes)</td>
<td>95%</td>
<td>90%</td>
<td>99%</td>
<td>95%</td>
<td>97%</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $45,000</td>
<td>44%</td>
<td>44%</td>
<td>40%</td>
<td>56%</td>
<td>43%</td>
</tr>
<tr>
<td>$45,000+</td>
<td>56%</td>
<td>56%</td>
<td>60%</td>
<td>44%</td>
<td>57%</td>
</tr>
<tr>
<td>Children (% Yes)</td>
<td>42%</td>
<td>46%</td>
<td>37%</td>
<td>30%</td>
<td>62%</td>
</tr>
<tr>
<td>Current relationship status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Committed relationship</td>
<td>66%</td>
<td>65%</td>
<td>65%</td>
<td>64%</td>
<td>77%</td>
</tr>
<tr>
<td>Casual relationship</td>
<td>17%</td>
<td>16%</td>
<td>18%</td>
<td>16%</td>
<td>20%</td>
</tr>
<tr>
<td>Currently not involved in a relationship</td>
<td>17%</td>
<td>19%</td>
<td>17%</td>
<td>20%</td>
<td>3%</td>
</tr>
<tr>
<td>Sexual behavior descriptive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age at 1ˢᵗ voluntary intercourse</td>
<td>17.16</td>
<td>17.46</td>
<td>17.14</td>
<td>17.21</td>
<td>16.67</td>
</tr>
<tr>
<td>SD</td>
<td>2.91</td>
<td>3.17</td>
<td>3.09</td>
<td>3.26</td>
<td>1.73</td>
</tr>
<tr>
<td>Range</td>
<td>9-30</td>
<td>9-28</td>
<td>10-28</td>
<td>12-27</td>
<td>13-20</td>
</tr>
</tbody>
</table>

HSD/GED = High School Diploma/General Equivalency Diploma.ᵃMissing demographic data for 18 participants; *p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001.

Table 2. Means, standard deviations, and ranges for measures.

<table>
<thead>
<tr>
<th>Variable</th>
<th>p</th>
<th>Overall</th>
<th>West</th>
<th>East</th>
<th>South</th>
<th>Midwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociosexual orientation (M)</td>
<td>0.322</td>
<td>49.84</td>
<td>47.55</td>
<td>52.44</td>
<td>49.70</td>
<td>44.50</td>
</tr>
<tr>
<td>SD</td>
<td>25.48</td>
<td>22.39</td>
<td>24.07</td>
<td>26.85</td>
<td>23.33</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>16-192</td>
<td>16-115</td>
<td>16-122</td>
<td>16-141</td>
<td>20-126</td>
<td></td>
</tr>
<tr>
<td>Perceived susceptibility (M)</td>
<td>0.224</td>
<td>9.43</td>
<td>9.18</td>
<td>9.54</td>
<td>10.28</td>
<td>8.63</td>
</tr>
<tr>
<td>SD</td>
<td>4.42</td>
<td>4.48</td>
<td>4.57</td>
<td>4.63</td>
<td>3.45</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>5-25</td>
<td>5-21</td>
<td>5-25</td>
<td>5-24</td>
<td>5-16</td>
<td></td>
</tr>
<tr>
<td>Sexual behavior index (M)</td>
<td>0.849</td>
<td>5.08</td>
<td>5.01</td>
<td>5.19</td>
<td>4.97</td>
<td>5.00</td>
</tr>
<tr>
<td>SD</td>
<td>1.61</td>
<td>1.53</td>
<td>1.61</td>
<td>1.74</td>
<td>1.76</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>1-9</td>
<td>2-8</td>
<td>2-9</td>
<td>1-8</td>
<td>1-8</td>
<td></td>
</tr>
</tbody>
</table>

No significant differences between respondents from the four regions.

more unrestricted in their sociosexuality would have higher perceived susceptibility to contracting HIV. The results showed a significant positive relationship, $F(1, 273) = 20.06, p < 0.001$. As the overall endorsement of casual relationship increased (more unrestricted), so did the women’s perceived susceptibility.
Secondly, the relationship between sociosexuality and risky sexual behavior was examined and was found to be positive, $F(1, 272) = 65.79, p < 0.001$. Women who endorsed sexual relationships without commitment also engaged in significantly more risky lifetime behaviors than those who did not. Contrary to the third hypothesized prediction that a negative relationship would arise between perceived susceptibility and risky sexual behavior, a significant positive association was found, $F(1,272) = 14.84, p < 0.001$. Women who had a higher perception of their HIV risk and susceptibility also engaged in more risky lifetime behaviors.

The final hypothesis examined the moderating effects of perceived susceptibility on the relationship between sociosexuality and sexual behavior. It was predicted that the positive relationship between sociosexuality and the SBI would become weaker as perceived susceptibility increased indicating that the personalization of risk plays a significant role in the enactment of risky and responsible sexual behavior (Figure 2). The Baron and Kenny (1986) method for testing moderators was used. The predictor and moderator variables (sociosexuality and perceived susceptibility, respectively) were centered to eliminate any multicollinearity effects between the two and the interaction term (sociosexuality X perceived susceptibility). The regression model was constructed as follows: (1) the SBI was entered as the dependent variable; (2) sociosexuality was entered into the first block; (3) perceived susceptibility was entered into the second block; and (3) the interactive term was entered into the last block. Although the predictor and moderator, independently, were significantly related to the SBI, the interaction term was not ($\beta = -0.046, t = -0.84, p = 0.401$). Therefore, perceived susceptibility was not shown to be a significant moderator of this relationship.

**DISCUSSION**

This study examined the psychosocial predictors of HIV-risk related sexual behavior among a geographically diverse sample of adult, heterosexual African American women. Demographically, the sample was fairly well educated and they reported low rates of STIs. Additionally, descriptive data revealed a sample where participants reported low levels of perceived susceptibility, and great variability in sociosexuality and sexual risk behavior. This study is novel in that it will help to fill the gap in existing literature on college-educated African American women and psychosocial predictors of risky sexual behaviors. Many previously published sexual behavior studies with African American women, in general, typically included only low income, inner city, drug abusing, or homeless populations (Dancy et al., 2002; Nyamathi et al., 1993; Quinn, 1993). Studies such as this are important, because only presenting data from lower socioeconomic status participants may convey the false perception that HIV-risk and risky sexual behavior is limited to these groups, when in fact, it may be related to other psychological, social, and contextual factors. Clearly, more attention to the diversity within the African American community is needed.

There were three major findings in this study. The first was that levels of sociosexuality (that is, unrestricted versus restricted) significantly predicted levels of perceived susceptibility and risky sexual behavior. Sociosexuality is an individual difference construct that is likely to fluctuate because the willingness to engage in casual sexual relations outside of commitment or strong emotional ties may change over one's lifetime. Psychological correlates such as sociosexuality are important to include in studies and interventions that examine sexual attitudes, decision-making, and behavior. Unfortunately, there has been few studies that examine sociosexuality among racial and ethnic minorities. One of the few studies found that used a primarily racial/ethnic population was Diaz-Loving and Rodriguez (2008). They examined sociosexuality and sexual behavior among 209 Mexican adults living in Mexico City and found great variability on the SOI (mean for women = 37.83). Overall results indicate that unrestricted sociosexuality was significantly related to increased sexual contact and increased number of sexual partners. Hall and Witherspoon (2011) examined sociosexual attitudes and sexual behavior of 57 African American college students attending a historically black college in the Southeast

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Predictor variable</th>
<th>$\beta$</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociosexual orientation inventory (SOI)</td>
<td>Age</td>
<td>-0.17**</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>Age at first intercourse</td>
<td>-0.17**</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>Perceived susceptibility</td>
<td>0.26***</td>
<td>0.07</td>
</tr>
<tr>
<td>Perceived susceptibility (PS)</td>
<td>Age</td>
<td>-0.14*</td>
<td>0.02</td>
</tr>
<tr>
<td>Sexual behavior index (SBI)</td>
<td>SOI</td>
<td>0.44***</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>PS</td>
<td>0.23***</td>
<td>0.05</td>
</tr>
</tbody>
</table>

*p ≤ 0.05; ** p ≤ 0.01; ***p ≤ 0.001.
region of the United States. They found that sociosexuality (mean for women = 56.20) was significantly associated with engagement in riskier sexual behavior ($r = 0.28, p \leq 0.05$).

The second major finding was that the relationship between perceived susceptibility and risky sexual behavior was significant within our sample; however, it was not found to be a significant buffer between sociosexuality and risky sexual behavior. As previously reported, literature has been mixed on whether perceived susceptibility acts as a protective mechanism or not. Women in this study, with a higher perception of risk, also engaged in increased risky sexual behavior. This is contrary to previous studies examining perceived susceptibility (or perceived risk) among African American women (Corneille et al., 2008; Younge et al., 2010). In these studies, low SES women had low levels of perceived susceptibility, but engaged in risky sexual behaviors. This presents an interesting quandary, because it is not known if the perceived susceptibility of the women in this study was increased after engaging in risky behavior, therefore, the person 'learned' about the risk and is now more aware. An alternative explanation could be that participants are aware of their susceptibility and still decide to engage in risky sexual behavior. The disconnection between knowledge and behavior is not unique to the African American community or to HIV (Pichon et al., 2010); however, with the extremely high rates of STIs, including HIV, it is critical to begin to disentangle the relationship between knowledge and behavior to help understand why, even in the face of evidence and information, behaviors are not being tempered.

These findings have implications for theories used to explain preventative behavior and interventions used to prevent risky sexual behavior such as the Precaution Adoption Process Model (PAPM; Weinstein, 1988). The PAPM focuses on psychological processes within an individual, and posits people behave differently based on the specific point of risk personalization or behavior modification. The theoretical tenets of the PAPM may be used to explain why some of the women in the study consider themselves to be at fairly low risk, even when their behavior does not support this. One possibility is that some of the women may have an optimistic bias (a self-serving bias) in which they incorrectly underestimate their risk and overestimate the risk of others. This cognitive depersonalization of risk will not result in sustained attitude or behavior change. Some women may be accurate in their perception of risk, but have not progressed to the stage of action. Even if a woman has personalized the risk and is aware of the possible negative consequences, the costs involved in behavior modification may be too great to change. There may be other factors (cognitive, social, or financial) involved in a woman’s decision to knowingly put herself at risk.
Finally, the covariate which emerged as an important construct in this study was age at first voluntary intercourse or sexual debut. Research indicates that an earlier sexual debut is associated with riskier sexual outcomes such as higher numbers of sexual partners, unplanned pregnancies, and a history of STIs (Bachanas et al., 2002; Kaestle et al., 2005). The relationship between sexual debut and riskier sexual outcomes must be interpreted with caution in this study. There are different cultural norms and expectations that may impact when and why participants engaged in voluntary sexual intercourse for the first time. Factors such as family dynamics, peer norms and influence may play a role in a role in sexual debut; however, these variables were not measured. Future prevention and intervention studies should examine sexual debut as it is possible that women who voluntarily engage in sexual intercourse at early ages may develop different sexual attitudes and beliefs that lay the groundwork for what types of behaviors and partners are appropriate.

As with all studies, there were a few limitations. The use of self-report data relies on the recall of each participant’s interaction and situational decisions, and it is possible that they reported inaccurately. As with all non-experimental studies, predictive relationships can only be assessed. As such, causal statements about psychosocial correlates that predict sexual behavior cannot be made based on the associations established by this study. Finally, perceived susceptibility was tested as an intermediary, or mediator, between sociosexuality and risky sexual behavior. This is something to include in future analyses.

One of the greatest strengths of this study is the representation of a geographically and socioeconomically diverse sample of African American women for the topical area of HIV-related sexual behavior. While some parts of the US were more represented than others, the issue of geographical diversity is important to HIV prevention and intervention planning efforts. Additionally, the use of web-based surveys to collect participant responses has significant advantages (e.g. such as low cost), especially with sensitive topics such as sexual attitudes and behavior, and HIV risk. Many of the samples that are presented in psychological research are those of “convenience” and not necessarily random. The web users are thought to be more diverse than university students or those from a community clinic. In addition, validity in web samples seems to be on par with those in traditional samples (Krantz ad Dalal, 2000) and issues of reliability are the same as those faced in traditional methods (Crano and Brewer, 2002).

Conclusion

Research gaps in the exploration of HIV behavioral risks and psychosocial factors such as sociosexuality has potential implications for future research and practice based on our findings. Although, prevention and intervention services in low-income communities is imperative (Denning, 2010; CDC, 2010), our data illustrates a continuum of sociosexual orientation coupled with self-reported sexual risk behaviors among a highly educated demographic of African American women. Interventions tailored to the needs of economically diverse African American women exhibiting a willingness to engage in casual, uncommitted sex would contribute substantially to the knowledge base. To the author’s knowledge, this is one of the few studies to address the limited data on the role of sociosexuality and perceived susceptibility in predicting risk behavior. The inclusion of psychosocial individual difference variables such as sociosexuality and perceived susceptibility in STI and HIV prevention and intervention programs can help researchers gain a deeper understanding of the variability of attitudes, desires, and behaviors that manifest in participants. African American women are disproportionately affected by STIs, including HIV, and it is imperative that prevention efforts are grounded in not just theories that address cognitive and behavioral factors, but also the psychological and social context in which the women live.

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