

## **Arousability as a Predictor of Sexual Risk Behaviours in African American Adolescent Women**

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### **Abstract**

This study examined the impact of sexual excitation (arousability) on sexual risk-taking behaviours in a community sample of African American adolescent women. Seven hundred and one African American adolescent women completed measures examining propensity for sexual arousal, impulsivity, and sexual behaviour. Compared to women with a lower propensity for sexual arousability, women with a higher propensity reported a greater number of sexual partners, more inconsistent condom use, a greater likelihood of having engaged in sexual intercourse with ‘risky’ partners, and sex while high on alcohol or drugs. Results indicate that women who have a greater propensity to become sexually aroused in a variety of situations may be at a greater risk for contracting HIV/STIs relative to women with a lower propensity for arousal. This suggests that individual differences in the propensity to become sexually aroused should be considered when developing intervention approaches targeting young African American women.

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## Arousability as a Predictor of Sexual Risk Behaviours in African American Adolescent Young Women

Adolescent females are at a high risk for contracting sexually transmitted infections (STI), with up to one in four (24.10%) American women aged 14-19 reporting an STI.<sup>(1)</sup> Additionally, young African American women are disproportionally affected by STIs.<sup>(1)</sup> Previous research on African American adolescent women has focused on behavioural factors that influence whether a person contracts an STI, such as sexual communication<sup>(2)</sup> and consistent condom use.<sup>(3)</sup> To develop and implement optimally effective sexual health education programs for young women, it is important to examine a diverse array of factors that impact sexual risk taking behaviour, including personality or trait factors, such as impulsivity or the propensity to become aroused in a range of situations/settings. Research has found that impulsivity significantly predicts sexual risk taking behaviours in adolescent females, such as poor condom and contraceptive use at last intercourse, increased number of lifetime sexual partners and higher probability of engaging in sexual intercourse before the age of 14.<sup>(4)</sup> Whether arousal in a sexual context is a significant predictor of sexual risk taking in young women, in and of itself, however, has not been addressed in previous research.

The dual-control model of sexual response postulates that individual variation in sexual response is based on the central nervous system processes of sexual excitation and sexual inhibition.<sup>(5)</sup> Individuals differ in the extent to which they respond with

sexual excitation and sexual inhibition in a given situation. It is hypothesized that these individual differences will influence sexual behavior. For example, individuals with high propensity for sexual excitation may exhibit less discretion and may engage more frequently in high-risk sexual behaviour while individuals with a propensity for sexual inhibition may be more likely to experience sexual problems.<sup>(6)</sup>

Although research has focused on a variety of factors that impact sexual risk-taking behaviour, only recently has the effect of sexual excitation on risk-taking been assessed. Much of this research has focused primarily on men's arousal and the impact of sexual excitation and inhibition on men's condom use behaviours, number of sexual partners and the likelihood of engaging in casual sex in risky situations (e.g. cruising).<sup>(7, 8)</sup> There is limited research examining sexual excitation and risk-taking behavior in women, but recent evidence suggests that sexual excitation may be an important factor to consider when examining these behaviours<sup>6</sup>.

In heterosexual women, higher levels of sexual excitation have been found to predict women's lifetime number of sexual partners and condom use during the previous year.<sup>(6)</sup> Additionally, sexual excitation has been linked to women's attitudes towards casual sex.<sup>(9,10)</sup> In college women, sexual excitation was found to significantly predict sexual risk-taking behaviors such as having vaginal or anal sex without a condom.<sup>(11)</sup> This research suggests that sexual excitation plays a role in the sexual risk taking behaviour of women. However, the samples of two of these studies consisted of undergraduate students,<sup>(9, 11)</sup> while the third included a sample of women with a mean age of 33.90 years.<sup>(10)</sup> To date, no studies have examined how sexual excitation impacts the sexual risk taking behaviour of high risk populations such as African

American adolescent women. Sexual excitation may impact women's sexual risk-taking behavior because it affects how easily they become aroused across a range of situations, including situations in which it may not be beneficial to become aroused. Additionally, high sexual arousal may affect a person's ability to make rational decisions when it comes to sexual behaviour.<sup>(12)</sup> Thus, the aim of the current study was to examine the relationship between propensity for sexual arousal and sexual risk-taking behaviours in a clinic-based sample of African American adolescent women.

## **Method**

### **Participants**

Participants in this study were part of a larger study evaluating a sexual risk reduction intervention for young African-American females. The analyses reported in this article are based on data from the baseline assessment. From June 2005 to June 2007 African -American adolescent females, 14-20 years of age, were recruited from three clinics in downtown Atlanta, Georgia, providing sexual health services to predominantly inner-city adolescents. Eligibility criteria included: self-identifying as African American, 14-20 years of age, and reporting vaginal intercourse at least once without a condom in the past 6 months. Adolescents who were married, currently pregnant, or attempting to become pregnant were excluded from the study. Of the eligible adolescents, 94% (N=701) enrolled in the study, completed baseline assessments and were randomized to study conditions.

### **Procedure**

A young African-American woman recruiter approached adolescents in the clinic waiting area, described the study, solicited participation, and assessed eligibility. Adolescents returned to the clinic to complete informed consent procedures, baseline

assessments, and be randomized to trial conditions. Data collection consisted of a 60-minute survey administered via audio computer-assisted self-interviewing technology. Questions on the baseline survey included demographics, sexual history, attitudes and outcome expectancies, psychosocial variables, HIV/STD knowledge, peer norms, and a measure of propensity for sexual arousal. Participants were compensated \$75 for their participation. Written informed consent was obtained from all adolescents with parental consent waived for those younger than 18 due to the confidential nature of clinic services. The Emory University Institutional Review Board approved all study protocols.

## **Measures**

### *Demographic Items*

Participants were asked to report on age, educational status, place of residence (e.g., with a family member or boyfriend), employment status (i.e., whether or not they were currently working), and relationship status (i.e., whether or not they currently had a boyfriend) and duration.

### *Arousability*

Arousability was assessed by the Arousability subscale of the Sexual Excitation/Sexual Inhibition Inventory for Women and Men (SESII-W/M). The SESII-W/M is a 30-item scale comprised of six subscales assessing factors which inhibit or enhance sexual response. Participants are presented with statements and asked to indicate their level of agreement, from 1 (Strongly Disagree) to 4 (Strongly Agree). The questionnaire has demonstrated test-retest reliability and convergent and discriminant validity.<sup>(13)</sup> The subscale most central to risk behaviour, Arousability, was selected for the current investigation. Arousability is comprised of 5 items assessing propensity for arousal

to various sexual stimuli (for example, being physically close to a partner, thinking about sex). Examples of items from this subscale include: “If I am very attracted to someone, I don’t need to be in a relationship with that person to become sexually aroused” and “Just talking about sex is enough to put me in a sexual mood.” Scores on this subscale range from 5 to 20 and higher scores indicate that the individual is more easily aroused. The Cronbach’s alpha for the Arousability subscale in the validation study was .72. In the current investigation, the Cronbach’s alpha was .73.

### *Impulsivity*

Impulsivity was assessed using Zimmerman’s 15-item impulsivity scale.<sup>(14)</sup> Possible scores range from 15 to 75, with higher scores indicating higher levels of impulsivity. Sample scale items include “I like to do things as soon as I think about them”, and “I act on the spur of the moment”. Cronbach’s alpha for the scale in the current study was .76.

### *Sexual Behaviour*

Women were asked to report on a variety of sexual behaviours, including age at first vaginal sex, whether they had ever engaged in anal sex, or had ever had sex while they were high or their partner was high on drugs or alcohol. Lifetime number of vaginal sexual intercourse partners was also assessed, as was the number of vaginal sexual intercourse partners in the past 90 days. Additionally, women were asked the following questions related to sex with risky partners: “Have you personally ever had sex with a man you suspect has had sex with other men?” and “In the past 90 days, have you had vaginal sex with a guy who you know has recently just been released from a jail, prison or detention center?”

### *Condom Use*

Condom use at last sex was assessed by answering yes or no to the following question: “The very last time you had sex, did you use a condom to prevent STDs or pregnancy?” Consistent condom use was assessed by the proportion of times women reported engaging in sex (“In the past 90 days, how many times have you had vaginal sex?”) divided by the number of times they reported using a condom (Out of the past\_\_times you have had vaginal sex in the past 90 days, how many times did you use a condom?”). Condom use with their partners the first time they had sex was also assessed (“The very first time you had sex with your boyfriend/casual partner, did he use a condom?”).

### **Data analysis**

Descriptive statistics were calculated to summarize sociodemographic variables for the entire sample. The following continuous variables were dichotomized using median splits: Arousability (Median = 12.00), lifetime number of partners (Median = 5.00), age of first vaginal sex (Median = 15.00), number of partners in the past 90 days (Median = 1.00).

Hierarchical multiple logistic regression was used to calculate adjusted odds ratios and their 95% confidence intervals. In order to examine whether Arousability significantly predicted sexual risk taking behaviour above a general inclination towards impulsivity, impulsivity was entered as a covariate in the first block. Additionally, as research suggests that sexual behaviours vary with age,<sup>(15)</sup> age was also controlled for. Arousability was entered in the second block and each outcome variable was assessed by a regression model.

### **Results**

The mean (SD) age of the participants was 17.6 (1.7) years. Many (65.3%) were full-time students; the remaining 34.8% had already graduated or were not in school. This



represents appropriate levels of education for their age. Many reported currently living in a mother-only headed household (42.5%). The majority of participants (79.5%) reported being in a current relationship (mean [SD] length of relationship, 14.4 [14.9] months, range 0-72 months, mode = 2 months) and the number of lifetime male vaginal sex partners ranged from 2-200 ( $M = 8.16$ ). The mean score for the Arousability measure was 11.94 ( $SD = 3.12$ ).

Age was a significant predictor of having six or more sexual intercourse partners (adjusted OR = 1.37, CI = 1.24-1.52), not having used a condom at last intercourse (adjusted OR = 1.15, CI = 1.05-1.27), having had sexual intercourse with two or more partners in the past 90 days (adjusted OR = 1.16, CI = 1.07-1.29), having intercourse while high on drugs or alcohol in the past 90 days (adjusted OR = 1.30, CI = 1.16-1.45), and having intercourse while a partner was high on drugs or alcohol in the past 90 days (adjusted OR = 1.10, CI = 1.00-1.21). Impulsivity significantly predicted the following variables: having six or more sexual intercourse partners (adjusted OR = 1.04, CI = 1.02-1.06), having intercourse while high on drugs or alcohol in the past 90 days (adjusted OR = 1.05, CI = 1.02-1.07), having intercourse while a partner was high on drugs or alcohol in the past 90 days (adjusted OR = 1.04, CI = 1.02-1.06) and having sex over the past 90 days with a man who had recently been released from a jail or detention centre (adjusted OR = 1.05, CI = 1.02-1.08).

As shown in Table 1, significant differences were found between women with higher scores on the Arousability scale and women with lower scores on this subscale. Compared with women scoring lower on the Arousability subscale, women who scored higher on this subscale were 55% more likely to report using condoms inconsistently over

the past 90 days, 79% more likely to report nonuse of a condom the first time they have sex with their boyfriend, 67% more likely to report engaging in sexual intercourse with 6 or more partners in their lifetime, as well as 54% more likely to have had more than two sexual partners within the last 90 days. Additionally, women with higher Arousability scores were 164% more likely to have ever engaged in anal sex, 47% more likely to have had sex at least once in the last 90 days while high on drugs or alcohol, and 53% more likely to have had sex at least once in the last 90 days while their partner was high on drugs or alcohol. Women with higher Arousability scores were also more likely to engage in sex with risky partners; specifically, they were 129% more likely to have had sex with a man who they suspected of having had sex with men and 73% more likely to have had sex with a man who had recently been released from prison or a detention centre within the past 90 days.

Higher Arousability scores did not significantly predict the following variables: first sexual intercourse before the age of 15, whether a condom was used at last intercourse, whether a condom was used during first intercourse with a casual sex partner, and whether condoms were used inconsistently in the past 90 days with a partner who was recently released from jail, prison or a detention centre.

## **Discussion**

The results of the current study suggest that adolescent women who demonstrate higher levels of propensity for sexual arousal may be at a greater risk for contracting an STI/HIV infection than adolescent women who have a lower propensity. These results are similar to previous research that has been conducted examining the relationship between Arousability and sexual risk taking behaviours. Graham et al.<sup>(10)</sup> found that higher

Arousability scores on the SESII-W significantly predicted more lifetime sexual partners in adult women. Adolescent women in the current study who scored higher on Arousability reported a higher number of lifetime sexual partners than those who had lower Arousability scores. Further, participants who scored higher on Arousability were more likely to engage in sex with men who had recently been released from prison and men who they suspected of having had sex with men, and to have had sex while under the influence of drugs or alcohol. Not only did adolescent women who scored higher on Arousability report having sex with more partners, they also reported having sex with riskier partners under conditions that might have impeded their ability to consistently use condoms during sexual intercourse. Given that impulsivity was controlled for in the current analysis, this suggests that arousal in a sexual context is a significant predictor of risk-taking over and above a more generalized tendency towards impulsivity.

In the current study, adolescent women who scored higher on Arousability were significantly more likely to report that they did not use condoms consistently within the last 90 days than women who scored lower on Arousability. This finding is in contrast with the research conducted by Graham and colleagues,<sup>(10)</sup> who found that sexual excitation factors did not predict frequency of condom use. However, this may reflect a difference in the age of the samples, as the mean age of women in Graham et al.'s<sup>(10)</sup> sample was 33.7 years and women in the current study had a mean age of 17.6 years. It may be that the relationship between Arousability and sexual risk taking behaviors is different in adolescent women than in adult women. It is also possible that a third variable mediates the relationship between Arousability and condom use. Crosby et al.<sup>(2)</sup> examined the association between condom use and infrequent sexual communication among African American female

adolescents. Adolescents who reported lower motivation to use condoms were less likely to report frequent sexual communication with their partner. Additionally, women who reported communicating less with their partner scored lower on their perceived ability to negotiate condom use. It may be that there is a mediating effect of communication on the relationship between Arousability and sexual risk taking behaviours. That is, higher levels of arousal may impede the ability to communicate effectively about sexual activity and condom use and this relationship may be stronger in younger women than in women who are older and have had more sexual experience.

These results indicate that Arousability is a significant factor that impacts young women's sexual risk taking behaviour and provides support for applying the dual control model in examining sexual risk behaviours in women. This research also highlights the importance of addressing pleasure and arousal within the context of sexual health education for young African American women. Research indicates that condoms are perceived to reduce sexual pleasure<sup>(16)</sup> and that pleasure reduction is a key reason that men and women report for not using condoms.<sup>(17,18)</sup> In adolescents, a greater enjoyment of using condoms is associated with more frequent condom use<sup>(19)</sup> and a decrease in pleasure when using condoms significantly predicts a decrease in condom use.<sup>(20)</sup> Sexual health interventions may benefit from encouraging women to incorporate safe sex practices into their sexual repertoire in a way that is conducive to their high Arousability.

Finally, these findings highlight the importance of considering individual differences among women in the propensity to become sexually aroused when developing and evaluating intervention techniques for young African-American women. Increasing awareness in women who are at greater risk because they become sexually aroused easily

and across a range of situations is important for ensuring that these young women are able to protect themselves from STIs and HIV. Turchik and Gidycz<sup>(21)</sup> found undergraduate students who reported higher levels of arousal within a sexual encounter were more likely to report also having used contraception. The authors suggested that these individuals were cued by their arousal to use a contraceptive method or, alternatively, that those who subjectively experience more arousal might be more prepared *in general* to practice safe sex (e.g., carrying condoms). If their interpretation is correct, it would be worthwhile to work with young women to be more conscious of their level of arousal during specific sexual encounters, so that they can take steps to protect themselves by using condoms or evaluate whether or not to maintain a sexual partnership (e.g., in the case of a potentially risky partner or situation).

Future research could expand upon these findings by examining additional factors that impact Arousability and sexual risk taking. For example, exploring whether the relationship between Arousability and sexual risk taking differs depending on relationship type (e.g. casual, long term) would allow for the creation of more tailored sexual health programs for women in this population. Additionally, future research could test the relationship between Arousability, sexual communication and sexual risk taking behaviours to see if there is a mediating effect of sexual communication on sexual risk taking.

The study was limited by its cross-sectional design. Longitudinal research is needed to assess whether the relationship between Arousability and sexual risk taking changes with age within this population. Additionally, a measure of sexual inhibition was not included in the current analysis. While sexual inhibition is thought to play a stronger role in sexual problems than in sexual risk taking,<sup>(6)</sup> it may be useful to investigate the role

of sexual inhibition in future research with this population. It is possible that sexual inhibition acts as a protective factor for engaging in sexually risky behaviours. For example, research conducted by Turchik and colleagues found that low sexual inhibition predicted sexual risk-taking in college women,<sup>(11)</sup> while high sexual inhibition was negatively related to sexual risk-taking.<sup>(14)</sup> Although the current study had limitations, it is the first to provide information on the impact of Arousability on sexual risk taking behavior in a clinic-based sample of African American adolescent women and highlights the need for more research in this area.

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