ARTICLE

Prevalence, Correlates, and Efficacy of Selective Avoidance as a Sexually Transmitted Disease Prevention Strategy Among African American Adolescent Females

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Objectives: To identify the prevalence and correlates of selective avoidance (SA) of sexual intercourse among African American adolescent females at risk for sexually transmitted disease (STD) acquisition and transmission.

Design: Cross-sectional study.

Setting: Health clinics.

Participants: African American females (N=715) between the ages of 15 and 21 years.

Main Outcome Measures: Self-reported sexual behaviors and laboratory-confirmed STDs.

Results: Among the participants, 35.4% used SA as a strategy to prevent STD acquisition; 25.7% used SA to prevent STD transmission. Use of SA was not associated with current STD status. In multivariable analyses, adolescents who had sexual intercourse with 2 or more partners in the past 60 days, those who had high fear related to condom use negotiation, and those who discussed STD prevention with their sexual partners were 2.05 times more likely (95% confidence interval [CI], 1.31-3.20), 1.55 times more likely (95% CI, 1.09-2.19), and 2.00 times more likely (95% CI, 1.38-2.90), respectively, to use SA to prevent STD acquisition, and the same groups were 2.62 times more likely (95% CI, 1.62-4.24), 1.60 times more likely (95% CI, 1.10-2.32), and 2.13 times more likely (95% CI, 1.39-3.26), respectively, to use SA to prevent STD transmission.

Conclusions: This study provides initial evidence suggesting that SA as a risk-reduction strategy specifically used to prevent STD acquisition and/or transmission may be common among African American adolescent females. Based on a lack of differences in STD prevalence, we recommend that clinicians and prevention programs discourage the use of SA as an STD prevention strategy and encourage adolescent females to use condoms consistently and correctly with all male sexual partners.

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SEXUALLY TRANSMITTED DISeases (STDs) are a common source of morbidity among adolescent females, particularly those who are African American and reside in the South.[1-6] Multiple correlates and predictors of condom use among African American adolescent females have been identified.[7-10] Another important but understudied protective behavior is the situational avoidance of sexual intercourse (selective avoidance [SA]). As contrasted to abstinence (the practice of delaying sexual activity until adulthood and/or marriage), adolescents may engage in SA under the false assumption that protective value will occur.

Selective avoidance, defined as not having sexual intercourse based on concerns about acquiring an STD from a sexual partner or transmitting an STD to a sexual partner, may be adopted based on the following: (1) suspicion of potential acquisition (believing that a male sexual partner has an STD), or (2) suspicion of potential transmission (believing that "I am infected and could infect my male sexual partner"). Understanding the practice of SA may be an especially critical dimension involved in understanding the STD-associated risk and protective practices of African American adolescent females. Unfortunately, empirical investigations regarding situational SA have focused only on periodic abstinence[11-13] (a term used in conjunction with the contraceptive method of natural family planning) or complete abstinence.[14-17]

Accordingly, the purpose of this study was 2-fold. First, prevalence of SA among a high-risk sample of African American adolescent females residing in

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the South was determined. Second, correlates of SA were identified. Correlates were grouped based on 3 distinct research questions: (1) Is SA associated with less risk as measured by the frequency of unprotected vaginal sexual intercourse (UVS) and by the acquisition of laboratory-confirmed STDs? (2) What are the motives adolescent females may have for engaging in SA? and (3) Are relationship dynamics associated with the practice of SA?

METHODS

STUDY SAMPLE

Participants included 715 African American adolescent females enrolled in a randomized trial of a human immunodeficiency virus prevention program. Only baseline data were used for this study. Recruitment sites were an urban, publicly funded STD clinic, a teen clinic, and a family planning clinic (all were located in the same urban area). From March 2002 through August 2004, project recruiters screened for eligibility. Adolescents were eligible to participate if they were African American females aged 15 to 21 years who reported sexual activity in the previous 60 days. Exclusion criteria were being married, being pregnant, or attempting to become pregnant. Of 1558 adolescents screened, 874 were eligible. The study achieved an 82% participation rate (N=715). The institutional review board at Emory University approved the study protocol.

DATA COLLECTION

Data collection included an audio-computer–assisted self-interview lasting about 60 minutes and a self-collected vaginal swab analyzed using polymerase chain reaction assays to detect *Trichomonas vaginalis*, *Chlamydia trachomatis*, and *Neisseria gonorrhoeae*. Participants were compensated $50 for their completion of these procedures.

SELF-REPORTED MEASURES

Based on evidence suggesting the possibility of decreased reporting bias,[18] all of the self-report measures were assessed using an audio-computer–assisted self-interview. By providing a voice track, this technology may reduce problems otherwise posed by illiteracy.

Selective Avoidance

Two questions were used. The first asked, "In the past 60 days, how many times have you avoided having sex as a way of not being infected with an STD?" The second asked, "In the past 60 days, how many times have you avoided having sex as a way of not infecting your partner with an STD?" Based on their responses, participants were categorized into 1 of 3 categories: (1) used SA to prevent STD acquisition, (2) used SA to prevent STD transmission, or (3) never used SA.

Unprotected Vaginal Sexual Intercourse

A 60-day recall period was used to assess how many times adolescents engaged in vaginal sexual intercourse without using condoms. A dichotomous variable representing no UVS and any UVS was also created.

Laboratory-Confirmed STD

We tested for 3 treatable, nonviral STDs. Adolescents self-collected a vaginal swab specimen that was subsequently evaluated for *T vaginalis*, *C trachomatis*, and *N gonorrhoeae*. *T vaginalis* was assayed using a real-time polymerase chain reaction assay.[19] *C trachomatis* and *N gonorrhoeae* were initially assayed using the Abbott LCx Probe System[20-22] (Abbott Laboratories, Abbott Park, Illinois). However, in September 2002, this assay was discontinued and we began using the BDProbeTec ET *C trachomatis* and *N gonorrhoeae* amplified DNA assay (Becton Dickinson and Co, Sparks, Maryland).[23]

Motivations for Using SA

Using a 60-day recall period, we asked whether adolescents' boyfriends or male sexual partners were concurrently having sexual intercourse with other females, whether adolescents had more than 1 male sexual partner, and whether adolescents had sexual intercourse with a casual male partner. We also asked adolescents whether they suspected that they had an STD before coming to the clinic. Response categories were yes or no for each of the potential SA motives.

Relationship Dynamics

Three relationship constructs were assessed. Power in relationships was measured with a shortened version of a scale created by Pulerwitz and colleagues.[24] Items included statements such as "I am more committed to our relationship than my partner" and "my partner does what he wants even if I don't want him to." Response alternatives were provided on a 4-point Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). Responses were coded so that higher scores indicated greater perceived power in relationships. The 12-item version of this measure yielded adequate reliability ($\alpha = .80$).

Adolescents' fear of condom use negotiation was assessed. The scale used was adopted from previous studies[25,26] published by our research team and included 8 items. All of the items began with the stem "I have been worried that if I talked about using condoms with my boyfriend or sex partner(s)," and then was followed by a potential outcome such as "he would threaten to hit me." Each item was answered with a 5-point Likert-type response ranging from never to always. Responses were coded so that higher scores indicated greater fear of the outcomes associated with negotiating condom use.

The final construct was communication with a boyfriend or sexual partner. A single item was used. We asked whether the adolescents had talked with their boyfriends or sexual partners in the past 60 days about the prevention of STDs. Responses were yes or no.

DATA ANALYSIS

Bivariate Associations

The 2 continuous variables (power in relationships and fear of condom use negotiation) were assessed for normality by calculating their degree of skewness and kurtosis. Both were observed to be not normally distributed and were dichotomized by a median split. Associations between the SA variables and the outcomes (UVS and STDs) as well as the correlates were assessed by contingency table analyses, prevalence ratios, and their corresponding 95% confidence intervals (CIs).

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Table 1. Selective Avoidance to Prevent Acquisition and Transmission of Sexually Transmitted Diseases Among 715 African American Adolescent Females, With Associated Motivations and Relationship Dynamics

Motivations for Using SA	SA to Prevent STD Acquisition		SA to Prevent STD Transmission	
	Participants, %	PR (95% CI)	Participants, %	PR (95% CI)
Current boyfriend or sexual partner has sexual intercourse with other females				
No (n=373)	27.9		21.7	
Yes (n=162)	43.8	1.57 (1.24-2.04)[a]	29.0	1.34 (0.98-1.82)
Sexual intercourse with ≥ 2 partners[b]				
No (n=478)	29.5		19.7	
Yes (n=237)	47.3	1.60 (1.32-1.94)[a]	38.0	1.93 (1.52-2.47)[a]
Sexual intercourse with a casual partner[b]				
No (n=490)	32.0		21.6	
Yes (n=225)	42.7	1.33 (1.09-1.62)[a]	34.7	1.60 (1.25-2.05)[a]
Recently suspected STD symptoms				
No (n=560)	33.2		20.5	
Yes (n=155)	43.2	1.30 (1.05-1.61)[a]	44.5	2.17 (1.71-2.75)[a]
Fear of condom use negotiation				
Low (n=501)	31.9		21.8	
High (n=214)	43.5	1.36 (1.12-1.66)[a]	35.0	1.61 (1.26-2.06)[a]
Perceived power in relationships				
High (n=368)	32.1		19.0	
Low (n=346)	38.7	1.21 (0.99-1.47)	32.7	1.72 (1.32-2.23)[a]
Discussed STD prevention with boyfriend or sexual partner[b]				
No (n=199)	25.1		17.1	
Yes (n=516)	39.3	1.57 (1.20-2.04)[a]	29.1	1.70 (1.22-2.38)[a]

Abbreviations: CI, confidence interval; PR, prevalence ratio; SA, selective avoidance; STD, sexually transmitted disease.
[a] The PRs are statistically significant.
[b] Assessed for a recall period of 60 days.

Multivariable Associations

Because the second and third research questions each involved multiple correlates, significant bivariate-level correlates were entered simultaneously into 4 separate logistic regression models: 1 for motivation of SA to prevent acquisition, 1 for motivation of SA to prevent transmission, 1 for relationship dynamics of SA to prevent acquisition, and 1 for relationship dynamics of SA to prevent transmission. The models were used to calculate adjusted odds ratios and their corresponding 95% CIs.

RESULTS

CHARACTERISTICS OF THE SAMPLE

The mean (SD) age of the adolescents was 17.8 (1.7) years. The median level of education fell between grades 10 and 11. Among the participants, 17.6% tested positive for *C trachomatis,* 12.9% tested positive for *T vaginalis*, and 4.9% tested positive for *N gonorrhoeae.* Overall, 206 adolescents (28.8%) tested positive for at least 1 of the 3 STDs. Of note, for the 155 adolescents who suspected an STD infection, the mean time that elapsed between initial suspicion and diagnosis was 9.7 days.

PREVALENCE OF SA AS A RISK-REDUCTION STRATEGY

Slightly more than one-third (253 participants [35.4%]) indicated that they had used SA as a way of preventing STD acquisition. Just more than one-quarter (184 participants [25.7%]) indicated that they had used SA to prevent transmitting an STD to a male sexual partner.

SA, UVS, AND STDs

Selective avoidance to prevent STD acquisition was not associated with having any UVS ($P=.28$); however, there were significant differences in the mean number of UVS occurrences ($t_{564}=3.52$; $P=.002$) between those using SA (mean [SD] number of UVS occurrences, 4.94 [8.75]) and those not using SA (mean [SD] number of UVS occurrences, 8.13 [12.87]) to prevent STD acquisition. Selective avoidance to prevent STD transmission was not associated with having any UVS ($P=.36$). Also, the mean number of UVS occurrences did not significantly vary between those using and those not using SA to prevent STD transmission ($t_{564}=0.97$; $P=.34$).

With respect to laboratory-confirmed biological measures, adolescents' use of SA was not associated with STD status. This was true regardless of whether SA was used to reduce the risk of disease acquisition (prevalence ratio=0.96; 95% CI, 0.75-1.22; $P=.74$) or to reduce the risk of disease transmission (prevalence ratio=1.16; 95% CI, 0.98-1.49; $P=.26$).

MOTIVES FOR USING SA

Table 1 displays the bivariate associations between the assessed potential motives and the 2 SA variables. As

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Table 2. Adjusted Odds Ratios for Correlates of Selective Avoidance Among 715 African American Adolescent Females

Correlate	AOR (95% CI)	
	SA to Prevent STD Acquisition	SA to Prevent STD Transmission
Recently suspected STD symptoms	1.06 (0.66-1.71)	2.46 (1.52-3.98)[a]
Current boyfriend or sexual partner has sexual intercourse with other females	1.83 (1.23-2.72)[a]	1.17 (0.75-1.84)
Sexual intercourse with ≥ 2 partners[b]	2.05 (1.31-3.20)[a]	2.62 (1.62-4.24)[a]
Sexual intercourse with a casual partner[b]	1.30 (0.82-2.07)	1.29 (0.77-2.13)
High fear of condom use negotiation	1.55 (1.09-2.19)[a]	1.60 (1.10-2.32)[a]
Low perceived power in relationships	1.21 (0.87-1.67)	1.86 (1.29-2.67)[a]
Discussed STD prevention with boyfriend or sexual partner[b]	2.00 (1.38-2.90)[a]	2.13 (1.39-3.26)[a]

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; SA, selective avoidance; STD, sexually transmitted disease.
[a]The AORs are statistically significant.
[b]Assessed for a recall period of 60 days.

shown, 3 motives achieved significance with both SA outcome variables: having sexual intercourse with 2 or more partners, having sexual intercourse with a casual partner, and recently suspecting STD symptoms. The belief that a current boyfriend or sexual partner was having sexual intercourse with other females was significantly related to SA to prevent acquisition but not to SA to prevent transmission.

RELATIONSHIP DYNAMICS AND SA

Of the 3 correlates representing relational dynamics, greater fear of condom negotiation and discussing STD prevention were associated with engaging in SA to prevent both acquisition and transmission. Although lower perceived power in relationships was not related to SA to prevent acquisition, it was related to SA to prevent transmission.

MULTIVARIABLE ANALYSES

Table 2 displays the adjusted odds ratios and their corresponding 95% CIs. As shown, having sexual intercourse with 2 or more partners in the past 60 days was significantly associated with both forms of SA. Adolescents' belief that their boyfriend or sexual partner was also having sexual intercourse with other females was associated with SA to prevent STD acquisition but not to prevent transmission. Also, adolescents who recently suspected that they had symptoms of an STD were significantly more likely to engage in SA to prevent disease transmission. Regarding relationship dynamics, high fear of condom use negotiation and discussing STD prevention with a boyfriend or sexual partner were significantly associated with both forms of SA. Finally, those perceiving low relationship power were significantly more likely to use SA to prevent STD transmission but not to prevent acquisition.

COMMENT

The findings suggest that the practice of selectively avoiding sexual intercourse specifically to prevent the acquisition and/or transmission of STDs may be prevalent among African American adolescent females. This risk-reduction strategy, however, did not confer a protective effect against the acquisition of nonviral STDs. We observed a significant difference for 1 behavioral measure, the mean number of UVS episodes, with adolescents practicing SA having a lower mean number of UVS episodes. This is important because it provides evidence suggesting that some adolescent females who suspect that they may acquire an STD from their partner engage in fewer unprotected sexual episodes. Although this reduction in risk behavior most likely was motivated to avoid contracting an STD, it was not adequate as a protective strategy as determined by the lack of a difference in STD prevalence.

Thus, using SA as a risk-reduction strategy may be a well-intended but ineffective method in reducing STDs among African American adolescent females. Unfortunately, SA may inadvertently promote a sense of protection, thereby obviating the use of more effective strategies.

Understanding motivations adolescents may have for engaging in SA may elucidate potential intervention strategies. For example, in this study, one motive that was especially robust was having multiple sexual partners in the past 60 days. Consistent with current prevention messages, adolescents having multiple partners may have perceived a need to avoid sexual intercourse (with ≥ 1 of these male partners) to prevent STD acquisition and/or transmission. This perception could become a leverage point to motivate African American adolescent females who have sexual intercourse with multiple partners to adopt 1 of 2 courses of action: (1) negotiate consistent and correct use of condoms with each partner, or (2) avoid all further sexual intercourse with male partners suspected of having an STD (until the suspicion is resolved by testing and treatment) and avoid sexual intercourse with all male partners if the adolescent female suspects that she may have an STD (until testing and treatment occur).

Of great interest, adolescents who suspected that their partners had been concurrently having sexual intercourse with other females were significantly more likely to use SA in an effort to reduce their risk of STD acquisition. Again, the intent is important because it suggests a potential starting point for behavioral intervention. Given that African American adolescent females may often lack adequate relational power,[27,28] providing them

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with the skills needed to amplify their intent for avoiding sexual intercourse may be important. Indeed, this may be an effective way of enabling them to more fully achieve potential desires to use abstinence rather than condoms to avert STD acquisition and/or transmission.

Also, adolescents who suspected that they had recently acquired an STD were significantly more likely to use SA to prevent STD transmission. Future research should establish whether this reason for using SA is overt or covert. In the context of a power-imbalanced relationship, covert efforts may fail. Ironically, these failed efforts could pose risk to male partners. While great caution should be exercised, it may be worth exploring whether interventions could help African American adolescent females shift toward more overt attempts to prevent transmission. Such efforts would entail helping adolescent females to rectify or discontinue power-imbalanced relationships. Indeed, our findings support this notion by showing that adolescents perceiving relatively less power were significantly more likely to engage in SA to prevent STD transmission. Also, interventions should provide adolescent females with the motivation, skills, and access they need to promptly seek diagnosis and treatment when they suspect infection. Our findings indicate that unnecessary delay may be occurring.

The findings also provide insight into relational dynamics that may influence African American adolescent females' ability to engage in SA. For example, in the multivariable analyses, those with relatively greater levels of fear pertaining to negotiating condom use were significantly more likely to use SA. This suggests the possibility that sometimes SA may be easier to negotiate than condom use. In fact, SA can be initiated much earlier than condoms in the sequence of events that may lead to unprotected intercourse. From the viewpoint of the theory of gender and power, it is likely that SA is a case of too little resistance in the face of male-exerted pressure to engage in unprotected sexual intercourse. Intervention efforts may help resolve the problem by providing African American adolescent females with strategies and negotiation skills specifically designed to help them avoid sexual intercourse more consistently. The most effective strategies may be those that are antithetical to arousal (eg, avoid being alone with the partner, avoid using drugs or alcohol with the partner, avoid viewing sexually arousing videos together).

In theory, the merit of SA is highly dependent on the accurate appraisal of male partners' risk and adolescent females' ability to enact protective behaviors. Adolescent females may be basing their decisions regarding the use of SA on perceptions of the male partner's risk. However, these perceptions may be ill informed, incorrect, or biased. Moreover, as the findings demonstrate, even if reducing the number of UVS episodes by 50%, adolescents practicing SA relative to those who did not practice SA to avoid STD acquisition were just as likely to be diagnosed with a laboratory-confirmed STD. Thus, the findings indicate that SA may lead to reductions in UVS but not corresponding reductions in infection. Consequently, we recommend that clinicians and prevention programs discourage the use of SA as an STD prevention strategy and encourage adolescent females to use condoms consistently and correctly with all male sexual partners.

Findings are limited by the use of self-reported measures. The use of a convenience sample as well as the cross-sectional study design also limit the generalizability of the findings and the ability to establish the temporal directionality of associations, respectively.

CONCLUSIONS

Findings from this study suggest that SA may be commonly practiced by this population to prevent STD acquisition and/or transmission. Additionally, several potentially important relational and motivational correlates associated with the use of SA may exist. Unfortunately, SA may not be sufficient to achieve STD risk reduction. We recommend that clinicians and prevention programs discourage the use of SA as an STD prevention strategy and encourage consistent and correct condom use with all male sexual partners.

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As a society, we have strong class divisions and we project these values onto our kids. MySpace and Facebook seem to be showcasing this division quite well. My hope in writing this out is to point out that many of our assumptions are problematic and the Internet often reinforces our views instead of challenging them.

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