

# Effects of Fear of Abuse and Possible STI Acquisition on the Sexual Behavior of Young African American Women

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Adolescence is a developmental period typically associated with risky and health-compromising behaviors. With the decrease in age at sexual initiation and the increase in sexual behaviors observed among adolescents,<sup>1</sup> attention to risk factors that may affect the sexual health of adolescents is critical. During adolescence, as girls develop and attempt to maintain dating and sexual relationships, some will experience abuse by a partner, which may adversely affect their ability to negotiate safer-sex practices, including condom use. Dating violence, a pervasive public health problem, affects between 12% and 43% of adolescents in the United States<sup>2,3</sup> and has the potential to increase the likelihood that adolescent girls will engage in sexual behaviors that increase their risk for HIV/AIDS.<sup>4</sup>

At every phase of the HIV/AIDS epidemic in the United States, from HIV infection to death from AIDS-related complications, African Americans are disproportionately affected when compared with Whites and other racial/ethnic groups. This disparity is most glaring among African American women, whose rate of AIDS diagnosis is approximately 23 times that of White women in the United States.<sup>5</sup> Furthermore, young African Americans in the United States are at increased risk of HIV infection. Among the 18 849 individuals younger than 25 years diagnosed with HIV or AIDS between 2001 and 2004, 64% were African American.<sup>6</sup>

As a result of the HIV/AIDS crisis in the African American community, numerous studies have assessed factors associated with HIV risk behaviors among African Americans at the individual (e.g., knowledge, self-efficacy, risk perception), peer (e.g., peer norms for condom use), and societal (e.g., gender norms, gender and economic inequality) level.<sup>7-9</sup> These studies have led to programs to address these factors, with the intention of promoting change in HIV risk behaviors. Theories used to guide the development of HIV prevention interventions include the theory of reasoned

**Objectives.** We examined the interactive effects of fear of abuse and knowledge of sexually transmitted infections (STIs) on sexual risk behaviors in a sample of young African American women.

**Methods.** We recruited 715 young African American women aged 15 to 21 years from a variety of health clinics and assessed them for fear of abuse because of negotiating condom use, knowledge of STIs, and several sexual risk behaviors.

**Results.** Overall, 75% of young African American women reported inconsistent condom use in the past 60 days. Surprisingly, under relatively higher levels of fear, young women with high STI knowledge were more likely than were those with low STI knowledge to exhibit inconsistent condom use in the past 60 days (89% vs 80%;  $\chi^2=4.32$ ;  $P\leq.04$ ) and during the last sexual intercourse with a main sexual partner (76% vs 70%;  $\chi^2=8.06$ ;  $P\leq.01$ ).

**Conclusions.** Most HIV prevention interventions focus on increasing knowledge about the transmission of STIs. However, other contextual factors such as fear of abuse because of negotiating condom use may heighten the risk of HIV infection. Our findings highlight the need for combining dating violence prevention activities with STI and HIV prevention programs targeting young African American women. (*Am J Public Health.* 2009;99:1067-1071. doi: 10.2105/AJPH.2007.131482)

action<sup>10</sup> and the health belief model.<sup>11</sup> Based on these theories and subsequent prevention programs, behavioral change is more likely to occur with increased knowledge of HIV and other sexually transmitted infections (STIs) among high-risk individuals. There are, however, mixed findings for the effect of HIV/STI knowledge on promoting individuals' behavior change, and the causal link has not been well established.<sup>12</sup> Hence, contextual factors between partners, such as dating violence, may explain sexual risk behaviors beyond increasing knowledge about how HIV and other STIs are transmitted.

Social cognitive theory suggests that knowledge, though necessary, may not be sufficient to motivate people to adopt HIV-preventive behaviors; at best, knowledge is a prerequisite for behavior change.<sup>13</sup> Social cognitive theory suggests that self-efficacy is also necessary when reducing risky sexual behavior and increasing safer sexual practices, such as condom use. Previous studies show that adolescents who feel confident in their ability to correctly use condoms,<sup>13,14</sup> to negotiate condom use with

their partners,<sup>14,15</sup> to say "no" to unprotected intercourse,<sup>16</sup> and to discuss their partner's sexual history<sup>15,17</sup> are likely to use condoms more often and have lower rates of STIs than are those adolescents who are relatively less confident or self-efficacious. This positive association between self-efficacy and safer sexual practices is important in understanding an adolescent girl's risk of HIV infection, particularly when attempting to negotiate condom use. Fear of an abusive partner might undermine an adolescent girl's self-efficacy to encourage her sexual partner to use condoms.

Because of the high rates of HIV infection observed in young women, the field of HIV prevention has seen a growing research interest in the intersection of gender-based violence and HIV infection. Specifically, there is mounting recognition of the effect of gender-based violence on young women's perceived ability to engage in safer sexual practices.<sup>18</sup> However, although most HIV prevention programs subscribe to the belief that knowledge of HIV/STI transmission is necessary to facilitate behavior change, programs often

lack a substantial focus on gender-based factors that may compromise or threaten a woman's self-efficacy to enact such change in light of newly acquired HIV/STI prevention knowledge.

We focused on abuse—specifically, fear of abuse in adolescent and young-adult dating relationships—and its impact on HIV-related risk behaviors. We assessed the effect of fear of abuse because of attempted condom negotiation on the relation between STI knowledge and high-risk sexual behavior among African American women aged 15 to 21 years. We expected those with low STI knowledge and high fear of abuse because of condom negotiation to be more likely to engage in high-risk sexual behaviors than would those with high STI knowledge and low or no fear of abuse.

## METHODS

From March 2002 through August 2004, project recruiters screened adolescent girls and young women from a county STI clinic, a hospital-based teen clinic, and a family planning clinic located in a large southeastern city in the United States. African American women aged 15–21 years who had been sexually active in the past 60 days were eligible to participate in an HIV prevention program designed for young African American women. Those who were married, currently pregnant, attempting to become pregnant, lacking child-care, or in a detention center were excluded. Of the 847 eligible women, 715 (84%) agreed to participate; the majority of those who were eligible but who did not participate in the study were unavailable because of work scheduling conflicts. All participants provided written informed consent. Parental consent was not required for those younger than 18 years because all were seeking confidential reproductive health services at local clinics.

### Data Collection

Data collection included an audio computer-assisted self-interview lasting about 40 minutes and a self-collected vaginal swab for nucleic acid amplification tests to detect *Trichomonas vaginalis*, *Chlamydia trachomatis*, and *Neisseria gonorrhoeae*. The self-interview consisted of several questions about behaviors over the past

60 days. We provided participants with a 60-day calendar to assist them in accurately recalling specific behaviors during the interview. A standardized script instructed participants to document significant events they remembered for this period. We demonstrated on a model vagina the correct procedure for collecting a vaginal swab specimen to test for STIs. Participants were then asked to self-collect a vaginal swab specimen that was subsequently evaluated for *T. vaginalis*, *C. trachomatis*, and *N. gonorrhoeae*. Participants were compensated \$50 for their completion of these procedures.

*T. vaginalis* was assayed with the BDProbeTec ET Culturette Direct Dry Swab System (Becton Dickinson and Co, Sparks, MD).<sup>4</sup> *C. trachomatis* and *N. gonorrhoeae* were initially assayed with the Abbott LCx Probe System (Abbott Laboratories, Abbot Park, IL). However, in September 2002 (after testing 102 participants), this Abbot assay was discontinued and we began using the BDProbeTec ET *C. trachomatis* and *N. gonorrhoeae* amplified DNA assay (Becton Dickinson and Company, Sparks, MD).<sup>5</sup> Because the Abbot and BDProbeTec ET tests have equally high levels of sensitivity, it was not necessary to retest the 102 participants who were tested with the Abbot assay. Participants who tested positive for any of the STIs were offered free treatment at all participating clinics by direct observed therapy. We notified the county health department of reportable STIs.

### Measures

The audio computer-assisted self-interview assessed several sociodemographic characteristics and gender-based psychosocial constructs. To assess fear of abuse and other negative consequences of condom negotiation<sup>4</sup> ( $\alpha=.89$ ), participants were asked about the degree to which they were worried that if they talked about using condoms with their sexual partner he would respond in negative ways, including threatening to hit, push, or kick them; leave them; swear at them; or call them names. Participants responded on a 5-item Likert-type scale ranging from 1 (never) to 5 (always). All scores were summed, and low and high fear categories were created from a median split of the scale scores. Lifetime partner abuse was assessed by asking participants if they had ever

been emotionally abused and if anyone had ever made them have vaginal or anal intercourse when they did not want to. To assess recent main partner abuse, participants aged 18 and older were asked if they had been emotionally, physically, or sexually abused in the past 60 days by their main sexual partner. (Because of mandatory reporting requirements for suspected child abuse, we did not ask participants younger than 18 years to report recent partner abuse experiences.)

We used an 11-item scale<sup>19</sup> ( $\alpha=.66$ ) employing true-or-false response options to measure each participant's knowledge of STIs. Example items include "Most people who have AIDS look sick," "If a man has an STI he will have noticeable symptoms," and "Birth control pills protect women against the AIDS virus." All scores were summed, and low and high STI knowledge categories were derived from a median split of the scale scores.

The outcome variable, risky sexual behavior, was assessed 4 ways: whether participants (1) used a condom every time they had vaginal intercourse in the past 60 days, (2) used a condom during the last instance of sexual intercourse with a main partner, (3) had sex while experiencing untreated STI symptoms, and (4) had unprotected sex while experiencing untreated STI symptoms. Condom use in the past 60 days was calculated as the ratio of the number of times participants used a condom to the reported number of episodes of vaginal intercourse in the past 60 days. Scores were then recoded as 0 (consistent condom user, wherein ratio equals 1.00) or 1 (inconsistent condom user, wherein ratio is less than 1.00).

## RESULTS

In this sample of young African American women, 206 (28.8%) tested positive at baseline for at least 1 of the 3 STIs we assessed. Seventy-five percent reported inconsistent condom use in the past 60 days, and 61% reported that their most recent instance of sexual intercourse with their main partner was unprotected. One hundred fifty-five participants (22%) reported experiencing STI symptoms, among whom 83% reported having sex (and 76% unprotected sex) while experiencing untreated STI symptoms. Also, almost half (47.6%) of women aged 18–21 years reported

experiencing relationship abuse in their lifetime, with 15% reporting abuse by a main sexual partner in the past 60 days.

We conducted 4 separate hierarchical logistic regression analyses to predict risky sexual behavior. Each behavior was regressed on age (covariate) in the first step, STI knowledge (independent variable) in the second step, fear of abuse because of condom negotiation (moderator variable) in the third step, and the interaction term in the fourth step. There were 2 significant interaction effects, 1 predicting inconsistent condom use during the most recent sexual intercourse with the main partner (Table 1), and 1 predicting inconsistent condom use during sexual intercourse in the past 60 days (Table 2). With a layered  $\chi^2$  technique to produce frequencies for each category of the interaction term, our post hoc analyses revealed that under relatively higher levels of fear, women with high STI knowledge were more likely than were those with low STI knowledge to exhibit inconsistent condom use during their last sexual intercourse with a main partner (76% vs 60%;  $\chi^2=8.06$ ;  $P\leq.01$ ; Figure 1) and in the past 60 days (89% vs 80%;  $\chi^2=4.32$ ;  $P\leq.04$ ; Figure 2). Under low levels of fear, there was no relation between STI knowledge and inconsistent condom use. Also, compared with women reporting high STI knowledge and low fear, those with high STI knowledge and high fear were significantly more likely to report inconsistent condom use in the past 60 days (89% vs 69%;  $\chi^2=17.10$ ;  $P\leq.001$ ) and during their last sexual intercourse with a main partner (76% vs 56%;  $\chi^2=13.00$ ;  $P\leq.001$ ). Finally, women with low STI knowledge and high fear were significantly more likely to report inconsistent condom use in the past 60 days than were those with low STI knowledge and low fear (80% vs 63%;  $\chi^2=9.86$ ;  $P\leq.002$ ).

No interaction effect was found for sexual intercourse (including unprotected intercourse) during an untreated, symptomatic STI; however, main effects were observed. Women with high STI knowledge were significantly less likely (adjusted odds ratio [AOR]=6.8;  $P\leq.02$ ) to have sex while experiencing untreated STI symptoms than were those with low STI knowledge. Also, women with high STI knowledge were significantly less likely (AOR=4.6;  $P\leq.05$ ) to have unprotected sex

**TABLE 1—Results of Logistic Regressions for Inconsistent Condom Use During Most Recent Sexual Intercourse With a Main Partner Among African American Women Aged 15–21 Years: 2002–2004**

Predictors	AOR (95% CI)	B (SE)
Age	1.23 (0.80, 1.91)	0.20 (0.23)
STI knowledge	1.02 (0.66, 1.59)	0.02 (0.23)
Fear of consequences	0.91 (0.32, 2.59)	-0.09 (0.53)
STI knowledge×fear of consequences	8.80* (1.84, 41.98)	2.17 (0.80)

Note. AOR=adjusted odds ratio; CI=confidence interval; STI=sexually transmitted infection. We controlled for age throughout.

\* $P\leq.01$ .

**TABLE 2—Results of Logistic Regressions for Inconsistent Condom Use During Intercourse in the Past 60 Days Among African American Women Aged 15–21 Years: 2002–2004**

Predictors	AOR (95% CI)	B (SE)
Age	1.55 (0.97, 2.48)	0.44 (0.24)
STI knowledge	1.32 (0.83, 2.11)	0.28 (0.24)
Fear of consequences	0.99 (0.33, 3.00)	-0.01 (0.57)
STI knowledge×fear of consequences	5.52* (1.11, 27.47)	1.71 (0.82)

Note. AOR=adjusted odds ratio; CI=confidence interval; STI=sexually transmitted infection. We controlled for age throughout.

\* $P\leq.04$ .

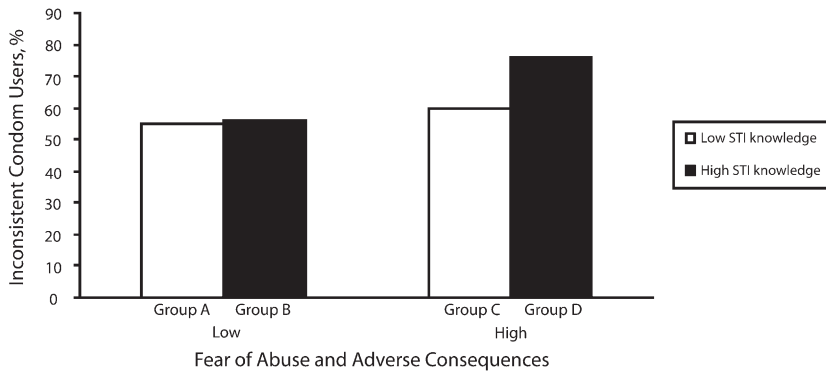
while experiencing untreated STI symptoms than were those with low STI knowledge.

## DISCUSSION

The data indicated that a substantial proportion of the African American young women we examined have had unprotected sex. Furthermore, our study illuminated the role of an important contextual factor, fear of abuse because of negotiating condom use, in risky sexual behavior among young women. Although fear and knowledge together serve to heighten the risk of HIV infection, the nature of this interaction was unexpected. When assessing condom use during the last instance of sexual intercourse with a main partner and in the past 60 days overall, STI knowledge was positively related to inconsistent condom use under conditions of high fear. One possible explanation for this counterintuitive finding is that study participants may have balanced the relative threat of abuse with the possibility of acquiring

an STI. In other words, more knowledge about STI transmission may cause young women to assess their partner's risk and conclude that the risk of abuse because of negotiating condom use is greater than the risk of contracting an STI, particularly if they know or suspect their partner is a low risk for STIs (e.g., they believe their partner is monogamous). Based on social cognitive theory, balancing the risk of abuse with the risk of acquiring an STI is influenced by an individual's outcome expectancy—a belief about the likelihood of a behavior leading to a specific outcome—and further supports the idea of social cognitive theory that knowledge alone is not sufficient to enact behavioral change.

This proposed explanation—balancing the relative threat of abuse with the possibility of acquiring an STI—is partially supported by our finding that STI knowledge was negatively related to inconsistent condom use when we assessed the likelihood of a woman having sex while experiencing untreated STI symptoms.



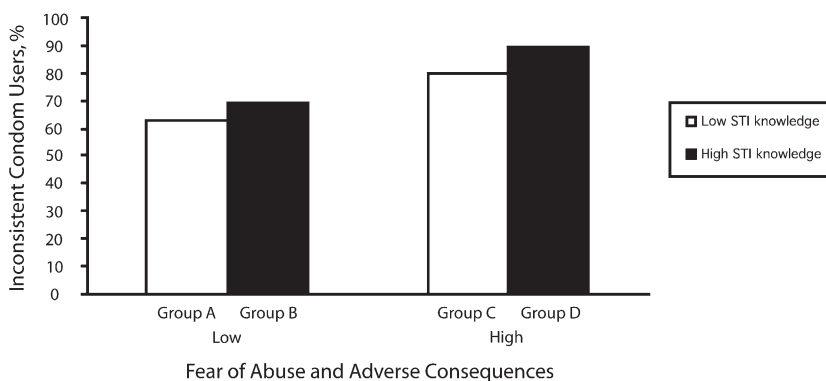
Note. STI = sexually transmitted infection. Fear of abuse because of condom negotiation was measured on a 5-point scale. STI knowledge was measured on an 11-point scale. Low and high categories were created from a median split of the scale scores. Group D differs significantly from groups A, B, and C ( $P \leq .01$ ).

**FIGURE 1—Percentage of African American women aged 15–21 years who were inconsistent condom users during their most recent intercourse with a main partner as a function of fear of abuse and STI knowledge: 2002–2004.**

This expected finding, coupled with the counterintuitive finding that STI knowledge was inversely related to condom use in instances of fear, suggests that STI knowledge is protective in instances where women believe that the behavior is risky but not in instances where they may feel reasonably confident they will not contract an STI when having unprotected sex with their main partner.

Our results highlighted another important issue: perception of risk. We defined for participants what “risky sex” was when they may have had a different notion of “risky” behavior. Participants may not have perceived having sex

with a boyfriend they know (or think they know) to be monogamous (or otherwise less risky) as a risk behavior; however, having sex while experiencing untreated STI symptoms was perceived as risky. Also interesting was how fear of abuse, although strong, was not strong enough to affect the relationship between substantial knowledge about the transmission of STIs and having sex or unprotected sex while experiencing untreated STI symptoms. Unlike balancing the relative threat of abuse with the risk of acquiring an STI from their partner, fear of abuse did not increase the likelihood that young women with high



Note. STI = sexually transmitted infection. Fear of abuse because of condom negotiation was measured on a 5-point scale. STI knowledge was measured on an 11-point scale. Low and high categories were created from a median split of the scale scores. Groups C and D differ significantly from each other and from groups A and B ( $P \leq .04$ ).

**FIGURE 2—Percentage of African American women aged 15–21 years inconsistent condom users in the past 60 days as a function of fear of abuse and STI knowledge: 2002–2004.**

knowledge of STIs would engage in unprotected sex while experiencing untreated STI symptoms. This finding suggests that young women are less inclined to risk infecting their partner when they have an untreated STI, but when they fear abuse, they are more inclined to risk being infected by their partner than to use a condom.

Although we identified an important moderator of sexual risk behavior—fear of abuse—a few limitations should be considered. First, because of the recruitment sites and self-selection nature of our study, the findings may have limited generalizability and may only be applicable to African American adolescent girls and young women residing in high-risk social environments. The findings may not be applicable to other races/ethnicities or to same-sex couples. Also, given the nature of this study, and consistent with the literature,<sup>20</sup> women may not have answered truthfully in their self-reports of condom use and STI symptoms. As with all self-report data, the degree to which participants under- or overreport participation in certain behaviors cannot be assessed. Finally, because of the cross-sectional nature of our study, causality cannot be inferred. We proposed that young women who fear abuse or other negative consequences of attempting to negotiate condom use balance their knowledge of STI transmission with the relative threat of abuse and that they may opt to have unprotected sex. Given the lack of longitudinal data, however, another plausible explanation to consider is that inconsistent condom use leads to STI exposure (not included in the main analyses), which leads to higher knowledge of STI transmission. However, given the other findings on the negative relation between high STI knowledge and unprotected sex while experiencing STI symptoms, which was not attenuated by fear of abuse, we still contend that increasing STI knowledge may be effective in increasing condom use in some but not all instances, primarily under conditions of fear of abuse because of condom negotiation. Longitudinal data would allow us to disentangle the temporal ordering of events observed in this study and, thus, should be considered for future research.

Our results highlight the effect fear of condom negotiation because of abuse has on females’ HIV/STI risk-taking behavior and suggest that their STI knowledge may be

counterproductive when attempting to decrease incidents of unprotected sex. Because the literature does not include strong evidence of a relation between STI knowledge and behavior change, our findings may highlight the need to go beyond increasing knowledge when attempting to change risky sexual practices, particularly for adolescent girls and young women with a history of abuse. Considering that almost half of participants aged 18–21 years reported experiencing relationship abuse in their lifetime and that fear of condom negotiation places women at risk for HIV, prevention programs need to include a substantial focus on dating violence and its effect on the sexual health of young women.

Particularly important when designing HIV-prevention and dating violence-prevention programming is attention to the unexpected finding that fear of abuse appears to prevent females from protecting themselves sexually while increasing the likelihood that they will protect their partner's sexual health by not having unprotected sex while exhibiting untreated symptoms of an STI. Furthermore, to better understand the surprising finding that, in instances of fear, greater STI knowledge predicts unprotected sex, future research should inquire as to whether young women know their partner's risk level (e.g., STI status, other sexual partners) and whether this knowledge affects their decision to have sex without a condom. This is especially important, given that three fourths of our sample of African Americans reported engaging in unprotected sex in the past 60 days.

Recent estimates show that AIDS is the leading cause of death for African American women aged 25–34 years.<sup>21</sup> Given the lengthy period between HIV infection and the development of AIDS, many of these women may have been exposed to HIV during late adolescence and early adulthood. Hence, targeting contextual factors that threaten the promotion of safer-sex practices among African American adolescent girls and young women is of high import in the fight to halt the persistent increase in HIV transmission among African American women. ■

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#### Contributors

J.L. Raiford completed and synthesized the analyses and led the writing. R.J. DiClemente and G.M. Wingood conceived the larger study and supervised all aspects of its implementation. All authors helped to conceptualize ideas, interpret findings, and review drafts of the manuscript.

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#### Human Participant Protection

This study was approved by the institutional review board at Emory University.

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