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EXPERIENCE OF FORCED SEX AND SUBSEQUENT SEXUAL, DRUG, AND MENTAL HEALTH OUTCOMES: AFRICAN AMERICAN AND HISPANIC WOMEN IN THE SOUTHEASTERN UNITED STATES

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Abstract

Objectives—This cross-sectional study examined African American and Hispanic women's ($N = 1,509$) self-reports of unwanted forced sex and its association with behavioral and mental health outcomes after the event.

Methods—Twenty percent of the women had experienced forced sex (1st occurrence at age 15 years or younger for 10%, 1st occurrence at older than 15 years of age for 10%).

Results—Regardless of when forced sex 1st occurred, women were more likely to have engaged in unprotected vaginal and anal sex, to have had multiple unprotected sex partners, to have sexually transmitted infections, to have reported binge drinking and illicit drug use, and to exhibit distress and have received mental health counseling.

Conclusions—Forced sex may have wide-ranging behavioral and mental health consequences years later.

Keywords

Sexual violence; women; cross-cultural studies; HIV prevention; quantitative studies

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INTRODUCTION

Women in the United States are more likely than men to experience sexual violence. In 2010, 92% of reported rapes or sexual assaults in the United States were against women, and 17.7 million women compared with 2.8 million men have reported being raped (forced vaginal, oral, or anal sex) at some time in their lives (Berzofsky, Krebs, Langton, Planty, & Smiley-McDonald, 2013). A recent national survey showed that almost one in five adult women in the United States reported that they had been raped, including attempted penetration, completed penetration, or alcohol- or drug-facilitated completed penetration (Black et al., 2011). Data from this national survey demonstrated that some minority women bear a higher risk for rape victimization compared with White women (rape reported by 36% of women of multiple races, 27% of American Indian/Alaska Native women, 22% of Non-Hispanic African American women, 19% of Non-Hispanic White women, and 15% of all Hispanic women; Black et al., 2011).

Women who experience physically forced sex may subsequently suffer a wide range of negative psychological, social, and behavioral outcomes later in life that have implications for their overall health (Basile & Smith, 2011; Hansen, Brown, Tsatkin, Zelgowski, & Nightingale, 2012; Leserman, 2007; Sachs-Ericsson, Cromer, Hernandez, & Kendall-Tackett, 2009; Wegman & Stetler, 2009; D. R. Wilson, 2009). These outcomes may include lower self-esteem, depression, problems with intimate relationships, eating disorders, binge drinking, drug use, exchange sex (providing sex for money, drugs, shelter, or other material goods), unprotected sex, high numbers of sexual partners, and sexually transmitted infections (STIs; Bournovaluova, Gwadz, Kahler, Akline, & Lejuez, 2008; Brown-Peterside, Ren, Chiasson, & Koblin, 2002; Hien et al., 2010; Meade, Kershaw, Hansen, & Sikkema, 2009; Mehrabadi et al., 2008; Stockman, Campbell, & Celentano, 2010; H. W. Wilson & Widom, 2009, 2011). Moreover, women who have experienced forced sex are at increased risk for medical disorders (e.g., Wegman & Stetler, 2009) and subsequent victimization (Daigle, Fisher, & Cullen, 2008; Desai, Arias, Thompson, & Basile, 2002).

This study explored whether women who had experienced physically forced sex (referred to hereafter as forced sex) earlier in life were at risk for engaging in sexual and drug behaviors and experiencing mental health problems later in life. We examined this issue in the context of several age-related parameters that have not been given much attention in previous studies. Specifically, we examined whether recent behavioral and mental health outcomes differed between women who first experienced unwanted forced sex at an early age in comparison with women who first experienced the event at an older age. It was theorized that recent sexual-risk and drug-risk behaviors and mental health problems would be more likely to be observed among women who first experience forced sex at a young age because of limited coping skills or psychological capacity to deal with such a traumatic event (Resick, Nishith, & Griffin, 2003). Alternatively, it was also theorized that given the sheer psychological and physical trauma of forced sex, recent sexual-risk and drug-risk behaviors and mental health problems might be observed regardless of the age at which forced sex first occurred. National surveys have shown that the average age of first sex for minority women in the United States is approximately 16 years old (Cavazos-Rehg et al., 2010; Haydon, Herring, Prinstein, & Halpern, 2012; Pettifor et al., 2011). We examined whether recent

behavioral and health outcomes differed between women who first experienced unwanted forced sex when they were 15 years of age or younger and women who first experienced unwanted forced sex when they were older than 15 years of age.

When assessing the impact of forced sex on recent behavioral and mental health outcomes, age at the time of the assessment must be considered. For example, older women, regardless of whether or not they have experienced forced sex, may be less likely than younger women to exhibit current risk behaviors. Thus, it may be difficult to statistically detect associations with prior experience of forced sex. However, it is also possible that older women who first experienced forced sex at an early age may be less likely to exhibit current risk behaviors due to the length of time since the event. This issue was addressed by examining the pattern of outcomes among younger (younger than 35 years old) and older (aged 35 years and older) women by three groups (forced sex first occurred at age 15 years or younger, forced sex first occurred at 15 years or older, no experience of forced sex). Additionally, we examined the outcomes according to the length of time (number of years) since forced sex first occurred relative to the woman's age at enrollment in the study. We reasoned that recent sexual-risk and drug-risk behaviors and mental health problems may be more likely to be observed among women who report that the event first occurred relatively recently compared with women who report that the event first occurred in the distant past.

Our study was conducted with heterosexually active African American and Hispanic women residing predominately in nonurban areas of the Southeastern United States. Most prior studies have focused on higher-risk women (drug users, sex workers, those at STI clinics) living in urban locations (McLellan-Lemal et al., 2012) or have had a preponderance of Non-Hispanic White women in the samples (Stockman et al., 2010), and research among diverse women in the Southern United States (Fleming, Lansky, Lee, & Nakashima, 2006) and among Hispanic women (Moreno, 2007; Surratt, Kurtz, Chen, & Mooss, 2012) is needed. We examined whether the occurrence of unwanted physically forced sex was associated with recent sexual-risk and drug-risk behaviors and mental health outcomes, stratified by age parameters. We were particularly interested in assessing a range of recent behaviors that may place the women at risk for HIV infection, including engaging in anal intercourse without condoms, having multiple sexual partners without using condoms, prior HIV testing, having sex with partners who have other concurrent partners, alcohol binging, and illicit drug use. We also assessed whether the women had recently experienced psychological distress and recently received professional counseling for a mental health problem.

METHODS

Overview

The data were drawn from a cross-sectional study of African American and Hispanic women conducted in two rural counties in Northeastern Alabama, two contiguous rural counties in Eastern North Carolina, and one county in South Florida. Recruitment, screening, and enrollment were conducted from October 2008 to September 2009. Enrollees provided written informed consent prior to completing an audio computer-assisted self-interview (ACASI) and taking a rapid oral HIV test. HIV testing was conducted as part of the larger

study, which was designed to assess women not previously diagnosed as HIV-positive and to characterize women most at risk for HIV infection. A unique participant identification number was used to link each woman's screening, enrollment, ACASI, and HIV test results. All enrollees received a $50 gift certificate for taking part in the study. Local institutional review boards (IRBs), the U.S. Centers for Disease Control and Prevention IRB, and the U.S. Office of Management and Budget reviewed and approved the study protocol.

Eligibility

Recruitment was based on population prevalence, and only African American women were recruited in the Alabama and North Carolina counties, while only Hispanic women were recruited in South Florida. Women were eligible for participation if they met the following criteria: (a) self-identified as African American (Alabama and North Carolina) or Hispanic (Florida); (b) were aged 18 to 59 years old (19 to 59 years old in Alabama; participants in Alabama needed to be 19 years or older to give legal consent for study participation); (c) reported vaginal or anal intercourse with a man in the previous 12 months; (d) were not previously diagnosed as HIV-infected; (e) were willing to be tested for HIV using rapid oral testing; (f) were willing and able to give informed consent; and (g) were able to understand English (Alabama and North Carolina) or either English or Spanish (Florida).

Participant Recruitment and Data Collection

Multiple methods were used to recruit study participants, including venue-based recruitment (e.g., beauty salons, Laundromats, shopping centers, churches, local community organizations, educational/training facilities, bars/clubs, transportation centers, health clinics), advertisements in locally posted flyers, participant referral with incentives, and word-of-mouth referral without incentives. The study recruitment and data collection process are described in greater detail in McLellan-Lemal et al. (2012).

Data were collected from participants in a private room in a study office (located at universities, community-based organizations, and church settings) or in the study's mobile unit. The mobile unit was a customized recreational vehicle parked at selected venues (with prior approval) to accommodate on-the-spot recruitment as well as scheduled study appointments. The vehicle had two private spaces for ACASI data collection and a separate room for HIV counseling and testing.

The participant-reported variables obtained from the ACASI and used in our analysis are described in Table 1, and the specific subgroups for each variable are shown in Table 2. As shown, women were asked whether anyone had ever physically forced them to have sexual contact (oral, vaginal, or anal) that they did not want and, if so, the age during which it first occurred. They were asked about behaviors in the previous 12 months: sexual risk behaviors and the risk behaviors/characteristics of their male sexual partners, whether they had been diagnosed with an STI, and whether they had been tested for HIV (apart from this study). The women responded to questions about binge drinking of alcohol in the previous 30 days, noninjection drug use in the previous 12 months, and whether they had received professional help for a mental or emotional problem in the previous 12 months. They also responded to

the 10-item Center for Epidemiologic Depression (CES-D) Scale measuring psychological distress in the previous 7 days (Andresen, Malmgren, Carter, & Patrick, 1994).

Statistical Analyses

Chi-squared tests were used to examine the association of the occurrence of forced sex (none, first experienced at age 15 years or younger, first experienced at older than 15 years of age) with the demographic, sexual-risk and drug-risk behaviors, and mental health outcome variables. When the associations were significant at the .05 level, we performed subsequent analyses with Fisher's exact test and the Jonckheere-Terpstra test to examine the association in greater detail. The choice of the age cut point for the forced sex variable was informed by national surveys indicating that the average age of first sex for minority women in the United States is approximately 16 years old (Cavazos-Rehg et al., 2010; Haydon et al., 2012; Pettifor et al., 2011).

Outcome variables were examined with pairwise correlations to assess the extent to which each variable provided unique information. Each outcome variable was examined in a multiple logistic regression model, with the three-group forced sex variable as the predictor (referent category = had never experienced forced sex). Each model statistically controlled for research site, age of the woman at the time of study enrollment, education, annual income, marital status, and employment. To determine whether the outcomes differed between women with early (15 years of age or younger) versus later (older than 15 years of age) first occurrence of forced sex, the referent category was switched to the early occurrence group in additional regression models. We also examined the findings according to the age of the woman at study enrollment. We examined whether the associations between forced sex and the outcome variables were observed for women younger than 35 years old (the median in our sample) and for women aged 35 years and older. We tested an interaction term (2 Age Groups × 3 Forced Sex Groups) for each outcome. We repeated the tests of interaction while retaining age as a continuous variable (centered). Additionally, among the women who experienced forced sex, we examined whether the outcomes varied according to how long ago the event first occurred relative to the woman's age at study enrollment (<10 years ago, 10–19 years ago, 20–29 years ago, 30 or more years ago). This recency analysis statistically controlled for the current age of the woman and demographic factors. Convergence criteria were satisfied in these models despite a moderate correlation between recency and the woman's age. All analyses were conducted with SAS software Version 9.2 (SAS Institute Inc., Cary, NC).

RESULTS

Approximately 90% of the women screened for eligibility met enrollment criteria (1,821 of 2,015). The most common reason for noneligibility was not having had sexual intercourse in the previous 12 months. Eighty-four percent of eligible women (1,527 of 1,821) enrolled in the study. Only 1 eligible woman declined enrollment. The main reasons eligible women were not enrolled were because they missed study appointments, did not respond to contact attempts, or had transportation difficulties. Enrollment rates were similar across sites. Enrollees included 514 Hispanic women from Florida, 501 African American women from

North Carolina, and 512 African American women from Alabama. The analytic sample included 1,509 of the 1,527 women due to missing data for the forced sex variable; the sample sizes fluctuated slightly for other variables due to item-specific missing data.

Demographic Characteristics and Forced Sex

Overall, participants had a median age of 35 years (range = 18–59 years), and 45% were single. Fifty percent of the women had an annual income of $12,000 or less, 18% had less than a high school graduation, and 57% were employed full-time or part-time. Demographic characteristics of the enrollees have been extensively described by site and ethnic group in a previous publication (see McLellan-Lemal et al., 2012). Only two women tested HIV-positive in this study; one reported that she had experienced forced sex, and the other did not.

Twenty percent of the women (299 of 1,509) reported having experienced unwanted physically forced sex (for 10%, it first occurred at age 15 or younger, and for 10%, it first occurred at older than 15 years of age). Forced sex was associated with three demographic variables (research site, education, and participant age at time of enrollment; Table 2). African American women from North Carolina and Alabama were more likely than Hispanic women from Florida to have experienced forced sex (Fisher's exact test, $p < .01$). Women who had not graduated from high school were more likely than women who had more education to have first experienced forced sex when they were 15 years of age or younger (Fisher's exact test, $p < .01$). Finally, women who were aged 45 to 59 years old at time of enrollment were more likely, while women aged 18 to 24 years old were less likely, to have first experienced forced sex when they were older than 15 years of age (Jonckheere-Terpstra test, $p < .01$).

Women's Standing on Outcome Variables

Table 3 displays the percentage of women who experienced the behavioral risk and mental health outcomes. Overall, in the previous 12 months, 26% of the women reported that they had engaged in unprotected anal intercourse, 19% had two or more sexual partners with whom they had unprotected vaginal or anal intercourse, and 20% had been diagnosed with an STI. Six percent had used noninjection drugs (excluding marijuana) in the previous 12 months (only one woman from Florida had injected an illicit drug), and 21% had engaged in binge drinking in the previous 30 days. Eleven percent had received professional help for a mental health problem in the previous 12 months, and 29% reached or exceeded the threshold on the CES-D sum score indicating symptoms of psychological distress in the previous 7 days.

We examined the outcome variables stratified by the age of the women at time of enrollment (younger than 35 years vs. 35 years and older). In the previous 12 months, the younger group was significantly ($p < .05$) more likely than the older group to have been tested for HIV apart from this study (38% vs. 21%), to have been diagnosed with an STI (27% vs. 12%), to have had two or more unprotected vaginal and anal sex partners (23% vs. 16%), to have had a male sexual partner who had other concurrent partners (48% vs. 40%), and to have had a male sexual partner who had been diagnosed with an STI (9% vs. 3%). The

younger women were also more likely to have ever had a male sexual partner with an incarceration history (35% vs. 24%). Use of illicit drugs in the previous 12 months was significantly more prevalent among the older women (8% vs. 4%). There were no differences between the age groups in alcohol binging in the previous 30 days, either of the two mental health outcomes, or having had an occurrence of unprotected anal intercourse in the previous 12 months.

In the total sample, the pairwise correlations of the 11 outcome variables listed in Table 3 ranged from .00 to .36, which indicates that there was not a high level of correlation among the outcomes. The highest correlations were between women's reports of having a recent STI and their reports that a sexual partner had a recent STI, and between the women who had multiple unprotected sexual partners and their male partners having concurrent partners.

Association of Forced Sex With Behavioral and Mental Health Variables

Experience of forced sex was significantly ($p < .05$) associated with 10 of the 11 outcome variables in chi-squared analyses (Table 3). In each instance, the outcome was more likely among women who experienced forced sex (regardless of age at first occurrence) compared with women who had not experienced forced sex. The one outcome that fell short of statistical significance was HIV testing in the previous 12 months.

Table 4 displays the results of unadjusted and adjusted logistic regression analyses that directly compared each forced sex group with the referent (no forced sex). In the adjusted results that controlled for research site and demographic factors, the odds of each outcome occurring were elevated among women who experienced forced sex compared with women who had not. The adjusted odds were significantly higher for 8 of the 11 outcomes among women who first experienced forced sex when they were 15 years of age or younger and for 9 of the 11 outcomes among women who first experienced forced sex when they were older than 15 years of age. The strongest association was between forced sex and use of illicit drugs (excluding marijuana) in the previous 12 months (adjusted odds ratios > 6.00).

In direct comparisons of the two age groups, the results of regression models controlling for demographic factors revealed that none of the outcomes differed significantly between women who first experienced the event when they were 15 years of age or younger compared with older than 15 years of age.

We examined whether the findings reported in Table 4 differed among women younger than 35 years old at the time of enrollment compared with women aged 35 years and older. Each of these two age groups exhibited the same pattern of results as displayed in Table 4. Interaction terms (2 Age Groups × 3 Forced Sex Groups, and repeated while retaining age as a continuous variable) were tested for each of the 11 outcomes; none were significant.

Among women who had experienced forced sex, we examined the outcomes according to the recency of first occurrence of the event relative to women's current ages. Recency was not associated with 9 of the 11 outcomes. For the other two outcomes—namely, STI in the previous 12 months and having two or more unprotected vaginal or anal sex partners in the previous 12 months—each was more likely to occur (adjusted odds ratios > 2.10, ps < .05)

among women who first experienced forced sex less than 10 years prior compared with women who first experienced the event 10 or more years prior.

DISCUSSION

We found that 20% of the African American and Hispanic women in this study experienced unwanted forced sex at some point in their lives. Occurrence was more likely among African American women than Hispanic women. Of women who experienced the event, approximately half first experienced it at age 15 years or younger, and half experienced it when older than 15 years. Compared with women who never experienced forced sex, both early and later first occurrence of the event were significantly associated with recent multiple sequelae including sexual risk behaviors, selection of risky sexual partners, binge drinking, noninjection drug use, and mental health problems. A couple of the outcomes (recent STI diagnosis and multiple unprotected sexual partners in the previous 12 months) were more likely to occur among women who first experienced forced sex less than 10 years ago (relative to their age at enrollment) compared with women who experienced the first event less recently. But taken as a whole, our findings indicated that experience of forced sex among the women in our study, regardless of the age at which the event first occurred and regardless of the women's age at enrollment (younger than 35 years vs. 35 years or older), was associated with wide-ranging behavioral and psychological outcomes later in life. Our findings are consistent with, and expand upon, previous studies of the associations between forced sex and risk outcomes (El-Bassel, Gilbert, Witte, Wu, & Chang, 2011; El-Bassel et al., 2010; Senn, Carey, & Vanable, 2008; Stockman et al., 2010; H. W. Wilson & Widom, 2011).

Our analysis focused on whether women had ever experienced forced sex and their age at first occurrence of the event, though some women may have experienced multiple instances of forced sex, and we did not know the woman's age at the time of the most recent event. Other contextual factors such as the woman's relationship with the perpetrator and the severity of the abuse obviously have important implications for understanding the magnitude of psychological and behavioral effects of such abuse. The fact that our analysis did not address these contextual factors, however, does not negate the importance of what our findings suggest: Girls or women who experience unwanted forced sex may suffer multiple adverse behavioral and psychological outcomes years after the first occurrence.

Prior studies have shown that women who first experienced forced sex in adulthood presented with a less complex constellation of traumatic symptoms than did women with a history of forced sex in childhood (Resnick et al., 2003). Women with a combined history of childhood and adult trauma were also more likely to have lasting pathology (Nishith, Mechanic, & Resick, 2000), which may in part stem from the woman's relationship with the perpetrator and the severity of abuse (Wyatt & Newcomb, 1990). Our study did not examine traumatic symptoms or psychological issues beyond screening for psychological distress and whether women had sought mental health counseling from a professional. Thus, our findings should not be interpreted as inconsistent with these prior studies showing the differential psychological effects depending on the age at which forced sex first occurred and the pattern of abuse across time.

Other research studies have shown that to promote women's health, interventions need to assess and address the context of women's sexual experiences (Cavanaugh, Hansen, & Sullivan, 2010; Logan, Cole, & Leukefeld, 2002). Sensitive behavioral assessments that aim to better understand the contextual factors surrounding forced sex may inform client-centered approaches to intervene with women who have experienced the event. A variety of sexual trauma and risk-reduction intervention models have been developed, tested, and implemented for use with women who have experienced forced sex (e.g., Hien et al., 2010; Puffer, Kochman, Hansen, & Sikkema, 2011; Sikkema et al., 2007, 2008; Wyatt et al., 2004). Those interventions emphasize the women's psychological processing of the event and the development of self-efficacy and coping skills. Trauma processing, in its later stages, relies upon strategies in which women "test" their skills at assertiveness and sexual negotiation. Historically, male partners have not been included in those interventions, but recent studies have shown that couples can benefit from such interventions (e.g., increased condom use in couples in which the woman has a history of sexual trauma; Jones, Kashy, Villar-Loubet, Cook, & Weiss, 2013). Thus, incorporating partners as potential facilitators in the women's processing of sexual trauma, skill development, and behavior change may be useful. Indeed, recent reviews of risk-reduction interventions have called for the development and assessment of couples-focused risk-reduction approaches (Burton, Darbes, & Operario, 2010).

Our study was limited because we focused on the first occurrence of forced sex and do not have information about revictimization or the perpetrator of the abuse. Methodologically, some women in our study may have underreported the occurrence of forced sex as well as some behavioral outcomes (e.g., unprotected anal sex) due to concerns about social desirability, although the use of ACASI to collect the data typically promotes more candid responses (Harvey, Bird, Henderson, Beckman, & Huszti, 2004). In 2010, an estimated 65% of rapes or sexual assaults in the United States were not reported to law enforcement (Truman, 2011). Reporting of forced-sex experiences involves multiple complex factors and minority women may experience additional stressors associated with race and/or ethnicity (Olive, 2012). For Hispanic women, issues involving acculturation, economic resources, immigrant status, language barriers, and access to community resources (Cuevas, Sabina, & Bell, 2012; Sabina, Cuevas, & Schally, 2012) may contribute to underreporting. African American women may also underreport forced sex because of beliefs in sexual stereotypes and rape myths, self-blame, stigma, a cultural mandate to protect an African American male perpetrator as well as a lack of health insurance (Bryant-Davis, Chung, & Tillman, 2009; Long, Ullman, Starzynski, Long, & Mason, 2007; Tillman, Bryant-Davis, Smith, & Marks, 2010). Our findings are based on convenient samples of African American women primarily from rural counties of North Carolina and Alabama and Hispanic women from South Florida who were sexually active in the previous 12 months. Caution is warranted in generalizing our findings beyond the immediate sample or to other women who have experienced forced sex or rape. Finally, due to the cross-sectional design of our study, causal inferences cannot be drawn. It is possible that some of the behavioral and psychological outcomes we observed existed prior to the first forced-sex event or earlier than the recall periods for our outcome variables for some women.

In summary, we found that 20% of the African American and Hispanic women in our study reported having experienced unwanted physically forced sex at some time in their lives. Regardless of when the event first occurred (15 years or younger vs. older than 15 years) and regardless of women's age at time of enrollment in the study (younger than 35 years vs. 35 years or older), those who experienced forced sex were significantly more likely to report recently engaging in vaginal and anal sex without condoms, having multiple unprotected sex partners, having a diagnosed STI, binge drinking, and using illicit drugs. They were also more likely to currently exhibit psychological distress and to have recently received professional counseling for a mental health problem. The experience of unwanted forced sex may have wide-ranging behavioral and mental health consequences years after the event first occurred.

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TABLE 1

Self-Reported Variables Used in the Analysis: African American and Hispanic Women in Five Counties in the Southeastern United States, 2008–2009

Demographic

    Research site

    Age

    Highest education attained

    Current marital status

    Income in the previous 12 months

    Employment status in the previous 12 months

Experience of Unwanted Forced Sexual Contact Experience of Unwanted Forced Sexual Contact

    "Has anyone ever physically forced you to have sexual contact with them when you didn't want to? By this we mean unwanted touching, oral, vaginal, or anal sex." If so, age it first occurred.

Mental Health

    Received professional help for mental or emotional problems in the previous 12 months

    10-item Center for Epidemiologic Study Depression scale measuring psychological distress in the previous 7 days[a]

Behavioral

    Binge drinking in the previous 30 days (five or more alcoholic drinks in a single day)

    Use of noninjection drugs (excluding marijuana) in the previous 12 months[b]

    Been tested for HIV in the previous 12 months (apart from current study)

    Diagnosed with sexually transmitted infection (STI) in the previous 12 months

    Occurrence of anal intercourse without using condoms in the previous 12 months

    Had two or more sexual partners for unprotected anal or vaginal intercourse in the previous 12 months

Risk Behaviors of the Wome's Male Sexual Partners in the Previous 12 Months

    A sexual partner had an STI in the previous 12 months.

    A sexual partner had other female or male concurrent sexual partners in the previous 12 months.

    A sexual partner was ever incarcerated.

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[a]Following methods used in prior studies (Andresen et al., 1994), a cut point for psychological distress (caseness) was defined as a sum score of 10 on the 10-item Center for Epidemiologic Study Depression scale (0 = less than 1 day in past week; 1 = 1–2 days; 2 = 3–4 days; 3 = 5–7 days). The 4-point response scale for the two positively worded items was reversed before summing. For women who had missing data on only 1 item, we imputed a score on that item based on the mean of the nonmissing items. Women with data missing on more than 1 item were omitted from the analysis of this variable (18 cases of missing data).

[b]Sniffed/swallowed/smoked crack, powder cocaine, heroin, meth-amphetamine, club drugs (e.g., Ecstasy, Roofies, GHB), narcotics (e.g., Oxycontin, Vicodin, Dilaudid), or downers (e.g., Ambien, Ativan, Valium, Xanax). Marijuana use was not included; two cases reporting only injection of cocaine, heroin, speedball, methamphetamine, goof-ball, or street methadone were not included.

TABLE 2

Demographic, Behavioral, and Mental Health Characteristics: African American and Hispanic Women in Five Counties in the Southeastern United States, 2008–2009

	Overall (Values Below Are Column Percentages) N = 1,509 n/N (%)	No Forced Sex N = 1,210, 80% n/N (%)	Forced Sex First Occurred at 15 Years of Age or Younger N = 154, 10% n/N (%)	Forced Sex First Occurred at Older Than 15 Years of Age N = 145, 10% n/N (%)	χ^2 (Comparing the Three Groups)
Demographic					
Site					28.1**
Florida	506/1,509 (34)	442/506 (87)	28/506 (6)	36/506 (7)	
North Carolina	500/1,509 (33)	374/500 (75)	68/500 (14)	58/500 (12)	
Alabama	503/1,509 (33)	394/503 (78)	58/503 (12)	51/503 (10)	
Age at enrollment (years):					25.08**
18–24	355/1,509 (24)	304/355 (86)	36/355 (10)	15/355 (4)	
25–34	383/1,509 (25)	311/383 (81)	38/383 (10)	34/383 (9)	
35–44	387/1,509 (26)	301/387 (78)	46/387 (12)	40/387 (10)	
45–59	384/1,509 (25)	294/384 (77)	34/384 (9)	56/384 (15)	
Education					16.4**
Less than high school graduate	270/1,505 (18)	199/270 (74)	41/270 (15)	30/270 (11)	
High school graduate/GED	547/1,505 (36)	446/547 (82)	54/547 (10)	47/547 (9)	
Tech/trade school graduate; some college	480/1,505 (32)	389/480 (83)	37/480 (8)	54/480 (11)	
College graduate	208/1,505 (14)	173/208 (83)	22/208 (11)	13/208 (6)	
Marital status					6.58
Single, never married	682/1,506 (45)	547/682 (80)	68/682 (10)	67/682 (10)	
Married or living as married	503/1,506 (33)	417/503 (81)	46/503 (9)	40/503 (8)	
Separated, divorced, or widowed	321/1,506 (21)	243/321 (76)	40/321 (13)	38/321 (12)	
Annual household income					5.23
Less than $6,000	328/1,458 (23)	255/328 (78)	36/328 (11)	37/328 (11)	
$6,001–$12,000	391/1,458 (27)	304/391 (78)	46/391 (12)	41/391 (10)	
$12,001–$24,000	427/1,458 (29)	353/427 (83)	37/427 (9)	37/427 (9)	
More than $24,000	312/1,458 (21)	255/312 (82)	31/312 (10)	26/312 (8)	
Employment status					0.38
Not employed	652/1,500 (43)	519/652 (80)	70/625 (11)	63/652 (10)	

	Overall (Values Below Are Column Percentages) N = 1,509 n/N (%)	No Forced Sex N = 1,210, 80% n/N (%)	Forced Sex First Occurred at 15 Years of Age or Younger N = 154, 10% n/N (%)	Forced Sex First Occurred at Older Than 15 Years of Age N = 145, 10% n/N (%)	χ^2 (Comparing the Three Groups)
Employed full-time or part-time	848/1,500 (57)	684/848 (81)	83/848 (10)	81/848 (10)	

Note. Values are row percentages reflecting the distribution of the three forced-sex categories within each stratum. Sample sizes fluctuate slightly across variables due to missing data. Some percentages do not sum to 100 due to rounding.

**
p < .01.

TABLE 3

Behavioral and Mental Health Outcomes: African American and Hispanic Women in Five Counties in the Southeastern United States, 2008–2009

	Overall N = 1,509 n/N (%)	No Forced Sex N = 1,210, 80% n/N (%)	Forced Sex First Occurred at 15 Years of Age or Younger N = 154, 10% n/N (%)	Forced Sex First Occurred at Older Than 15 Years of Age N = 145, 10% n/N (%)	χ^2 (Comparing the Three Groups)
Behavioral					
HIV test in the previous 12 months					3.96
No	1,070/1,509 (71)	870/1,210 (72)	99/154 (64)	101/145 (70)	
Yes	439/1,509 (29)	340/1,210 (28)	55/154 (36)	44/145 (30)	
Unprotected anal sex in previous 12 months					6.26[*]
No	1,110/1,491 (74)	907/1,198 (76)	110/153 (72)	93/140 (66)	
Yes	381/1,491 (26)	291/1,198 (24)	43/153 (28)	47/140 (34)	
Two or more unprotected vaginal or anal sex partners in previous 12 months					30.24[**]
No	1,211/1,498 (81)	1,003/1,201 (84)	113/154 (73)	95/143 (66)	
Yes	287/1,498 (19)	198/1,201 (16)	41/154 (27)	48/143 (34)	
Diagnosed with a sexually transmitted infection (other than HIV) in previous 12 months					9.69[**]
No	1,211/1,508 (80)	990/1,209 (82)	113/154 (73)	108/145 (74)	
Yes	297/1,508 (20)	219/1,209 (18)	41/154 (27)	37/145 (26)	
Binge drinking in previous 30 days[a]					19.79[**]
No	1,190/1,507 (79)	982/1,209 (81)	111/154 (72)	97/144 (67)	
Yes	317/1,507 (21)	227/1,209 (19)	43/154 (28)	47/144 (33)	
Used noninjection drugs in previous 12 months[b]					97.29[*]
No	1,419/1,509 (94)	1,174/1,210 (97)	126/154 (82)	119/145 (82)	
Yes	90/1,509 (6)	36/1,210 (3)	28/154 (18)	26/145 (18)	
Mental Health					
Received professional help for mental health or emotional problem in the past 12 months					50.32[**]
No	1,341/1,507 (89)	1,111/1,210 (92)	119/153 (78)	111/144 (77)	
Yes	166/1,507 (11)	99/1,210 (8)	34/153 (22)	33/144 (23)	
Psychological distress					45.22[**]

	Overall N = 1,509 n/N (%)	No Forced Sex N = 1,210, 80% n/N (%)	Forced Sex First Occurred at 15 Years of Age or Younger N = 154, 10% n/N (%)	Forced Sex First Occurred at Older Than 15 Years of Age N = 145, 10% n/N (%)	χ^2 (Comparing the Three Groups)
No	1,054/1,494 (71)	891/1,196 (75)	86/154 (56)	77/144 (53)	
Yes[c]	440/1,494 (29)	305/1,196 (25)	68/154 (44)	67/144 (47)	
Sexual Partner					
Reported her partner(s) had concurrent female or male partner(s) in previous 12 months[d]					60.50**
No	842/1,497 (56)	734/1,199 (61)	56/154 (36)	52/144 (36)	
Yes	655/1,497 (44)	465/1,199 (39)	98/154 (64)	92/144 (64)	
Reported her partner(s) in previous 12 months had an incarceration history					87.50**
No or do not know	1,054/1,497 (70)	912/1,202 (76)	73/153 (48)	69/142 (49)	
Yes[e]	443/1,497 (30)	290/1,202 (24)	80/153 (52)	73/142 (51)	
Reported her partner(s) had a sexually transmitted infection (other than HIV) in previous 12 months					8.11*
No or do not know	1,410/1,496 (94)	1,142/1,202 (95)	136/152 (89)	132/142 (93)	
Yes	86/1,496 (6)	60/1,202 (5)	16/152 (11)	10/142 (7)	

Note. Values are column percentages reflecting the percentage exhibiting outcome within each of the three forced-sex categories. Sample sizes fluctuate slightly for some variables due to missing data. Some percentages do not sum to 100 due to rounding.

*
 $p < .05$.

**
 $p < .01$.

[a] Five or more alcoholic drinks in single day.

[b] Sniffed/swallowed/smoked crack, powder cocaine, heroin, methamphetamine, club drugs (e.g., Ecstasy, Roofies, GHB), narcotics (e.g., Oxycontin, Vicodin, Dilaudid), or downers (e.g., Ambien, Ativan, Valium, Xanax). Marijuana use was not included; two cases reporting only injection of cocaine, heroin, speedball, methamphetamine, goofball, or street methadone were not included.

[c] Women with a sum score 10 on the 10-item Center for Epidemiologic Study Depression scale were categorized as "yes" (response scale for each item was 0 = less than 1 day in past week; 1 = 1–2 days; 2 = 3–4 days; 3 = 5–7 days). The response scale for the two positively worded items was reversed before summing. Following methods used in prior studies (Andresen et al., 1994), for women who had missing data on only 1 item, we imputed a score on that item based on the mean of the nonmissing items. Women with data missing on more than 1 item were omitted from the analysis of this variable (18 cases of missing data).

[d] "Yes" indicates that the participant reported that her male partner(s) "probably" or "definitely" had concurrent female or male partners. "No" indicates that the male partner(s) "probably" or "definitely" did not have concurrent female or male partners.

[e] Participant reported that the partner(s) spent 1 or more nights in jail or prison.

TABLE 4

Odds Ratios for Outcomes by Age at Which Physically Forced Sexual Contact First Occurred: African American and Hispanic Women in Five Counties in the Southeastern United States, 2008–2009

Outcome Variable[a]	Outcome Variable[a]	Forced Sex First Occurred at 15 Years of Age or Younger				Forced Sex First Occurred at Older Than 15 Years of Age			
		Unadjusted Results		Adjusted Results[a]		Unadjusted Results		Adjusted Results[a]	
		OR[b]	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
HIV test in the previous 12 months	Ref	1.42	1.00, 2.02	1.46	1.00, 2.11	1.12	0.77, 1.62	1.32	0.89, 1.96
Unprotected anal sex in previous 12 months	Ref	1.22	0.84, 1.78	1.21	0.81, 1.79	1.58	1.08, 2.29	1.65	1.17, 2.44
Two or more unprotected vaginal or anal sex partners in previous 12 months	Ref	1.84	1.25, 2.71	1.69	1.13, 2.54	2.56	1.75, 3.74	2.54	1.69, 3.82
Diagnosed with a sexually transmitted infection (other than HIV) in previous 12 months	Ref	1.64	1.12, 2.41	1.48	0.98, 2.23	1.55	1.04, 2.31	1.67	1.07, 2.60
Binge drinking in previous 30 days[c]	Ref	1.68	1.15, 2.45	1.64	1.11, 2.43	2.10	1.44, 3.06	2.00	1.35, 2.96
Used noninjection drugs in previous 12 months[d]	Ref	7.25	4.28, 12.28	6.52	3.69, 11.52	7.13	4.16, 12.21	6.05	3.41, 10.75
Received professional help for mental health or emotional problem in the previous 12 months	Ref	3.21	2.08, 4.95	3.06	1.91, 4.90	3.34	2.15, 5.18	3.57	2.22, 5.75
Psychological distress[e]	Ref	2.31	1.64, 3.26	2.06	1.43, 2.96	2.54	1.79, 3.62	2.33	1.60, 3.39
Reported her partner(s) had concurrent female or male partner(s) in previous 12 months[f]	Ref	2.76	1.95, 3.91	2.46	1.71, 3.55	2.79	1.95, 4.00	2.61	1.78, 3.81
Reported her partner(s) in previous 12 months had an incarceration history[g]	Ref	3.45	2.44, 4.86	3.17	2.19, 4.59	3.33	2.33, 4.74	3.31	2.24, 4.88
Reported her partner(s) had a sexually transmitted infection (other than HIV) in previous 12 months	Ref	2.24	1.26, 4.00	2.06	1.12, 3.79	1.44	0.72, 2.88	1.55	0.73, 3.33

Note. OR = odds ratio; CI = confidence interval.

[a] The adjusted analysis of each outcome controls for recruitment site, age at enrollment, education, marital status, employment, and income (retaining missing values on the income variable to maximize the sample sizes for the adjusted analyses). *Ns* for the multiple logistic regression models ranged from 1,479 to 1,495.

[b] An OR > 1 means increased likelihood of the outcome.

[c] Five or more alcoholic drinks in a single day.

[d] Sniffed/swallowed/smoked crack, powder cocaine, heroin, methamphetamine, club drugs (e.g., Ecstasy, Roofies, GHB), narcotics (e.g., Oxycontin, Vicodin, Dilaudid), or downers (e.g., Ambien, Ativan, Valium, Xanax). Marijuana use was not included; two cases reporting only injection of cocaine, heroin, speedball, methamphetamine, goofball, or street methadone were not included.

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[e]Women with a sum score ≥ 10 on the 10-item Center for Epidemiologic Study Depression scale were categorized as "yes" (response scale for each item was 0 = less than 1 day in past week; 1 = 1–2 days; 2 = 3–4 days; 3 = 5–7 days). The response scale for the two positively worded items was reversed before summing. Following methods used in prior studies (Andresen et al., 1994), for women who had missing data on only 1 item, we imputed a score on that item based on the mean of the nonmissing items. Women with data missing on more than 1 item were omitted from the analysis of this variable (18 cases of missing data).

[f]"Yes" indicates that the participant reported that her male partner(s) "probably" or "definitely" had concurrent female or male partners. "No" indicates that the male partner(s) "probably" or "definitely" did not have concurrent female or male partners.

[g]Participant reported that the partner(s) spent 1 or more nights in jail or prison.