Do Differences in Relationship and Partner Attributes Explain Disparities in Sexually Transmitted Disease Among Young White and Black Women?

NINA T. HARAWA, Ph.D., SANDER GREENLAND, Dr.P.H., SUSAN D. COCHRAN, Ph.D., WILLIAM E. CUNNINGHAM, M.D., AND BARBARA VISSCHER, M.D., Dr.P.H.

Abstract: Using data from 1695 respondents aged 15 to 24 years to the 1995 National Survey of Family Growth, we examined black/white differences in marital history and sex with older, casual, and nonmonogamous partners, as well as the associations of these differences with self-reported bacterial sexually transmitted disease (STD) history. Although characteristics of sexual partners and relationships often differed by race, this did not explain racial disparities in STDs. © Society for Adolescent Medicine, 2003

KEY WORDS:
Adolescence
Chlamydia
Gonorrhea
Marital status
Race
Sexually transmitted diseases, bacterial
Syphilis

Striking racial differences exist in bacterial sexually transmitted disease (STD) rates. Young (aged 15–24 years) black women experience 18 times the reported gonorrhea rates and nearly 7 times the chlamydia rates of similarly aged white women [1]; data from other settings [2,3] confirm less dramatic but large racial disparities in bacterial STD risk. This elevated risk is often not explained by adjustment for sexual risk behavior, demographic factors, or socioeconomic status [4,5], suggesting the need for expanded approaches to understanding the basis of these differences, including examination of mate selection [5,6], sexual networks [6], and social context [7].

Imbalances in the male/female ratios among Blacks (including high incarceration rates among black men) reduce black women’s pool of potential marriage partners compared with that of white women and contribute to lower marriage and higher divorce rates among Blacks [8]. Black women who face a diminished pool of potential partners may widen their selection criteria [9] by including partners of less similar age or socioeconomic status [10]. They may also lower their expectations of a boyfriend or husband’s behavior, including an expectation of monogamy [9]. We thus expect young black women may be more likely than young white women to report older sexual partners and relationships with men who they believe are not monogamous. Both factors may increase young women’s STD risk (e.g., STD rates peak at ages 20–24 years for males vs. ages 15–19 years for females [1]).

Our analysis is based on a conceptual model in which social segregation, socioeconomic status, and sex-ratio imbalances differentially affect relationship stability and partnership selection, leading to an increased likelihood of black women selecting older
partners or partners who are concurrently involved in other relationships, lower rates of marriage or cohabitation, and higher rates of marital dissolution. These effects then contribute to elevated STD risk among black women. To evaluate this explanation, we investigate the effect of controlling for these factors on racial disparities in self-reported bacterial STD history among young women.

Methods
The 1995 National Survey of Family Growth (NSFG) data come from a reinterview of 10,847 women who originally participated in the 1993 National Health Interview Survey (NHIS) [8]. The study received Institutional Review Board approval from the National Center for Health Statistics, and all participants signed a written consent. We included in this analysis the 1183 white and 695 black non-Hispanic NSFG participants aged 15 to 24 years (mean age = 20) who reported at least one lifetime male sexual partner. We examined associations of the respondents’ partner and relationship characteristics with history of a chlamydia, gonorrhea, or syphilis diagnosis. When available, we used the National Center for Health Statistics-supplied variables that contained imputed values for missing questionnaire responses [11].

We present odds ratios and 95% confidence limits from four models: a crude model, a model controlling for age and number of partners, a model controlling for all possible confounders, and a model controlling for all possible confounders and the relationship and partner attributes of interest. After descriptive analyses, we evaluated our hypothesis by using multiple logistic regression of STD diagnosis history on race and the predictors of interest while controlling for potential confounders.

To adjust for possible confounding, we controlled first for the respondent’s age and the natural logarithm of her lifetime number of sexual partners (based on the higher of the responses to the interview- and self-administered questions). We then controlled for the following other potential confounders: educational level, type of medical insurance, region of residence and population size of residential area, age at first voluntary sex, current douching practices, condom use (based on 12-month frequency of use for disease protection), and history of pregnancy or forced sex.

We also considered including an indicator for frequency of sex. This indicator was calculated using the respondent’s “nonintercourse calendar,” her reported first date of voluntary sexual intercourse, and her interview date to estimate the number of months in which she had sex since January 1991. The covariate was later excluded because of the many missing answers in the questions composing the measure and the high rate of detectable errors in the responses [12]. Removal resulted in 1% to 11% changes in the estimated odds ratios for the predictors of interest.

To test the hypothesis, we included the following predictors of primary interest in the full model: (a) Marital and cohabitation history: Because preliminary analyses showed similarities in the associations with self-reported STD history among currently married, currently cohabiting, ever married, and ever cohabiting respondents, we compared respondents who had ever married or cohabited with those who had never married or cohabited; (b) Nonmonogamy among recent partners: We compared respondents answering “yes” and “no” to the following question, “During the past 12 months, did you have ANY male sexual partners who were also having sex with other female partners around that same time?”; (c) Older and casual sexual partners: We examined associations with number of older (by three or more years) and casual (those whom the respondent had just met or with whom she was “just friends”) sexual partners reported since January 1991.

We used STATA 6.0 to produce the survey design-adjusted results, employing the NSFG weights to adjust for nonlocation, nonresponse, and sampling probability (i.e., oversampling and poststratification) [11]. Weighted estimates reflect the age, marital status, and parity distributions of black and white non-Hispanic U.S. women aged 15 to 24 years who had voluntary sex with at least one male partner as of her interview date. All percentages reported below are weighted estimates.

Results
Table 1 provides demographic and risk factor distributions of all 1695 women included in the analysis. From the NSFG data, we estimate 6.7% of the surveyed population would report a history of chlamydia, gonorrhea, or syphilis (5.3% of women aged 15–19 years and 7.5% of women aged 20–24 years, p = .11). Black women appear almost twice as likely as white women to report a bacterial STD diagnosis (11% vs. 5.6%, 95% Confidence Limits for Difference
Discussion

Although single marital status, divorce, and partner infidelity were found to be more common among young black than white women, adjusting for these indicators and for socioeconomic status, demographic factors did not explain the racial disparity. Alternate explanations for the observed racial disparities include: (a) generally riskier sexual behaviors among black than white men; (b) racial differences in sexual network dynamics that are not captured in these data; and (c) racial differences in self-reporting bias. Some evidence exists to support the latter two explanations.

Table 2. Crude and Adjusted Odds Ratios (from Logistic Regression) for the Association of Self-Reported Bacterial STD Diagnosis with Race (Black-White vs. non-Hispanic Females Ages 15–24 Years in the United States, 1995)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Black</th>
<th>White</th>
<th>95% CL for % difference</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 512)</td>
<td>(n = 1183)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever been diagnosed with a bacterial STD</td>
<td>54 (11)</td>
<td>68 (5.6)</td>
<td>(2.1, 9.1)</td>
<td>.002</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>37 (6.9)</td>
<td>55 (4.5)</td>
<td>(−5.3, 0.5)</td>
<td>.10</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>21 (5.0)</td>
<td>13 (1.1)</td>
<td>(−6.2, −1.4)</td>
<td>.002</td>
</tr>
<tr>
<td>Syphilis</td>
<td>6 (1.5)</td>
<td>1 (0.09)</td>
<td>(−2.8, 0.0)</td>
<td>.047</td>
</tr>
</tbody>
</table>

Marital/cohabitation history

<table>
<thead>
<tr>
<th></th>
<th>Black</th>
<th>White</th>
<th>95% CL for % difference</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever married</td>
<td>58 (14)</td>
<td>317 (29)</td>
<td>(−20, −11)</td>
<td>.001</td>
</tr>
<tr>
<td>Divorce/separated/widowed (among ever married)</td>
<td>18 (11)</td>
<td>317 (29)</td>
<td>(1.8, 29)</td>
<td>.026</td>
</tr>
<tr>
<td>Ever cohabited (among never married)</td>
<td>101 (19)</td>
<td>273 (30)</td>
<td>(−17, −5.5)</td>
<td>.001</td>
</tr>
<tr>
<td>Nonmonogamous partner in last 12 months</td>
<td>160 (33)</td>
<td>259 (22)</td>
<td>(7.3, 19)</td>
<td>.001</td>
</tr>
<tr>
<td>Had a partner 3 or more years older (since 1/91)</td>
<td>322 (62)</td>
<td>717 (60)</td>
<td>(−3.1, 7.9)</td>
<td>.39</td>
</tr>
<tr>
<td>Had a casual sexual partner (since 1/91)</td>
<td>199 (39)</td>
<td>412 (35)</td>
<td>(−1.4, 10)</td>
<td>.13</td>
</tr>
</tbody>
</table>

Sample n = 1695; weighted N = 10,347,014.

* Percentages are weighted and so are estimated prevalences for the surveyed population.

** CLD = confidence limits for difference in percentages; NSFG = National Survey of Family Growth; STD = sexually transmitted disease.
tween black and white females. Young black men have substantially higher numbers of sexual partners and begin having sexual intercourse 2–3 years earlier [13], and black married men report higher rates of extramarital sex [14]. Imbalanced gender ratios may encourage these behaviors by increasing black men’s options for female partners, reducing their motivation to commit to one partner, and fostering norms that encourage sex with multiple partners [15]. In this setting, any protective effect of entering a traditionally monogamous relationship may be offset for black women because of increased opportunities for sexual intercourse and lower levels of condom use in cohabiting or married relationships compared to dating or casual relationships.

Although black women did not appear more likely to report older or casual sexual partners, choosing such partners is just one strategy for finding a mate. Others, such as selecting less-educated men, underemployed men, or men with a history of numerous sexual partners or infidelity were not assessed in this study, but may be associated with higher STD prevalence among partners.

Important study limitations include our use of an outcome measure based on self-report of stigmatized conditions, temporal ambiguity owing to the cross-sectional survey design, and the lack of partner-specific information on condom use and sexual frequency. Underreporting seems likely and has been documented in other surveys [2,16]. The low frequency of self-reported STDs reduces the precision of our estimates. Self-reporting may have also lead to biases, particularly because information was not verified with the respondents’ partners. Partner’s reported age may have been biased by partners or respondents who overestimated this information because they associated older age with being mature and having resources. In some cases, the respondent’s STD diagnosis likely led her to discover partner infidelity.

Because risky sexual behaviors and measured aspects of sexual partnerships have not been shown to explain black/white disparities in bacterial STDs, prevention efforts should not be limited to “high-risk” women or to women with known “high-risk” partners. External pressures on black relationships further suggest that preventive measures may be appropriate even within many committed relationships. Aggressive efforts to screen and treat young black men for STDs and widespread incorporation of STD screening into young women’s gynecologic ex-

aminations remain the most promising options for reducing the high prevalence among African-Americans.

The authors would like to thank Victor Schoenbach for his useful comments on early drafts and Linda Piccinino of the National Center for Health Statistics (NCHS) for assistance with obtaining and using the dataset. This research was based on data from the 1995 National Survey of Family Growth, Cycle 5, a survey jointly planned and funded primarily by the NCHS, the National Institute for Child Health and Human Development, and the Office of Population Affairs, with additional support from the Administration for Children and Families. This work was supported by NIH predoctoral traineeship T32 AI07481 and NIMH predoctoral traineeship T32 MH19127-08.

References


14. Smith TW. Adult sexual behavior in 1989: Number of partners, frequency of intercourse and risk of AIDS. Fam Plann Perspect