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Women with Multiple Sexual Partners: United States, 1988

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Introduction
Each additional sexual partner puts an individual at some incremental risk of exposure to a sexually transmitted pathogen and increases the dissemination of such pathogens. The number of lifetime sex partners quantifies an individual's cumulative risk for persistent viral sexually transmitted diseases (STDs) and cervical cancer1-5 and is associated with bacterial STDs, including pelvic inflammatory disease.6-8 The number of sex partners in a recent time interval, such as the previous several months, is a more precise measure for assessing the risk for incident infection: among STD clinic patients, having multiple partners in a specific recent time period (less than 6 months) is a risk factor for the acquisition of bacterial STDs, such as gonorrhea,9,10 chlamydia,11-13 syphilis,14 and chancroid,15 as well as for the presence of viral STDs.16-18 Furthermore, for STDs with a short period of infectiousness, such as gonorrhea, having multiple partners in a short time span increases the rate of dissemination in the population.

One way to identify individuals at greatest risk is to focus on those who report having two or more partners in a specific time interval. Having multiple recent partners is associated with disease risk for at least two reasons: first, it reflects the increased likelihood of encountering a sexually transmitted pathogen through having multiple potential exposures, and second, it may reflect an increased probability of choosing a partner with an infection through a riskier pattern of partner recruitment.19,20 Primary prevention strategies to reduce the number of sexually transmitted infections can use the characteristics of these women to target education and counseling that encourage safe sexual practices. Secondary prevention strategies, aimed at early diagnosis and treatment of asymptomatic infection, can target these high-risk women for selective screening (e.g., for human immunodeficiency virus, syphilis, and/or pelvic inflammatory disease).

Over this century, Americans have increasingly had greater numbers of sexual relationships, in part because of postponed marriage, increases in separation and divorce, and more reliable contraception.21,22 A growing majority of unmarried

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women are sexually active,23,24 and many young women who reduce the number of sexual partners they have because of fear of acquired immunodeficiency syndrome (AIDS) continue to have more than one partner.25 Overall, almost two thirds of sexually experienced women report having had two or more sexual partners during their lifetime,23,24 and this proportion is increasing. These developments are likely to portend even greater proportions of sexually active women, especially young women, having multiple sexual partners.

In the 1988 through 1990 General Social Survey, a nationally representative survey that included 1123 women 18 to 49 years of age, 13% of these women reported having two or more sexual partners in the preceding year (General Social Survey, unpublished data). A combined analysis of this survey and one conducted by the Los Angeles Times suggests that about one fourth of unmarried women of reproductive age had two or more sexual partners in the preceding year.21 From the General Social Survey, factors associated with a greater mean number of partners in the preceding year were young age, single marital status, and central city residence.26 Similarly, in a self-administered questionnaire from clients of a family planning clinic in Pennsylvania, factors that were associated with women reporting five or more sexual partners in the previous year included young age, unmarried marital status, and lack of any college education.19

Each of the previous studies of women with multiple partners has added significantly to the demographic description of these women. However, interpretation of data from these studies is somewhat limited by methodological concerns. For example, the Los Angeles Times survey had a response rate of only 33%.21 Most significantly, none addressed the prevalence of having multiple partners in a recent short time period.

The present study uses face-to-face interviews of a representative sample of American women to focus on factors associated with having multiple partners in the 3 months preceding the interview.

Methods

We obtained data for this analysis from the National Survey of Family Growth Cycle IV conducted by the National Center for Health Statistics. The National Survey of Family Growth is based on personal interviews with women of reproductive age regarding fertility, family planning, and maternal and child health. The Cycle IV survey was conducted between January and August 1988 with a multistage probability sample of 8450 women 15 to 44 years of age in the civilian noninstitutionalized population of the United States. The sample included 5354 White women, 2771 Black women, and 325 women of other races. In personal interviews lasting just over an hour, respondents provided detailed information on their reproductive health, including age at first intercourse, and number of recent sexual partners. Response rates were high overall (82.5%), and similar for Black (82.2%) and White (82.6%) women. For most of this analysis, only women who reported having had sexual intercourse in the preceding year were included. This reduced the sample size to 7011 women.

Reported percentages are weighted national estimates. The weight for each respondent represents her probability of selection for the survey, adjusted for nonresponse and adjusted again to agree with US Bureau of the Census estimates by age, race, marital status, and parity.27 The z tests used in Tables 1 through 3 applied the formulas and procedures recommended for this survey.27 These formulas are based on the balanced half-sample replication technique, an accurate method for estimating sampling errors from complex samples such as this one. These estimates take into account both the sample size and sample design on which our weighted percentages are based.

Near the end of the interview, after questions about pregnancy, contraception, and marriage, all women who had ever had intercourse were asked: “In the last 3 months in which you were having intercourse, with how many men did you have intercourse?” The variables and categories shown here were arrived at after preliminary analysis, using both cross tabulation and logistic regression. Our tables show women who report two or more partners in the preceding 3 months as a percentage of all women in a particular group who had intercourse in the previous year. Relative risks and confidence intervals were determined from these proportions for each group. To determine which variables were independently associated with having multiple recent partners when the effects of other variables were controlled, we used multiple logistic regression.

Results

Overall, in 1988, 11% of all women of reproductive age did not have intercourse at all in the preceding 3 months, 85% had intercourse with one man during that period, 4% had intercourse with two men during that period, and less than 1% report having intercourse with three or more men in the preceding 3 months (Figure 1).

Of sexually active women (i.e., those who have had sexual intercourse in the preceding year), 3.4% report having intercourse with two or more men in the previous 3 months (Table 1). Marital status is the most important predictor of having two or more partners: 0.4% of married women report multiple partners in a 3-month period compared with 7.9% of never-married women and 9.5% of divorced/separated women (Table 1). Since the proportion having multiple partners is small among married women and substantially higher among never-married and divorced/separated women, and since STD incidence among Blacks and Whites differs dramatically, the results are stratified by marital status and race.

Among all sexually active women, increasing age is associated with lower proportions reporting multiple recent partners (Table 1). This is related to the greater proportion of married women in the older age groups. Among those who are not married, however, the pattern among Blacks reveals a later peak in this behavior among women in their thirties (Figure 2). Among unmarried, sexually active White women, most of those who report having two or more recent partners are under 30 years of age; the unmarried, sexually active Black women who report this most are those 30 or older. In fact, further stratification reveals that 35- to 39-year-old
divorced/separated Black women, in particular, report two or more recent partners more often than any other race–marital status group (16.4%).

Poverty status is associated with distinctive patterns of this behavior among women of reproductive age overall (Table 1), but not among unmarried women in particular. In general, less education is associated with multiple recent partners among all unmarried women except divorced/separated White women. Never-married White women with a high school diploma only are significantly more likely to report multiple recent partners than those with some college education or no high school diploma (relative risk = 2.4, P < .05) (Table 2). Among never-married Black women, formal education is inversely associated with multiple recent partners: 9.2% of those in the lowest education group report having two or more recent partners compared with 2.7% among those with some college (P < .05). In contrast, among divorced/separated White women, educational level is positively associated with having multiple partners: 5.5% of those without a high school diploma, 7.3% of those with only a high school diploma, and 13.7% of those with some college had two or more partners in the preceding 3 months (P < .05) (Table 3).

Earlier age at first sexual intercourse is strongly associated with a higher rate of having multiple recent partners for all never-married women except divorced/separated White women. Among never-married White women, the percentage reporting multiple partners increases almost fivefold for those whose first intercourse was before age 15 (17.8%) compared with those whose first intercourse was after age 18 (3.8%). This association is also large among never-married Black women, substantially smaller among divorced/separated Black women, and nonexistent among divorced/separated White women.

Among never-married women, having two or more recent sex partners is reported most by those with no religious affiliation and least by those who attend religious services once a month or more; there is no such significant association among divorced/separated women. Among never-married Whites, those with no religious affiliation are more likely to have multiple partners than those with some affiliation (16.7% vs 7.4%; P < .05). Among never-married Blacks, lack of at least monthly attendance at religious services (compared with monthly attendance) is associated with having multiple recent partners (8.8% vs 4.3%; P < .05).

Among never-married White women, residence in the central city of a metropolitan area is associated with a significantly higher percentage reporting multiple recent sex partners (11.3%) than is suburban or nonmetropolitan residence (7.4%, P < .05). This is not true among Black women or divorced/separated women.

**Multivariate Analysis**

To control for the simultaneous effects of age, education, residence in a metropolitan area, age at first sexual intercourse, religious affiliation, and religiosity on the number of recent partners, we conducted multiple logistic regression analyses. Because of interactions among race, marital status, and the other variables, we conducted separate analyses for the four race–marital status groups.

Two key findings emerge from this analysis (Table 4). First, among sexually active women overall, early age at first sexual intercourse predicts a higher likelihood of having two or more sexual partners in the previous 3 months of sexual activity. After stratification by race and marital status, this finding remains significant for never-married women but does not hold for divorced/separated women. Second, religion is associated with having multiple recent sex partners both for women who have never married and for those who are divorced or separated. However, different measures of religion's effect are significant for Whites compared with Blacks: among Whites, religious affiliation independently predicts this behavior, while among Blacks regular attendance at religious services is predictive.

After controlling for the effects of other variables, the significant predictors
of having multiple recent sex partners among White women who have never married are early first sexual intercourse (younger than 18 years compared with 18 or older), central city residence, and having no religious affiliation. Among Black women who have never married, first sexual intercourse before 15 years of age and less than monthly attendance at religious services are predictive.

Independent predictors of having multiple recent partners among divorced/separated White women include any college education and having no religious affiliation. Among divorced/separated Black women, only less than monthly attendance at religious services predicts this behavior.

**Discussion**

We found that among sexually active women, less than 1 in 200 of those who are currently married and less than 1 in 10 of those who are currently unmarried report having multiple recent sexual partners. Marital status, socioeconomic status, central city residence, age at first sexual intercourse, religious affiliation, and religious attendance are associated with the expression of this sexual behavior. Furthermore, the effect of each of these factors is different among Black compared with White sexually active, unmarried women.

We studied four groups in detail in this analysis: never-married Whites, never-married Blacks, divorced/separated Whites, and divorced/separated Blacks. Race and marital status were singled out for stratification because these are generally accepted as markers of distinct patterns of sexual behavior and because they provide discrete population subgroups for the targeting of STD interventions. Two variables stand out because their effects are strong and because their effects were found in multiple race-marital status groups: age at first sexual intercourse and the religious factors.

We found that earlier first intercourse predicts having multiple recent partners for never-married Whites and Blacks and for divorced/separated Blacks, even when the effects of other variables are controlled. Early first sexual intercourse has been associated with "risky" behaviors such as using drugs, not using contraception at first intercourse, having more sexual partners, and having more frequent intercourse. It may also be a marker for other sexual behaviors that place an individual at increased risk for STDs, such as lack of condom use, less discriminating sex partner recruitment, and having multiple sex partners in a short time period. Finally, early age at first intercourse is directly linked to bacterial and viral STDs and to cervical cancer and dysplasia.

The association we have demonstrated between low religiosity and having multiple recent partners among unmarried Blacks, and between lack of religious af-
filiation and having multiple recent partners among unmarried Whites, suggests that the religious variables may be markers of women who are more apt to disregard behavioral norms with respect to sexual behavior. Having a religious affiliation and attending religious services frequently have been inversely associated with early first sexual intercourse, number of partners in the preceding year (General Social Survey, 1988-1990, unpublished data), and coital frequency. Some theorists view one’s connection to religion as an indication of proneness to engage in socially acceptable behavior. The relationship between such markers and risky behavior and their potential use in targeting interventions require further research.

In our data, some factors have particularly strong effects in some race-marital status groups, but not in others. For example, early first sexual intercourse and low religiosity, which predict having multiple recent partners among never-married women, are much weaker or unimportant as predictors among divorced/separated women. Educational level is positively associated with having multiple partners among divorced/separated White women, and negatively among never-married women. In addition, divorced/separated Black women are almost twice as likely to have multiple recent partners as are never-married Black women (11% vs 6%; P < .05). Thus, being formerly married (compared with never married) is associated with different predictors of having multiple recent partners, and also distinguishes some groups (e.g., Black women) at higher “risk” for having multiple partners.

Similarly, race is associated with different patterns of this behavior among unmarried, sexually active women. The data suggest different, though not necessarily riskier, practices among Black women compared with White women. The finding that having multiple recent sexual partners is most common among divorced/separated Black women (11.2%), least common among never-married Black women (6.2%), and intermediate among unmarried White women (9.0%) points to the oversimplification introduced by using race alone as a predictor of sexual behavior; stratification by marital status adds a new dimension to the discussion of such racial differences. An accurate appraisal of these differences is especially important for STD prevention activities because of the wide disparity in STD incidence between Blacks and Whites.

These self-reported data may contain bias. Intentional nonreporting, incomplete recall, and misunderstanding of the survey questions could lead to inaccuracies in self-reported number of sexual partners and result in underreporting of multiple partners. Thus, these findings probably represent minimum estimates of the number of recent sex partners. However, no representative database exists for comparison.


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The Medical Origins of Homelessness

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Introduction

A consistent sociodemographic profile of homeless adults has emerged over the last decade indicating that the homeless are predominantly men in their 30s who have completed high school,1,2 have few or no dependents,3,4 and are long-term residents of the cities in which they reside.1,3 Research on substance abuse5-8 and psychiatric disorders8,17 among the homeless is less consistent and remains the subject of considerable debate8,18,19 because of two conceptual and analytic problems. First, with some exceptions,15 addictive and psychiatric disorders that precede homelessness have not been distinguished from those that are a consequence of homelessness, thereby limiting the opportunity to explore causal hypotheses and to evaluate the accretion of disorders following homelessness. Second, many studies have not used comparative data on nonhomeless populations, thereby hindering the evaluation of the extent to which the homeless exhibit an excessive prevalence of medical disorders.

Methods

We conducted a cross-sectional survey of adults from the three National Guard armories in Santa Clara County, California, that provide approximately half of all shelter beds for adults in the county.20,21 The largest armory (with a capacity of 300 persons) is located in downtown San Jose, the 13th largest city in the United States. The armories admit any adult without children, allow registration throughout the night, and impose no limits on the length of stay (the average stay per guest is 15 nights). Recruitment took place every night from November 26, 1989, through March 31, 1990. All persons were invited to participate on the first night they registered and were administered a 58-item questionnaire by nurses and health interviewers. To ensure that no one was interviewed twice, a master file was kept of names, ages, and interview status.

Demographic questions were adapted from the 1980 US census. Items on substance abuse were selected from the National Institute of Mental Health (NIMH) Diagnostic Interview Schedule (DIS), a structured questionnaire designed for lay interviewer administration.22 The DIS questions examining excessive alcohol intake addressed both perceptual ("Did you ever think you were an excessive drinker?") and quantitative ("Did you ever consume..."
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