

Prevalence and Correlates of Sexual Activity and Function in Women: Results from the Boston Area Community Health (BACH) Survey

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Abstract Relatively few studies have measured sexual functioning in women using a large, diverse, community-based sample with measures that allow for direct comparisons with previous findings. In this article, we: (1) describe prevalence of sexual activity in women by key sociodemographic characteristics, including age, race/ethnicity, marital status, and socioeconomic status; and (2) estimate the influence of key correlates on sexual problems. Data were analyzed from the Boston Area Community Health (BACH) Survey, a 2002–2005 community-based epidemiologic study of urologic and gynecologic symptoms, sociodemographics, health status, and psychosocial characteristics in a diverse sample of Boston area residents ($N = 3,205$ women aged 30–79 years). Analyses of sexual activity prevalence and reasons for inactivity were conducted on the full sample, while analyses of sexual problems and their correlates were conducted for the subset of women who engaged in sexual activity with a partner in the previous 4 weeks. A total of 49% of participants were not sexually active, citing lack of interest (51.5%) and lack of a partner (60.8%) as the most common reasons. Data pertaining to five dimensions of sexual functioning were gathered through a self-administered questionnaire adapted from the Female Sexual Function Index, measuring desire among all women and arousal, lubrication, orgasm, and pain among those who were sexually active. Among the sexually active, we obtained a 38.4% prevalence rate of sexual problems and 34.9% of those participants reported that they were also dissatisfied with their

sex lives. Therefore, only 13.7% of the sexually active sample exhibited both sexual problems and dissatisfaction with their overall sex lives. Age was strongly and positively associated with sexual problems. In terms of psychosocial factors, depression, sexual and physical abuse in adulthood, global mental health functioning, and alcohol were associated with sexual problems, with variation across racial/ethnic groups.

Key words Sexual activity · Sexual problems · Female sexual dysfunction · Social epidemiology

Introduction

Recent years have brought increased attention and controversy to issues surrounding women's sexual activity, functioning, symptoms, and possible pharmaceutical interventions (Loe, 2004; Tiefer, 2001a, 2001b). Scientifically, the study of sexuality has expanded significantly since the latter half of the 20th century, beginning with Kinsey's classic work (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953), followed by Masters and Johnson's (1970) attention to orgasm as the centerpiece of sexual activity (see also Masters, Johnson, & Reproductive Biology Research Foundation, 1966), and more recent efforts to identify models of women's sexuality that are not derived from male models (Kaschak & Tiefer, 2002; Tiefer, 1996). At stake in these studies is the creation of "normal" standards of sexual behavior as well as criteria for disease and dysfunction (Loe, 2004).

The terms of the debate shifted in the late 1990s with the introduction of phosphodiesterase type 5, or PDE-5, inhibitors. The extremely lucrative sales of PDE-5 inhibitors for erectile dysfunction have fueled investigation into the use of similar approaches with women (Loe, 2004; Tiefer, 2001a,

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2001b). As a result, assumptions underlying research on women's sexuality, especially those focused on Female Sexual Dysfunction (FSD), have largely promoted an ideal that follows from the male model, one which is oriented to sexual performance: orgasm is central, desire is high, arousal is abundant, and lubrication is readily achieved (Loe, 2004).

Debates have flourished, however, concerning the underlying causes of sexual dysfunction, how it should be measured, and, indeed, whether sexual problems should be defined as medical problems at all (Bancroft, Loftus, & Long, 2003b; Basson, 2005; Loe, 2004; Rosen & Laumann, 2003). For example, Mercer et al. (2003) found variations in prevalence when duration of symptoms was taken into account. In a national probability sample from the United Kingdom, Mercer et al. found that while 53.7% of women reported at least one sexual problem lasting at least one month in the previous year, only 15.5% of them had those problems persistently (defined as lasting six months or longer). Similarly, Bancroft, Loftus, and Long (2003a) observed that while four major prevalence studies (Dunn, Jordan, Croft, & Assendelft, 2002; Fugl-Meyer & Fugl-Meyer, 1999; Laumann, Paik, & Rosen, 1999; Osborn, Hawton, & Gath, 1988), as well as their own analyses, generated similar overall symptom prevalence rates (ranging from 33% to 47%), only a third to a half of those women reported being distressed by those symptoms or as having a sexual problem. Furthermore, King, Holt, and Nazareth (2007) found a low correlation between clinical diagnoses and women's perceptions of whether or not they had problems. While the diagnostic criteria for a range of sexual problems in the DSM-IV included the disturbance causing "marked distress or interpersonal difficulty" (American Psychiatric Association, 2000), other researchers have underscored the need to take into account the "transient alteration of sexual behavior" resulting from situational circumstances (Balon, Segraves, & Clayton, 2007).

To the extent that female sexual activity, problems, or satisfaction are viewed as possible targets for pharmaceutical or psychological intervention, the accuracy of such information is a high stakes issue (King et al., 2007). Furthermore, to the extent that sexual problems may result from or foreshadow serious underlying or chronic conditions (Basson, 2007; Basson & Schultz, 2007; Bhasin, Enzlin, Coviello, & Basson, 2007), questions about their prevalence have broad medical implications. Together, these issues highlight the need for thorough documentation and evaluation of the epidemiology of sexual activity and problems, especially in older populations and across racial and ethnic categories. In this study, we replicate and extend previous studies by: (1) describing prevalence of sexual activity in women by key sociodemographic characteristics, including age, race/ethnicity, marital status, and socioeconomic status; and (2) estimating the influence of key correlates of

sexual problems among sexually active women in the Boston Area Community Health (BACH) Survey, a large, random, community-based sample.

Previous studies of the prevalence of sexual problems in women have drawn from national, community, and clinical samples in the U.S. and other countries, including varied age groups from 18 through 96 (Paik & Laumann, 2005; West, Vinikoor, & Zolnoun, 2004). These studies have indicated that sexual problems are highly prevalent, ranging from 7% to 50% depending on how problems were measured (Bancroft et al., 2003a; Gierhart, 2006; King et al., 2007; Laumann et al., 1999; Paik & Laumann, 2005). Perhaps the most widely cited study of the prevalence of sexual functioning in women was by Laumann et al. (1999), which was based on a broader study of sexual behavior in the U.S., and found that 43% of women reported they had experienced at least one of seven difficulties in sexual desire or performance for "several months or longer" in the previous year. Based on the National Health and Social Life Survey, this study was among a small handful that examined sexual function among women in national probability samples (Bancroft et al., 2003a; Paik & Laumann, 2005) or smaller community samples (Johannes & Avis, 1997).

Previous studies have shown that, similar to men, sexual activity in women declines with age, but, unlike men, this is due less to health problems than to lack of a functioning partner (Avis, 2000). Robust findings have shown a strong negative association between sexual problems and various psychosocial indicators, including general emotional well-being (Bancroft et al., 2003a; Basson, 2005), mental health (Laumann et al., 1999), positive emotional feelings toward a partner during sexual activity (Bancroft et al., 2003a; Basson, 2005; Laumann et al., 1999), and quality of life (Laumann et al., 1999). A positive association has been consistently observed between sexual problems and sexual abuse in childhood (Browning & Laumann, 1997) as well as depression (Basson, 2005). Additional variations have been observed between types or frequency of sexual problems in women and various demographic characteristics, including race/ethnicity, age, and educational attainment (Bancroft et al., 2003a; Laumann et al., 1999).

Compared with other community-based samples, BACH offered several major advantages that help fill gaps in existing literature. BACH was representative of the Boston area, generalizable to the U.S., and was designed to allow for comparison between racial/ethnic groups (White, Black, and Hispanic) as well as across age categories (30–79) (McKinlay & Link, 2007). With the notable exception of the Study of Women's Health across the Nation (SWAN) ($N = 16,065$) (Gold et al., 2000), BACH ($N = 5,506$) was also larger than many substantively comparable studies, which generally used samples of less than 2,000 (Paik & Laumann, 2005). The scope and diversity of BACH was

much greater than that captured in patient- or convenience-based samples, and provided a unique opportunity to measure prevalence of sexual problems in diverse age and racial/ethnic groups.

The measurement of sexual problems in BACH offered additional features that enhanced our ability to make systematic comparisons with previous prevalence. Sexual function was measured in BACH with an abbreviated form of the Female Sexual Function Index (FSFI). In its full form, the FSFI was clinically validated and has proved to have excellent psychometric properties (Rosen et al., 2000; Wiegel, Meston, & Rosen, 2005), and allowed for comparison with previous studies. Consistent with calls from previous research (Paik & Laumann, 2005), the FSFI not only measured multiple dimensions, or co-symptoms, of sexual functioning, but also used multiple-response rather than dichotomous measures of dimensions of sexual problems. As a result, compared to studies of single dimensions, such as desire or pain, the FSFI allowed for fuller comparisons. This study also extended Laumann et al. (1999) by addressing reasons for sexual inactivity and considering women's satisfaction with their sex lives in the presence and absence of sexual problems.

In interpreting our results, we followed Paik and Laumann's (2005) distinction between "sexual dysfunctions" and "sexual problems." Building on the assumption that participants (lay people) should not exclusively define medical problems, Paik and Laumann reserved "sexual dysfunction" to refer to cases that have received a clinical diagnosis. By contrast, "sexual problems" referred to participants' self-reports of symptoms, with the recognition that reported symptoms were not necessarily viewed as problems or as medical dysfunctions by the medical community or by the women who experienced them. This orientation was echoed in recent criticisms of medicalized *DSM* definitions of female sexual dysfunction (Balon et al., 2007; Tiefer, 2001b). Because the women in our sample reported their own activity levels and symptoms, the issue of whether or not they were diagnosed with a clinical problem (such as FSD) was beyond the scope of our analysis. Rather, our focus was on assessing the prevalence of sexual activity among women, the prevalence of problems in this population, and the correlates of these relationships.

Methods

Participants

The Boston Area Community Health (BACH) study is a population-based, random sample epidemiologic survey of urologic and gynecologic symptoms, including also a wide range of information related to sociodemographics, health status, and psychosocial characteristics. The research design had as its goal equal numbers of participants in each of 24

cells, defined approximately by age (30–39, 40–49, 50–59, 60–79 years), sex, and race/ethnicity (Black, Hispanic, and White). From April 2002 through June 2005, 2,301 men and 3,205 women were surveyed, including 1,770 Blacks, 1,877 Hispanics, and 1,859 Whites. Full details of the study design and execution have been reported elsewhere (McKinlay & Link, 2007). Characteristics of the sample are presented in Table 1.

Procedure

The city of Boston was divided into 12 strata: four geographic areas by three levels of minority density. Census blocks were randomly sampled from 4,266 blocks in the city of Boston by stratum such that approximately 10% of the low density minority blocks, 15% of the high density Black blocks, and 75% of the high density Hispanic blocks were selected. Screeners were completed by telephone or in the field for 36.0% of the selected households, while 30.0% of the households refused screening and 34.0% of the households could not be contacted after at least 16 attempts to reach them by mail, telephone, or field visit (McKinlay & Link, 2007).

To be eligible for BACH, a person needed to meet the following criteria: (1) be a member of the randomly selected household; (2) be of a race/ethnicity and sex compatible with the household's sampling code; (3) be between the ages of 30–79 years; (4) be competent to provide signed informed consent; and (5) speak English or Spanish well enough to complete the study. People under the age of 30 were excluded because the prevalence of urologic symptoms is quite low in that age group. However, the age range included in BACH extends well beyond that addressed in many other studies, including that of the National Health and Social Life Survey (NHSL) (Laumann et al., 1999), which excluded people over the age of 59. Interviews were completed with 63.3% of the screener-identified eligible individuals from the selected households, and data were obtained during a 2-h, in-person interview, generally in the participant's home. In order for analyses to be representative of the city of Boston, it was necessary to weight observations inversely proportional to their probability of selection into the study (Cochran, 1977; Kish, 1965). The final sample of women in BACH was 3,205.

Measures

Sexual functioning in women was measured using an abbreviated version of the Female Sexual Function Index (Meston, 2003; Rosen et al., 2000; Wiegel et al., 2005), and for present purposes we refer to this instrument as the BACH FSFI

Table 1 Descriptive statistics of the BACH sample, overall and by race/ethnicity, by sexual activity with a partner in last 4 weeks (ages 30–79, weighted to population of Boston)

	Overall			Black			Hispanic			White		
	Overall	Active	Inactive	Overall	Active	Inactive	Overall	Active	Inactive	Overall	Active	Inactive
Sample size, <i>N</i>	3,205	1,415	1,790	1,070	473	597	1,111	493	618	1,024	449	575
Percent	100	50.9	49.1	100	52.7	47.3	100	48.3	51.7	100	50.5	49.5
Age group (%)												
30–39	33.5	46.4	20.1	32.7	42.1	22.2	43.3	60.5	27.2	31.6	45.5	17.3
40–49	24.4	29.2	19.4	27.1	32.5	21.1	27.7	24.3	30.8	22.2	28.4	15.8
50–59	18.4	14.9	22.0	20.0	17.3	22.9	15.9	12.1	19.3	18.2	14.2	22.3
60–79	23.7	9.6	38.4	20.2	8.1	33.8	13.2	3.0	22.6	28.1	11.9	44.6
Marital status (%)												
Married	45.0	65.1	24.2	32.6	48.4	14.8	44.6	68.3	22.4	51.7	73.6	29.4
Sep/Div/Wid ^a	28.0	14.0	42.4	33.7	24.2	44.2	34.3	15.2	52.2	23.5	8.2	39.0
Single	27.0	20.9	33.4	33.8	27.4	40.9	21.1	16.5	25.4	24.8	18.3	31.6
Socioeconomic status (%)												
Lower	30.9	22.2	40.0	44.0	36.8	52.0	63.3	51.6	74.2	16.5	7.6	25.6
Middle	45.2	47.8	42.5	47.0	52.7	40.7	30.9	38.3	23.9	47.7	47.3	48.0
Upper	23.8	30.0	17.5	9.0	10.5	7.3	5.8	10.0	1.9	35.9	45.1	26.4
Alcohol consumption (%)												
None	41.6	31.0	52.6	52.1	42.5	62.8	56.6	46.9	65.7	32.5	21.1	44.2
<1 drink/day	43.3	48.7	37.6	39.7	44.6	34.2	34.8	41.9	28.1	47.1	52.4	41.7
1–3 drinks/day	12.9	16.8	9.0	5.9	9.3	2.1	5.7	6.0	5.4	18.4	23.3	13.7
3+ drinks/day	2.2	3.5	0.8	2.3	3.5	1.0	3.0	5.2	0.8	2.0	3.2	0.8
Smoking status (%)												
Never	50.2	52.6	47.6	52.6	52.8	52.4	65.6	63.0	68.1	45.2	50.2	40.1
Former	27.2	25.2	29.3	20.7	18.8	22.7	13.0	11.8	14.1	34.0	31.8	36.3
Current	22.6	22.1	23.1	26.7	28.4	24.8	21.4	25.3	17.8	20.8	18.0	23.6
Physical activity (%)												
Low	27.8	17.6	38.4	26.7	17.0	37.4	33.5	21.8	44.5	27.1	17.1	37.3
Moderate	53.6	58.5	48.6	52.7	57.2	47.7	56.0	65.6	47.1	53.5	57.6	49.4
High	18.6	23.9	13.0	20.6	25.8	14.8	10.4	12.6	8.4	19.4	25.4	13.3
Body mass index (%)												
<25	33.3	38.9	27.4	18.6	20.7	16.3	24.4	30.4	18.8	43.1	50.9	35.1
25–30	28.6	30.0	27.3	28.1	30.6	25.4	32.5	25.5	39.1	28.0	30.6	25.3
≥30	38.1	31.1	45.3	53.3	48.8	58.3	43.1	44.0	42.2	28.9	18.5	39.6
Mental Health Component Score (SF-12) (mean)												
Childhood emotional abuse (%)	19.0	17.2	20.8	17.2	16.6	18.1	13.1	16.6	10.0	21.4	17.7	24.7
Adult sexual abuse (%)	25.7	25.0	26.2	25.4	24.8	26.3	21.9	26.4	17.8	26.7	24.9	28.2
Adult physical abuse (%)	20.7	18.4	23.1	26.7	26.0	27.1	22.6	24.8	21.1	17.1	12.7	21.6

^a Separated, divorced, widowed

questionnaire (see Appendix A for a summary of items and response options). Due to time constraints (BACH participation required a 2+ hour time commitment on the part of participants), a 10-item BACH FSFI was adapted from the original 19-item FSFI, including questions that measured five dimensions of sexual functioning addressed in the original FSFI: desire (2 items), arousal (1 item), lubrication (1 item),

orgasm (3 items), and pain (3 items). All women, regardless of sexual activity status, answered the two items measuring the desire dimension; those who were sexually active also responded to items measuring arousal, lubrication, orgasm, and pain (see Appendix A).

In addition, sexually active BACH participants were asked about satisfaction with one item used in the original

FSFI: “Over the past 4 weeks, how satisfied have you been with your overall sex life?” However, while the original FSFI treated satisfaction as an independent domain, we specifically omitted that domain from our measure and return to it below as a control variable in our model. This abbreviated form of the FSFI offered a multidimensional assessment of sexual functioning that also permitted comparisons with previous studies.

Scoring of the BACH FSFI followed the convention of the original FSFI, which multiplied the sum of the items in each domain by a domain factor, the total score being equal to the sum of the domain scores. For the BACH FSFI, domain scores derived from one item (arousal and lubrication) were multiplied by 1.2, domain scores derived from 2 items (desire) were multiplied by 0.6, and domain scores derived from three items (orgasm and pain) were multiplied by 0.4. As a result, BACH FSFI domain scores could range from 0 to 6.0 (except desire, which could range from 1.2 to 6.0) and the BACH FSFI total score could range from 1.2 to 30.0. This scoring method allowed for direct comparison between the BACH FSFI domain scores and the original FSFI domain scores because it maintained the same relative contribution of each domain to the overall score.

For the present analysis, the BACH FSFI was validated against the same data used to validate and develop cut-off scores for the original FSFI (Wiegel et al., 2005). This sample consisted of 568 women, of whom 261 had no sexual problems and 307 had one or more sexual problems, as determined by clinical interview (Wiegel et al., 2005). The BACH FSFI total score was found to correlate highly with the original FSFI total score in this clinical sample (Pearson $r = .98, p < .001$) and had high internal reliability (Cronbach's $\alpha = .92$). The original FSFI instrument was additionally validated using empirically derived cutoff scores and normative data from different samples (Likes, Stegbauer, Hathaway, Brown, & Tillmanns, 2006; Masheb, Lozano-Blanco, Kohorn, Minkin, & Kerns, 2004; Meston, 2003; Sidi, Puteh, Abdullah, & Midin, 2006). For the original FSFI, a cutoff score of 26.5 was determined based on a sensitivity score of .80 and a specificity score of .85 (Wiegel et al., 2005), and scores equal to or below the cut-off score were used to indicate the presence of sexual problems. A cut-off score of 22.5 was determined for the BACH FSFI, based on the same sensitivity and specificity scores, with an area under the ROC curve of .89. Thus, for the present study, women with a score of 22.5 or less on the BACH FSFI were classified as having sexual problems.

No single domain dominates the measure of sexual functioning in women. Domain scores measured on the FSFI tend to be modestly but positively correlated with one another and with the overall score (Wiegel et al., 2005), and similar patterns emerged in the BACH data. Correlations between the domains and the overall BACH FSFI score

ranged from .54 for pain to .78 for arousal (see Appendix A). The correlation between the satisfaction domain and the overall BACH FSFI score, which was measured but included as a control variable, was .60.

As discussed above, while the FSFI treats satisfaction as one domain of sexual functioning in women, other studies have treated sexual function as distinct from satisfaction or distress (Bancroft et al., 2003a; Feldman, Goldstein, Hatzichristou, Krane, & McKinlay, 1994a; McKinlay & Feldman, 1994). In this study, we also oriented to satisfaction as an independent response to a set of conditions related to sexual functioning, rather than a component of sexual function itself. We treated the BACH measure of satisfaction with one's sex life as a proxy for an absence of distress about sexual problems, and adjusted for it as a correlate in our model.

Those who reported no sexual activity with a partner in the previous four weeks were asked to provide reasons for their sexual inactivity, and options included having no partner, having no interest, having pelvic pain or a urinary problem, having another health problem, or having a partner with a health problem that interfered with sex (participants were able to list multiple reasons). In a separate question, all participants (regardless of sexual activity) were asked to rate their frequency and level of desire (Appendix A).

We also examined the association of sexual activity and sexual problems with a series of other variables. First, we considered sociodemographic characteristics, including age, race, marital status, and socioeconomic status (SES), which was measured based on a combination of education and income, following Green (1970). Second, we also included anthropometrics, specifically body mass index, waist circumference, hip circumference, and waist-to-hip ratio. Third, we considered comorbidities, including physical health, diabetes, heart conditions, vascular conditions, high blood pressure, high cholesterol, and arthritis. General health status was measured by the SF-12, which is a 12-item assessment of global physical and mental health measuring, for example, limitations or problems with doing moderate activity, climbing stairs, or doing normal work (Ware, Kosinski, & Keller, 1996). For the general U.S. population, the mean mental health component score for the SF-12 is 49.3, with a standard deviation of 9.75 (Ware, Kosinski, Tuner-Bowker, & Gandek, 2002).

Fourth, we included lifestyle factors, such as alcohol use, smoking, physical activity, and current work situation. Finally, we considered psychosocial issues, including history of childhood (≤ 13 years) and adult (≥ 14 years) sexual, emotional, and physical abuse, which was measured with a self-administered questionnaire from a clinically validated abuse instrument developed by Leserman, Drossman, & Li (1995). Sexual abuse was defined as present if participants indicated they had any one in a series of unwanted sexual experiences

involving exposure, touching, or penetration, with slightly more narrow definitions for adults. Physical abuse (child or adult) was defined as present if a respondent indicated that an adult had “occasionally” or “often” “hit, kick, or beat” them, or had “seldom,” “occasionally,” or “often” “seriously threatened your life.” Emotional abuse was defined as present if a respondent indicated that an adult “emotionally abused, humiliated, or insulted you” “occasionally” or “often.” Depression was measured using a short form of the Center for Epidemiologic Studies Depression Scale (CES-D), which includes 8 yes/no questions, with depression indicated by the presence of 5 or more symptoms (Turvey, Wallace, & Herzog, 1999).

Data Analysis

We analyzed our data in two ways, focusing on sexual activity and sexual problems among the women in our dataset. First, we conducted multivariate analyses of the prevalence of sexual activity by race/ethnicity, as well as reported reasons for inactivity. Second, we analyzed the prevalence of sexual problems by race/ethnicity, age, marital status, and socioeconomic status, as well as conducting multivariate analyses of symptom correlates. Relatedly, we analyzed the importance of satisfaction in predicting sexual problems among the sexually active participants.

Multiple imputation (MI) was used to impute missing values using the MI procedure in SAS version 9.1 (Rubin, 1987; SAS Institute, 2003; Schafer, 1997). Statistical analyses taking into account the complex survey design using sampling weights were done using SUDAAN version 9.0.1 (Research Triangle Institute, 2004). Bivariate associations were tested with a chi-square test of independence. Multivariate logistic models were developed using backwards elimination. Variables were kept in the model if they were significant at .05 level, or for at least one racial/ethnic group.

Results

Prevalence of Sexual Activity and Reasons for Inactivity

In BACH, participants were defined as sexually active if they reported having had sexual relations with a partner in the previous four weeks. A total of 50.9% of our sample met this criterion, with 52.7% of Black, 48.3% of Hispanic, and 50.5% of White participants reporting sexual activity. Table 2 presents multiple logistic regression results for the probability of having been sexually active. Race/ethnicity was highly significant ($p < .001$), with Blacks having higher odds than Whites of reporting sexual activity in the previous four weeks, while Hispanics had only slightly higher odds than Whites. Age was also highly significant ($p < .001$)

overall and for all three racial/ethnic groups, where likelihood of sexual activity decreased with age, especially for those in the 60- to 79-year-old group. Women who were married or living with a partner were also more likely to report having been sexually active, relative to divorced/widowed/separated or single women ($p < .001$). Likelihood of sexual activity also varied with behavioral characteristics, increasing with alcohol consumption ($p < .001$) and with physical activity ($p = .008$). For Hispanics, having a history of emotional abuse during childhood significantly increased the odds of sexual activity, while for whites the odds of sexual activity increased with increased emotional well-being (as measured by the mental health component score). Finally, obesity was associated overall with decreased odds of sexual activity ($p = .017$).

The prevalence of reasons reported for not engaging in sexual activity is summarized in Table 3. The most commonly cited reasons were lack of partner (59.7%) and lack of interest (48.1%). Reports of “lacking a partner” varied significantly by race/ethnicity ($p = .025$) and marital status ($p < .001$), while reports of “no interest” varied by age ($p < .001$) and marital status ($p < .001$). Overall and for all three race/ethnicities, sexually active participants reported higher levels of desire than their inactive counterparts, as tested with a chi-square test of independence ($p < .001$).

Prevalence of Sexual Problems among the Sexually Active Participants

Table 4 summarizes the prevalence of sexual problems by race, age, marital status, and SES. Among those who had sexual relations with a partner in the previous four weeks, we found a 39.2% prevalence rate of sexual problems. These bivariate estimates indicated a statistically significant higher prevalence of problems among Whites relative to Blacks and Hispanics ($p = .008$), among older age groups relative to younger ($p < .001$), and among married people relative to divorced/widowed/separated and single women ($p = .021$).

Correlates of Sexual Problems among Sexually Active Participants

Table 5 presents results of a multiple logistic regression model measuring the probability of sexual problems and adjusting for a variety of clinical and sociodemographic factors, both for overall effects and separated by race/ethnicity. Race/ethnicity was associated with sexual problems, with Blacks and Hispanics having reported lower odds of sexual problems relative to Whites ($p = .046$). Age was strongly and positively associated with problems ($p < .001$).

Table 2 Multiple logistic regression model for probability of BACH respondents reporting sexual relations with a partner in the previous four weeks (overall and by race/ethnicity) (OR = odds ratio, CI = confidence interval)

	Overall			Black			Hispanic			White		
	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>
Race/Ethnicity			<.001									
Black	2.04	1.39–3.00										
Hispanic	1.04	0.66–1.62										
White	1.00	reference										
Age group			<.001			<.001			<.001			<.001
30–39	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
40–49	0.67	0.44–1.01		0.94	0.52–1.70		0.39	0.20–0.74		0.64	0.32–1.27	
50–59	0.36	0.24–0.52		0.47	0.26–0.84		0.36	0.20–0.63		0.29	0.15–0.55	
60–79	0.12	0.08–0.20		0.19	0.10–0.38		0.08	0.03–0.19		0.10	0.05–0.20	
Marital status			<.001			<.001			<.001			<.001
Married	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
Sep/Div/Wid ^a	0.15	0.11–0.21		0.19	0.11–0.32		0.07	0.04–0.13		0.15	0.09–0.27	
Single	0.15	0.11–0.22		0.16	0.09–0.29		0.12	0.07–0.24		0.16	0.09–0.27	
Alcohol use			<.001			<.001			.053			.003
None	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
<1 drink/day	1.78	1.29–2.46		1.81	1.06–3.08		1.65	0.92–2.95		1.79	1.10–2.91	
1–3 drinks/day	3.18	1.98–5.10		9.21	3.68–23.05		1.05	0.35–3.20		2.82	1.52–5.24	
3+ drinks/day	7.62	3.06–18.96		6.28	1.70–23.16		12.34	1.96–77.51		7.59	1.55–37.12	
Physical activity			.008			.027			ns			.067
Low	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
Moderate	1.57	1.14–2.15		1.84	1.06–3.19		1.35	0.79–2.31		1.61	1.02–2.54	
High	1.84	1.19–2.85		2.27	1.24–4.17		1.53	0.62–3.78		1.96	1.02–3.78	
Childhood emotional abuse	0.83	0.57–1.22	ns	1.04	0.58–1.87	ns	2.03	1.04–3.96	.042	0.65	0.39–1.08	.097
SF12—mental (per 10 point increase)	1.17	1.00–1.36	.053	1.15	0.90–1.46	ns	1.01	0.81–1.27	ns	1.32	1.06–1.66	.018
BMI			.017			ns			.083			.015
<25	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
25–30	0.94	0.64–1.39		1.01	0.54–1.89		0.45	0.21–0.95		1.15	0.68–1.96	
30+	0.62	0.42–0.92		0.80	0.43–1.47		0.78	0.39–1.57		0.47	0.26–0.85	

^a Separated, divorced, widowed

Marital status was also significant, with women who were married or living with partners having increased odds of problems relative to those who were divorced/widowed/separated or single (although this relationship may have been a function of non-married people being excluded due to inactivity) ($p < .003$). Overall and for Black participants, we found that having experienced adult sexual abuse was also significantly associated with sexual problems. Finally, mental health (as measured by the SF-12) was negatively associated with sexual problems, overall and for all three race/ethnic groups.

We also considered other correlates, which were hypothesized to be related to sexual problems. After the covariates in Table 5 were adjusted for, the other measures of anthropometrics, health status, comorbidities, and lifestyle factors noted above were not statistically significant.

The Importance of Satisfaction

Table 6 presents the bivariate association between satisfaction and sexual problems, overall and by race. Among women without sexual problems, a small minority were either dissatisfied (3.3%) or very dissatisfied (2.2%) with their overall sex lives. By contrast, women with sexual problems reported a seven times higher rate of dissatisfaction (34.9% total) ($p < .0001$). However, when considered in the context of the overall prevalence rate of 39.2%, this finding means that only 13.7% of our sexually active sample exhibited both problems and dissatisfaction with their overall sex lives [(0.349 dissatisfied)/(0.392 with sexual problems) = .137].

Table 7 presents results from multiple logistic regression analysis measuring the probability of sexual problems, this time including satisfaction in the model. Here, we found that

Table 3 Percentage of BACH respondents reporting reasons for not engaging in sexual relations with a partner in the previous four weeks

	Reason				
	No partner	No interest	Pelvic pain or urinary problem	Other health problem	Partner has health problem
Overall	59.7	48.1	4.1	13.0	10.7
Race/Ethnicity					
Black	61.5	42.0	3.4	14.0	6.2
Hispanic	46.5	42.8	5.3	12.8	7.9
White	61.9	52.4	4.1	12.6	13.6
<i>p</i>	.025	.051	ns	ns	.026
Age					
30–39	64.9	30.2	3.9	6.0	7.5
40–49	56.7	34.3	2.5	15.1	8.1
50–59	62.7	53.4	5.5	13.4	13.8
60–79	56.7	61.3	4.1	15.4	11.8
<i>p</i>	ns	<.001	ns	.084	ns
Marital status					
Married	22.7	60.4	5.6	18.0	30.9
Sep/Div/Wid ^a	68.8	52.1	3.7	13.7	5.4
Single	74.9	34.0	3.4	8.5	2.6
<i>p</i>	<.001	<.001	ns	.040	<.001
SES					
Lower	53.4	50.9	5.6	17.7	8.4
Middle	64.4	49.0	2.7	10.5	11.8
Upper	62.4	39.2	3.9	8.5	13.1
<i>p</i>	.059	ns	.076	.019	ns

^a Separated, divorced, widowed

Table 4 Prevalence of sexual problems among sexually active BACH participants, by race/ethnicity, marital status, and SES (percent)

Variable	Overall	Black	Hispanic	White
Overall	39.2	–	–	–
Race/Ethnicity (<i>p</i> value)				
Black	31.6	31.6	–	–
Hispanic	33.3	–	33.3	–
White	44.7	–	–	44.7
Age group (<i>p</i> value)				
30–39	32.3	27.4	25.4	36.8
40–49	35.0	26.8	41.7	38.8
50–59	53.5	44.5	52.9	59.7
60–79	63.3	45.0	44.8	71.2
Marital status (<i>p</i> value)				
Married	42.8	34.3	29.1	48.8
Sep/Div/Wid ^a	27.1	21.3	26.2	36.9
Single	35.9	35.9	57.1	31.6
SES (<i>p</i> value)				
Lower	39.2	36.7	37.9	47.9
Middle	37.9	28.5	31.7	44.8
Upper	41.2	29.5	15.6	44.0

^a Separated, divorced, widowed

satisfaction was highly significant ($p < .001$) overall and for all three race/ethnic groups. Women who were very satisfied had only slightly increased odds of sexual problems compared to those who were neither satisfied nor dissatisfied (OR 0.05, 95% CI: 0.03–0.09). However, compared to the same reference group, those who were dissatisfied (OR 1.74, 95% CI: 0.73–4.12) or very dissatisfied (OR 1.34, 95% CI: 0.47–3.77) had greater odds. Compared to the model that excluded satisfaction (Table 5), the inclusion of satisfaction rendered race/ethnicity and adult sexual abuse non-significant. The inclusion of satisfaction also made smoking status and adult physical abuse significant, although this pattern held for Blacks only.

Discussion

While the results of this study were generally consistent with studies of prevalence of sexual problems from convenience and patient-based samples, the broad community sample underscores the significance of age and race/ethnicity as determinants of sexual problems. We found that 50.9% of our sample reported sexual activity with a partner in the previous four weeks and, consistent with previous studies

Table 5 Multiple logistic regression model for probability of sexual problems among sexually active BACH Participants (overall and by race/ethnicity) (OR = odds ratio, CI = confidence interval)

	Overall			Black			Hispanic			White		
	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>
Race/Ethnicity			.046									
Black	0.59	0.38–0.93										
Hispanic	0.63	0.40–1.00										
White	1.00	Reference										
Age group			<.001			.001			.005			<.001
30–39	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
40–49	1.18	0.72–1.92		1.00	0.46–2.16		2.52	1.24–5.14		1.11	0.55–2.23	
50–59	3.27	1.95–5.51		3.59	1.53–8.41		4.51	1.69–12.09		2.98	1.42–6.24	
60–79	5.45	3.03–9.79		4.65	1.62–13.35		3.72	1.11–12.51		5.68	2.56–12.60	
Marital status			.003			.006			.013			.034
Married	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
Sep/Div/Wid ^a	0.33	0.17–0.63		0.24	0.10–0.58		0.78	0.34–1.81		0.37	0.12–1.11	
Single	0.66	0.41–1.09		0.79	0.37–1.72		3.06	1.30–7.21		0.45	0.22–0.94	
Adult sexual abuse	1.67	1.08–2.60	.022	2.39	1.17–4.89	.017	0.94	0.42–2.10	ns	1.65	0.88–3.10	ns
Mental Health–SF12 per 10 point change	0.59	0.48–0.71	<.001	0.53	0.40–0.71	<.001	0.54	0.42–0.71	<.001	0.64	0.45–0.91	.014

^a Separated, divorced, widowed

(Avis, 2000), participants reported a lack of interest and lack of a partner as the main reasons for their sexual inactivity. Using an abbreviated (but validated with clinical data) form of the FSFI questionnaire, we found an overall prevalence of sexual problems of 39.2% among the sexually active women in the sample, with only 34.9% of those participants reporting that they were also dissatisfied with their sex lives (such that only 13.7% of the sexually active participants had both symptoms and dissatisfaction).

We found some key differences between our results and previously reported studies, particularly for the prevalence of symptoms among sexually active participants. First, we observed a strong, positive association between age and sexual problems, overall and for all three racial/ethnic groups. These findings differed significantly from those of Laumann et al. (1999), but were consistent with other studies

that found a positive correlation between age and sexual problems (West, Vinikoor, & Zolhoun, 2004). This difference may have been due, in part, to BACH's inclusion of women through the age of 79, while the National Health and Social Life Survey (NHSLs) used in Laumann et al. (1999) only included people through the age of 59. Additionally, our results showed that marriage was protective only for Hispanic women, among whom single women had greater odds of sexual problems than their married counterparts. For Blacks, Whites, and overall, however, it was married women who had higher odds of sexual problems relative to their separated/divorced/widowed or single counterparts. A high proportion of uncoupled people were excluded from our analyses due to inactivity, which may have partially accounted for our different findings in this specific area. We note that while Boston has a higher proportion of unmarried

Table 6 Bivariate relationship of sexual problems (present or absent) and satisfaction among sexually active BACH participants (percent)

	Overall		Black		Hispanic		White	
	Present	Absent	Present	Absent	Present	Absent	Present	Absent
Satisfaction								
Very satisfied	10.1	47.9	15.0	52.9	18.9	53.9	6.7	42.8
Satisfied	27.6	39.9	29.5	34.9	27.5	36.4	26.8	44.3
Neither	27.4	6.6	29.5	6.1	21.9	6.0	27.5	7.2
Dissatisfied	23.1	3.3	14.9	3.8	24.5	2.1	26.1	3.4
Very dissatisfied	11.8	2.2	11.0	2.3	7.1	1.6	12.9	2.3
<i>p</i>	<.001		<.001		<.001		<.001	

Table 7 Multiple logistic regression model for probability of sexual problems among sexually active BACH participants, satisfaction included (OR = odds ratio, CI = confidence interval)

	Overall			Black			Hispanic			White		
	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>
Age group			<.001			.003			.004			<.001
30–39	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
40–49	1.63	0.93–2.87		1.90	0.78–4.64		2.36	1.00–5.58		1.69	0.74–3.87	
50–59	3.55	1.92–6.53		4.90	1.82–13.23		6.72	2.31–19.55		3.03	1.23–7.50	
60–79	8.18	4.00–16.74		6.46	1.96–21.30		3.98	1.14–13.80		10.20	3.44–30.22	
Marital status			.053			.002			.013			ns
Married	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
Sep/Div/Wid ^a	0.42	0.21–0.85		0.26	0.10–0.68		1.05	0.43–2.57		0.74	0.21–2.54	
Single	0.88	0.51–1.54		1.40	0.61–3.21		4.22	1.60–11.16		0.50	0.20–1.26	
Smoking status			ns			.046			ns			ns
Never	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
Former	0.92	0.55–1.53		0.33	0.14–0.80		1.02	0.43–2.51		1.06	0.53–2.12	
Current	0.91	0.54–1.52		0.87	0.39–1.93		1.02	0.43–2.42		0.93	0.39–2.21	
Adult physical abuse	0.94	0.55–1.62	ns	2.53	1.16–5.51	.020	1.06	0.42–2.70	ns	0.49	0.18–1.37	ns
Mental Health—SF12 per 10 point change	0.72	0.58–0.89	.003	0.67	0.48–0.93	.018	0.67	0.51–0.88	.004	0.83	0.56–1.24	ns
Satisfaction			<.001			<.001			<.001			<.001
Very satisfied	0.05	0.03–0.09		0.06	0.02–0.18		0.09	0.03–0.26		0.03	0.01–0.08	
Satisfied	0.18	0.10–0.34		0.21	0.08–0.56		0.27	0.09–0.79		0.15	0.06–0.37	
Neither	1.00	Reference		1.00	Reference		1.00	Reference		1.00	Reference	
Dissatisfied	1.74	0.73–4.12		0.73	0.14–3.63		2.24	0.57–8.81		2.19	0.72–6.67	
Very dissatisfied	1.34	0.47–3.77		1.18	0.30–4.69		1.79	0.40–8.06		1.69	0.39–7.24	

^a Separated, divorced, widowed

people than the U.S. as a whole, it is comparable to many major urban areas across the country (U.S. Census Bureau, 2000).

Similar to previous work (Bancroft et al., 2003a; Basson, 2005; Laumann et al., 1999), we found that psychosocial factors were significantly associated with sexual problems. BACH data similarly revealed that mental health was positively associated with likelihood of sexual activity as well as with sexual problems among the active participants. Consistent with previous work (Browning & Laumann, 1997; Laumann et al., 1999), we found that abuse was associated with sexual activity and sexual problems. Specifically, we found that childhood emotional abuse was associated with higher odds of sexual activity among Hispanics, adult physical abuse was associated with sexual problems among Blacks (before taking satisfaction into account), and adult sexual abuse was associated with sexual problems (after taking satisfaction into account). Together, these findings were consistent with the notion that sexual abuse may induce long-standing psychosocial problems, which, in turn, affect sexual function (Browning & Laumann, 1997; Laumann

et al., 1999). Furthermore, Laumann et al.'s findings that daily alcohol consumption was protective against low desire, arousal disorder, and sexual pain were consistent with our finding that likelihood of sexual activity with a partner in the last month increased significantly with alcohol consumption. Finally, the BACH results were consistent with previous studies showing that only about a third of women with sexual problems are distressed or dissatisfied by them (Bancroft et al., 2003a).

To evaluate its generalizability, the BACH sample was compared to three different government-sponsored national surveys (the National Health and Nutrition Examination Survey [NHANES], the National Health Interview Survey [NHIS] and the National Behavioral Risk Factors Surveillance Survey [BRFSS]) on many sociodemographic and health-related variables. While the BACH sample incorporated nearly equal numbers of the three major racial/ethnic groups in Boston, it was unable to include some other racial/ethnic groups that are common throughout the U.S. (e.g., Asian Americans). Despite these differences, most of the BACH health-related estimates were comparable, suggesting

that with appropriate adjustments the BACH rates could be generalizable to the U.S. as a whole.

In order to ensure that participants answered all the questions about sexual problems, our analysis of sexual problems included only women who reported sexual activity with a partner in the previous four weeks, which resulted in the exclusion of a large portion of the sample. Although it was impossible to know exactly how the exclusion of sexually inactive women affected our models of sexual problems, selection patterns enacted opposing forces on our prevalence estimates. Overall, despite BACH's geographic focus on the Boston area, the prevalence of sexual problems in the present study were compatible with findings from smaller samples in both clinical and non-clinical settings (Meston, 2003; Wiegel et al., 2005). Women who were excluded from the BACH FSFI questionnaire were disproportionately older, more likely to be single or divorced/widowed, and had higher BMIs than those women who were included. At the same time, women who were Black, drank more alcohol, and were physically active were disproportionately sexually active. By excluding a higher proportion of women from older age groups, who tended to have a higher prevalence of sexual problems relative to younger age groups, our prevalence estimates were biased downward. The exclusion of a higher proportion of divorced/widowed and single women, however, both of whom had lower overall prevalence of sexual problems relative to married people, had the opposite effect on our estimates. Due to the magnitude of the observed age effects outlined below, we expected the overall effect was in the direction of biasing our estimates downward.

As a result of these inclusion criteria, less is known about the sexual functioning of women who did not engage in partnered sexual activity. While some may assume that sexual inactivity resulted from sexual problems, we found that most BACH participants were inactive due to a lack of partner or lack of interest (Avis, 2000). While we recognize that some researchers may consider "lack of interest" to be a sexual problem in and of itself, we observe that it may be secondary to comorbidities or lifestyle factors, such as lack of sleep, busy schedules, work, travel, child or parental care, which should not necessarily be conflated with likelihood of sexual problems. While our data did not contain information about sexual activity rates in other cities, it is possible that the combined effects of women delaying and/or never marrying, increased divorce rates, and increased urbanization has resulted in similarly high rates of sexual activity in other places, especially those urban areas with comparably high proportions of unmarried people.

Future research would benefit from analysis of longitudinal data, which would allow for detailed examination of the causal ordering of all six domains measured in the FSFI. In the same way that we treated satisfaction as a response to

other conditions rather than a separate domain of sexual functioning, it seems plausible that arousal, desire, and lubrication may be, in part, responses to specific partners, environmental or life course events, changes, and pressures. Alternatively, reported sexual problems may have been a function of selection, such that women were differentially predisposed to be distressed by their symptoms or to seek medical attention for them (King et al., 2007; Nicolson & Burr, 2003). For example, people with certain personality characteristics, or stressful home circumstances, or those whose partners were bothered by their symptoms may have had increased likelihood of seeking medical attention for their problems, regardless of their severity. Longitudinal analyses would also show whether satisfaction at one point in time is related to subsequent functioning, or to what extent sexual problems in women are stable over time (Travison et al., 2007). When considered in combination with our finding that only about one third of the women with sexual problems were bothered by them (see also Bancroft, Loftus, & Long, 2003a), these alternative explanations become important for thinking about a range of classification systems for sexual problems.

Additional limitations of this study should be addressed in future studies. For example, further studies are needed of sexual function among women who did not answer all of the FSFI questions, such as those who were not active with a partner, or those who had not engaged in specific activities (e.g., vaginal penetration) as part of their sexual activity. Meyer-Bahlburg and Dolezal (2007) outlined conceptual and statistical limitations of the FSFI, with special attention to potential sources of bias and recommendations for how best to score and analyze data collected from sexually inactive women. The many psychometric strengths of the FSFI are undermined in populations with a high prevalence of sexual inactivity, where sexual function is measured, as in this study, with only two items. Similarly, this study was limited by having a single measure of satisfaction, and no direct measure for whether or not women were distressed by their sexual symptoms. By comparing across these groups, there can be improved understanding of what constitutes a sexual problem from the perspective of the women themselves.

In studies of sexual functioning in men (Rosen, Cappelleri, Smith, Lipsky, & Pena, 1999; Rosen et al., 1997), measures of erectile function tend to dominate other domains of functioning, including orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. As a result, studies have had success in measuring erectile dysfunction with a single question (Derby, Araujo, Johannes, Feldman, & McKinlay, 2000; Feldman, Goldstein, Hatzichristou, Krane, & McKinlay, 1994b). By contrast, our results suggested that physiological responses measured by the BACH FSFI (and original FSFI) may not capture all the information that is

relevant for understanding arousal in women (Basson, 2005). Indeed, our multivariate analyses showed that psychosocial factors were significantly associated with sexual problems in women, suggesting that interventions to improve women's sexual problems may necessitate attention to a combination of physiological, psychological, and satisfaction measures.

This report provides a needed examination of the prevalence of sexual activity and sexual problems in women in a large, community-based sample that is not only generalizable to the U.S. population as a whole, but also diverse in its age and racial/ethnic composition. Previous studies have revealed a high prevalence of sexual problems in women, but with a wide range of results. Furthermore, definitions of sexual problems have varied across studies, with few studies

using measures like BACH's that allow for overall assessments of co-symptoms, thereby facilitating comparisons of findings across studies. In light of the high stakes interests involved in establishing definitions of sexual dysfunction, identifying possible avenues toward improving women's sexual lives, and the associations between sexual problems and overall health, it is critical to have accurate assessments of activity, reasons for inactivity, and prevalence of problems. This study underscores the medical and public health importance of sexual function in women and contributes to the process of accurately elucidating its characteristics.

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Appendix A

Items asked in the BACH FSFI questionnaire (abbreviated form of the Female Sexual Function Index)

Question	Response options ^a	Dimension	Correlation of dimension with overall score
Asked of all participants: <i>Over the past 4 weeks</i> ,			
(1) How often did you feel sexual desire or interest?	Almost always or always; Most times; Sometimes; A few times; Almost never or never	Desire	.74
(2) How would you rate your level (degree) of sexual desire or interest?	Very high; High; Moderate; Low; Very low or none at all	Desire	
Asked of those reporting sex with a partner in the last 4 weeks:			
(3) How much confidence did you have about becoming sexually aroused during sexual activity or intercourse?	Very high confidence; High confidence; Moderate confidence; Low confidence; Very low or no confidence	Arousal	.78
(4) How difficult was it to become lubricated ("wet") during sexual activity or intercourse?	Extremely difficult or impossible; Very difficult; Difficult; Slightly difficult; Not difficult	Lubrication	.70
(5) When you had sexual stimulation or intercourse, how often did you reach orgasm?	Almost always or always; Most times; Sometimes; A few times; Almost never or never	Orgasm	.71
(6) When you had sexual stimulation or intercourse, how difficult was it for you to reach orgasm?	Extremely difficult or impossible; Very difficult; Difficult; Slightly difficult; Not difficult	Orgasm	
(7) How satisfied were you with your ability to reach orgasm (climax) during sexual activity or intercourse?	Very satisfied; Moderately satisfied; About equally satisfied and dissatisfied; Moderately dissatisfied; Very dissatisfied	Orgasm	
(8) How often did you experience discomfort or pain during vaginal penetration?	Did not attempt vaginal penetration; Almost always or always; Most times; Sometimes; A few times; Almost never or never	Pain	.55
(9) How often did you experience discomfort or pain following vaginal penetration?	Did not attempt vaginal penetration; Almost always or always; Most times; Sometimes; A few times; Almost never or never	Pain	
(10) How would you rate your level (degree) or discomfort or pain during or following vaginal penetration?	Did not attempt vaginal penetration; Very high; Most times; Sometimes; A few times; Almost never or never	Pain	

^a Responses were scored on a scale of 1–5, with lower scores indicating higher levels of desire, arousal, and lubrication; more frequent orgasm, and less pain. "Did not attempt vaginal penetration" responses were scored as zero

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