

Distress About Sex: A National Survey of Women in Heterosexual Relationships

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Received April 22, 2002; revision received October 8, 2002; accepted December 15, 2002

As a consequence of the impact of Viagra on male sexual dysfunction, considerable attention is now being paid to sexual dysfunctions in women, which might respond to pharmacological treatment. Should women's sexual problems be conceptualized in the same way as men's? The objective of this study was to assess the prevalence of distress about sexuality among women, and examine the predictors of such distress, including aspects of the woman's sexual experience, as well as other aspects of her current situation. A telephone survey of women used Computer Assisted Telephone Interviewing and Telephone-Audio-Computer-Assisted Self-Interviewing methodology to investigate respondents' sexual experiences in the previous month. A national probability sample was used of 987 White or Black/African American women aged 20–65 years, with English as first language, living for at least 6 months in a heterosexual relationship. The participation rate was 53.1%. Weighting was applied to increase the representativeness of the sample. A total of 24.4% of women reported marked distress about their sexual relationship and/or their own sexuality. The best predictors of sexual distress were markers of general emotional well-being and emotional relationship with the partner during sexual activity. Physical aspects of sexual response in women, including arousal, vaginal lubrication, and orgasm, were poor predictors. In general, the predictors of distress about sex did not fit well with the *DSM-IV* criteria for the diagnosis of sexual dysfunction in women. These findings are compared with those from other studies involving representative samples of women, and the conceptual issues involved in the use of terms such as "sexual problem" and "sexual dysfunction" are discussed.

KEY WORDS: sexual problems; women; mood; physical response; subjective response; sexual dysfunction.

INTRODUCTION

At present, we are in the midst of a new and controversial phase of interest, from the medical profession and pharmaceutical industry, in the sexuality of women. Although the medical profession has, from time to time, paid considerable attention to the sexuality of women, usually in a somewhat repressive or negative fashion (Groneman, 2000; Maines, 1999; Thompson, 1999), for most of the twentieth century we find little evidence of such interest, either negative or positive. The introduction of oral

contraceptives revealed considerable ambivalence about female sexuality from the medical profession (Watkins, 1998). The "pill" was there to allow married women to control fertility, not to allow women to enjoy sex free from the fears of unwanted pregnancy, and since their introduction the potential negative effects of oral contraceptives on the sexuality of some women have been largely ignored (Bancroft, 2002a; Graham, Ramos, Bancroft, Maglaya, & Farley, 1995; Sanders, Graham, Bass, & Bancroft, 2001). In other respects, both medical interventions for treating women's sexual problems and the adverse effects of medical procedures or medical illness on female sexuality have also been largely ignored. But things have recently started to change. There is now, for example, concern within the pharmaceutical industry over the sexual side effects in women of drugs such as the SSRI antidepressants (e.g., Michaelson, Bancroft, Targum, Kim, & Tepner, 2000). The reasons for this are fairly obvious: as

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soon as alternative antidepressants came onto the market with claims that they were relatively free of such adverse effects, sexual side effects, and with them, women's sexuality, became a commercial issue. And, as a reaction to the success of Viagra in treating erectile dysfunction in men, there arose the fundamentally new interest in the possibility of drugs having beneficial effects on female sexual dysfunction, opening up another potentially huge market.

It is not unreasonable to expect benefits for women to result from this new interest. Such benefits may, in part, involve the development of new and effective treatments, but in addition, or perhaps more likely, an increased understanding of the sexuality of women. One of the consequences of the long-term neglect of women's sexuality has been a lack of serious attempts to conceptualize women's sexual problems in ways which are relevant to women. In the therapeutic field, which for women has largely been restricted to sex therapy, we find Masters and Johnson (1966) formulating the male and female "sexual response cycle" in basically the same terms, and the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV*; American Psychiatric Association, 2000) advocating diagnostic categories for women, which are essentially based on the male model of sexual dysfunction. There have been earlier reactions from feminist scholars to this state of affairs (e.g., Irvine, 1990; Tiefer, 1991); there is now a much more active controversy in progress. The report of an International Consensus Development Conference (Basson et al., 2000) reviewed the *DSM-IV* categorization and made recommendations that, if anything, reinforced the "status quo." There has been a range of reactions to this report (e.g., Bancroft, Graham, & McCord, 2001; see Segraves, 2001, for an introduction to a large number of commentaries on this report in *Journal of Sex and Marital Therapy*). In addition, Tiefer (2001) has presented a "New View of Women's Sexual Problems," which strives to de-emphasize the more medicalized aspects that currently prevail, and that looks at "problems" rather than at dysfunctions.

This raises the crucial issue of when it is appropriate to call a sexual problem, or difficulty, a "dysfunction," given the medical connotations conveyed by the term *dysfunction* (Bancroft, 2002b). In a recent study by Laumann, Paik, and Rosen (1999), it was concluded that 43% of American women suffer from sexual dysfunction. This extraordinarily high figure is being widely quoted (e.g., Berman, Berman, & Goldstein, 1999; Guay, 2001) in the medical literature,⁴ and the media, as evidence of

a widespread need for effective medical treatment for women's sexual problems, even though the problems in the Laumann et al. (1999) study were shown to be commonly associated with mental health problems, relationship problems, and various aspects of "quality of life," including economic problems. To what extent was the term *dysfunction* appropriate or helpful in such cases?

Central to this conceptual debate is the question of whether absence or reduction of sexual interest or response is necessarily "dysfunctional" or maladaptive. The theoretical model of sexual response, The Dual Control Model, which guides much of the research program at The Kinsey Institute, conceptualizes inhibition of sexual response as an adaptive mechanism (Bancroft & Janssen, 2000). Although it is postulated that there are individuals who are prone to maladaptive levels of inhibition, either too high or too low, for the majority, inhibition of sexual interest or response occurs as an appropriate or at least understandable reaction to certain circumstances, which in today's world may include states of fatigue or depression or the presence of adverse circumstances in the woman's sexual relationship or situation in life. These may appropriately be regarded as manifestations or even "symptoms" of a problematic state, but not necessarily evidence of malfunction of the sexual response system.

In this paper, we use results from a national survey of women to address two principal questions: (1) how common is distress about sex among women, and (2) what are the principal determinants of "sexual distress" in women? We have deliberately avoided applying any preconceived concepts of "sexual dysfunction" in women, but have instead asked them detailed questions about their sexual experiences and responses over the preceding month, and also whether they felt distressed or worried about their sexual lives. In that way, we can explore which aspects of their sexual experiences are related to distress. The principal objectives are to inform current debate on how best to conceptualize women's sexual problems.

METHOD

Participants

The study involved a telephone survey of women in heterosexual relationships. The sample was obtained using random digit dialing from a national sampling frame. To be included, women had to be (a) aged 20–65 years, (b) White or Black/African American, (c) with English as their first language, and (d) in a current sexual relationship with a male partner of at least 6 months duration. Sampling was stratified by region of the country and racial composition

⁴As of September 1, 2002, 178 citations in the medical and psychological literature were identified using Institute for Scientific Information's "Web of Science."

Table I. PCS Scores From SF-12 by Age Group for National Sample and Current Sample (Weighted)

| Age group | National sample | | Current sample | |
|--------------------|-----------------|-----------|----------------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| 20–24 ^a | 53.39 | 8.7 | 54.32 | 6.86 |
| 25–34 | 52.46 | 7.7 | 51.58 | 8.21 |
| 35–44 | 51.36 | 8.3 | 51.50 | 7.29 |
| 45–54 | 48.95 | 9.6 | 48.79 | 9.21 |
| 55–64 ^b | 45.03 | 11.6 | 49.70 | 7.57 |

Note. SF12 scoring involves application of regression weights from the general U.S. population for each item, summing the weighted items and transforming the score to a norm-based score by adding a constant. This relates the score to the U.S. population norm of mean 50 and *SD* 10 (Ware, Kosinski, & Keller, 1998).

^aFor the national sample, the age group is 18–24.

^bFor the national sample, the age group is 55–65.

with a deliberate oversampling of black women to produce a White-to-Black ratio of 2:1. This oversampling was used to allow a better comparison of White and Black women, which will be reported elsewhere. In the analysis reported here, weighting was used to produce a representative ratio of White and Black women.

There were 987 women who completed both parts of the survey, for a response rate of 53.1%. Participants were paid \$25 to complete the survey. For those who initially refused and subsequently agreed to participate, \$50 was paid. The refusal conversion rate was approximately 35%. Of the 987 completed interviews, 14.6% had missing data on one or more of the questions used in the following analyses, leaving a useable sample of 853 cases. Human participants approval for the survey was granted by the Research Triangle Institute's own IRB and the Human Subjects Committee of Indiana University, Bloomington.

The age distribution for the sample was 20–35 years, 38.8%; 36–50 years, 41.5%; 51–65 years, 19.7%. The health status of the sample, as measured by the PCS 12 and MCS 12, shown by age group in Tables I and II, was close to the general U.S. population for both measures, but with the older age group scoring slightly higher than expected on the PCS 12; that is, physically healthier.

Procedure and Measures

The data were collected between November 1999 and March 2000. The survey, designed at The Kinsey Institute and carried out by the Research Triangle Institute, was in two parts. The first, *Computer Assisted Telephone Interview* (CATI), involved checking on inclusion and exclusion criteria, and covered basic demographics plus less

Table II. MCS Scores From SF12 by Age Group for National Sample and Current Sample (Weighted)

| Age group | National sample | | Current sample | |
|--------------------|-----------------|-----------|----------------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| 20–24 ^a | 47.37 | 11.2 | 46.93 | 9.81 |
| 25–34 | 48.34 | 10.1 | 48.39 | 10.53 |
| 35–44 | 48.84 | 9.5 | 48.80 | 10.13 |
| 45–54 | 50.07 | 10.2 | 51.00 | 8.93 |
| 55–64 | 50.56 | 10.2 | 52.20 | 8.47 |

Note. See Table I for method of scoring.

^aFor the national sample, the age group is 18–24.

^bFor the national sample, the age group is 55–65.

sensitive information such as health, medication, impact of partner's health on sexual activity, menopausal status and characteristics of menstrual cycles in premenopausal women, use of hormone replacement therapy, height and weight, number of children, importance of religion and religious denomination, education, and family income. The second part, *Telephone-Audio-Computer-Assisted Self-Interview* (T-ACASI), involved the participant being switched over to interacting with a computer. This covered questions from the SF12 (Ware, Kosinski, & Keller, 1996), a commonly used "Quality of life" assessment, which produces two overall scales of physical (PCS 12) and mental (MCS 12) health⁵ (see Table I for scoring method). These led into detailed questions about the woman's sexual experiences *over the preceding month*, on the basis of our previously used "Interviewer's Ratings of Sexual Function" (Cawood & Bancroft, 1996; Graham et al., 1995; Sanders et al., 2001), including frequency of sexual activity with partner with or without intercourse, and frequency of masturbation. Having established how often sexual activity with partner (or masturbation) had occurred in the previous 4 weeks, the participant was asked how many of those occasions they had experienced orgasm, arousal, genital tingling, enjoyment of genital touching, vaginal lubrication, experience of pleasure, unpleasant feelings, and pain. She was also asked whether her partner had erectile or ejaculatory problems, who initiated sexual activity, and about feelings of closeness and being understood by partner during that activity. In addition, the woman was asked how often she thought about sex with interest (not at all, once or twice, at least once a week, several times a week, or at least once a day), how sexually attractive she found her partner, and how sexually attractive she regarded herself. Sexual distress was assessed by two questions.

⁵The SF12 is a shortened version of the SF36 and correlates .93–.97 with the longer scale. The population norms given in Tables I and II are from the SF36.

(a) "During the past 4 weeks, how much distress or worry has your sexual relationship caused you?" (b) "During the past 4 weeks, how much distress or worry has your own sexuality caused you?" Possible answers to each question were "no distress," "slight distress," "moderate distress," and "a great deal of distress."

Before final modification for use in the T-ACASI format, all questions were assessed using cognitive interviewing, carried out by Research Triangle Institute. The final combined CATI and T-ACASI took 30–35 min to complete.

RESULTS

To make accurate estimates of the target population, weights were computed to reflect the probability of an individual's inclusion in the sample and to compensate for different response and coverage rates for specific demographic subsets of the population. Because the target population had an unequal probability of selection, design-based methods of estimation that incorporated the weights and sample stratification were used to obtain unbiased estimates of population parameters and standard errors. Unless otherwise noted, all statistics are computed using survey weights (for a detailed discussion of these methods, see Hosmer & Lemeshow, 2000).

The two outcomes of primary interest in this paper are ordinal measures of a woman's distress with her sexual relationship and with her own sexuality. Because the outcomes were ordinal, the ordinal logit model was considered, but we found evidence of violation of this model's assumption of proportional odds (Long, 1997). Consequently, the multinomial logit model (MNL) was used to model the effects of independent variables on our measures of sexual distress (Hosmer & Lemeshow, 2000; Long, 1997).

Indicators of Sexual Distress

The weighted percentages answering for each of the four categories of distress about (a) the relationship and (b) one's own sexuality are given in Table III, showing the extent of agreement between the two ratings. In view of the small numbers of participants answering "moderately" and "a great deal" of distress, these two categories were combined for further analyses, to produce three categories: "no distress," "slight distress," and "marked distress." "Marked distress" about the relationship was reported by 19.8%, and about one's own sexuality by 14.7%; 24.4% of the sample had marked distress about their sex-

Table III. Cross-Tabulation of Ratings of Sexual Distress (a) About Relationship and (b) About Own Sexuality

| About relationship | About own sexuality | | | | Total |
|--------------------|---------------------|--------|----------|------------|-------|
| | None | Slight | Moderate | Great deal | |
| None | 44.2 | 7.5 | 1.4 | 0 | 53.1 |
| Slight | 8.2 | 15.7 | 3.0 | 0.1 | 27.1 |
| Moderate | 2.9 | 3.3 | 5.3 | 0.7 | 12.2 |
| Great deal | 2.3 | 1.0 | 0.7 | 3.5 | 7.6 |
| <i>Total</i> | 57.7 | 27.5 | 10.4 | 4.3 | 100 |

Note. Percentages are of the total weighted sample.

ual relationship, their own sexuality, or both, 31.4%, slight distress about either or both, and 44.2% reported no distress of either kind.

Independent Variables

Details of the independent variables, as used in the final MNL, are given in Table IV. In some cases when independent variables involved frequencies, square roots of the counts were used to decrease the impact of extremely high frequencies reported by some respondents. Religion was included as a series of dummy variables (e.g., Protestant, yes/no). To avoid overloading the model with independent variables and reducing power, preliminary analyses were carried out to identify variables that were not contributing to the model. On this basis income, socioeconomic status, and menopausal status were excluded from the final models as adding nothing once education and age were entered.

The frequency of sexual intercourse and masturbation and experiencing orgasm during sexual activity with partner are shown in Table V.

Comparison of Sexually Active and Inactive Women

Using logistic regression, four independent variables significantly discriminated between the women who, during the past 4 weeks, had been sexually active with their partner (with or without intercourse) and those inactive. The sexually inactive group was older ($p = .05$) and masturbated more frequently ($p < .01$), whereas women who were active were more likely to think about sex daily ($p < .01$) and felt more sexually attractive ($p < .01$). In addition, sexually inactive women reported significantly more distress about their sexual relationship (marked distress, 46% vs. 19%, $\chi^2(2) = 19.67$, $p < .001$), but not about their own sexuality (11.5% vs. 14.9%, *ns*).

Table IV. Summary of Independent Variables Used in the Multinomial Logit Models

| Variable | Description | Codes/range | Sample estimates (unweighted) | | Population estimate (weighted) | |
|---|--|-----------------|----------------------------------|------|-----------------------------------|------|
| | | | Mean or % | SD | Mean or % | SD |
| <i>Part 1</i> | | | | | | |
| Demographic variables | | | | | | |
| Age | (Age in years) | 20–65 | 39.5 | 11.0 | 40.4 | 11.0 |
| College degree | Have a college degree? | 1 = yes; 0 = no | 29.8% | | 31.7% | |
| White | Race is White? | 1 = yes; 0 = no | 68.7% | | 87.3% | |
| Religion | Protestant | 1 = yes; 0 = no | 65.3% | | 60.8% | |
| | Catholic | 1 = yes; 0 = no | 16.8% | | 22.9% | |
| | Jewish | 1 = yes; 0 = no | 2.5% | | 2.1% | |
| | Other religion | 1 = yes; 0 = no | 7.2% | | 5.8% | |
| | No religion | 1 = yes; 0 = no | 8.3% | | 8.4% | |
| Health | | | | | | |
| Mental health (MCS 12) | Scale from the SF12; higher score indicates better health | 13.6–67.8 | 49.4 | 9.8 | 49.5 | 9.8 |
| Physical health (PCS 12) | Scale from the SF12; higher score indicates better health | 16.8–67.7 | 50.8 | 8.2 | 50.8 | 8.2 |
| Sexual behavior | | | | | | |
| Sexual activity | Square root of the frequency of sexual activity with or without intercourse | 0–11.9 | 3.1 | 1.6 | 3.1 | 1.6 |
| Masturbation | Square root of the frequency of masturbation alone | 0–10 | 0.8 | 1.2 | 0.8 | 1.2 |
| Sexual attractiveness | How sexually attractive have you felt lately? | 1–5 | 3.7 | 1.0 | 3.6 | 1.0 |
| Think about sex | | Never | 8.3% | | 7.2% | |
| | | Sometimes | 75.9% | | 78.8% | |
| | | Daily | 15.8% | | 14.0% | |
| <i>Part 2^a</i> | | | | | | |
| Lubrication | Lubrication problem? Composite of two variables: 1 if no lubrication, or some lubrication but also report vagina uncomfortably dry during intercourse. 0 otherwise | 1 = yes; 0 = no | 31.0% | | 31.2% | |
| Orgasm | Square root of the frequency of orgasm | 0–11.83 | 2.4 | 1.5 | 2.3 | 1.4 |
| Ejaculation | Square root of the frequency partner ejaculated too quickly | 0–8.66 | 0.9 | 1.1 | 0.8 | 1.0 |
| Erection | Square root of the frequency partner had trouble with erection | 0–5.92 | 0.4 | 0.8 | 0.5 | 0.8 |
| Impaired physical response ^b | Sum of three indicators of physical sexual response. Higher value indicates greater impaired response | 0–3 | 0.7 | 1.0 | 0.7 | 1.1 |
| Pain | Felt pain or discomfort during sexual act 50% or more of the time? | 1 = yes; 0 = no | 3.1% | | 3.3% | |
| Subjective response ^c | Sum of four indicators of subjective sexual response. Higher value indicates greater response | 0–4 | 2.6 | 1.3 | 2.6 | 1.3 |

^aThese variables were only used in the second stage of modeling; statistics are based on the sample of women who were sexually active ($N = 815$).
^bImpaired Physical Response scale is derived from arousal (felt aroused during sexual act less than 50% of the time = 1), pleasant tingling in genitals (felt pleasant tingling in genitals less than 50% of the time = 1), enjoying genitals touched (enjoyed genitals touched less than 50% of the time = 1).
^cSubjective Response scale is derived from feeling pleasure during sexual act (felt pleasure during sexual act 80% or more of the time = 1), feeling emotionally close to partner (felt emotionally close to partner during sexual act 80% or more of the time = 1), feeling indifferent (felt indifferent about sexual act less than 20% of the time = 1), having unpleasant feelings (had unpleasant feelings less than 20% of the time = 1).

Table V. Frequency of Sexual Activity and Orgasm During Past Month (%)

| | None | Less than once a week | Once or twice a week | Several times a week | Daily |
|--|------|--------------------------|-------------------------|-------------------------|-------|
| Sexual intercourse | 8.3 | 29.4 | 37.2 | 24.1 | 1.1 |
| Masturbation (alone) | 56.9 | 26.5 | 10.5 | 4.5 | 1.6 |
| | None | <25% | 25–50% | 51–75% | >75% |
| Orgasm during sexual activity with partner (% of occasions) | 9.7 | 11.4 | 23.1 | 20.1 | 35.7 |

Predictors of Sexual Distress

To examine factors that affect the level of sexual distress, either in a woman's relationship or regarding her own sexuality, we proceeded in two stages, first estimating an MNLM using all women in our sample with complete data, whether sexually active with a partner or not ($n = 853$). Because sexually inactive women were included, only independent variables not dependent on sexual activity were used (see Table IV, part 1). In the second stage, we added measures of sexual activity and response and accordingly restricted the sample to those women who had been sexually active with their partner ($n = 815$; see Table IV, part 2).

Distress About the Sexual Relationship

Results of the first stage multinomial logit for distress about sexual relationship are not shown, as the addition of the independent variables related to sexual activity in the second stage resulted in very few changes in the effects of variables considered in Stage 1. Results of the second stage multinomial logit are shown in Table VI. Column 1 indicates the odds ratio for the effect of a change in the independent variable on the odds of "slight" compared to "no distress," with the corresponding confidence interval in column 2. For the independent variables marked (*SD*), the odds ratio is for a standard deviation change in that variable. Similarly, the remaining columns present the odds ratios for "marked distress" compared to "none," and "marked" compared to "slight."

Age has only a modest effect, with a standard deviation increase in age increasing the odds of "slight" versus "no distress" by 34%, holding all other variables constant. MCS 12 has a highly significant effect, decreasing the odds of "slight" versus "no distress" by 30% and "marked" compared to "no distress" by 59% (i.e., the higher the level of mental health, the less likely to experience distress). PCS 12 had a weaker effect, significantly decreasing the odds of "marked" versus "no distress" by 25%, with

nonsignificant effects on the other comparisons. "Thinking about sex" daily (compared to the reference category of "thinking about sex" occasionally) increased the odds of "marked" relative to "no distress" by 249% and of "slight" relative to "no distress" by 272%, although the overall effect of this variable was only just significant.

Consistent with the greater level of distress found in the sexually inactive women, frequency of sexual activity with partner was negatively related to distress, reducing the odds of "slight" versus "no distress" by 31%, and "marked" versus "no distress" by 51%. None of the variables relating to religion had any significant effect and are not shown in the table.

Among the variables relating to sexual activity, "subjective response" and frequency of premature ejaculation by the partner had the most significant effects. "Subjective response" (a composite of "feeling pleasure," "feeling emotionally close," "not feeling indifferent," and "not having unpleasant feelings") decreased the odds of "slight" and "marked" distress relative to "no distress" by 33 and 43%, respectively (i.e., the more positive the subjective response, the less distress). "Impaired physical response" (which covers "not feeling subjective arousal," "not experiencing pleasant genital tingling," or "not enjoying genitals being touched") had a weaker effect, increasing the odds of "marked" relative to "no distress" by 51%, but with marginal significance ($p = .04$). Problems with partner's premature ejaculation increased the odds of "slight" compared to "no distress" by 31% and of "marked" compared to "no distress" by 52%. It is noteworthy that after controlling for other variables, impaired lubrication, pain during intercourse, and orgasmic frequency were insignificant predictors of distress; a variety of different ways of entering these variables were examined, none of which proved to be significant.

Distress About One's Own Sexuality

The corresponding model examining distress about one's own sexuality is shown in Table VII. Overall the

Table VI. Odds Ratios (OR) From Multinomial Logit Analysis of Factors Affecting “Distress About Sexual Relationship” Including Variables Related to Sexual Activity

| Comparison | Slight vs. none | | Marked vs. none | | Marked vs. slight | | SD | p |
|--|-----------------|-------------------------|-----------------|--------------------------|-------------------|-------------------------|------|------------------|
| | OR | 95% CI | OR | 95% CI | OR | 95% CI | | |
| Age (SD) | 1.34 | 1.04, 1.70 ^a | 1.03 | 0.69, 1.54 | 0.77 | 0.53, 1.13 | 11.0 | .05 |
| College degree | 2.06 | 1.27, 3.34 ^b | 1.30 | 0.62, 2.70 | 0.63 | 0.30, 1.33 | | .01 |
| White | 1.15 | 0.58, 2.27 | 0.92 | 0.35, 2.39 | 0.80 | 0.33, 1.92 | | .85 |
| MCS 12 (SD) | 0.70 | 0.53, 0.91 ^b | 0.41 | 0.29, 0.59 ^b | 0.60 | 0.44, 0.80 ^a | 9.6 | .00 |
| PCS 12 (SD) | 0.87 | 0.68, 1.12 | 0.75 | 0.56, 0.99 ^a | 0.86 | 0.65, 1.14 | 8.1 | .12 |
| Sexual activity (SD) | 0.69 | 0.49, 0.99 ^a | 0.49 | 0.28, 0.84 ^b | 0.70 | 0.40, 1.23 | 1.5 | .01 |
| Masturbation (SD) | 1.14 | 0.86, 1.52 | 1.38 | 0.91, 2.10 | 1.21 | 0.88, 1.66 | 1.2 | .32 |
| Sexual thoughts: | | | | | | | | .04 ^c |
| Daily vs. occasionally | 3.72 | 0.93, 14.80 | 3.49 | 0.92, 13.26 ^b | 0.94 | 0.21, 4.13 ^a | | |
| Never vs. occasionally | 2.80 | 0.87, 9.02 | 0.99 | 0.39, 2.53 | 0.35 | 0.11, 1.09 | | |
| Sexual attractiveness (SD) | 0.89 | 0.69, 1.15 | 0.92 | 0.68, 1.24 | 1.03 | 0.75, 1.42 | 1.0 | .65 |
| Impaired physical response | 1.19 | 0.90, 1.56 | 1.51 | 1.09, 2.08 ^b | 1.27 | 0.91, 1.77 | | .04 |
| Pain | 2.49 | 0.51, 12.26 | 1.30 | 0.26, 6.47 | 0.52 | 0.12, 2.20 | | .49 |
| Subjective response (SD) | 0.67 | 0.52, 0.88 ^b | 0.57 | 0.39, 0.84 ^b | 0.85 | 0.58, 1.25 | 1.3 | .00 |
| Frequency of orgasms (SD) | 1.14 | 0.77, 1.70 | 0.95 | 0.56, 1.61 | 0.83 | 0.48, 1.42 | 1.4 | .72 |
| Lubrication problems | 1.02 | 0.61, 1.69 | 0.98 | 0.53, 1.83 | 0.97 | 0.52, 1.79 | | .99 |
| Frequency of ejaculation problems (SD) | 1.31 | 1.04, 1.66 ^a | 1.52 | 1.12, 2.07 ^b | 1.16 | 0.84, 1.59 | 1.0 | .01 |
| Frequency of erection problems (SD) | 1.16 | 0.92, 1.45 | 1.08 | 0.72, 1.64 | 0.93 | 0.65, 1.35 | 0.8 | .43 |

F(42, 767) = 3.33, p < .001

Note. OR indicates the odds ratios for the pair of categories indicated in the row labeled “Comparison.” SD by that name of a variable indicates that the odds ratios for that variable are given for a standard deviation increase in that variable (analysis excludes women who were not sexually active (n = 815)).

^aNext to the 95% confidence interval, indicates significance at the .05 level.

^bAt the .01 level, p contains results of the test that all of the odds ratios for a given variable are equal to 1.

^cIn this column for sexual thoughts, indicates a simultaneous test of both dummy variables. To save space, coefficients for the four dummy variables associated with religion are not included; religion had an insignificant effect: F(8, 801) = 1.00, p = .44.

results are quite similar to those for distress about one’s relationship. The effect of MCS 12 is similar and that of PCS 12 slightly stronger and now significant overall. A somewhat puzzling effect of education, apparent in Table VI, emerges more strongly; those with a college education were significantly more likely to report “slight” distress than either no distress or “marked” distress, holding all other variables constant.

Among the second stage variables, “subjective response” once again features, but less strongly, and partner’s premature ejaculation has a weaker, though still significant, effect than with relationship distress. None of the variables relating to the woman’s physical response or arousal during sexual activity entered the model, and “frequency of sexual thoughts” was also insignificant.

Frequency of “Sexual Problems” and Their Relationship to Age

In view of the relatively modest effect of age in predicting sexual distress of either kind, and the substantial evidence in the literature of an increase in most types

of “sexual problems” with age, the relationship between the sexual response and sexual interest variables and age were examined. For this purpose, “sexual problems,” as reported during the previous month, were defined as “no sexual thoughts,” “no orgasm,” and, as independent variables defined in Table IV, (“lubrication problems,” “impaired physical response,” and “pain”). The distribution of the frequency of thinking about sex with interest, in relation to age, is shown in Table VIII. This showed a clear relationship with age, with sexual thoughts being less frequent in older women. The distribution of “no sexual thoughts” and the other operationally defined sexual problems, by age group, together with the percentage of women with those problems reporting marked distress, is shown in Table IX. The reporting of marked distress in women with “no sexual thoughts” tended to be higher in the younger age groups, although not significantly. “Lubrication problems” were more frequent in the older women, but not significantly so. When considering the association between marked distress and lubrication problem, it was the two older age groups with lubrication problems who were more likely to report marked distress about their “own sexuality” than the younger women. “Impaired physical response,” which did

Table VII. Odds Ratios (OR) from Multinomial Logit Analysis of Factors Affecting “Distress About One’s Own Sexuality” Including Variables Related to Sexual Activity

| Comparison | Slight vs. none | | Marked vs. none | | Marked vs. slight | | SD | p |
|--|-----------------|-------------------------|-----------------|-------------------------|-------------------|-------------------------|------|------------------|
| | OR | 95% CI | OR | 95% CI | OR | 95% CI | | |
| Age (SD) | 1.23 | 0.97, 1.56 | 1.46 | 1.01, 2.13 ^a | 1.19 | 0.83, 1.72 | 11.0 | .08 |
| College degree | 1.98 | 1.22, 3.21 ^b | 0.48 | 0.20, 1.16 | 0.24 | 0.10, 0.59 ^b | | .00 |
| White | 0.91 | 0.50, 1.63 | 0.67 | 0.27, 1.61 | 0.73 | 0.31, 1.74 | | .67 |
| MCS 12 (SD) | 0.60 | 0.46, 0.78 ^b | 0.34 | 0.25, 0.47 ^b | 0.57 | 0.42, 0.78 ^b | 9.6 | .00 |
| PCS 12 (SD) | 0.73 | 0.57, 0.93 | 0.66 | 0.49, 0.89 ^b | 0.90 | 0.68, 1.19 | 8.1 | .01 |
| Sexual activity (SD) | 0.85 | 0.59, 1.23 | 0.76 | 0.45, 1.28 | 0.89 | 0.52, 1.54 | 1.5 | .49 |
| Masturbation (SD) | 0.88 | 0.68, 1.15 | 1.06 | 0.77, 1.45 | 1.20 | 0.86, 1.68 | 1.2 | .49 |
| Sexual thoughts | | | | | | | | .36 ^c |
| Daily vs. occasionally | 1.57 | 0.49, 5.05 | 1.52 | 0.35, 6.55 | 0.97 | 0.23, 4.14 | | |
| Occasionally vs. never | 1.21 | 0.47, 3.14 | 0.62 | 0.21, 1.77 | 0.51 | 0.16, 1.57 | | |
| Sexual attractiveness (SD) | 0.94 | 0.73, 1.19 | 0.81 | 0.56, 1.17 | 0.87 | 0.60, 1.25 | 1.0 | .53 |
| Impaired physical response | 1.02 | 0.78, 1.34 | 1.29 | 0.93, 1.79 | 1.26 | 0.89, 1.77 | | .30 |
| Pain | 1.99 | 0.48, 8.28 | 0.98 | 0.22, 4.46 | 0.50 | 0.10, 2.35 | | .57 |
| Subjective response (SD) | 0.75 | 0.58, 0.97 ^a | 0.65 | 0.45, 0.97 ^a | 0.87 | 0.59, 1.31 | 1.3 | .03 |
| Frequency of orgasms (SD) | 1.06 | 0.72, 1.55 | 0.87 | 0.51, 1.49 | 0.83 | 0.49, 1.39 | 1.4 | .77 |
| Lubrication problems | 1.27 | 0.77, 2.09 | 1.31 | 0.66, 2.58 | 1.03 | 0.52, 2.04 | | .59 |
| Frequency of ejaculation problems (SD) | 1.20 | 0.94, 1.52 | 1.60 | 1.11, 2.32 ^a | 1.37 | 0.93, 1.93 | 1.0 | .03 |
| Frequency of erection problems (SD) | 1.05 | 0.83, 1.32 | 0.85 | 0.57, 1.27 | 0.82 | 0.55, 1.21 | 0.8 | .59 |

$F(42, 767) = 3.44, p < .001$

Note. OR indicates the odds ratios for the pair of categories indicated in the row labeled “Comparison.” SD by that name of a variable indicates that the odds ratios for that variable are given for a standard deviation increase in that variable (analysis excludes women who were not sexually active ($n = 815$)).

^aNext to the 95% confidence interval, indicates significance at the .05 level.

^bAt the .01 level, p contains results of the test that all of the odds ratios for a given variable are equal to 1.

^cIn this column for sexual thoughts, indicates a simultaneous test of both dummy variables. To save space, coefficients for the four dummy variables associated with religion are not included; religion had an insignificant effect: $F(8, 801) = 1.32, p = .23$.

not differ in frequency across age groups, was, however, significantly more associated with “distress about the relationship” in the younger age group; interestingly, this did not apply to “distress about own sexuality.” Overall, the picture was of impaired sexual interest or response being less problematic for older women.

Table VIII. Frequency of Thinking About Sex With Interest in the Last Month, by Age Group, % of Weighted Sample ($n = 853$)^a

| Frequency | Age groups | | | Total |
|----------------------|------------|-------|-------|-------|
| | 20–35 | 36–50 | 51–65 | |
| Not at all | 3.2 | 7.0 | 13.5 | 7.2 |
| Once or twice | 19.1 | 18.6 | 31.9 | 21.8 |
| Once a week | 30.4 | 31.5 | 31.2 | 31.0 |
| Several times a week | 27.8 | 29.9 | 16.0 | 26.0 |
| Daily | 19.5 | 13.0 | 7.3 | 14.0 |
| Total | 35.0 | 42.0 | 23.0 | 100 |

^aThe full question was, “How often did you think about sex with interest or desire? This includes times of just being interested, daydreaming or fantasizing, as well as times you wanted to have sex.”

DISCUSSION

Our main objective was to explore predictors and possible determinants of sexual distress in women. A secondary objective was to use this data to throw light on the conceptual distinction between a “problem” and a “dysfunction.”

Predictors of Sexual Distress

The two questions about sexual distress were used in an attempt to distinguish between distress that was principally a reaction to problems in the sexual relationship or with the partner, and distress about the woman’s own capacity for sexual response, or problems with how she felt about herself as a sexual person. We anticipated that this distinction would not always be easy, but the use of these two ratings would give the subject scope for making the distinction. In many respects, the results were similar for these two markers of sexual distress, but there were a number of differences that will be considered as we discuss the

Table IX. Sexual Problems by Age Group, and the Percentages of Those With Each Problem Who Reported Marked Distress About Relationship and Own Sexuality (Unweighted)^a

| | Total sample (N) | Total sample (%) | Age groups | | | p ^b |
|-------------------------------------|------------------|------------------|-------------------|-------|-------|----------------|
| | | | 20–35 | 36–50 | 51–65 | |
| No sexual thoughts | 71 | 7.2 | 3.2 ^c | 7.0 | 13.5 | .001 |
| Marked distress about relationship | 23 | 2.6 ^d | 47.1 ^e | 29.0 | 26.1 | |
| Marked distress about own sexuality | 17 | 2.5 ^d | 35.3 ^e | 19.4 | 21.7 | |
| Lubrication problems | 253 | 31.2 | 28.9 | 29.0 | 39.2 | |
| Marked distress about relationship | 64 | 7.3 | 24.5 | 27.0 | 23.7 | |
| Marked distress about own sexuality | 54 | 6.5 | 12.8 | 29.0 | 22.0 | .02 |
| Impaired physical response | 98 | 12.2 | 10.9 | 11.2 | 16.1 | |
| Marked distress about relationship | 40 | 4.7 | 57.6 | 25.6 | 45.5 | .02 |
| Marked distress about own sexuality | 28 | 3.4 | 30.3 | 23.3 | 36.4 | |
| Pain | 25 | 3.3 | 2.2 | 3.7 | 4.3 | |
| Marked distress about relationship | 11 | 1.4 | 40.0 | 50.0 | 40.0 | |
| Marked distress about own sexuality | 9 | 1.0 | 10.0 | 60.0 | 50.0 | .07 |
| No orgasm | 69 | 9.3 | 8.8 | 7.2 | 13.8 | |
| Marked distress about relationship | 28 | 3.3 | 50.0 | 38.1 | 30.0 | |
| Marked distress about own sexuality | 24 | 3.1 | 28.6 | 42.9 | 35.0 | |
| None of the above | 462 | 54.7 | 58.3 | 56.4 | 46.4 | |
| Marked distress about relationship | 55 | 8.0 | 13.5 | 11.4 | 9.2 | |
| Marked distress about own sexuality | 43 | 5.4 | 8.8 | 9.3 | 10.5 | |

^aThese percentages are based on an unweighted analysis of the sample, because there were not enough cases to complete weighted estimates after controlling for age and distress.

^b χ^2 ; $p < .10$ shown.

^cEach age-related % for the three age bands is the % of total n in that age band who have the problem.

^dPercentage of total sample who had this problem *and* reported marked distress.

^eEach age-related % for the three age bands is the % of n who have the problem and who show marked distress.

results, which for the most part suggest that a meaningful distinction has been made.

The best predictor of both sexual distress measures was the MCS 12 measure of mental health. This was a composite based on questions about feeling “calm and peaceful,” having “lots of energy,” feeling “downhearted and blue,” and having work and other functions impaired by “emotional problems.” Clearly states of depression, tiredness, or general unhappiness would influence this measure. We should be cautious in interpreting the relationships observed in our analyses. It is conceivable that sexual distress could cause negative mood. But given the high prevalence of depression, as well as the many reasons for tiredness among women, it is likely that in the majority of our cases it was the negative mental state that led to the sexual distress rather than the other way round.

Our PCS 12 measure of physical health also featured, but less strongly, showing more relevance to distress about “one’s own sexuality” than about the sexual relationship. This is consistent with physical health having a more direct relevance to how the woman feels sexually, whereas mental health is likely to have a more complex impact, reflecting aspects of the relationship as well as the self, and

the potential for being both cause and effect, as discussed earlier.

Of the variables reflecting the woman’s response *during* sexual activity, “subjective response” entered the model strongly, emphasizing the importance of positive and negative emotional feelings as well as emotional closeness to the partner during sexual activity. Not surprisingly, this was a much stronger predictor of “distress about the relationship,” than about “one’s own sexuality.” It is noteworthy that this variable was not a measure of subjective awareness of sexual arousal, but covered subjective pleasure, feeling emotionally close, or indifferent, or experiencing unpleasant feelings, none of which are reflected in the diagnostic criteria of any of the principal *DSM-IV* categories (i.e., hypoactive sexual desire disorder, female sexual arousal disorder, female orgasmic disorder, dyspareunia, and vaginismus).

“Impaired physical response,” which covers subjective sense of arousal and genital response, just entered the model, predicting the difference between marked and no distress, but only for distress about the sexual relationship, not the woman’s own sexuality. Does this indicate that, at least in some cases, the impaired physical response is a consequence of difficulties in the sexual relationship? If

it had important causal significance, we would expect to find it predicting distress about “one’s own sexuality.” It is also of interest that this “problem” was more likely to be associated with “distress about the sexual relationship” in the younger women (see Table IX).

None of the other indicators of the woman’s physical response, including lubrication, pain or orgasm, predicted sexual distress, although clearly in a few women they were causes of such distress. (By contrast, rapid ejaculation in the partner did increase the likelihood of distress in both models. It is not clear why this should affect distress about “one’s own sexuality.”)

“Thinking about sex with interest every day” had the largest effect on “distress about the relationship” in terms of odds, although the significance of this effect was modest. This may reflect lack of variation in the independent variable or colinearity with other independent variables. It is striking that having such thoughts daily increased the odds of distress about the relationship so markedly, with no significant effect on distress about “own sexuality.” This suggests a complex relationship between sexual thoughts and sexual experience. First, a woman who often thinks about sex with interest is going to be more distressed by a sexual relationship which is not working well. Second, the existence of a problematic sexual relationship may increase the likelihood of thinking about sex. Third, frequent thoughts about sex may be problematic for the woman if she is not comfortable with the thoughts she is having. We ran both MNLMs without this variable, which made little difference to the model except for some increase in importance of “frequency of sexual activity” and that of “masturbation.”

Age had only a modest effect. Older women were more likely to report “slight distress” than to report “no distress” about their relationship, or “marked distress” than “no distress” about their own sexuality, the overall significance level being only .08 for the “own sexuality” model. Closer examination of the relationship with age suggests that the “sexual problems” tended to be more common in older women, but it was younger women who were more likely to be troubled by them.

A striking but puzzling finding was the impact of college education on the models. This was particularly strong for “distress about own sexuality,” with college education increasing the likelihood of reporting “slight distress” over either “no distress” or “marked distress.” It is possible that education may have a protective effect against many sexual problems for women, but it is not clear why that would result in more “slight distress” than “no distress.” It may reflect an education-related difference in how rating scales are used, with educated women more likely to choose the middle range than the extremes. Laumann et al. (1999)

found a clear relationship between being college educated and being less likely to report sexual problems. Their data, as presented, did not allow an assessment of the nonlinear relationship we found with sexual distress. This issue deserves further study.

There are obvious limitations to this sample. Because of our restriction to an English language survey, we were unable to include Hispanics and other racial minorities. We failed to reach our target for the 50–65 age range, and given the somewhat better physical health, in this age category, for our women than for the general population, there may have been a selection bias for healthier, older women. Our overall response rate of 53%, while typical for current telephone surveys on any topic, does allow for further participation biases, and the weighting used could not compensate for underrepresentation of women with negative sexual lives if it occurred. It is therefore possible, though by no means certain, that our sample overrepresents women with positive sexual lives—it is unlikely to be the other way round. However, there are no grounds for assuming that those with negative sexual lives who did participate would be different from those who did not. Hence, our main findings in relation to the predictors of sexual distress are unlikely to be substantially different in a more representative sample, even if the prevalence rates differed.

The overall picture is that lack of emotional well-being and negative emotional feelings during sexual interaction with the partner are more important determinants of sexual distress than impairment of the more physiological aspects of female sexual response. Although we do not have directly comparable data for men, we can predict that the pattern would be different, with greater importance attached to genital response. This underlines the importance of conceptualizing the sexual problems of women differently to those of men. Interestingly, in a recent “consensus report” on the best diagnostic classification of female sexual dysfunction, a proportion of the panel advocated “sexual satisfaction disorder” as an important clinical concept for women. However, this was rejected on the grounds that “complaints of this type are difficult to incorporate within the existing nosological framework” (Basson et al., 2000). This concept would certainly have covered the “subjective response” variable in our study.

Assessing the Prevalence of Sexual Problems

To what extent can we determine the prevalence of “sexual problems” and how do our findings compare with those from other studies involving representative community-based samples? It is first important to consider

and compare how “problems” and “dysfunctions” have been conceptualized in this and other studies. We arbitrarily defined “problems” in terms of absence or impairment of response, using frequency counts for the past month. We found 44.3% who qualified for one or more such “problems,” but only 24.4% who reported marked distress.

In Laumann et al.’s study, the definition of “sexual dysfunction” was based on *yes/no* answers to the following: “During the last 12 months has there ever been a period of several months or more when you, a) lacked interest in having sex, b) were unable to climax (experience an orgasm), c) came to climax too quickly, d) experienced physical pain during intercourse, e) did not find sex pleasurable (even if it was not painful), f) felt anxious just before having sex about your ability to perform sexually, or g) had trouble lubricating?” (Laumann et al., 1999). There was no inquiry about whether such “dysfunctions” had caused distress or even whether they were considered as problems by the women themselves. The precise meaning of their questions is not always clear. It is conceivable that different women interpreted these questions differently. The percentages of women answering *yes* to some of these questions are shown in Table X. By counting all women who answered *yes* to at least one of the questions, they concluded that 43% were suffering from a “sexual dysfunction.”

Osborne, Hawton, and Gath (1988), in an interview study of 436 English women in a sexual relationship, aged 35–59, derived operationally defined problems, from 5-point scales ranging from *never* to *all the time*, to assess frequency and, *greatly decreased* to *greatly increased* to assess degree of change, on the basis of the past 3 months. Frequencies of impaired sexual interest, infrequent orgasm, dyspareunia, and vaginal dryness (based on a *yes/no* question) are shown in Table X; together, 33% met the criteria for one or more of these problems. In addition, they asked each woman whether she regarded herself as having a sexual problem; only 10% of women answered “yes,” 31% of whom did not meet any of the authors’ operational criteria for “problem.”

Fugl-Meyer and Fugl-Meyer (1999), in a 1996 survey of 1,335 Swedish women, aged 18–74, identified “sexual disabilities,” operational definitions of whether or not sexual responses were occurring, on the basis of a series of questions covering sexual interest, vaginal lubrication, orgasm, and dyspareunia (see Table X). Each of these questions was followed by the question “Has this been a problem in your sexual life during the past year?” Forty-seven percent met the criteria for one or more of the “disabilities,” but the proportion of each “disability” group where the woman regarded the disability as “a problem” varied from 69% for dyspareunia to 43% for “decreased interest”

(it was not possible from this report to derive the overall percentage who considered they had a problem).

Dunn, Croft, and Hackett (1998) studied a sample of 979 English women aged 18–75, 75% of whom were married. The relevant questions included “On what proportion of occasions that you made love in the past 3 months did you have a problem being aroused?” There were four response categories: “never,” “rarely,” “often,” and “always.” A further question asked about how often climax was experienced. Questions about experiencing pain or vaginal dryness were answered *yes* or *no*, with no indication of frequency. Prevalence of each problem is shown in Table X; together, 41% of women were identified “with a problem.” Apart from the question on sexual arousal, which referred to “having a problem,” there was no indication whether the women themselves regarded these operationally defined problems as problems. Women were asked, however, if they would like to receive help for sexual problems if it was available; 39% said *yes*, but only 46% of those women were in the operationally defined problem groups.

These comparisons raise some key methodological issues. In some cases, frequency assessments were asked for, but the woman was given a choice of frequency response categories which, by their nature, had problematic or nonproblematic implications (e.g., whether to choose “rarely” or “often” with no option in between). In two studies (Fugl-Meyer & Fugl-Meyer, 1999; Laumann et al., 1999), questions were asked about the previous year; in the two other studies (Dunn et al., 1998; Osborn et al., 1988), it was for the previous 3 months.

Our study differed from these other four studies in two respects; first, we asked women to indicate how often they had experienced sexual activity and then on how many of those occasions did they experience or not experience a particular response. They were, therefore, asked for counts, and were not asked to choose from four or five response categories. (The exception to this was the question about frequency of thinking about sex with interest.) Their answers, therefore, had less problematic implications. Second, because we were focusing on counts we restricted our questions to the previous month, to minimize recall error. Graham, Catania, Brand, Duong, and Cranchola (2002) asked men and women to complete daily diaries recording sexual activities for 1 month, and followed this with retrospective recall of those activities at 1-, 2- and 3-month intervals following the diary period. They found that by 3 months, recall of frequency of sexual intercourse was significantly impaired. A 1-month period is clearly brief when considering sexual problems in people’s lives, but when relying on counts or frequencies, it is likely to have greater validity.

Table X. Prevalence of Specific Problem (%) Found in the Current Study and Four Other Studies

| Study | Low sexual Interest | Impaired arousal | Impaired lubrication | Impaired orgasm | Pain | Total (with one or more) |
|----------------------------------|---------------------|------------------|----------------------|-----------------|------|--------------------------|
| Current study | 7.2 | 12.2 | 31.2 | 9.3 | 3.3 | 45 |
| Laumann et al. (1999) | 31.6 | — | 20.6 | 25.7 | 15.5 | 43 ^a |
| Fugl-Meyer and Fugl-Meyer (1999) | 33.0 | — | 12.0 | 22.0 | 6.0 | 47 |
| Dunn et al. (1998) | — | 17.0 | 28.0 | 27.0 | 18.0 | 41 |
| Osborne et al. (1988) | 17.0 | — | 17.0 | 16.0 | 8.0 | 33 |

^aThis includes more categories of problem than shown in this table.

In spite of these methodological differences, these five studies reached broadly similar results when considering combined prevalence of operationally defined problems. However, the distribution of specific problems within these studies differed substantially (see Table X). A common theme, on the other hand, was that across the four studies where the woman's own concept of a problem or her concern was assessed, only a third to a half of women operationally defined as having a sexual problem, regarded themselves as having a sexual problem or reported marked distress in relation to their sexuality.

The important point to be made about the comparison of these five studies is that estimated prevalence of specific problems varied considerably. This underlines the arbitrary nature of the criteria used to define "a problem." Until we have well-developed, theoretically sound criteria for deciding whether a woman has a problem with her sexuality or not, attempts such as these to assess epidemiological prevalence should be regarded as hazardous, and studies should be restricted to the assessment of the relationship between problems and other possible determinants, which is the main purpose of our study.

The relationship to age is a good example. We found that low sexual interest was significantly more common in the older women, but when the association between low interest and marked distress was considered, the age factor largely disappeared. This was reflected in the marginal contribution of age to our MNLM models of distress. Osborne et al. (1988) found a more general age effect on their operationally defined "problems," but also no relationship between age and self-defined sexual problems. Fugl-Meyer and Fugl-Meyer (1999) found a clear positive relationship between age and low sexual interest, and impaired lubrication, but they did not comment on the relationship between age and the women-defined problems. Laumann et al. (1999) reported a noticeably different pattern in relation to age; they found no significant relationship to low sexual interest; but younger women were significantly more likely to report nonpleasurable sex, sexual anxiety, and pain during sex. With the exception of pain, these age-related problems are not directly suggestive of

"sexual dysfunction" and probably reflect greater concern and uncertainty about sex that women experience until they have established a stable sexual relationship. In general, sexual "impairments," such as low sexual interest, appear to be more problematic for the younger women.

When Is a Sexual Problem a Sexual Dysfunction?

As noted in the Introduction, our theoretical model emphasizes the role of inhibition of sexual response as an adaptive mechanism for the majority of individuals. This underlines the point that a reduction in sexual interest or an impaired response to sexual interaction can be an understandable reaction to adverse conditions in the relationship with the partner or in the individual's general life situation. In those circumstances, it is inappropriate to interpret the impaired sexuality that results as evidence of a "dysfunctional" or malfunctioning sexual response system. Keeping this fundamental point in mind, we can then look at each individual's case through three conceptual "windows." Through the first window, we look at the woman's current situation in her relationship with her sexual partner and in her life generally. To what extent are there circumstances that would be expected to increase inhibition of sexual interest and response? Here we might be seeing the modulating effects of stress, fatigue, or unresolved hostility in the relationship. Through the second window, we consider the individual's sexual history. To what extent has she developed a tendency to overreact to difficulties in her sexual life with inhibition? Using our dual control model, is she at the high end of the distribution of sexual inhibition proneness? Here we are considering individual differences, which may result from genetic factors or early learning, or the effects of early traumatic sexual experiences. Through our third window, we consider whether there are physical, pharmacological, or hormonal effects, which might be interfering with her sexual response system.

We can meaningfully consider problems explained through the second and third windows as "sexual

dysfunctions.” Such distinctions, however, will not always be easy. The impact of depression, for example, presents a complex challenge. At one level, when depressive mood is a reaction to circumstances, it is reasonable to assume that inhibition of sexual response will occur as a reaction to the same negative circumstances that induced the depressed mood. In some states of clinical depression, however, when the degree or duration of the depression is not understandable as a reaction to current circumstances, there may be basic metabolic changes in the central nervous system which, among other effects, lower the capacity for sexual excitation. In that case, where we are dealing with impaired sexual excitation rather than increased sexual inhibition, we can appropriately consider the impaired sexuality as a symptom of the depressive illness. But the differential diagnosis of reactive versus endogenous depression has a long and troubled history in psychiatry, and we should not expect these distinctions to be easy.

Our findings indicate the importance of the woman’s mental well-being, physical health, level of education, and relationship with her partner to whether she is experiencing distress about sex. While not directly comparable, Laumann et al.’s study, which has a much more extensive range of variables to examine, finds a strong relationship between presence of sexual problems and emotional state, as well as socioeconomic factors, particularly a recent decline in economic status that is a clear indicator of stress (Laumann et al., 1999). They concluded that “emotional and stress-related problems among women generate elevated risk of experiencing sexual difficulties in all phases of the sexual response cycle” (p. 543). Osborne et al. (1988) found that the best predictors of presence of a sexual problem were age, marital adjustment, and neuroticism; however, in a later paper from this same survey, Hawton, Gath, and Day (1994) reported a strong association between presence of psychiatric disorder, particularly depression, and overall satisfaction with the sexual relationship.

To what extent are these associations relevant to our first “window?” Laumann et al. (1999) emphasized correctly that the causal relationship in these associations was unclear, and certainly cannot be established on the basis of relatively limited survey data. However, we should consider that although the existence of sexual problems or dysfunctions may cause emotional problems, or stress, the reverse is equally or more likely to apply. The impact of socioeconomic status, or education may, as Laumann et al. (1999) suggest, be mediated through their impact on physical health; poor physical health is likely to be associated with sexual problems. However, we should also consider that socioeconomic and educational factors are associated with different attitudes about sex and different patterns of

male–female relationships, which may undermine sexual satisfaction, particularly in women. Thus the woman in an unrewarding, low-intimacy marriage, in which sex has been regarded as a wifely duty, may have low self-esteem, and be less likely to feel positive about her own sexuality, or the experience of sexual interaction with her partner. In those circumstances, we may expect increased inhibition of sexual interest and response. The woman who is under chronic stress or chronically fatigued may be expected to have increased inhibition of her sexuality as an adaptive mechanism.

According to this line of reasoning, a “sexual dysfunction” is an appropriate, heuristically useful way of describing a sexual problem that results either from maladaptive psychophysiological response patterns, as observed through our second window, or from the effects of an illness or a disease process, hormonal or drug effect that directly interferes with the sexual response system, as observed through our third window. Whether a “sexual dysfunction” should be the prime target of treatment then depends on whether it is the primary problem, or a symptom of some other condition, such as depression, which should be the target of treatment. There will remain some conditions, such as diabetes, where relatively permanent consequences of the disease, such as autonomic neuropathy, may impact sexual function and require direct intervention. The process of making a valid distinction between dysfunctions and other kinds of sexual problems, important when considering interventions or treatment, is obviously complex, requiring careful clinical evaluation of the individual case. It is not possible to begin to estimate what proportion of the “problems” identified in our survey, or the Laumann et al. (1999) survey, or those of the other surveys cited, could be called dysfunctions in the above sense, but it would not be surprising if a substantial proportion were best identified through our first window, as adaptive or understandable reactions to current circumstances.

The impact of aging on sexual function deserves additional consideration. The evidence suggests that aging effects on genital response are more evident in men, and aging effects on sexual interest more evident in women. Our data suggest that for many women, such effects are not a cause of concern. While it is good to encourage older couples to maintain and foster their sexual intimacy, should we be encouraging older women to regard themselves as “dysfunctional” because they have less sexual interest than when they were younger? Should we, instead, normalize normal aging processes, while recognizing the need for individuals and couples to adapt to them?

It may be that, with further research, valid methods for making distinctions between “dysfunction” and

“reaction to circumstances” will emerge, that can be more widely applied, though whether they will ever be suitable for large-scale population surveys is uncertain. In the meantime we should be cautious about estimating the prevalence of “sexual dysfunctions” in the population. Clearly, our results should be replicated before reaching firm conclusions. In addition, a different approach to assessing women who present with sexual problems is warranted, in which the woman’s own description of her problem is used rather than her answers to questions based on preconceived concepts of female dysfunction. In this way, it may be possible to reconceptualize the sexual difficulties and “dysfunctions” of women in ways, which may have more therapeutic and prognostic significance. We would then hope that such evidence will be taken into consideration in the development of *DSM-V*, resulting in a diagnostic schema of greater relevance to clinical management of women’s sexual difficulties than *DSM-IV*.

APPENDIX

Sexual Experience Interview⁶

The following questions from the T-ACASI component were those used in the analysis reported in this paper:

1. Over the past 4 weeks, approximately how many times have you engaged in sexual activity leading to sexual intercourse (that is, entry of the penis into vagina)?
2. Over the past 4 weeks, approximately how many times have you engaged in sexual activity with your partner (for example, petting, genital contact or other activity intended to give sexual pleasure) not leading to sexual intercourse?

On the (*reported number, combining sexual intercourse, and other sexual activity with partner*) occasions that you had sexual activity with your partner in the past 4 weeks:

3. How many times were initiated by you?
4. How many times was the sexual activity initiated by your partner?
5. How many times was the sexual activity initiated mutually by both you and your partner?
6. How many times did you feel mainly indifferent (meaning you did not care one way or the other)?
7. How many times was the sexual activity mainly pleasurable and enjoyable?
8. How many times did you experience unpleasant feelings such as tension or anxiety?

9. How many times did you feel a pleasant tingling in your genitals?
10. How many times did you enjoy being touched around your genitals (such as by your partner’s hand, mouth, or other part of his body)?
11. How many times did you become aroused? (For example, just feeling excited or noticing physical changes in your body such as breathing more quickly, heart beating faster, sweating?)
12. How many times did you experience an orgasm?
13. Typically when you had sexual activity in the past 4 weeks, to what extent did you respond with vaginal lubrication?

No vaginal lubrication and remained dry
Some lubrication
Sufficient lubrication

14. In the past 4 weeks, during sexual activity with your partner did you ever find that your vagina was uncomfortably dry?

Yes
No

15. Have you used lubricants (such as K-Y jelly, lotion, or baby oil) during sexual activity with your partner in the past 4 weeks?

Yes
No

On the (*reported number, combining sexual intercourse, and other sexual activity with partner*) occasions you had sexual activity with your partner in the past 4 weeks:

16. How many times did you experience pain or discomfort as a result of the sexual activity?
17. How many times did he have difficulty getting or keeping an erection?
18. When your partner had difficulty getting or keeping an erection, to what extent did this affect your sexual enjoyment?

Not at all
Slightly
Moderately
Quite a bit
Extremely

19. How many times did he ejaculate too quickly (that is, more quickly than either your partner or you would prefer)?
20. When your partner ejaculated too quickly, to what extent did this affect your sexual

⁶Researchers wishing to use this schedule should obtain permission from the first author.

enjoyment?

Not at all
Slightly
Moderately
Quite a bit
Extremely

In the past 4 weeks

21. How many times did your partner approach you, wanting to have sex, and you declined?
22. How many times did you approach your partner, wanting to have sex, and he declined?
23. How many times did you feel emotionally close and comfortable with him?
24. How many times did you feel content and satisfied afterwards (whether or not you had experienced an orgasm)?
25. How often does your partner understand how you feel and what you enjoy while you are having sex?

All of the time
Most of the time
Some of the time
A little of the time
None of the time

26. During the past 4 weeks, about how often did you think about sex with interest or desire? This includes times of just being interested, daydreaming, and fantasizing, as well as times when you wanted to have sex.

Not at all
Once or twice
Once a week
Several times a week
At least once a day

27. How many times in the past 4 weeks have you masturbated on your own?

On the (*reported number*) occasions you masturbated on your own in the past 4 weeks,

28. How many times were mainly pleasurable and enjoyable?
29. How many times did you experience unpleasant feelings such as tension or anxiety?
30. How many times did you feel a pleasant tingling in your genitals?
31. How many times did you become aroused (for example, just feeling excited or noticing physical changes in your body such as breathing more quickly, heart beating faster, sweating)?

32. How many times did you experience an orgasm?
33. How sexually attractive have you felt recently?

Very attractive
Somewhat attractive
Neither attractive nor unattractive
Somewhat unattractive
Very unattractive

34. How sexually attractive is your partner to you?

Very attractive
Somewhat attractive
Neither attractive nor unattractive
Somewhat unattractive
Very unattractive

35. During the past 4 weeks, how much distress or worry has your sexual relationship caused you?

A great deal
Moderate
Slight
None

36. During the past 4 weeks, how much distress or worry has your own sexuality caused you?

A great deal
Moderate
Slight
None

ACKNOWLEDGMENTS

This study was made possible by a grant from the Lilly/ICOS Joint Venture. We are grateful to Diane Brashear and William Pullman, of Eli Lilly & Company, for making this study possible. Diane Brashear died on October 11, 2002, after a 14-month battle with breast cancer. She had dedicated much of her life to improving the sexual and reproductive health of women, she was a great supporter of the Kinsey Institute, and she will be greatly missed. We also thank Dr. John Kennedy, Director of the Center for Survey Research, Indiana University, for help at various stages of the project. Financial disclosure: Dr. Bancroft has been acting in a consultant capacity for Eli Lilly & Co., Indianapolis, Indiana.

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