Sexual Problems Among Older Women by Age and Race

Anne K. Hughes, PhD, MSW,¹ Ola S. Rostant, PhD,² and Sally Pelon, MSW¹

Abstract

Background: The purpose of our study was to examine the prevalence of sexual problems by age and race among older women in the United States and to examine quality of life correlates to sexual dysfunction among non-Hispanic white and African American older women.

Methods: A cross-sectional study using self-report surveys was conducted among community-dwelling U.S. women, aged 60 years and over. A total of 807 women aged 61–89 years were included. Self-administered questionnaires assessed sexual dysfunction, satisfaction with life, depressive symptomatology, and self-rated health. Analyses included multivariate logistic regression.

Results: The mean age of the sample was 66 years. Two-thirds of the sample had at least one sexual dysfunction; the most common for both African American and non-Hispanic white women were lack of interest in sex and vaginal dryness. Prevalence varied by age for each of the sexual dysfunctions. The odds of experiencing sexual dysfunction varied with age and race. Compared with non-Hispanic white women, African American women had lower odds of reporting lack of interest in sex or vaginal dryness. Poor self-rated health, depressive symptomatology, and lower satisfaction with life were associated with higher odds of having some sexual dysfunction.

Conclusions: Improved understanding of how sexual dysfunction affects women across multiple age ranges and racial/ethnic groups can assist providers in making recommendations for care that are patient centered. The associations that we identified with quality of life factors highlight the need to assess sexual health care in the aging female population.

Introduction

MANY OLDER ADULTS are sexually active and consider sex to be an important aspect of a full and meaningful life.^{1–4} However, aging can bring an increase in sexual problems, or sexual dysfunctions, as well as decreases in sexual activity.^{1,5–7} Prevalence studies indicate that sexual dysfunction rates can be quite high in older patient populations, and that older women have higher prevalence rates for all non–gender-specific sexual dysfunctions (for example, erectile dysfunction or vaginal dryness) when compared with older men.^{1,8} In this study we explored how sexual problems are associated with quality of life indicators for older women, aged 60 and above. Health care providers who are informed about how sexual dysfunction can affect the lives of older women can incorporate interventions to decrease the negative impact of these problems.

Sexual problems for women of all ages include lack of interest in sex, poor vaginal lubrication, inability to achieve orgasm, not finding sex pleasurable, and pain during intercourse.^{1,8,9} Research on older women's sexual problems

generally finds that as age increases, rates of problems increase as well.¹⁰ Luftey et al. found a strong positive association between age and sexual dysfunction in their community based sample of women aged 30–79.¹¹ Other studies report low sexual desire and vaginal dryness are positively associated with a woman's age.^{9,12} However, Nusbaum et al. found similar rates of sexual dysfunction between younger and older women,¹³ and Waite et al. found relative similarity in prevalence of sexual dysfunction across age groups of women aged 57–85 years.¹⁴ In a large, population-based study of U.S. adults, aged 57–85, Lindau et al. found that sexually active older women most frequently reported: experiencing low desire (43%), difficulty with vaginal lubrication (39%), and inability to climax or reach orgasm (34%).¹ With these rates of sexual problems among older women, health care providers should be engaged in understanding how these problems are impacting women's lives.

Research to date provides some information with regard to the experience of sexual problems in older women, but current knowledge remains somewhat limited. Sexual dysfunction in women has been found to be strongly associated

¹School of Social Work, Michigan State University, East Lansing, Michigan.

²The National Institute on Aging Intramural Research Program, National Institutes of Health, Baltimore, Maryland.

with health conditions such as arthritis, diabetes, and hypertension¹, self-rated poor to fair health;^{9,15,16} the presence of emotional problems like depression^{12,17} and stress;¹⁶ decreased physical and emotional satisfaction with sex; and less happiness.^{1,8} A strong association between life satisfaction and sexual satisfaction in women aged 45 and over has also been documented.¹⁸ Data from the Wisconsin Longitudinal Study was used to examine lack of sexual satisfaction and inability to maintain a sexual relationship among adults aged 63–67 years old. Respondents with poor self-rated health, a history of depression, fatigue, and sexual pain in the previous 6 months were at greater risk for the inability to maintain their sexual relationship.³ However, these studies quite often report results for all women in the sample, rather than reporting by age or race. We are left wondering how these experiences may or may not be different for older women or women of color. Data from studies of middle aged women have identified variance related to sexual dysfunction by race,^{19,20} suggesting that racial and ethnic differences are important considerations.

To add to this body of literature, the present study aims to enhance the available data on the correlates to sexual problems, drawing from a national sample of community-dwelling older women (aged 60 years and above). We sought to increase understanding of how often this racially diverse sample of women are experiencing sexual problems, as well as how these problems are associated with demographic variables and quality of life factors such as self-rated health and mental health.

Methods

Sample

The sampling frame consisted of members of SurveyMonkey Audience, a diverse group of people that are re-

flective of the U.S. population that uses the internet (K. Campbell, SurveyMonkey Audience account representative, personal communication, September 29, 2011). Members of SurveyMonkey Audience are volunteers who complete surveys that are of interest to them. Participation is compensated by a donation by SurveyMonkey to a charity of the respondents' choice. The principal investigator worked with a representative from SurveyMonkey to determine the sampling frame, which included women aged 60 and above, one third of whom were non-white. The survey was made available online to this stratified random sample. Audience members had to respond to the request to complete the survey within 2 days; otherwise, the request was closed and another member in the sampling frame was asked to respond. We received responses from 935 community dwelling older women, 807 of whom were used for analysis. Cases were excluded from the analysis if they were missing 25% or more data from the variables of interest. Table 1 provides the demographic characteristics of the analysis sample.

Procedures

During autumn of 2011, members of the sample were sent an e-mail notification from SurveyMonkey informing them of the study and the link to the online questionnaire. The online questionnaire included a cover letter that described the study, the types of information to be collected and the expected costs and benefits of participating in the research study. Consent was implied if the respondents continued on to the survey after reading this cover letter. The researcher did not give any incentive to participants. The researcher downloaded data from the survey site into SPSS version 20 for data management and analysis. The research protocol was approved by a University Institutional Review Board.

TABLE 1. DEMOGRAPHIC CHARACTERISTICS BY AGE (N=807)

Variable	Age group		
	61–66 years n (%)	67–71 years n (%)	72–89 years n (%)
Race			
White	407 (77.1%)	152 (86.0%)	91 (89.2%)
African American	121 (23.0%)	25 (14.1%)	11 (11.0%)
Educational attainment			
Less than high school graduate	6 (1.1%)	1 (.05%)	—
High school graduate	34 (6.4%)	18 (10.1%)	11 (11.0%)
Some college or Associate's degree	184 (35.1%)	42 (24.0%)	28 (27.4%)
College degree	139 (27.0%)	48 (27.1%)	27 (26.4%)
Post-graduate degree	161 (31.0%)	68 (38.4%)	36 (35.2%)
Marital status			
Married	255 (29.0%)	83 (48.0%)	48 (48.0%)
Widowed	44 (8.4%)	29 (17.0%)	31 (31.0%)
Separated or divorced	147 (28.2%)	40 (23.0%)	17 (17.0%)
Never married	51 (10.0%)	17 (10.0%)	4 (4.0%)
Living with a partner	23 (4.4%)	5 (3.0%)	1 (.09%)
Currently have a romantic, intimate, or sexual partner	267 (68.0%)	89 (23.0%)	39 (9.8%)
Self-rated health status			
Poor or fair	57 (11.0%)	18 (10.4%)	14 (14.0%)
Good	171 (33.1%)	50 (29.0%)	28 (28.0%)
Very good or excellent	289 (56.0%)	105 (61.0%)	59 (58.4%)

—, no cases.

Measures

Demographic characteristics. Standard demographic questions were used to assess age, race/ethnicity, education, income, and marital status. For analysis, age was broken into three categories (a) 61–66 years old, (b) 67–71 years old, and (c) 72–89 years old and race/ethnicity was defined as non-Hispanic White compared with African American (others were excluded from analysis due to small sample sizes). Educational attainment was defined as (a) less than high school, (b) high school graduate, (c) some college or an associate's degree, (d) college degree, and (e) post-graduate degree. Finally, marital status was defined as (a) married, (b) widowed, (c) separated or divorced, (d) never married, and (e) living with a partner. Current relationship status was defined as currently having a romantic, intimate, or sexual partner (yes or no).

Sexual dysfunction. Women's sexual dysfunction was assessed by asking respondents whether they were currently experiencing any of the following sexual problems: (1) lack of interest in sex, (2) vaginal dryness or poor vaginal lubrication, (3) vaginal pain during intercourse, (4) lack of sexual pleasure, (5) inability to climax or reach orgasm, (6) worry about sexual performance, and (7) an avoidance of sexual activity due to sexual problems. These items were developed based on the diagnostic criteria for female sexual dysfunction, as defined by the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition.²¹ Respondents responded to these items with a yes or no. A variable was created to assess having any sexual problem versus none. Total number of sexual problems was assessed with a continuous count of problems reported.

Quality of life. We assessed quality of life using the variables self-rated health and mental health. Self-rated health was assessed using a standard one-item measure^{22,23} that asks respondents to rate their health on a five-point Likert scale from poor to excellent. Mental health was assessed via two standardized instruments. The Brief Screen for Depression (BSD) was used to assess depressive symptoms.²⁴ It is a four-item measure designed to detect clinical levels of depression. A cut-score of 21 distinguishes clinical from nonclinical patients. The BSD has an internal consistency reliability, which in previous studies has ranged between 0.63 and 0.65.²⁵ The Satisfaction with Life Scale (SWLS) was used to assess an individual's own judgment of their quality of life.^{25,26} The SWLS has an internal consistency of 0.87, and test-retest reliability coefficient of 0.82 over two months.²⁵ SWLS utilizes a total test score, summed across five items, with a range of 5–35 in which higher scores reflect more satisfaction with life.

Statistical analysis

The analytical data set was comprised of 807 community dwelling older adult women. Women were included in the analysis sample if they had complete data (no more than 25% missing) on the variables of interest and were non-Hispanic white or African American. We excluded respondents indicating other racial/ethnic groups due to small sample sizes. Demographic characteristics were assessed by age-groupings. Prevalence of sexual problems was examined across race and

age groupings. Multivariable logistic and linear regression models were used to identify demographic characteristics as potential confounders in their mutual relationship with quality of life factors and individual sexual dysfunctions. We fit multivariate logistic regression models to examine the association between individual sexual problems and age groupings (61–66 years, 67–71 years, 72–89 years); race (African American vs. non-Hispanic white); marital status (married versus unmarried); education (high school, college, post-graduate); self-rated health (poor/fair, good, very good/excellent); depression, satisfaction with life; and current relationship status (currently in a relationship vs. currently not in a relationship). Referent groups were 61–66 years age group, non-Hispanic white, married, college education, very good/excellent self-rated health, and currently in a relationship. Ordinary least squares regression models were used to examine the correlates of the total number of sexual problems. All analyses were conducted using Stata SE 13. Results are presented as odds ratios with 95% confidence intervals.

Results

The age range of the participants was 61–89 years old, with a mean age of 66 (standard deviation [SD]=5.07). Eighty percent of the sample self-identified as non-Hispanic White and 20% as African American. The majority of the sample had a Bachelor's degree or higher educational level. More than half of the sample was married across all age-groupings and the likelihood of being a widow increased with age. Among women reporting currently being in an intimate, romantic, or sexual relationship, 68% were 61–66 years old, 23% were aged 67–71, and 9.8% were 72–89 years old.

Prevalence of sexual dysfunction

The average number of sexual dysfunctions was 1.57 (SD=1.7), with 34% of women reporting no dysfunction, 26% reporting one, 16% reporting two, and 24% reporting three or more sexual dysfunctions. For both African American and non-Hispanic white women the two most common sexual problems reported were (1) lack of interest in sex by (31% of African American and 44% of non-Hispanic white women) and (2) vaginal dryness by 23% (African American) and 42% (non-Hispanic white) women. Prevalence varied by age for each of the sexual dysfunctions. Decreased interest in sex was lowest among respondents 67–71 years old and higher amongst the oldest age group. Forty-two percent of women age 67–71 reported vaginal dryness as a problem, compared with 38% of the 61–66 year olds, and 33% of women aged 72–89. Women aged 67–71 years had the highest prevalence of vaginal pain during intercourse. Women aged 72–89 were more likely to report sex as being not pleasurable (27%) and that they had trouble achieving orgasm (24%). Prevalence of worry regarding sexual performance was highest among women in the 61–66 years age grouping. Avoidance of sexual activity because of sexual problems occurred in 18% of women aged 72–89 years, 17.4% of women aged 61–66, and 13% of women aged 67–71 years old. See Table 2 for further details.

Correlates of sexual dysfunction

Table 3 displays the demographic, relationship, self-rated health, and quality of life correlates to sexual problems

TABLE 2. PREVALENCE OF SEXUAL PROBLEMS BY AGE AND RACE (N=807)

Sexual problem	Age			Race	
	61–66 Years	67–71 Years	72–89 Years	White	African American
Lack of interest in sex	n = 185 41.3% (36.8–46.0)	n = 60 38.9% (31.5–46.9)	n = 40 48.7% (38.1–59.5)	n = 250 43.6% (39.6–47.7)	n = 45 31.2% (24.1–39.3)
Vaginal dryness (poor vaginal lubrication)	n = 169 38.0% (33.6–42.6)	n = 65 41.9% (34.3–49.8)	n = 27 33.3% (23.8–44.3)	n = 238 42.0% (38.0–46.1)	n = 33 22.7% (16.6–30.3)
Vaginal pain during intercourse	n = 64 14.8% (11.7–18.4)	n = 23 15.4% (10.4–22.2)	n = 9 12.0% (6.3–21.5)	n = 88 16.1% (13.2–19.4)	n = 13 9.2% (5.4–15.2)
Sex is not pleasurable	n = 77 17.9% (14.5–21.8)	n = 27 17.8% (12.5–24.8)	n = 20 26.6% (17.8–37.8)	n = 109 19.9% (16.8–23.5)	n = 21 15.0% (9.9–21.9)
Inability to climax or reach orgasm	n = 92 21.4% (17.8–25.5)	n = 28 18.7% (13.2–25.9)	n = 19 24.3% (16.0–35.1)	n = 122 22.3% (19.0–25.9)	n = 21 15.0% (9.9–21.9)
Worry about sexual performance	n = 56 12.9% (10.1–16.4)	n = 17 11.4% (7.1–17.6)	n = 6 7.5% (3.4–15.9)	n = 66 12.0% (9.5–15.0)	n = 15 10.8% (6.5–17.1)
Avoidance of sex because of sexual problem(s)	n = 72 16.7% (13.5–20.6)	n = 19 12.5% (8.1–18.9)	n = 14 18.1% (11.0–28.4)	n = 92 16.8% (13.9–20.1)	n = 16 11.6% (7.2–18.1)
Any sexual problem	n = 361 71.0% (66.9–74.8)	n = 131 76.1% (69.1–81.9)	n = 78 78.7% (69.5–85.7)	n = 494 75.6% (72.2–78.7)	n = 108 63.1% (55.6–70.0)

Data presented as number (n) and percentage of total, with ranges shown in parentheses.

experienced by the women in this study who reported at least one sexual problem. Results are presented as odds ratios (ORs) with 95% confidence intervals. Women in the oldest age group, 72–89 years, had higher reports of lack of pleasurable sex (OR = 2.10). African American women relative to non-Hispanic white women had lower odds of reporting vaginal dryness (OR = 0.55), as well as lack of interest in sex (OR = 0.62). Relative to married women, unmarried women have lower reports of vaginal dryness (OR = 0.48), vaginal pain (OR = 0.48), lack of pleasurable sex (OR = 0.52), and avoidance of sex (OR = 0.30). Women currently in romantic relationships had lower odds of reporting vaginal dryness (OR = 0.54).

Quality of life indicators were considered self-rated health, depressive symptomatology, and satisfaction with life. Poor self-rated health was associated with higher odds of lack of interest in sex (OR = 2.10) and lack of pleasurable sex (OR = 2.19) compared with women who report very good or excellent health. The average score on the BDS was 21 (SD = 6.00). An increase in depressive symptoms increased the likelihood of reporting an inability to orgasm (OR = 1.07) and avoidance of sex (OR = 1.09). Higher satisfaction with life was also associated with a lower likelihood of reporting worry regarding sexual performance (OR = 0.95) and avoidance of sex (OR = 0.95). Level of educational attainment was not a statistically significant predictor of sexual dysfunction. African American (OR = 0.63) and unmarried (0.48) women had lower odds of reporting having had any sexual problem. Multiple regression analyses indicate that on average women who were unmarried and not currently in a relationship re-

ported fewer sexual problems. In addition women who had poorer self-rated health and higher depression scores reported a higher number of sexual problems.

Discussion

In this study we aimed to increase understanding of older women's experiences of sexual problems and how these are related to personal demographic factors such as age and race as well as quality of life variables. Overall, there were high rates of sexual dysfunction in our participants; the most commonly reported problems were lack of interest in sex and vaginal dryness. Two thirds of the sample had at least one sexual problem and twenty-four percent of the sample reported three or more sexual problems. In a previous study, Moriera et al. found that 49% of women (aged 40–80 years) reported one sexual problem.²⁷ The authors do not break down their results by age, however, so it is unclear whether this result reflects the experiences of older women. When compared with Lindau et al.'s¹ nationally representative sample, we found lower rates of each individual sexual problem but more women reporting multiple sexual problems. Similar to Waite et al.,¹⁴ we found that lack of interest in sex was common across age groups.

Lack of interest in sex was highest among our oldest age group; however, over half of this group did not report lack of interest, a larger percentage than reported by Huang et al., who found that only 25% of their sample aged 65 and over maintained an interest in sex.⁷ This difference may be due to the samples used in the two studies: whereas we sampled

TABLE 3. CORRELATES TO SEXUAL DYSFUNCTION/SEXUAL PROBLEMS

<i>Sexual problem</i>	<i>n</i>	<i>67-71 Years^a</i>	<i>72-89 Years^a</i>	<i>African American women^b</i>	<i>Unmarried^c</i>	<i>High school, vs. college^d</i>	<i>Post-grad vs. college^d</i>	<i>Current relationship status^e</i>	<i>Good vs. excellent or very good health^f</i>	<i>Poor or fair vs. excellent or very good health^f</i>	<i>BSD^g</i>	<i>SWLS^h</i>
Lack of interest in sex	641	0.94 [0.62-1.41]	1.26 [0.75-2.11]	0.64* [0.4-0.99]	0.73 [0.49-1.10]	1.18 [0.66-2.09]	0.70 [0.49-1.01]	1.04 [0.68-1.57]	1.34 [0.91-1.95]	2.18* [1.25-3.81]	1.05 [0.99-1.11]	0.99 [0.97-1.03]
Vaginal dryness/ poor vaginal lubrication	637	1.40 [0.92-2.12]	0.83 [0.47-1.43]	0.54** [0.33-0.87]	0.47** [0.31-0.72]	0.92 [0.51-1.67]	0.89 [0.61-1.30]	0.57* [0.37-0.88]	0.96 [0.64-1.43]	1.03 [0.57-1.86]	1.02 [0.96-1.08]	0.97 [0.94-1.00]
Vaginal pain during intercourse	615	1.39 [0.78-2.45]	0.95 [0.43-2.07]	0.89 [0.45-1.77]	0.47* [0.26-0.87]	0.73 [0.30-1.74]	1.19 [0.71-1.97]	0.60 [0.32-1.13]	0.69 [0.38-1.24]	1.61 [0.77-3.33]	1.02 [0.95-1.10]	0.97 [0.93-1.01]
Lack of pleasurable sex	614	1.08 [0.61-1.92]	1.98* [1.06-3.70]	0.74 [0.39-1.38]	0.50* [0.29-0.87]	1.21 [0.61-2.42]	0.62 [0.37-1.04]	0.92 [0.52-1.6]	1.41 [0.85-2.35]	2.20* [1.13-4.31]	1.04 [0.97-1.11]	0.97 [0.93-1.01]
Inability to climax or reach orgasm	615	0.89 [0.52-1.49]	1.20 [0.65-2.22]	0.70 [0.39-1.25]	0.69 [0.42-1.14]	0.69 [0.32-1.46]	0.86 [0.55-1.35]	0.68 [0.40-1.15]	0.87 [0.54-1.40]	0.83 [0.41-1.66]	1.07* [1.01-1.14]	0.97 [0.94-1.01]
Worry about sexual performance	618	1.45 [0.77-2.71]	0.74 [0.29-1.86]	1.51 [0.78-2.94]	0.71 [0.37-1.33]	0.39 [0.13-1.21]	1.08 [0.62-1.90]	0.58 [0.30-1.14]	0.98 [0.54-1.80]	1.84* [0.87-3.91]	1.10* [1.02-1.18]	0.95* [0.90-0.99]
Avoidance of sex because of sexual problems	616	0.94 [0.51-1.76]	1.52 [0.76-3.04]	1.01 [0.51-1.99]	0.31* [0.17-0.58]	0.80 [0.34-1.87]	1.15 [0.69-1.93]	0.78 [0.42-1.43]	0.69 [0.39-1.23]	1.33 [0.64-2.75]	1.10* [1.02-1.18]	0.95* [0.91-0.99]
Any sexual problem	697	1.46 [0.94-2.27]	1.48 [0.85-2.60]	0.63* [0.41-0.96]	0.49* [0.32-0.75]	1.11 [0.58-2.15]	0.93 [0.64-1.35]	0.82 [0.54-1.27]	1.15 [0.77-1.71]	1.83 [0.93-3.58]	1.02 [0.96-1.09]	0.97 [0.94-1.00]
Total number of sexual problems	591	$\beta_{\text{age}} = 0.07, SE = 0.01^*$		$\beta = -0.04, SE = 0.17$	$\beta = -0.20, SE = 0.16^*$	$\beta_{\text{education}} = -0.03, SE = 0.07$		$\beta = -0.10, SE = 0.16^*$	$\beta_{\text{self}} = 0.08, SE = 0.10^*$		$\beta = 0.13, SE = 0.02^*$	$\beta = -0.09, SE = 0.01$

Results are given as odds ratios with 95% confidence intervals (in brackets).

*Significant at $p < 0.05$.**Significant at $p < 0.01$.^a-Referent categories: ^aage 61-66 years, ^bnon-Hispanic white women; ^cmarried; ^dcollege education; ^ecurrently in a romantic, intimate, or sexual relationship; and ^fexcellent/very good self-rated health status.^gBrief Screen for Depression (BSD) range is 7-50; BSD and Satisfaction With Life Scale (SWLS) are continuous variables. Multiple linear regression independent variables are treated as continuous.^hSWLS range is 5-35.

SE, standard error; self, self-rated health.

community-based women, Huang et al. sampled women from a cohort study looking at risk factors for urinary tract infections. Urinary incontinence has been shown to be correlated to distressing sexual problems in a study of U.S. women.¹⁵ Women in the 67- to 71-year-old age group had the lowest lack of interest in sex rates but the highest rates of vaginal dryness and pain with intercourse. Thirteen percent of women in this age group are avoiding sexual activity due to sexual problems. This mismatch between desire for and physical barriers to sex creates a tension around sexual activity for these women that can be a possible intervention point for practitioners.

Across all sexual problems and age groups, rates were higher among non-Hispanic white women when compared with African American women. Very little research exists that looks at sexual problems in older, racially diverse women. One study of ethnically diverse women aged 45–80 years old found, as we did, that African American women had higher levels of sexual desire, compared with non-Hispanic white women.⁷ However, their study did not report rates of other sexual problems by race/ethnicity, something that our work adds to the literature. Another study examined sexual health concerns across African American, Asian, and white women aged 18 and over, but their average age was 44 years old.²⁰ Culture and race can be powerful influences in help seeking related to sexual health and therefore should be examined more thoroughly.^{7,20,28} Further research should examine how diverse women experience sexual dysfunction as they age so that individualized treatment options can be offered.

When we consider correlates to these sexual problems, we find that several demographic factors related to higher odds of experiencing certain sexual problems. In particular, women in the oldest age group are more likely to report lack of pleasurable sex, non-Hispanic white women more often report vaginal dryness, and married women report more vaginal dryness, vaginal pain, lack of pleasurable sex, and avoidance of sex. It is important to pay attention to these correlates, as sexual problems can impact sexual activity, sexual behavior, and general happiness.⁸ Women with problems related to worry and avoidance of sex may need interventions to maintain an active sex life, which has been found to be associated with a higher quality of life.²⁹

Similar to previous literature,^{1,15} we found associations between self-rated health and sexual problems. In our sample, poor self-rated health was significantly associated with lack of interest in sex and lack of pleasurable sex. Women who rate their health as poor may be struggling with chronic condition that require a degree of management that does not leave them time or emotional space to consider being sexually active. In addition, the chronic disease itself may be taxing physically which affects the amount of energy and stamina women have to devote to their sexual health. Other quality of life factors, namely depression and satisfaction with life, were correlated with certain sexual problems but not others in our sample. As a whole, the sample reported rates of depressive symptomatology that reached the cut score for clinical significance. With cross sectional data we are not able to discuss causality but will note that often depression and sexual problems accompany each other,^{11,15,30} and this trend was observed in our data as well. These results suggest that practitioners, after identifying a sexual problem, should ask about effects of this problem physically, emotionally, and socially.

Conclusions based on this study should be considered in light of study limitations. First, this is a cross-sectional study, so while we found many interesting associations, we cannot determine causal relationships between the variables we studied. Our sample of SurveyMonkey Audience members may not be representative of older women in the US, and results can only be generalized to internet users, who tend to have higher incomes, of white race, and to have more education.³¹ Members of the sampling frame who chose to respond to this survey may have a particular interest in the topic, introducing the possibility of selection bias as well.³² The use of self-report of sexual dysfunction, while used in previous studies,¹ does not allow an objective diagnosis of sexual dysfunction and women may have over or under reported their dysfunctions. Additionally, women were not asked about co-occurring disorders, such as arthritis or diabetes, that can affect rates of sexual problems as well as quality of life. It is possible that these factors, rather than the sexual dysfunction contributed to lower quality of life. In addition, in the oldest age group there were very small numbers of African American women so that it is difficult to draw conclusions about these women due to low statistical power.

Despite these limitations, this study provides information to help practitioners more fully understand how often sexual dysfunction occurs among older non-Hispanic white and African American women and what demographic and quality of life variables are associated with these dysfunctions. Across age and racial groups, we found high prevalence of sexual dysfunction that have the potential to negatively impact women's lives and health. Because sexual health is related to overall health and quality of life, it should be a consideration in the care of all older women. Health care practitioners who identify women with difficulties related to sexual problems can then engage in care planning to reduce the negative consequences of these problems. This can be done in the form of further assessment, provision of education, or referrals for additional support such as counseling or sex therapy.

Acknowledgments

All authors meet the criteria for authorship stated in the Uniform Requirements for Manuscripts Submitted to Biomedical Journals. Anne K. Hughes contributed to conception and design, data collection, data analysis, drafting and revising of the article, and final approval of the version to be published. Ola S. Rostant contributed to conceptualization, data analysis, drafting and revising of the article, and final approval of the version to be published. Sally Pelon contributed to conceptualization, interpretation of the data analysis, drafting and revising of the article, and final approval of the version to be published.

The project described was supported by Award Number K12HD065879 (Hughes) from the Eunice Kennedy Shriver National Institute of Child Health and Human Development. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Eunice Kennedy Shriver National Institute of Child Health and Human Development or the National Institutes of Health.

Author Disclosure Statement

No competing financial interests exist.

References

1. Lindau ST, Schumm LP, Laumann EO, et al. A study of sexuality and health among older adults in the United States. *New Engl J Med* 2007;357:762–774.
2. Kennedy GJ, Martinez MM, Garo N. Sex and mental health in old age. *Prim Psychiatry* 2010;17:22–30.
3. Syme ML, Klonoff EA, Macera CA, et al. Predicting sexual decline and dissatisfaction among older adults: The role of partnered and individual physical and mental health factors. *J Gerontol B Psychol Sci Soc Sci* 2013;68:323–332.
4. Watters Y, Boyd TV. Sexuality in later life: Opportunity for reflections for health care providers. *Sex Relation Ther* 2009;24:307–315.
5. Goldfarb S, Baron SR, Lindau ST. Female sexuality and sexual function. In: Goldman MB, Troisi R, Rexrode KM, eds. *Women and health*. Waltham, MA: Academic Press, 2013:347–357.
6. Thompson WK, Charo L, Vahia IV, et al. Association between higher levels of sexual function, activity, and satisfaction and self-rated successful aging in older postmenopausal women. *J Am Geriatr Soc* 2011;59:1503–1508.
7. Huang AJ, Subak LL, Thom DH, et al. Sexual function and aging in racially and ethnically diverse women. *J Am Geriatr Soc* 2009;57:1362–1368.
8. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: Prevalence and predictors. *JAMA* 1999;281:537–544.
9. Rosen RC, Taylor JF, Leiblum SR, et al. Prevalence of sexual dysfunction in women: Results of a survey study of 329 women in an outpatient gynecological clinic. *J Sex Marital Thera* 1993;19:171–188.
10. Hayes R, Dennerstein L. The impact of aging on sexual function and sexual dysfunction in women: A review of population-based studies. *J SexMed* 2005;2:317–330.
11. Luftey KE, Link CL, Rosen RC, et al. Prevalence and correlates of sexual activity and function in women: Results from the Boston Area Community Health (BACH) survey. *Arch Sex Behav* 2009;38:514–527.
12. West SL, D'Alosio AA, Agans RP, et al. Prevalence of low sexual desire and hypoactive sexual desire disorder in a nationally representative sample of US women. *Arch Int Med* 2008;168:1441–1449.
13. Nusbaum MRH, Singh AR, Pyles AA. Sexual healthcare needs of women aged 65 and older. *J Am Geriatr Soc* 2004;52:117–122.
14. Waite LJ, Laumann EO, Das A, et al. Sexuality: Measures of partnerships, practices, attitudes, and problems in the National Social Life, Health, and Aging Study. *J Gerontol B Psychol Sci Soc Sci* 2009;64:i56–i66.
15. Shifren JL, Monz BU, Russo PA, et al. Sexual problems and distress in United States women. *Obstet Gynecol* 2008;112:970–978.
16. Laumann EO, Das A, Waite LJ. Sexual dysfunction among older adults: Prevalence and risk factors from a nationally representative U.S. probability sample of men and women 57–85 years of age. *J Sex Med* 2008;5:2300–2315.
17. Schnatz PF, Whitehurst SK, O'Sullivan DM. Sexual dysfunction, depression and anxiety among patients of an inner-city menopause clinic. *J Womens Health (Larchmt)* 2010;19:1843–1849.
18. Woloski-Wruble AC, Olie Y, Leefsma M, et al. Sexual activities, sexual and life satisfaction, and successful aging in women. *J Sex Med* 2010;7:2401–2410.
19. Avis NE, Zhao X, Johannes CB, et al. Correlates of sexual function among multi-ethnic middle-aged women: results from the Study of Women's Health Across the Nation (SWAN). *Menopause* 2005;12:385–398.
20. Nusbaum MM, Braxton L, Strayhorn G. The sexual concerns of African American, Asian American, and white women seeking routine gynecological care. *J Am Board Fam Pract* 2005;18:173–179.
21. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*, 4th ed., text revision. Washington, DC: American Psychiatric Association, 2000: 493–532.
22. Idler EL, Benyamini Y. Self-rated health and mortality: A review of twenty-seven community studies. *J Health Soc Behav* 1997;38:21–37.
23. Lundberg O, Manderbacka K. Assessing reliability of a measure of self-rated health. *Scand J Soc Med* 1996;24: 218–224.
24. Hakstian AR, McLean PD. Brief screen for depression. *Psychol Assess* 1989;1:139–141.
25. Fischer J, Corcoran K. *Measures for clinical practice and research: A sourcebook*, vol. 1. New York, NY: Oxford University Press, 2007:648–649.
26. Diener E, Emmons RA, Larsen RJ, et al. The satisfaction with life scale. *J Pers Assess* 1985;49(1):71–75.
27. Moreira ED, Brock G, Glasser DB, et al. Help-seeking behavior for sexual problems: The Global Study of Sexual Attitudes and Behaviors. *J Clin Pract* 2005;59:6–16.
28. Hinchliff S, Gott M. Seeking medical help for sexual concerns in mid- and later life: A Review of the literature. *Journal of Sex Research*. 2011;48:106–117.
29. Bauer M, McAuliffe L, Nay R. Sexuality, health care and the older person: An overview of the literature. *International Journal of Older People Nursing*. 2007;2:63–68.
30. Laumann EO, Glaser DB, Neves RCS, et al. A population-based survey of sexual activity, sexual problems and associated help-seeking behavior patterns in mature adults in the United States of America *International Journal of Impotence Research*. 2009;21:171–178.
31. Pew Research Center: Internet, Science, and Tech. Internet use and home broadband connections. Washington, DC: Pew Research Center, 2012. Available at <http://pewinternet.org/Infographics/2012/Internet-Use-and-Home-Broadband-Connections.aspx> Accessed August 21, 2012.
32. Couper MP. Issues of representation in eHealth research (with a focus on web surveys). *Am J Prev Med* 2007;32: S83–S89.

Address correspondence to:
 Anne K. Hughes, PhD, MSW
 Michigan State University
 School of Social Work
 Baker Hall Room 240
 655 Auditorium Road
 East Lansing, MI 48824
 E-mail: hughesa@msu.edu