ORIGINAL RESEARCH—WOMEN'S SEXUAL HEALTH

The Impact of Multimorbidity on Sexual Function in Middle-Aged and Older Women: Beyond the Single Disease Perspective

Ayesha A. Appa, MD,*[1] Jennifer Creasman, MSPH,[†] Jeanette S. Brown, MD,[†] Stephen K. Van Den Eeden, PhD,[‡] David H. Thom, MD, PhD,[§] Leslee L. Subak, MD,[†] and Alison J. Huang, MD, MAS*

*Department of Medicine, University of California, San Francisco, CA, USA; [†]Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, CA, USA; [‡]Division of Research, Kaiser Permanente Northern California, Oakland, CA, USA; [§]Department of Family and Community Medicine, University of California, San Francisco, CA, USA

DOI: 10.1111/jsm.12665

ABSTRACT

Introduction. Little is known about sexual activity and function in women with multiple chronic health conditions.
Aim. To examine the impact of multimorbidity on sexual activity and function in middle-aged and older women.
Methods. Multiethnic cross-sectional cohort of 1,997 community-dwelling women (mean age of 60.2 [±9.5] years) in California. Structured questionnaires assessed prior diagnoses of common cardiometabolic, colorectal, neuropsychiatric, respiratory, musculoskeletal, and genitourinary conditions.
Main Outcome Measures. Sexual desire, frequency of sexual activity, overall sexual satisfaction, and specific sexual problems (i.e., difficulty with arousal, lubrication, orgasm, and pain) were assessed by structured questionnaires.
Results. Seventy-one percent of women had two or more diagnosed chronic conditions. Fifty-nine percent reported low sexual desire, 53% reported less than monthly sexual activity, and 47% reported low overall sexual satisfaction. Multimorbidity was associated with increased odds of reporting low sexual desire (OR = 1.11, 95% CI = 1.06–1.17, per each additional chronic condition), less than monthly sexual activity (OR = 1.11, 95% CI = 1.05–1.17 per each additional condition), and low sexual satisfaction (OR = 1.10, 95% CI = 1.04–1.16 per each additional condition), adjusting for age, race/ethnicity, and partner status. Depression and urinary incontinence were each independently associated with low desire (OR = 1.53, 95% CI = 1.19–1.97, and OR = 1.23, 95% CI = 1.00–1.52, respectively), less than monthly sexual activity (OR = 1.39, 95% CI = 1.06–1.83, and OR = 1.29, 95% CI = 1.02–1.62, respectively), and low sexual satisfaction (OR = 1.49, 95% CI = 1.14–1.93, and OR = 1.38, 95% CI = 1.11–1.73, respectively), adjusting for other types of conditions. After adjustment for total number of chronic conditions, age remained a significant predictor of low desire and less than monthly sexual activity, but not sexual satisfaction.
Conclusions. Women with multiple chronic health conditions are at increased risk for decreased sexual function. Depression and incontinence may have particularly strong effects on sexual desire, frequency of activity, and satisfaction in women, independent of other comorbid conditions. Women's overall sexual satisfaction may be more strongly influenced by multimorbidity than age. **Appa AA, Creasman J, Brown JS, Van Den Eeden SK, Thom DH, Subak LL, and Huang AJ. The impact of multimorbidity on sexual function in middle-aged and older women: Beyond the single disease perspective. J Sex Med 2014;11:2744–2755.**

Key Words. Female Sexual Dysfunction; Multimorbidity; Chronic Disease; Aging/Geriatrics

[1]Current Affliation: Department of Medicine, University of Washington, Seattle, WA, USA.
Funding Sources: Funding for this research was provided by the Office of Research on Women's Health Specialized Center of Research Grant # P50 DK064538 and the National Institutes Diabetes, Digestive and Kidney Diseases (NIDDK) Grant # DK53335. Dr. Huang is additionally supported by a Paul B. Beeson Career Development Award in Aging Research from the National Institute on Aging (1K23AG038335) and the American Federation for Aging Research.
Presentations: This work was presented at the Society of General Internal Medicine's Annual Meeting on April 26, 2013 in Denver, Colorado, as well as at the American Geriatric Society's Annual Meeting on May 3, 2013 in Grapevine, Texas.

Introduction

Over a quarter of middle-aged and older women report problems with some aspect of sexual activity [1,2], with the prevalence of sexual dysfunction increasing with increasing age [3,4]. Although multiple factors may contribute to decline in sexual function with aging, preliminary studies suggest that changes in women's underlying physical and mental health may play an important role in determining whether women remain engaged in and satisfied with sexual activity as they age [5–7]. In particular, aging is associated with an increased risk of a wide variety of chronic health conditions that can interfere with women's interest in and ability to enjoy sexual activity [8–10].

To date, a limited number of epidemiologic studies have examined the effects of chronic conditions such as diabetes mellitus [11–15], end-stage renal disease [16], Parkinson's disease [17], depression [18–21], inflammatory bowel disease [22], and urinary incontinence [23–25] on sexual activity and function in women. These studies have tended to focus on the isolated effects of individual diseases, even though over half of women aged 50 years and older suffer two or more concurrent chronic conditions. With the aging of the population, there is a need for research that addresses the broader spectrum of multimorbidity that can influence sexual function in older women, while accounting for other contextual factors that can exacerbate decline in sexual function with age.

Among middle-aged and older women in the community, there is also a need for more data on the relative impact of different types of chronic health conditions on sexual activity and function. Among older men, diabetes mellitus and other cardiometabolic conditions that contribute to endothelial dysfunction and decreased genital vascular perfusion are well-established as risk factors for erectile dysfunction, the most common form of male sexual dysfunction [10]. Among older women, in whom changes in vascular perfusion may not translate as directly into changes in subjective arousal, the impact of cardiometabolic conditions on sexual function is not as well understood [26], and it is possible that some of the reported effects of these conditions on sexual function may be attributable to other comorbid diseases that are also widely prevalent in older adults.

Aims

We examined the impact of multimorbidity on self-reported sexual desire, activity, satisfaction, and sexual problems in a multiethnic, community-dwelling population of middle-aged and older women. Our goal was to provide new insight into the determinants of sexual function in women with multiple chronic health conditions, to help guide development of future strategies for preserving female sexual function in the context of chronic disease.

Methods

This research was conducted as an ancillary study to the Reproductive Risks of Incontinence Study at Kaiser (RRISK), a multiethnic cohort study of risk factors for urinary tract dysfunction in community-dwelling middle-aged and older women. Participants were female enrollees in Kaiser Permanente Northern California (KPNC), an integrated health care delivery system serving approximately 25% to 30% of the northern California population. To be eligible for the parent RRISK cohort, women had to have enrolled in KPNC by 21 years of age and to have had at least half of any childbirths at a KPNC facility. Additionally, women from racial/ethnic minorities were oversampled to achieve a target composition of 20% African American, 20% Latina, 20% Asian, and 40% white [27]. Approximately 20% of all participants were recruited from the KPNC Diabetes Registry to ensure robust participation by women with diabetes, but no symptoms or complications of diabetes were required, nor were women required to have any symptoms of urinary tract dysfunction. For this ancillary study of sexual function, data were collected during the third wave of RRISK (RRISK3), involving home-based study visits with 2,016 women from November 2008 to April 2012. Informed consent was obtained from all participants prior to data collection, and all study procedures were approved the institutional review boards of both the University of California San Francisco and the Kaiser Foundation Research Institute.

Chronic health conditions were ascertained using structured-item questionnaires assessing prior physician diagnoses of selected health problems. These included pulmonary conditions such as asthma and chronic obstructive pulmonary disease; cardiometabolic conditions such as heart disease, hypertension, hyperlipidemia, and diabetes; neuropsychiatric conditions such as stroke, Parkinson's Disease, and depression; colorectal conditions such as irritable bowel syndrome and inflammatory bowel disease; genitourinary condi-