Sexual Dysfunction in Postmenopausal Women

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Abstract- Nowadays, women have a longer menopausal duration due to the worldwide dramatic life expectancy increase. Sexual dysfunction is one of the most prevalent problems during menopause that affect women`s quality of life, mental health, and interpersonal relationship. This study aimed to investigate sexual dysfunction and its contributing factors amongst married postmenopausal women. This cross-sectional study was conducted among 164 postmenopausal women who attended the menopause clinic of the academic hospitals in Mashhad during 2017-2018. Data were collected using a checklist that included demographic and reproductive information and the validated Persian version of the Female Sexual Function Index questionnaire (FSFI). The mean age of participants was 53.55±6.25 years. The mean FSFI score was 20.06±6.66, and 65.2% of women had sexual dysfunction. The most disturbed sexual domains were; desire (86%, n: 141), arousal (82.3%, n: 135), lubrication (71.3%, n: 117) and sexual satisfaction (70.1%, n: 115), respectively. The partner`s age (P=0.01), time since menopause onset (P=0.01), age at marriage (P=0.02), and frequency of sexual intercourse (P<0.0001) had a significant relationship with sexual function. The sexual function of postmenopausal women in this study was highly deteriorated. The associated factors were; older age of the spouse, younger age at marriage, longer time since menopause onset, and lower frequency of sexual intercourse. It is important to determine perimenopausal women who are at potential risk of sexual dysfunction and consult them for preventive programs and strategies.

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Introduction

Menopause, the permanent cessation of menstruation that occurs averagely at the age of 51 years, is a natural event during a woman`s life course (1). Due to the recent increase in life expectancy, women spend the remaining one-third of their lives (20-30 years) during menopause (2). During this period, they experience numerous problems because of the physical and psychological changes. One of the most important problems that a woman encounters during menopause is the changes in sexual function (2).

The interest in sex persists in middle-aged and elderly adult groups, and most of them remain sexually active if they have an available partner. Moreover, in women aged 45 and over, life satisfaction and sexual satisfaction have a documented strong correlation (3). Accordingly, maintaining sexual activity tremendously affects women's self-esteem and quality of life, while sexual problems can potentially cause emotional distress and relationship issues (4).

Sexual dysfunction, defined by the American psychiatric association Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as "disturbances in sexual desire and the psychophysiological changes that characterize the sexual response cycle and cause

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marked distress and interpersonal difficulty" (5).

Aging generally increases sexual problems, but the prevalence of distressing sexual problems reaches its maximum point in middle-aged women (45-64 years) (6). Hence, in postmenopausal women, the frequency of sexual dysfunction is thought to be as high as 68-86%. Similarly, in Iran, the prevalence among menopausal women is estimated to be 67-72% (7,8).

According to the results of recent studies, the most frequently reported sexuality problems in menopausal women were lack of sexual desire, lubrication difficulties, arousal deficiency, inability to reach orgasm, and lack of pleasure in sex (7,9). This might be related to the physiological changes followed by marked reduction of adrenal production of androgen hormones, especially estrogen that regulates women's sexual responses (1).

Although low estrogen levels during menopause can lead to physiologic changes and sexual disturbances, women`s negative attitude towards menopause and their low self-esteem can adversely affect their sexuality and menopausal symptoms (7). In other words, some women consider the menopause period as an ending to their attractiveness and youth, which may affect their sexual life.

Sexual function and satisfaction are crucial aspects of life among the growing aging female population, which can be adversely affected by menopause. Since sexuality plays a major role in menopausal women's quality of life, mental health, and interpersonal relationship, it seems necessary to identify their sexual problems and their contributing factors so that the care providers take them to their consideration during each routine health assessment. In Iran, the cultural barriers and the social stigma around female sexuality prevent this group of women from maintaining their sexual activity or seeking help for sexual problems from their healthcare providers. Therefore, understanding the sexual function during menopause and designing preventive programs, educating and counseling them can improve their quality of life, especially in a traditional society like Iran. Accordingly, we designed this study to investigate sexual dysfunction, its contributing factors, and the different sexual domains that influence sexual function amongst married postmenopausal Iranian women who are referred to menopausal clinics of academic hospitals, Mashhad University of Medical Sciences.

Materials and Methods

This population-based cross-sectional study was conducted among 164 postmenopausal women who attended the menopause clinics of the academic hospitals in Mashhad during 2017-2018.

All the individuals were healthy menopause-married women who were the only sex partner to their healthy spouses and did not use any medications for important medical or psychological diseases. The samples were selected with convenient sampling according to the inclusion criteria. We considered the participant to be in menopause if she has had no menstrual periods for one year. Pelvic examination was performed for all women to find out any gynecological problem. The exclusion criteria were;

1) Any medical condition in the woman or her partner affecting sexual function, e.g., depression or anxiety disorders, vasculitis, infectious diseases, high blood pressure, diabetes.

2) Sexual disability or premature ejaculation of the spouse.

3) Using medicine interferes with the sexual function of either of the couple.

4) History of infertility.

5) History of any stressful or traumatic experience within the last year.

6) Consuming alcohol, hookah, smoking, or opium addiction by either of the couple.

7) Pelvic organ prolapse in any vaginal compartment, more than stage 2 (more than 1 cm beyond the hymnal ring).

Women with the exclusion criteria or those who were unwilling to participate were excluded, and all incomplete answers to questions were eliminated. All the participants provided oral and written informed consent after the aims and objectives of the study had been explained to them. The ethical approval was obtained from the ethics committee of Mashhad University of Medical Sciences with the ethics code number 921311.

Data were collected by direct interview using a questionnaire. The questionnaire included demographic and reproductive information and the validated Persian version FSFI (Female Sexual Function Index) questions. The questions on demographic information included age, age of the spouse, age at marriage, menopausal age, and the frequency of sexual intercourse in a month. The FSFI standard questions consist of 19 questions investigating six sexual function domains: desire, arousal, lubrication, orgasm, satisfaction, and pain with the score of 1-5 for the desired domain, 0-5 for the arousal, lubrication, orgasm and pain domain and 0 or 1-

5 for the satisfaction domain.

The total score was calculated with the summation of each domain score multiplied by its specific coefficient (the factor or coefficient in desire domain 0 to 6, arousal and lubrication domain 0 to 3, orgasm, satisfaction, and pain domain 0 to 4). The total score range is 2-36; a higher score indicates more favorable sexual function. The cut-off point of 25.0 was used to determine sexual dysfunction. The reliability and validity of the Persian version of this scale have been approved in many studies in Iran (10,11).

The study sample size with a 95% confidence level and 80% power was calculated at least 141 subjects using a pilot study. With the 10% addition, we increased it to 182 ones. Data were collected and were analyzed using SPSS 21.0 software (SPSS Inc., Chicago, IL, USA). All qualitative data are reported as percentages, analyzed using the *Chi*-square test, and the quantitative data are reported as mean (±standard deviation) (SD), analyzed using a two-sample T-test. $P<0.05$ was considered statistically significant.

Results

Totally, the study population included 164 women with a mean age of 53.55±6.25 years. The participant's mean age at marriage was 17.46±3.69 years, and their mean menopause duration was 15.63±6.09 months. Only 26.2% of our study population had a high school diploma or higher education, and most of them (84.14%) were housewives. The socio-demographic and reproductive information of the study population and their relation to the sexual function are shown in Table 1. The partner`s age ($P=0.01$), time since menopause onset ($P=0.01$), age at marriage ($P=0.02$), and frequency of sexual intercourse in a month ($P<0.0001$) had a significant relationship with sexual function, as shown in Table 1.

Table 1. Demographic and reproductive characteristics of the participants according to their sexual function

Variable:	With sexual dysfunction (n=107)	Without sexual dysfunction (n=57)	*P*	Total (n:164)
Age (years)/(mean ± SD)	54.16±6.10	52.40±6.42	0.08*	53.55±6.25
Partner`s age (years)/(mean ± SD)	59.09±7.06	55.77±9.13	0.01*	57.94±7.98
Time since menopause onset (months)/(mean ± SD)	16.88±5.55	13.59±5.53	0.01*	5.63±6.09
Age at marriage (years)/(mean ± SD)	16.99±3.04	18.33±4.59	0.02*	17.46±3.69
Frequency of sexual intercourse (in a month)/(mean ± SD)	6.59±4.42	3.36±3.00	<0.0001*	4.49±3.87
Gravidity (number)/(mean ± SD)	5.13±2.06	4.79±2.78	0.37*	5.01±2.30
Parity (number)/(mean ± SD)	4.57±1.85	4.09±2.47	0.16*	4.40±2.09

*Chi-square test, **Two-sample t-test SD = Standard Deviation

The mean FSFI sexual function score was 20.06±6.66, and 107 (65.2%) women had sexual dysfunction. The mean score of sexual function in each domain is reported in table II. The most disturbed sexual domains were; desire (86%, n: 141), arousal (82.3%, n: 135), lubrication (71.3%, n: 117) and sexual satisfaction (70.1%, n: 115), respectively

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Table 2. Frequency of sexual dysfunction and its domains in participants

	Score	N (%)	Total (Mean±SD)
FSFI*:	> 25.0	57 (34.75)	20.06±6.66
	≤ 25.0	107 (65.24)	
Desire:	> 3.3	23 (14.02)	2.93±1.04
	≤ 3.3	141 (85.97)	
Arousal:	> 3.4	29 (17.68)	2.74±1.51
	≤ 3.4	135 (82.31)	
Lubrication:	> 3.4	47 (28.65)	3.02±1.70
	≤ 3.4	117 (71.34)	
Orgasm:	> 3.4	49 (29.87)	2.98±1.60
	≤ 3.4	115 (70.12)	
Satisfaction:	> 3.8	104 (63.41)	4.09±1.19
	≤ 3.8	60 (36.58)	
Pain:	> 3.8	108 (65.85)	4.29±1.24
	≤ 3.8	56 (34.14)	

*FSFI: Female Sexual Dysfunction Index

Discussion

We aimed this study to increase the perception of the sexual function in postmenopausal women and the demographic and socio-economic factors that can adversely influence it. In this study, the frequency of sexual dysfunction among our participants was generally high (65.2%), with the mean FSFI sexual function score of 20.06±6.66.

High sexual dysfunction rates are reported in similar studies. In Iran, Beigi and colleagues reported a 72.4% sexual dysfunction frequency in menopausal women, Nateri and co-workers reported a 67.42% frequency, and Yazdanpanahi *et al*., reported an 88.70% frequency likewise (7,8,12). In a similar study conducted in Malaysia in 2014 by Masliza *et al*., the prevalence of sexual dysfunction in postmenopausal women was 85.2% (13). Furthermore, according to previous studies, the prevalence of sexual dysfunction during menopause was estimated to be 70.3% in Brazil, 40.4% in Nigeria, 51.3% in Chile, and 67.9% in Lithuania (14-16). These different results obtained in different studies might be due to the religious, racial, and cultural differences and the dissimilar sample size, inclusion criteria, scoring system, and cut-off point considered in each study. We recruited married menopause women in our study, and the FSFI score of 25.0 was considered as the cut-off point.

Among our participants, the two most disturbing sexual domains were sexual desire (86%) and arousal (82.3%), while the least affected one was the pain domain (34.1%). In three other separate studies in Iran by Omidvar and co-workers, Beigi *et al*., and Moghassemi and colleagues, it is also declared that desire and arousal were the most prevalent sexual dysfunctions among postmenopausal women (7,17,18). Although we do not fully understand the effects of menopause on sexuality and health, studies reported a significant deterioration in menopausal women's different sexual function dimensions and their frequency of sexual activity (9,13,17).

This study demonstrated no significant difference between the individual's age and their sexual function. In an online survey in Belgium on 15,048 women, Hendrickx and co-workers reported that the association between age and sexual dysfunctions seems to be complex. They found that aging increases most sexual dysfunctions and sexual difficulties, but some of them present a U-shaped association with age (19). On the other hand, many prior studies have shown that aging is an important correlate of sexual responsivity or sexual problems, and generally, younger women tend to be more sexually active (3,13,20). Advancing age brings many new physiological and psychosocial factors that can adversely affect the sexual life of a woman, for example, vaginal atrophy and dryness, loss of a partner, medical concerns, depression, and so on (1,3). One explanation for this contradiction between the result of our study and the previous ones may be the fact that our study population is small, limited to women who are having a sexually active husband while losing a partner is a strong correlate of sexual inactiveness in older women (3).

Our research manifested a significant association between the partner`s age and sexual function. In two studies by Chedraui and colleagues, the same result is reported (21,22). It seems like the sexual problems among men tend to be more associated with aging and physical health than in women.

The present study showed that younger age at marriage negatively affects sexual function. Similarly, some other researchers reported that marriage duration could increase sexual dysfunction (15). Some researchers indicate the older age at marriage as a protective factor against sexual dysfunction (23).

In this study, there was a significant correlation between the time since menopause onset and the sexual function. In 2009, in a review study by da Silva Lara and co-workers, it is reported that the overall sexual function significantly deteriorate from 88% in the first year after menopause to 34% after eight years, although it is still unclear whether this is due to the decline in levels of estrogen or with aging, or both (24).

In this study, there was a significant correlation between the frequency of intercourse and sexual function. Similarly, Chedraui and co-workers reported that the coital frequency is significantly related to a higher FSFI score (21). In a study by Ishak and colleagues in 2010, conducted on 163 married women aged 18-65 years, the risk of sexual dysfunction was significantly associated with the frequency of sexual intercourse (25). Some researchers believe that the effect of sexual intercourse frequency on sexual function is disputable since the cultural and religious barriers that consider sexual intercourse after menopause as a stigma influence the participant`s response (23,26).

Considering the high frequency of sexual dysfunction among postmenopausal women obtained in

this study, assessing the sexual function at the early menopausal years are an important issue that will affect the women`s health and quality of life and should be considered as a routine care program of this period. It seems beneficial to carry out counseling or group psychotherapy sessions to discuss sexual issues and other menopause-related problems in a safe and professional setting.

The present study had some limitations. Considering that this study is cross-sectional, we cannot determine the causal relationship between the study variables. One of the most important limitations in the current study was the lack of the assessment of menopausal symptoms (especially mood changes, sleep disturbances, night sweets, vaginal dryness, and dyspareunia) on sexual activity. The sexual function data were collected based on women's self-reported statements, which can be affected by society's religious or cultural expectations. Since a sex partner's existence seems to be a strong correlate of maintaining sexual function in older women and our study population was limited to women with a sexually active partner, we might have underestimated the actual sexual dysfunction prevalence frequency in our study. This study was conducted in one city of Iran and cannot be generalized to all Iranian women population. Moreover, in this study, some modifiable variables that can affect the sexual function in the menopause period were not investigated, including psycho-emotional factors, physical health, the quality of the couple`s relationship, the individual`s sexual attitude, body mass index, and physical activity. It seems beneficial to assess more modifiable factors in future studies; moreover, evaluating the duration of the relationship with specifying the main sexual problem in each time interval is another recommendation so that conducting preventive strategies would be more achievable.

In conclusion, the sexual function of postmenopausal women in the city of Mashhad was highly deteriorated. Different factors influenced this unfavorable sexual function, including; older age of the spouse, younger age at marriage, longer time since menopause onset, and lower frequency of sexual intercourse. It is important to identify these factors among perimenopausal women in order to determine those who are at potential risk of sexual dysfunction in the future, raising their awareness toward the impact of menopause on sexual activity and its solutions and enrolling them in prevention programs and strategies. Public awareness about the necessity of maintaining sexual activity in elderlies needs to be raised.

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