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Original Research Article

Association of menopausal sexual dysfunction with demographic and obstetric factors in postmenopausal women in Hamadan, Iran

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ABSTRACT

Background: Sexual dysfunction is a common menopausal problem that may be affected by demographic factors. The present study aimed to determine demographic and obstetric factors affecting sexual dysfunction in menopause.

Methods: The present cross-sectional descriptive-analytical study was conducted on 315 postmenopausal women in Hamadan. The research instruments included demographic questionnaire, and female sexual function index (FSFI). Univariate and multivariate linear regressions were used to investigate the association of different factors and sexual function at a significance level of less than 0.05.

Results: The participants' mean age was 54.15±4.24 years. Their mean sexual function score was 18.92±4.25 indicating poor sexual function. The multivariate analysis indicated that increasing the number of spouse marriage, sexual function score decreased by 2.45 (p=0.006). Furthermore, the sexual function score in those, who were not satisfied with their marriage, was 5.58 points lower than those who were satisfied with their marriage status (p <0.001).

Conclusions: Given the relationship between number of spouse marriage and marital satisfaction with sexual function in postmenopausal women, it is necessary to design and implement training sessions for them.

Keywords: Demographic factors, Multivariate analysis, Postmenopausal, Sexual dysfunction

INTRODUCTION

Sexual function is a part of human life and behaviour and sexual health and is so intertwined with the individual personality; hence, speaking of it as an independent phenomenon seems impossible. It is also defined as engaging in sex, just as the individuals wish.^{1,2} Sexual function is a set of desire, arousal, and orgasm that occur continuously in a person or couple and enable couples to love or be loved.³ This phenomenon affects different organs and requires coordination between neurological,

vascular and endocrine systems, and is an important topic of life for men and women.^{4,5} Sexual function can be impaired by several factors, one of which is menopause.⁶ Menopause is the most important event in middle age.⁷ This physiological event dates back to the history of human life and is a critical-inevitable phenomenon.

This event can be caused by factors such as surgery, chemotherapy, radiation, or other factors called induced menopause; and is called natural menopause if it is spontaneously created at age 40 or later.⁸ Menopause is a

stage when all women will face and spend about 30 years after menopause.⁹

In general, the world's population is rapidly aging, and much of this change is occurring in developing countries.¹⁰ Life expectancy was about 25 years in 100 years BC, but it was 79.7 and 72.9 years respectively for women and men in 2000.¹¹ Given that one-third of women's lives is spent in menopause, numerous studies have been conducted to determine its average age. A meta-analysis in 2013 for determining the menopause age in Iran revealed that the average age of menopause was 48.26 years, while the world average age was reported to be 51.^{6,12}

The transition from fertility to non-fertility is accompanied by physical and psychological symptoms that may last for several years.¹³ Some of menopause symptoms include menopausal flushing, sleeplessness, loss of concentration, changes in sexual function, vaginal dryness, atrophy of skin and mucous, long term cardiovascular complications, and osteoporosis.¹⁴ Sexual dysfunction are complaints of menopause that may be related to the lower estrogen and androgen.¹⁵ Physiological and psychological changes in postmenopausal women, as well as aging, also affect their sexual function.^{16,17}

Estrogen deficiency and atrophic changes can be associated with genitourinary symptoms such as intercourse pain, and vaginal itching and dryness.¹⁸ In addition, anxiety can cause intercourse pain through reducing the vaginal blood flow.¹⁹ Pain conditioning and discomfort during intercourse can lead to the loss of libido.²⁰ Furthermore, vasomotor symptoms, which are distressing symptoms of menopause, can disrupt all aspects of women's lives, including sexual function.²¹ The above changes in the genitourinary system, atrophic vaginitis, mammary tissue atrophy, and vasomotor instability can make trouble for postmenopausal women and their sexual partners.²²

According to the definition of health by the World Health Organization (WHO) and based on its massive scale as the full physical, mental and social welfare, it is necessary to pay attention to frequency and severity of disease in addition to other human values in the assessment of health and its interventions.^{23,24} The sexual function is also an important part of women's health and should be greatly taken into account to achieve health.²⁵ Since the human sexual behaviours have been systematically studied, it has become clear that sexual dysfunction is more common than previously thought.²⁶ According to society-based studies in different countries, the prevalence of sexual dysfunction in women is estimated at 25% to 63% that is higher in postmenopausal women, ranging from 68% to 86.5%.²⁷ In many cases, sexual dysfunction causes serious distress and problems in inter-personal communication and affects the females' self-confidence.^{28,29} In the field of importance of

interpersonal relationships, studies have found that women, who do not have a good relationship with their husbands and are unable to express their sexual needs, are more likely to have sexual dysfunction.³⁰ This problem manifests in couples in the form of familial and social conflicts.³¹ Many factors can affect the sexual function of postmenopausal women and they have been investigated in numerous studies.^{26,32-34}

In general, effects of different factors on sexual function have been studied in three domains: physical, psychological and social. Factors such as the individual and spouse's age, and menopause duration are discussed in the physical domain. Mental illnesses and emotions are also considered in the mental domain, and ultimately factors such as education, occupation, marital life duration, marital satisfaction, economic status, remarriage (death or divorce of a former spouse), and substance abuse (cigarettes, drugs, alcohol, etc.) are studied in the social domain.³² Therefore, identifying the determinants of sexual function of postmenopausal women can be useful in planning as well as conducting interventions to improve the women's health.

METHODS

The present cross-sectional descriptive-analytical study was conducted on postmenopausal women in 2018. The powerreg module in stata-13 was used to determine the sample size. The sample size was finally calculated to be 315 according to $r^2f = 0.6$ (R-squared for the full model), $r^2r = 0.57$ (R-squared for the reduced model) 35, 18 predictive and tested variables, $\alpha = 0.05$ and power = 0.8 with 10% loss.

Eight geographical districts were identified in Hamadan by visiting the health center of city. Then, 2 health centers were selected from each district using random cluster sampling. After obtaining necessary permissions and code of ethics with ID number (IR.UMSHA.REC.1397.399) from Hamadan University of Medical Sciences and presenting to the head of selected centers, names of postmenopausal women registered in the Integrated Health System were extracted according to coordination. The women were then informed about goals and method by telephone, and those who were willing to participate in the study were invited to health centers and interviewed. Using self-reported information, women who met the inclusion criteria, were selected by convenience sampling and completed the consent forms. The demographic and midwifery questionnaires and the Female Sexual Function Index questionnaire were then completed by interviews; and if a person's questionnaire score was less than the cut-off point (28), he/she will be formally included in the study.

Inclusion criteria of this study were 40-65 years of age; married and living with a stable spouse; natural menopause; no history of infertility; no spouse with premature ejaculation or impotence, no serious

debilitating illnesses such as heart diseases and cancers; lack of mental illness; lack of severe family disagreement; score less than 28 in the sexual function questionnaire; and no use of hormone replacement therapy. It should be noted that since menopause before the age of 40 is termed premature menopause, the minimum age of inclusion was 40.

Demographic questionnaire included the women's and spouses' age, their education, their occupation; number of pregnancies; average monthly income; duration of marriage; number of single children; duration of menopause; number of women's and spouses' marriage; cigarette smoking; and marriage satisfaction (poll). To examine the validity of the questionnaire, 10 midwifery faculty members and gynecologists were asked to pass their corrective comments and the comments and the views were conducted at the discretion of the research team.

Female Sexual Function Index (FSFI) was designed by Rosen et al. to assess sexual function in women 36. The questionnaire includes 19 items that describe female sexual functions in 6 fields, namely desire (2 items), arousal (4 items), moisturizing (4 items), orgasm (3 items), satisfaction (3 items) and sexual pain (3 items) during the last 4 weeks. The overall cut-off point of the questionnaire is 28. In other words, scores higher than the cut-off point indicate good sexual function. The minimum score of this questionnaire is 2 and maximum score is 36. Validity and reliability of the questionnaire was obtained equal to 0.87 by Mohammadi et al, in Iran using Cronbach's alpha coefficient.²⁸ In the present study, its reliability was examined by the test-retest, so that the questionnaire was completed by 30 postmenopausal women within 6 days; and its interclass correlation coefficient (ICC) was calculated to be 0.78 for the whole questionnaire.

Statistical analysis

The data eventually entered the Stata-13. Kolmogorov-Smirnov test was used to investigate the distribution of sexual function scores. Central and dispersion indices were used to describe demographic and midwifery variables. Univariate and multivariate linear regression analyses were utilized to examine the association of postmenopausal women's sexual function scores and independent variables at a significance level of 0.05.

RESULTS

The participants' mean age was 54.12±4.25 years and the mean duration of menopause was 65.82±47.55 months. The majority of participants had under high school diploma (81.59%) and most of them were housewives (92.38%). The average number of pregnancies was 4.30±1.75 and the average number of post-marital years was 36.94±5.89 years. Table 1 presents the rest of information.

According to results of Table 2, the mean scores of all fields of sexual function index were lower than the cut-off point for each domain. Furthermore, the maximum problem was in terms of arousal, and the minimum problem was about satisfaction and there was no pain disorder. The results indicated that the mean score of postmenopausal women's sexual function was 18.92±4.25 indicating the undesirable sexual function in them (Table 2).

Table 1: Comparison of demographic and obstetric characteristics.

Variables	M(SD)/(N%) (N=315)	
Age (years) M(SD)	54.12 (4.25)	
Husband's age (years) M(SD)	61.13 (5.98)	
Gravid M(SD)	4.30 (1.75)	
Duration of menopause (month) M(SD)	65.82 (47.55)	
Duration of marriage (year) M(SD)	36.94 (5.89)	
Number of single children M(SD)	1.35 (1.36)	
Number of marriages M(SD)	1.07 (0.26)	
Husband's number of marriages M(SD)	1.08 (0.27)	
Level of education N (%)	Primary	257 (81.59)
	High	37 (11.75)
	Academic	21 (6.67)
Husband's education N (%)	Primary	231 (73.33)
	High	50 (15.87)
	Academic	34 (10.79)
Job status N (%)	Employed	24 (7.62)
	Housewife	291 (92.38)
Husband's job status. N (%)	Employed	269 (85.40)
	Unemployed	46 (14.60)
Income N (%)	Low	61 (19.37)
	Intermediate	186 (59.05)
	High	68 (21.59)
Husband's smoking N (%)	Yes	129 (40.95)
	No	186 (59.05)
Marriage satisfactory N (%)	Yes	276 (87.62)
	No	39 (12.38)

Table 2: Mean scores of sexual function domains and minimum/maximum scores.

Variables	M(SD) N=315	Min. score	Max. score
Desire	2.68 (0.86)	1.20	4.80
Arousal	2.75 (0.89)	1.20	5.10
Lubrication	2.77 (0.85)	1.20	6.00
Orgasm	2.81 (0.93)	1.20	6.00
Satisfaction	3.73 (1.14)	1.20	6.00
Pain	4.13 (0.96)	1.20	6.00
Sexual function	18.92 (4.25)	8.40	25.30

Univariate linear regression was used to examine the association of demographic and midwifery variables with sexual function score. The results indicated that age,

spouse's age, being unemployed, duration of menopause, number of spouse's marriage, and marital dissatisfaction were significantly correlated with sexual function score. For multivariate analysis, variables with p-values of less than 0.2 in the univariate analysis were included in the model (age, spouse's age, spouse's education, spouse's occupation, duration of marriage, duration of menopause, number of single children, number of spouse's marriage, monthly income, and satisfaction with marriage). The above variables accounted for 25% of variance in the model ($R^2 = 0.25$, and Adjusted $R^2 = 0.22$). By controlling the effects of other potential confounding

variables, marital satisfaction and number of spouse's marriage had significant relationships with sexual function score. The results indicated that increasing number of spouse marriage decreased sexual function score by 2.45 ($p=0.006$).

Furthermore, the sexual function score was 5.58 points lower in those who were not satisfied with their marriage than those who were satisfied with their marital status ($p<0.001$) and the variable was more strongly correlated with decreased sexual function scores than number of spouse marriage (Table 3).

Table 3: Relationship between demographic factors and sexual function score (univariate and multivariate regression).

Variables	Univariate linear regression			Multivariate linear regression ($R^2 = 0.25$)			
	Beta	t	p value	beta	t	p value	
Age (years)	-0.16	-0.87	0.004	0.05	0.47	0.64	
Husband's age (years)	-0.21	-3.88	< 0.001	0.02	0.23	0.82	
Gravid	-0.05	-0.80	0.43				
Duration of menopause (month)	-0.16	-2.94	0.004	-0.11	-1.40	0.16	
Duration of marriage (year)	-0.09	-1.57	0.12	-0.12	-1.50	0.14	
Number of single children	0.1	1.77	0.08	0.06	1.25	0.21	
Number of marriages	-0.05	-0.84	0.40				
Husband's number of marriages	-0.17	-3.06	0.002	-0.15	-2.82	0.005	
Level of education	Primary	Reference					
	High	0.06	1.09	0.28			
	Academic	0.05	0.83	0.41			
Husband's education	Primary	Reference			Reference		
	High	0.04	0.75	0.46	-0.08	-1.42	0.16
	Academic	0.09	1.50	0.14	-0.01	-0.19	0.85
Job status	Employed						
	Housewife	-0.03	-0.61	0.55			
Husband's job status	Employed	Reference			Reference		
	Unemployed	-0.11	-2.00	0.05	-0.08	-1.66	0.10
Income in month	Less than 20 million rials	Reference					
	Between 20 - 30 million rials	-0.09	-1.31	0.19			
	More than 30 million rials	0.01	0.16	0.87			
Husband's smoking	Yes	Reference					
	No	-0.02	-0.30	0.76			
Marriage satisfactory	Yes	Reference					
	No	-0.43	-8.47	<0.001	-0.44	-8.24	< 0.001

DISCUSSION

Given the importance of sexual function and menopausal phenomenon and number of years, when are spent in this period, the present study investigated the association of demographic and midwifery factors with sexual dysfunction in menopausal women. According to findings of the present study, there were significant statistical relationships between sexual dysfunction in menopause with marital satisfaction and number of spouse's marriage. The findings also indicated that the

highest disorder was seen in arousal, but the lowest in satisfaction; and there was no sexual pain disorder. In a systematic review study by Nazarpour et al, 46 menopausal and sexual function papers from 15 countries were reviewed and indicated that menopause, as a transition period, had a negative effect on sexual function in some studies. It has been sexually transmitted and has affected some areas of sexual function. However, other studies indicated that effects of interpersonal variables, such as satisfaction with cohabitation might be more important than the effect of aging or hormone depletion

on menopausal sexual function.²⁰ The results partly confirm results of the present study and may be related to the Iranian culture in which divorce and separation due to the marriage dissatisfaction, especially at an older age, are considered as taboos; and unhappy couples often have to continue living together, but they suffer from sexual dysfunction because of this unhappiness. In a study by Beutel, the results indicated that the contribution of psychosocial factors such as satisfaction with sex with a partner was effective in sexual function.³⁷ It was consistent with results of the present study and confirmed the importance of interpersonal relationships.

Findings of a study by Beigi et al, on determinants of the sexual dysfunction in menopause indicated that there were significant relationships between sexual dysfunction in postmenopausal women with factors such as depression, women's age, economic status, and education.³⁸ However, women without depression and other mental illnesses were selected in the present study according to the inclusion criteria; and there was only a significant statistical relationship between number of husband's marriage and women's satisfaction with marriage with sexual dysfunction according to regression analysis results. The difference may be due to the omission of an effective factor, depression, in the present study or not using the standard questionnaire for determining sexual function in women in Beigi's study. Danaci determined destructive effects of mental disorders such as anxiety and depression on sexual desire and function in menopause.³⁹

In a study by Kingsberg on the sexual behavior, it is stated that sexual partner's psychological or physical problem, which lead to undesirable relationships with the spouse and lower satisfaction with cohabitation, can lead to the sexual dysfunction in the elderly.⁴⁰ Results of the present study can also confirm findings of the present study.

In another study by Mazinani et al, on determinants of female sexual dysfunction among 405 women aged 17-56, it was found that among various factors, psychiatric illnesses and older female age had negative effects on their sexual functions, but education, drug use, physical illness, and type of contraception had no significant effect on female sexual functions.²⁶ In the present study, however, the effect of older age on sexual function was not statistically significant by the elimination of mental illnesses. The difference might be due to the age range, because the fertility and menopause age ranges were not separately studied in Mazinani's study.

In a study by Hashmi et al. on the sexual function of 225 postmenopausal women, the results indicated that postmenopausal women's attitudes towards sexual function had a significant effect on their sexual activity.⁴¹ In other words, women with positive attitudes towards sex during menopause were less likely to have sexual dysfunction. A reason for their positive attitudes was

satisfaction with the overall state of marriage and cohabitation.

The age separation of women over the age of 40, as the range of onset of natural menopause, was a strength of the present study. Another strength of the present study was the exclusion of women with a history of previous or current depression and other mental illnesses that were likely to make the determinants of female sexual function much clearer and without negative effect of depression. The advantages of study were also the suitable sample size and sampling from all urban geographical areas.

The weakness of the present study is uncontrolled influence of society's culture and custom on answering sexual function questions. It also seems that the lack of rural women participation in the study might be weaknesses of the study.

CONCLUSION

According to findings of the present study, the examination of sexual function in postmenopausal women who had sexual dysfunction indicated that women had impairment in all domains except for the sexual pain (they had scores below the cut-off point). Furthermore, results of the study on the association of demographic factors and sexual dysfunction in menopause indicated that number of spouse's marriage and women's satisfaction with marriage had statistically significant relationship with sexual dysfunction in menopausal women. It also seems that in the absence of depression and other psychiatric disorders, effects of women's overall satisfaction with their marriage and marital status and quality of interpersonal relationships of couples on women's sexual dysfunction were more than other factors such as age, education or financial status. According to results of the present research and other studies, it seems that sexual dysfunction is common in postmenopausal women; and it is affected by many factors in different cultures and societies. Therefore, these factors can be unique in every society and culture and require further studies.

Furthermore, because of the high prevalence of sexual dysfunction in postmenopausal women, there is a need for interventional studies to investigate effects of different therapeutic methods on the improvement of sexual dysfunction in menopause.

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