

# Examining sexual functions of women before and after menopause in Turkey

Yurdagül Yağmur<sup>1</sup>, İlksen Orhan<sup>2</sup>

1. Faculty of Health Sciences, İnönü University, 44280-Malatya, Turkey.

2. High School of Nursing, Munzur University, Tunceli, Turkey.

## Abstract

**Background:** Sexuality is an important factor that completes the lives of individuals and affects people in all age groups.

**Objectives:** To examine the sexual functions of women before and after menopause.

**Methods:** This cross-sectional study was conducted at the Family Health Centers in Tunceli Turkey, between September 2014 and February 2015. The study data were obtained using a Questionnaire and the Female Sexual Function Index. The data were analyzed by number, percentage distribution, mean, standard deviation, t-test, and using binary logistic regression analysis.

**Results:** The mean Female Sexual Function Index score of the women was  $23.8 \pm 8.0$ . The Female Sexual Function Index score of 59.7% of women was below the cut-off score (26.55) and was accepted indicative of sexual dysfunction. Low educational level ( $P < 0.01$ ), low income ( $P < 0.01$ ), and menopausal status ( $P < 0.0001$ ) of the women were risk factors for sexual dysfunction.

**Conclusion:** Prevalence of sexual dysfunction in the women was very high and they indicated no effort to seek medical care. Low educational and income level and menopausal status of the women were three factors increasing the risk of sexual dysfunction. Awareness of the society and the healthcare professionals about the issue should be increased.

**Keywords:** Associated factors, sexual functions, women.

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## Introduction

Sexuality is an important factor that completes the lives of individuals and affects people in all age groups. Sexual health is defined as physical, psychological, and socio-cultural well-being concerning sexuality.<sup>1</sup> Even though the inadequacy of any of these areas impairs sexual function and affects general health, this can be ignored.<sup>2</sup> Sexuality not only reflects women's biopsychosocial welfare, but also has a fundamental effect on their quality of life.<sup>3</sup>

Sexual dysfunction (SD) is defined as the inability of the individual to have the sexual experience he/she expects.<sup>4</sup> Female SD is believed to be associated with biological, cognitive, emotional, and social factors and is also affected by beliefs, attitudes, and value judgments regarding sexuality.<sup>5</sup> SD causes a decrease in self-esteem and impairs the quality of life among women,<sup>6</sup> disrupts relationships between the couples, and may even lead to divorce.<sup>7</sup> The prevalence of sexual problems in pre-menopausal and post-menopausal periods increases. Menopause is an important condition with personal, cultural, and social dimensions for middle-aged women. Increased life expectancy and elderly population make the sexual health of menopausal women an important issue.<sup>8</sup> Sexual function changes seen in the menopausal period are affected by age, chronic diseases, drug use, hormonal changes, and socio-cultural characteristics.<sup>9</sup> It is estimated that there will be 1.1 billion women over 50 years of age in the world by the year 2025.<sup>10</sup> Decreased estrogen and progesterone, which is the basis of sexual function, in menopause covering one third of the woman's lifespan affects sexual function negatively.<sup>11</sup> Studies have shown that SD

### Corresponding author:

Yurdagül Yağmur,

Inonu University, Faculty of Nursing,  
Malatya/TURKEY 44069

Tel:+90 422 3410220 ext 1126

Email: [yurdagul.yagmur@inonu.edu.tr](mailto:yurdagul.yagmur@inonu.edu.tr)

İlksen Orhan

Munzur University, High School of Nursing,  
Tunceli/TURKEY

e-mail: [ilksenorhan@munzur.edu.tr](mailto:ilksenorhan@munzur.edu.tr)

is quite common among middle-aged women.<sup>2,12,13</sup> Sexuality is usually considered a social taboo, which prevents women from expressing their sexual complaints easily and receiving medical help. In this study, since the sexual functions of middle-aged women were examined, 35-65 year-old women were sampled. The purpose of this study was to examine the sexual function of women before and after menopause.

## Methods

**Patients:** This cross-sectional study was conducted at three Family Health Centers (FHC) located in the city center of Tunceli between September 2014 and February 2015. The location of the study was a city located in eastern Turkey with an underdeveloped industry and a predominantly rural life-style. The population of the study consisted of 5200 women aged between 35 to 64 years who were residing in the city center and were registered in the Population Census system of the Family Practice Units in 2013. A total of 310 women, identified by random sampling within a known population (confidence interval [CI] of 95% and SD prevalence of 0.69), were included in the study among the 480 women who applied to the three FHCs located in the city center during the study period. Based on the women's self-report, those who had chronic illnesses (diabetes, hypertension), difficulty in understanding the questions, and had no active sex lives (single, divorced or widowed) were excluded from the sample. The data were collected by face-to-face interview with women present at the FHCs within regular working hours, three days per week (Monday, Wednesday and Friday). A room was provided at the participating centers for the participants to complete the forms alone.

The ethics committee approval was obtained from Inonu University Malatya Clinical Trials Ethics Committee to conduct the study (approval number: 2014/117). All women who agreed to participate in the study were informed about the purpose, duration, and scope of the study. It was explained that the participation was voluntary and their informed consent was obtained.

The study data were obtained using a Questionnaire and Female Sexual Function Index (FSFI). The questionnaire included questions about the demographic characteristics

of the women (age, working status, women/husband's educational status, income status), their menopause status (state of menopause, the duration of menopause), and whether or not they receive medical care for SD.

**The Female Sexual Function Index (FSFI):** In order to evaluate female sexual function, the multidimensional scale includes six sections (desire, arousal, lubrication [lubrication, wetness], orgasm, satisfaction and pain), and 19 items were adapted for Turkish respondents by Aygin and Eti Aslan in 2005.<sup>14</sup> The Cronbach's alpha reliability coefficient for the FSFI was found to be 0.82. Items of the scale are scored from 0 or 1 to 6; the minimum score is 2 and the maximum score is 36. A high score signifies better sexual function.<sup>14</sup> The alpha value of the scale was found to be 0.98 in this study and a total scale score of >26.55 was considered indicative of normal sexual function, while a score of  $\leq 26.55$  was considered to indicate SD.

## Data assessment

The data were described using number, percentage distribution, mean, standard deviation, and assessed by t-test in the Statistical Package for Social Sciences, version 16 (Chicago, IL, USA) for Windows package software. A backward conditional binary logistic regression analysis was used to identify variables that may be a risk factor for the development of SD. In order to remove the repressive effect of variables on each other, regression analysis was performed by excluding variables with the lowest correlation from the statistics. The variables having a P-value  $\leq 0.05$  were retained within the stepwise regression model; the variables having a value  $P \geq 0.10$  were excluded from the model. A P-value  $< 0.05$  was accepted as statistically significant.

## Results

It was found that 74.2% of the women were aged 35 to 49 years (Mean $\pm$ SD: 44.7 $\pm$ 8.2 years), 46.8% had primary school level and lower education, 68.1% were unemployed, 23.2% had low income, 76.5% had a nuclear family structure, 97.4% gave birth at least once, and 30% were menopausal. The mean menopause duration of the 93 menopausal women was 7.1 $\pm$ 5.4 (lowest-highest values: 1-22) years.

The FSFI mean score of the women was  $23.8 \pm 8.0$  (lowest-highest values: 2.4-36 points). The FSFI score of 59.7% (n = 185) of the women was below the cut-off score (26.55) and considered to indicate SD. None of the women with SD received any medical assistance for this problem. Starting with the most affected FSFI subscale scores, the mean score of the women for the subscales were as follows: desire  $3.57 \pm 1.27$ , arousal  $3.75 \pm 1.48$ ,

lubrication  $3.91 \pm 1.49$ , orgasm  $3.96 \pm 1.57$ , satisfaction  $4.20 \pm 1.67$ , and pain  $4.35 \pm 1.56$ .

Various variables related to SD were examined by t-test. Age, educational level, working status of women and their husbands, income level, family type, and menopausal status were found to be related to the FSFI score ( $P < 0.01$ ). The status of having a child for women was unrelated to the FSFI score ( $P > 0.05$ ) (Table 1).

**Table 1.** Demographic characteristics of women

Variables	The Female Sexual Function Index			
	n	%	Mean (SD)	Significance
<b>Age (years)<sup>a</sup></b>				
35-49	230	(74.2)	$26.5 \pm 5.8$	$t = 12.314$
50-65	80	(25.8)	$16.0 \pm 8.4$	$P < 0.0001$
<b>Education level</b>				
≤ Primary school	145	(46.8)	$19.9 \pm 8.5$	$t = 9.131$
≥ Secondary school	165	(53.2)	$27.2 \pm 8.5$	$P < 0.0001$
<b>Occupational status of husband</b>				
Employment	259	(83.5)	$24.99 \pm 7.1$	$t = 6.465$
Unemployment	51	(16.5)	$17.58 \pm 9.15$	$P < 0.0001$
<b>Occupational status</b>				
Employment	99	(31.9)	$27.3 \pm 5.4$	$t = 5.652$
Unemployment	211	(68.1)	$22.1 \pm 8.4$	$P < 0.0001$
<b>Income level</b>				
Low (less than spend)	72	(23.2)	$19.1 \pm 8.7$	$t = -5.945$
≥ Moderate (equal to or more than spending)	238	(76.8)	$25.2 \pm 8.7$	$P < 0.0001$
<b>Family type</b>				
Nuclear	237	(76.5)	$24.6 \pm 7.5$	$t = 3.303$
Large (parents, children, grandmother, grandfather)	73	(23.5)	$21.1 \pm 8.9$	$P < 0.01$
<b>Parity</b>				
Presence	302	(97.4)	$23.7 \pm 8.0$	$t = -1.048$
Absence	8	(2.6)	$26.7 \pm 4.1$	$P > 0.05$
<b>Menstruation status</b>				
Menopause	93	(30.0)	$17.3 \pm 8.2$	$t = -11.100$
Menstrual cycle (+)	217	(70.0)	$26.6 \pm 6.0$	$P < 0.0001$

<sup>a</sup> Age average was  $44.7 \pm 8.2$ .

A backward conditional binary logistic regression analysis was applied to seven variables that were found to be related according to the t-test results. Women's low educational level ( $P < 0.01$ ), low-income status ( $P < 0.01$ ), and menopausal status ( $P < 0.0001$ ) were risk factors for sexual dysfunction. In this study, 79.3% of women hav-

ing primary school or lower education women compared to 42.4% of secondary school or upper educated women were found to experience SD. 84.7% of the women with low income compared to 52.1% middle and upper income women were found to experience SD. 92.5% of menopausal women compared to 45.6% of pre-menopausal women were found to experience SD (Table 2).

**Table 2.** Risk factors for sexual dysfunction in women; A backward conditional binary logistic regression analysis (step 5)

Variables	FSFI $\leq$ 26.55		FSFI $>$ 26.55		OR (95% CI for B EXP B)	P value
	n	%	n	%		
<b>Education level</b>						
$\leq$ Primary school	115	79.3	30	20.7		
$\geq$ Secondary school	70	42.4	95	57.6	0.79	2.20 (1.22-3.98) < 0.01
<b>Income level</b>						
Low	61	84.7	11	15.3		
$\geq$ Moderate	124	52.1	114	47.9	1.33	3.78 (1.76-8.12) < 0.01
<b>Menstruation status</b>						
Menopause	86	92.5	7	7.5		
Menstrual cycle (+)	99	45.6	118	54.4	2.37	10.65 (4.53-25.05) < 0.0001

### Discussion

The results of this study revealed that the prevalence of SD was high among women in this population. A low level of education, low-income level, and menopause were the most important risk factors.

SD evaluation of women was performed based on their mean FSFI scores. If the FSFI scores were  $\leq 26.55$ , then they were interpreted as SD. The FSFI mean score was determined as  $23.8 \pm 8.0$  in the present study. In the literature, the FSFI mean score has been reported to be between 18.7 and 25.2.<sup>2,8,12,15</sup> The results of the present study are compatible with the literature.

In this study, it was determined that women aged between 35 and 64 years had high SD (59.7%) and none of these women received any medical care for this issue. Since sexual issues are accepted culturally as disgraceful and private in our society, it is difficult to discuss these problems with others. Therefore, efforts by women to see a doctor and seek medical care for sexual problems, which are not life-threatening, remain inadequate especially due to abstention and/or embarrassment. Healthcare professionals who are sensitive to this issue, and question the sexual functions of female patients and encourage them to discuss these issues would make an important contri-

bution to resolving the problem. In a similar study conducted in Turkey, Kömürcü and İşbilen determined that 87.6% of postmenopausal women did not seek solutions for their sexual problems.<sup>11</sup> Aslan et al. found that 89% of the women were not asked any questions about sexuality by healthcare professionals during their clinical consultations and sexuality was not evaluated.<sup>2</sup> The prevalence of SD ranges between 43.4% and 70.9% in the studies conducted in Turkey.<sup>2,7,11,16-19</sup> Among the studies conducted in other countries, at least one sexual dysfunction was found in 81.5% of women over the age of 50 in Iran,<sup>8</sup> 55.0% of women aged between 40 and 65 years in the US,<sup>20</sup> and in 77.2% of women aged between 40 and 60 years in China.<sup>21</sup> In a multicenter study including 11 Latin American countries, SD was determined to be present in 56.8% of women,<sup>12</sup> in 50.2% of women aged between 40 and 64 years in Chile,<sup>22</sup> and in 55.7% of healthy women in Ecuador.<sup>13</sup> Although the prevalence of SD in women varies within the country and between countries, it is a very common problem requiring a solution. This variability may be not only associated with socio-cultural differences, but also with the sample characteristics and measurement tools used. Sensitivity of healthcare professionals in this regard should be increased.

According to the results of this study, the odds of experiencing SD were 2.20 times higher in women with primary school and lower educational levels, than in women with higher educational levels. There are studies described in the literature indicating that as women's educational levels decrease, SD increases. These studies provide support for the results of the present study.<sup>2,3,6,7,12,19,23</sup> Differently from the results of this study, there are also studies determining that educational level has no effect on sexual function of women.<sup>17</sup> It is believed that low education level and related problems affect sexual function negatively. Women with a low educational level need to be assessed and examined as a potential risk group in terms of sexual function.

This study showed that women with low-income levels experienced SD 3.78 times more frequently. There are studies in Turkey and in other countries reporting that a low-income level is closely associated with SD. This result supports the results of the present study.<sup>6,19,23,24</sup> In contrast to the results of the present study, there is also a report indicating that income level does not affect the

sexual function of women.<sup>17</sup> It is believed that an inadequate income level and problems deriving from economic difficulties affect sexual function negatively.

The results of the present study showed that the odds of SD were 10.65 times higher in menopausal women than in non-menopausal women. Women had sexual problems mostly in the areas of desire and arousal. In similar studies, it was found that women in the postmenopausal period had a risk of SD which was 1.8 to 2.3 times higher than women in the adult period.<sup>2,19,25</sup> Being menopausal has been found to be associated with SD in studies conducted in Turkey<sup>7,11,16</sup> and in other countries,<sup>6,13</sup> which support the results of the present study. The fact that menopausal women had a higher risk of SD in the present study can be associated with the perception that the menopausal period is the onset of aging and the end of sexuality, as well as its perception with a low educational and income levels. The prolonged life expectancy of women increases the lifetime in the menopausal period. The importance of sexuality for menopausal women should be emphasized in contrast to the traditional belief that the sexuality of menopausal women has ended.

The present study had some limitations. First, the data obtained regarding sexual functions were collected based on women's self-reported statements and measurement tools. Second, sexual function of the women's husbands was not investigated, which is an important issue because the sexual function of women is significantly affected by that of their husbands. Third, the study was conducted in a single city. For this reason, the results of the present study cannot be generalized for the sexual functions of all Turkish women.

## Conclusion

In this study, the SD prevalence among women was very high; though they did not make any effort to seek medical care. Low educational and income levels and menopausal status of the women were the three factors increasing the risk of SD. It is necessary for healthcare professionals to better evaluate women with low educational and income levels and who are menopausal. Females with these characteristics represent a potential risk for impaired sexual function and clinicians should primarily focus their efforts on monitoring these women more carefully. Accordingly, awareness by society and by healthcare profes-

sionals should be increased regarding this issue. In order to promote sexual health, training programs should be organized and women should be informed and encouraged to express their sexuality, as well as increase their awareness of their sexuality. Referring women who seek medical treatment among women diagnosed with SD will make a positive contribution to their quality of life.

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