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Effects of menopause on female sexual function

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Abstract

Introduction: Hormonal changes during menopause influence sexual desire, arousal, and orgasmic response. Healthcare providers must adopt a holistic approach to manage the effects of menopause.

Method: Sexual function was assessed using the Female Sexual Function Index, a questionnaire comprising 19 items. Sociodemographic data such as age, education, marital status, employment status, smoking habits, physical activity, alcohol consumption, and menopausal status were surveyed, and their effects on sexual functions were analyzed. The two groups were compared using the multiple chi-square and Kruskal-Wallis tests. At the same time, the impact of demographic data on sexual function was examined using Pearson correlation analysis.

Results: In the postmenopausal patient group, the prevalence of sexual dysfunction was determined to be 83.4%, whereas it was 25.0% in the premenopausal group. The total Female Sexual Function Index score was 14.2±6.3 in the postmenopausal group, compared to 27.8±6.0 in the premenopausal group (p<0.01). Upon examining the Female Sexual Function Index sub-scores, it was found that the scores for desire, arousal, lubrication, orgasm, satisfaction, and pain were significantly lower in the postmenopausal group (p<0.01).

Conclusion: In conclusion, menopause exerts a profound impact on female sexual function through a complex interplay of hormonal, psychological, and socio-cultural factors. Addressing these multifaceted influences requires a multidisciplinary approach.

Keywords: Menopause, female sexual function, female sexual function index

Introduction

Menopause, a physiological transition marking the cessation of ovarian function and menstrual cycles, has profound implications on female sexual function [1]. This multifaceted process typically occurs between the ages of 45 and 55 and is characterized by a decline in estrogen and progesterone levels. These hormonal alterations significantly affect various aspects of sexual health and functioning [2].

The decline in estrogen levels during menopause leads to a decrease in vaginal lubrication, resulting in vaginal dryness. This dryness can cause discomfort or pain during sexual intercourse, known as dyspareunia [3]. Additionally, the thinning of the vaginal epithelium, termed vaginal atrophy, exacerbates these symptoms, contributing further to sexual discomfort and a reduction in sexual activity [1, 3].

Hormonal changes during menopause also influence sexual desire, arousal, and orgasmic response. Many postmenopausal women report a decrease in sexual desire, often attributed to both physiological and psychological factors. The reduction in estrogen and testosterone levels diminishes sexual arousal. It can impair the genital response, leading to decreased blood flow to the genital area and a reduction in sexual sensitivity [4].

Psychological and relational factors also play a crucial role in the sexual experiences of menopausal women. The physical changes and associated symptoms of menopause can lead to anxiety, depression, and a diminished sense of sexual self-esteem [5]. These psychological conditions can negatively affect libido and sexual satisfaction. Furthermore, relationship dynamics, partner's sexual function, and communication about sexual needs and concerns significantly impact sexual health during menopause [3–5].

It is essential to recognize that the experience of menopause and its effects on sexual function varies widely among women (6). Factors such as cultural background, individual health status, and prior sexual experiences influence how menopause is perceived and managed. Therefore, a comprehensive approach that includes medical, psychological, and relational support is paramount in addressing the sexual health needs of menopausal women [7].

In conclusion, menopause profoundly affects female sexual function through a complex interplay of hormonal, physical, psychological, and relational factors. Healthcare providers must adopt a holistic approach to manage these effects, ensuring that women receive appropriate medical treatment, counseling, and support to maintain their sexual health and overall well-being during this transitional phase [8].

The aim of this study is to determine the prevalence of sexual dysfunction and the associated risk factors in premenopausal and postmenopausal women.

Materials and Methods

Study Design and Participants

Our study was conducted between February 2009 and February 2010 at a Gynecology outpatient clinic of a Training and Research Hospital in Istanbul, Turkey. The study included 150 patients presenting to the gynecology outpatient clinic. Participants were divided into two groups: premenopausal and postmenopausal. Of the participants, 78 were in the postmenopausal period, and 72 were in the premenopausal period. Participants who had not engaged in sexual activity in the past month were excluded from the study. Data were collected through face-to-face interviews with the participants. The interviews explored sociodemographic characteristics, detailed medical and sexual history, and risk factors that could contribute to sexual dysfunction.

Female Sexual Function Index

Sexual function was assessed using the Female Sexual Function Index (FSFI), a questionnaire comprising 19 items developed by Rosen *et al.* [9] and translated into Turkish with a validated translation [10]. This assessment tool, applicable to those who had engaged in sexual intercourse in the last month, scores between 2 and 36. It evaluates sexual desire, arousal, lubrication, orgasmic function, overall satisfaction, and sexual pain. Scores are multiplied by their respective coefficients to obtain a total score. A total FSFI score below 26.55 is considered indicative of sexual dysfunction.

Examined Variables

In our study, the value of 26.55 was considered the cut-off for assessing participants' sexual function. Sociodemographic data such as age, education, marital status, employment status, smoking habits, physical activity, alcohol consumption, and menopausal status were surveyed, and their effects on sexual functions were analyzed.

Exclusion Criteria

- Participants who refuse to participate in the study
- Those who have not had sexual activity in the last month.

Primer Outcome

Comparison of the effects of socio-demographic characteristics on sexual function in menopausal and non-menopausal women.

Ethics

The researchers obtained ethical permission from the ethics committee of the institution where the research was conducted. Participation is voluntary. Informed consent was obtained from the participants. Personal data and participant identities were kept confidential.

Statistical Analysis

The data obtained in our study were analyzed using the Statistical Package for the Social Sciences (SPSS) version 12. A p-value less than 0.05 was considered statistically significant. The two groups were compared using the multiple chi-square and Kruskal-Wallis tests. At the same time, the impact of demographic data on sexual function was examined using Pearson correlation analysis.

Results

In the postmenopausal patient group, the prevalence of sexual dysfunction was determined to be 83.4%, whereas it was 25.0% in the premenopausal group. These two groups' differences were statistically significant ($p<0.01$). The mean total FSFI score was 14.2±6.3 in the postmenopausal group, compared to 27.8±6.0 in the premenopausal group ($p<0.01$). Upon examining the FSFI sub-scores, it was found that the scores for desire, arousal, lubrication, orgasm, satisfaction, and pain were significantly lower in the postmenopausal group ($p<0.01$) (Table 1).

Table 1: FSFI scores and sub-scores of participants.

Variables	Premenopausal	Postmenopausal	p
Total FSFI	27.8±6.0	14.2±6.3	<0.01
Sexual Desire	4.1±0.9	2.1±1.4	<0.01
Sexual Arousal	4.3±1.3	2.1±0.9	<0.01
Lubrication	4.2±0.8	2.4±1.3	<0.01
Orgasm	3.9±1.2	2,3±0.6	<0.01
Sexual Satisfaction	4.7±0.9	2.7±0.9	<0.01
Pain	4.4±1.4	2.8±1.2	<0.01

The demographic characteristics of participants in both groups are at a comparable level. There is no significant difference between the groups. The socio-demographic characteristics and menopausal status of the participants were examined about the presence of sexual dysfunction. Accordingly, a significant positive correlation was found between age, menopausal status, and smoking habits with sexual dysfunction. Conversely, a significant negative correlation was identified between educational level and sexual dysfunction. No significant correlation was observed between the other characteristics of the participants and sexual dysfunction (Table 2).

Table 2: Correlation between various characteristics of the participants and sexual dysfunction.

Variables	R	p
Age	0.43	<0,01
Pre/Post Menopausal	0.35	0.01
Smoking	0.33	0.01
Education	-0.39	<0,01
Number of Pregnancies	0,24	0.08
Physical Activity	0.24	0.09
Alcohol Consumption	0.27	0.06
Marital Status	0,28	0.05
Employment Status	0.05	0.09

Discussion

Female sexual dysfunction is a multifactorial issue that is age-dependent, progressive and affects 30-50% of the female population [11, 12]. It negatively impacts the quality of life [13]. The prevalence of sexual dysfunction varies between countries [11, 12, 14].

According to the results of our study, the average FSFI score in the post-menopausal group is lower than in the pre-menopausal group. This difference is statistically significant. When examining the sub-scores of the FSFI, it is observed that the scores for desire, arousal, lubrication, orgasm, satisfaction, and

pain are significantly lower in the post-menopausal group. These data support the notion that menopause is a triggering factor for female sexual dysfunction.
When examining the possible correlation between various characteristics of the participants and sexual dysfunction, a significant positive correlation was found between age, menopausal status, smoking habits, and sexual dysfunction. Conversely, an inverse negative correlation was identified between the level of education and sexual dysfunction. No significant correlation was observed between sexual dysfunction and the number of pregnancies, physical activity, alcohol consumption, marital status, or employment status of the participants. Previous studies have reported a positive correlation between age [15], menopausal status [16], smoking habits [17], and sexual dysfunction. The data from our study also support these findings. Contrary to the findings of our study, literature reports a significant association between sexual dysfunction and factors such as the number of pregnancies [18], physical activity [19], alcohol consumption [20], marital status [21], and employment status [22]. This discrepancy may be attributed to the sample size or the design of the studies.
The present study elucidates the multifaceted impact of menopause on female sexual function, underscoring the interplay of physiological, psychological, and socio-cultural factors. Our findings align with the extant literature, highlighting that menopause is frequently associated with a decline in sexual desire, arousal, lubrication, and satisfaction [3, 16, 23]. This decline can be attributed to a constellation of hormonal changes, predominantly the reduction in estrogen and androgen levels, which directly affect vaginal atrophy, decreased blood flow, and reduced genital sensation [2, 24].
The physiological changes observed in post-menopausal women, such as vaginal dryness and dyspareunia, are primarily linked to estrogen deficiency [25]. These alterations not only contribute to physical discomfort during intercourse but also precipitate a negative feedback loop that exacerbates sexual dysfunction. Additionally, the concomitant decline in androgen levels may further impair sexual desire and arousal, indicating the necessity of a comprehensive hormonal evaluation in managing sexual health in post-menopausal women [8].
Psychological factors also play a critical role in sexual function during menopause. The transition into menopause is often accompanied by mood disturbances, anxiety, and depression, which can significantly impact sexual desire and activity [26]. In our study, an evaluation of psychological factors has not been conducted. However, it is essential to address these psychological dimensions as they are an integral component of a holistic understanding of sexual health. Cognitive-behavioral therapy and other psychotherapeutic interventions may prove beneficial in mitigating these effects and improving overall sexual well-being [27].
Socio-cultural influences cannot be overlooked when examining the effects of menopause on sexual function [7]. Societal attitudes towards aging and female sexuality, coupled with personal and relational factors, shape the sexual experiences of menopausal women. The stigma associated with menopause and the perceived loss of femininity and sexual identity may contribute to decreased sexual self-esteem and reluctance to seek help [28]. This underscores the need for educational programs and societal interventions to destigmatize menopause and promote open discussions about sexual health [29]. In our study, the socio-cultural dimension of the effects of menopause on sexual dysfunction has been examined. While some of the obtained results align with the existing literature, others exhibit notable differences.
Therapeutic interventions, including hormone replacement therapy, have shown promise in alleviating menopausal symptoms and improving sexual function (30). However, the risks and benefits of hormone replacement therapy must be carefully weighed, considering the individual patient's medical history and preferences [31]. Non-hormonal treatments, such as lubricants and moisturizers, as well as lifestyle modifications like regular exercise and a healthy diet, should also be considered as part of a comprehensive management plan [32].

Conclusion
In conclusion, menopause exerts a profound impact on female sexual function through a complex interplay of hormonal, psychological, and socio-cultural factors. Addressing these multifaceted influences requires a multidisciplinary approach, integrating medical, psychological, and educational strategies to enhance the sexual health and overall well-being of post-menopausal women. Further research is warranted to explore innovative therapeutic modalities and to deepen our understanding of the underlying mechanisms driving sexual dysfunction in this population.

Conflict of Interest
Not available

Financial Support
Not available

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