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Factors Behind Sex Life and Health Impact During Menopause

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Abstract

The aim of the study is to find out the characteristics of sex life and the factors that affect women's health during menopause.

To achieve this aim, the following tasks have been set:

1. To analyse the characteristics of sex life and health disorders during menopause in the study group of women (45-60 years), as well as the distribution of symptoms.

2. To determine the effect of hormones on the sex life of women during menopause.

3. To find out what are the most effective measures to relieve menopausal symptoms, and what is their distribution in the study group.

4. To find out the influence of vulvovaginal atrophy and its treatment methods on a woman's sex life.

***Methods**: The study included 45-60 years old women experiencing menopause, who agreed to participate in the study. They completed a questionnaire and performed a hormone test to determine oestrogen, progesterone and testosterone levels. The symptoms of sexual dysfunction in both hormone replacement therapy (HRT) and non-hormone replacement therapy women were assessed. Vulvovaginal atrophy has been assessed based on women's complaints and during gynaecological examination. Women with vulvovaginal atrophy diagnosis were divided into three groups according to the different treatments used in this study: Group 1 – patients treated with hyaluronic acid injection, Group 2 – patients treated with oestrogen suppositories, and Group 3 – patients treated with platelet-rich plasma (PRP) method. The differences were assessed as statistically significant when the confidence level was $p<0.05$. The results are presented in tables and diagrams.*

***Results**: When assessing the duration of menopause, a relationship has been established between the duration of menopause and sexual dysfunction ($p<0.05$). The incidence of vasomotor and psychological symptoms was assessed as statistically significant when comparing the number of correspondents and the incidence of symptoms in the respective groups. Women with a menopausal period of more than five years had more pronounced symptoms of sexual dysfunction.*

Assessing the impact of alcohol consumption on quality of life, it was observed that women who use alcohol in moderation and regularly (73.4% (n = 138)) have more pronounced psychological symptoms. The results of the study showed that women with higher education (90% (n = 72)) were more likely to choose HRT, while women with post-secondary education were less likely to choose this therapy (18% (n = 17)). Assessing the symptoms of sexual dysfunction, it was found that women who received hormone replacement therapy had fewer symptoms of sexual dysfunction than those who did not. The analysis of the collected data showed that women with younger partners (30-40 years) have better quality sexual intercourse.

Hyaluronic injections and the use of platelet-rich plasma may be an alternative treatment for vuvlovaginal atrophy in women who refuse ormone therapy.

***Keywords**: menopause, sexual dysfunction, hyaluronic acid, platelet rich plasma, female health, vulvovaginal atrophy, menopausal symptoms.*

Abbreviations:

PRP - Platelet Rich Plasma

HA - Hyaluronic Acid

HRT - Hormone Replacement Therapy

Introduction

Menopause is the end of menstruation and happens when the ovarian follicles stop functioning. Menopause is diagnosed clinically after 12 months after a woman's last period. [2]. Menopause can happen naturally, surgically, or medically. The number of women aged 50 and over is fast increasing: there were 467 million women aged 50 and over in 1990, and by 2030, that number will have risen to almost 1,200 million. [2]. Menopause affects the majority of women between the ages of 40 and 58 with a median age of 51 years [6]. Because of rising life expectancy, nearly a third of a woman's life is spent after menopause, which has an impact on her health and quality of life [5].

During menopause, the majority of women have particular symptoms. The only symptoms directly connected with menopause are vasomotor symptoms such as night sweats and hot flushes, which occur in 60-80% of menopausal women [12]. The majority of women consider these symptoms to be moderate or severe [13]. Women in menopause can be encouraged to take care of themselves and manage or treat

their symptoms if they have access to reliable information cducational materials [15]. Most women have minimal comprehension about menopause, according to studies [17, 18].

Oestrogen deficiency is linked to symptomatic vulvovaginal atrophy.Lactobacilli, an acid-producing bacteria that play a critical role in maintaining a normal vaginal epithelium pH (3.8-4.5) throughout menopause, decrease as oestrogen levels diminish [1]. The vaginal epithelium becomes more basic when lactobacilli diminish, resulting in a change in vaginal flora. It has been discovered that greater bacterial diversity is linked to increased vaginal dryness symptoms [28].

Vulvovaginal atrophy is frequently accompanied by decreased sebaceous gland secretions and vaginal lubrication during sexual stimulation [1]. Vulvovaginal atrophy causes pain during sexual intercourse, which leads to avoidance of sexual engagement [30]. Sexuality is important in menopausal women, however, sexual dysfunction increases with age. Deterioration in sexual function due to age can significantly impair quality of life, so it is important for physicians to recognise sexual dysfunction in order to provide effective care for menopausal women. Sexual dysfunction can result from a variety of factors, including psychosocial factors, side effects of medications, vulvovaginal atrophy, chronic illness, or hypoactive sexual desire disorder. Once the etiology has been elucidated it will be possible to select the appropriate treatment.

In the REVIVE (Real Women's Views on Treatment Options for Menopausal Vaginal Changes) study, 63 percent of women with symptomatic vulvovaginal atrophy said their symptoms made it difficult to enjoy sexual intercourse, and 47 percent of partnered women said it made their relationship difficult [31, 4]. Due to symptoms associated with vulvovaginal atrophy, 12 percent of women without a partner said they were not looking for a sexual relationship. Similarly, 75% of women in the Vaginal Health: Insights, Views, and Attitudes (VIVA) research felt that vaginal discomfort had a negative impact on their sex life [10]. Despite the significant frequency of symptomatic vulvovaginal atrophy in midlife and postmenopausal women, nearly half of them say they never talk to their doctor about how the symptoms affect their quality of life. Worryingly, only 7% of women said their healthcare practitioner had ever brought up the subject of vulvovaginal atrophy with them [1, 31, 4]. Patients should be questioned about symptoms of sex life satisfaction, and health care clinicians should be cautious when inquiring about it.

Sexuality has an impact on one's quality of life, as well as a woman's emotional and psychological well-being. Sexual dysfunction is frequently related with the menopausal transition,, which negatively influence vaginal mucosa elasticity, vaginal secretions, and result in vaginal atrophy and pain during sexual intercourse [1]. Younger women with partners who are more prone to intimate sexual activity, have a lower body mass index, are married, and have better emotional well-being [29].

During menopause, women with higher education have better physical and mental health records, reflecting quality of life, compared to women with post-secondary or secondary education [3]. Women,

even those who do not report vaginal dryness as a frustrating symptom, have poorer mental health composites, as well as poorer emotional well-being and social life [3].

For symptomatic vulvovaginal atrophy, local vaginal oestrogen therapy is advised as the treatment of choice [24]. Vaginal creams, pills, and rings are available in low dose vaginal oestrogen formulations. These formulations have minimal systemic absorption and are ineffective for the alleviation of vasomotor symptoms [1]. In women taking low-dose local oestrogen therapy, any uterine bleeding should be thoroughly evaluated. Water-based lubricants and moisturisers are available over the counter to help relieve symptoms for women who refuse hormonal therapy.

There are no testosterone formulations licensed for the treatment of poor sexual function in women at this time. Free and total serum testosterone levels are unrelated to the results of female sexual function assessments [49].

Platelet-rich plasma (PRP) injection is another successful treatment for vulvovaginal atrophy. Due to high concentrations of autologous growth factors, platelet-rich plasma treatment seeks to increase the potential of the human body to repair spontaneously by enhancing neovascularisation and collagen formation [7]. The autologous and dependable nature of this preparation are its key advantages [8, 9]. In the literature, there have been cases of gynaecological PRP therapy [8, 9]. Atrophic diseases such lichen sclerosus of the vagina, stress urine incontinence, episiotomy scars, and vaginal lubrication issues have all been treated with PRP [8]. O-Shot was the name given to this therapy by Charles Runels, who initially employed it to treat women's sexual dysfunction. [9] The injection of platelet-rich plasma (PRP) into the G-spot has been demonstrated to increase sexual function. Phase coordination, which includes the desire, arousal, and orgasm phases of the sexual response cycle, is used to classify sexual disorders [14]. Craving (arousal) and orgasm problems are the most common causes of sexual dysfunction in women, according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria [16].

Study Subjects and Methods

The study was conducted at Maxmeda medical institution during January-May 2022. The study included 45-60 years old women experiencing menopause, who agreed to participate in the study. They completed a questionnaire and performed a hormone test to determine oestrogen, progesterone and testosterone levels. Patients who voluntarily agreed to participate in the study were interviewed anonymously to find out the influence of their lifestyle, social factors on sex life characteristics and health disorders. Psychological, somatic, vasomotor symptoms, and sexual dysfunction were assessed on the Greene Climacteric Scale. The symptoms of sexual dysfunction in both hormone replacement therapy and non-hormone replacement therapy women were assessed. Women with vulvovaginal

atrophy diagnosis were divided into three groups according to the different treatments used in this study: Group 1 – patients treated with hyaluronic acid injection, Group 2 – patients treated with oestrogen suppositories, and Group 3 – patients treated with PRP method.

The study data of the groups were compared to assess how the treatment applied reduced the symptoms of vulvovaginal atrophy, and the effects of such treatment on sex life have been reviewed.

In the course of this study, original questionnaires were prepared based on the analysis of the literature and clinical experience. Only women who met the above requirements were included in the study; they lived a normal life, no other illnesses were ruled out. The women were informed about the risks and benefits of the study, the research procedures, and confidentiality policy.

After completing the questionnaire, a gynaecological examination and hormone tests were performed to assess oestrogen, progesterone and testosterone levels.

Data were analysed using SPSS 23.0 statistical data processing programme and MS Excel 2016. 95% confidence results were calculated for the values of the various parameters. The differences were assessed as statistically significant when the confidence level was $p<0.05$. The results are presented in tables and diagrams.

Results

A total of 188 women meeting the above criteria participated in the study and completed the questionnaires. After analysing the data of the questionnaires of the women who participated in the study, it was found that 50% (n = 94) have a post-secondary or college education, 42.6% (n = 80) – higher education, and several higher degrees – 7.4% (n = 14) of the respondents. [Figure 1]

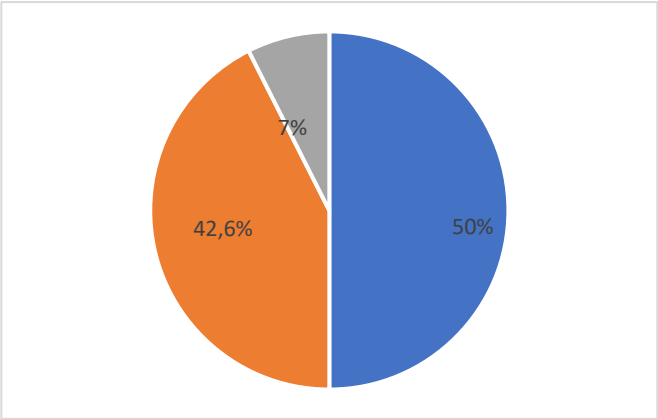

Figure 1. Women education

The study examined whether giving birth had an effect on the onset of symptoms in women (85.1% (n = 160) of all study participants were women who gave birth). It was found that 12.7% (n = 20) of women who have birth have more pronounced vasomotor and psychological symptoms.

Overall, psychological symptoms occurred in 79.7% (n = 150), somatic symptoms – 39.8% (n = 75), vasomotor symptoms – 60.6% (n = 114), sexual dysfunction – 47.3% (n = 89) of women participating in the study. [Table 1]

		Symptoms			**Sexual dysfunction**
		Vasomotor	**Psychological**	**Somatic**	
Women	Gave birth(85,1 %) n=160	62,2 %	81,2 %	50 %	50 %
	Never gave birth (12,7 %) n=20	70 %	100 %	45 %	45 %
Total:		63,3 % (n=180)	83,3 % (n=180)	41,6 % (n=180)	49,9 % (n=180)

Table 1. Distribution of symptoms in different groups according to whether the woman had given birth or not.

When assessing the duration of menopause, an association between the duration of menopause and sexual dysfunction was found ($p<0.05$), and such an association was also observed due to lower oestrogen levels. [Table 2]

Menopause duration	**Sexual dysfunction**
1–5 years	43,1 %
5–10 years	75 %

Table 2 Manifestation of sexual dysfunction depending on the duration of menopause.

Smoking and alcohol consumption contributed to vasomotor and psychological symptoms. 30.3% (n = 57) of the respondents indicated that they smoked and had a statistically significant increase in vasomotor and psychological symptoms ($p<0.05$). Assessing the impact of alcohol consumption on quality of life, it was observed that women who used alcohol in moderation and regularly (73.4% (n = 138)) have more pronounced psychological symptoms. The study also looked at the measures the

patients take to relieve menopausal symptoms. It was found that almost half (47.3% (n = 89)) of the respondents prefer HRT. 30.3% (n = 57) of women participating in the study did not receive any treatment, and 37.7% (n = 42) prefer herbal preparations.

The results of the study showed that women with higher education (90% (n = 72)) were more likely to choose HRT, while women with post-secondary education were less likely to choose this therapy (18% (n = 17)). Assessing the symptoms of sexual dysfunction, it was found that women who received HRT had fewer symptoms of sexual dysfunction than those who did not. 16.8% of the respondents (15 patients) who received the said therapy indicated that they felt less sexual arousal, and 81.6% of the respondents (40 patients) who did not receive the said therapy indicated that they felt less sexual arousal and experienced orgasmic disorders during sexual intercourse. Assessing the age of sexual partners, it was observed that women with younger partners (30-40 years) have better quality sexual intercourse. Vulvovaginal atrophy occurred in 52.6% (n = 99) of patients. Low oestrogen levels and testosterone levels were found to have no effect on vulvovaginal atrophy. Women with vulvovaginal atrophy diagnosis were divided into three groups according to the different treatments used in this study: 47 patients (47.4%) were treated with hyaluronic acid injection, 32.3% (n = 32) – with oestrogen vaginal suppositories and PRP method was used in 20.2% (n = 20) of patients. All patients complained of vaginal dryness, 78.7% (n = 78) reported having painful sexual intercourse, 49.4% (n = 49) had a burning sensation in the vagina. Hyaluronic acid injection was found to reduce vaginal dryness in 91.4% (n = 43), oestrogen vaginal suppositories – in 78.1% (n = 25), and PRP – in 50% (n = 10) of the cases.

Discussion

Age, BMI, marital status, sexual activity, place of residence, occupation, socioeconomic environment, education, sexual trauma and urogenital surgery, psychological issues, and so on all influence women's sexual performance. The age, BMI, occupation, and education of a partner all have an impact on a woman's sexual activity [19].

In a Chinese study, women aged 56-60 showed lower sexual desire than women aged 45-55, while older study participants had higher vaginal dryness and dyspareunia [20]. Women's sexual desire is said to be influenced by their age. It's also worth noting that a partner, alcohol usage, vaginal dryness, dyspareunia, depressed symptoms, and psychotropic drug use have all been linked to sexual dysfunction in middle-aged women [21].

Another 2020 study of Australian women (aged 40-65) found that 69.3 percent had poor sexual desire and that the following characteristics were related with it: vaginal dryness, pain during or after sexual intercourse, moderate to severe depressive symptoms, and the use of psychotropic medicines [22].

According to a global assessment, research on menopause and sexuality in recent years has primarily focused on oestrogen shortage and local or systemic replacement. Androgens, on the other hand, have recently resurfaced as important regulators of female sexual health. Studies show that oestrogens and androgens have a synergic, stimulatory effect on the female sexual response, boosting sexual desire via a complex network of neurotransmitters and a balance of excitatory and inhibitory signals [23].

The new term genitourinary syndrome of menopause now includes vaginal atrophy. Vulvovaginal atrophy, urogenital atrophy, and atrophic vaginitis are all signs of this condition. A decrease in estrogenic stimulation of the urogenital tissues is the most common of genitourinary syndrome. Ale, dry, smooth, shiny tissue or enhanced visibility of blood vessels (erythema, petechiae, or increased vascular visibility) are the most prevalent indications of vaginal atrophy [25].

Systemic (oral oestrogens) or local (intravaginal (local) oestrogen, oestrogen-containing intravaginal ring, and vaginal dehydroepiandrosterone (DHEA, testosterone)) HRT is available. Systemic HRT improves symptoms in 75 percent of cases, while local therapies relieve symptoms in 80-90 percent of cases, according to studies. Although the adverse effects are comparable, local treatment is considered to be safer than systemic treatment [26]. In the differential diagnosis, vulvovaginitis, including candidiasis, bacterial vaginosis, sexually trasmitted diseases: ermatological problems such as lichen planus, lichen sclerosis, or stimuli-induced inflammation, and urinary tract infections or cancers should be rulled out.[27]

Another study that involved the treatment of 26 women is also worth mentioning. Vulvovaginal atrophy (VVA) was found in these women, and they were followed up on six and twelve months after treatment. Injections of deep intradermal hyaluronic acid were given on a monthly basis. The most prevalent sexual issue was dyspareunia during intercourse, however hyaluronic injections were successful in alleviating all reported gynaecological symptoms. When it comes to assisting women with VVA, this medication is both safe and effective, so it can be used as one of numerous options. Hyaluronic acid can also be given to women with oncological disorders who are unable to take oestrogen medications because of its pharmacologic qualities and safety [11].

Also, a 56,000-member probability-selected Internet panel projectable to the whole US population, performed an online survey of women in the United States about Vulvar and vaginal atrophy in postmenopausal women, the results showed that dryness (55%) was the most prevalent VVA symptom, followed by dyspareunia (44%), and irritation (44%). (37 percent). In 59 percent of the participants, VVA symptoms interfered with their enjoyment of sex. [32] Similar results have showed also our study where all of the patients complained of vaginal dryness, 78.7% (n = 78) reported having painful sexual intercourse, 49.4% (n = 49) had a burning sensation in the vagina. Another one REVIVE survey's goal was to gain a better understanding of vulvovaginal atrophy throughout Europe (VVA), a total of 3768 postmenopausal women were surveyed in an online internet-based study done in Italy, Germany, Spain,

and the United Kingdom (age: 45-75 years) and the results appeared again similar to our study, that confirm of having a major influence on quality of life and sexual life. Nevertheless, underdiagnosed and undertreated, with a high degree of dissatisfaction with real available remedies. [33] According to our study we suggest a hyaluronic injection and the use of platelet-rich plasma may as an alternative treatment for vulvovaginal atrophy in women who do not want hormone therapy and was found to reduce vaginal dryness in 91.4% (n = 43), oestrogen vaginal suppositories – in 78.1% (n = 25), and PRP – in 50% (n = 10) of the cases.

In another one study a semi-structured interview and purposive sample method were used to choose 13 midwives and 12 general practitioners for a descriptive exploratory qualitative study on how the aging process affects sexual life. The study was approved by the Ethics Committee of Mashhad University of Medical Sciences. The results showed that Most men's sexual expectations have changed as a result of satellite programs and young couple romantic habits, resulting in increased sexual disharmony. Some men want their wives to act flirtatiously, as young couples do, or to emulate activities seen on television, but most women refuse, causing considerable agony to their spouse. [34] Similar results have shown our study, women who were used to have sexual intercouse with younger partners were more sattisfied as the younger and more energetic partner made them feel more coveted and elder ones made them feel unaware of sexual expectations of one's partner.

Conclusion

Smoking and alcohol consumption affect the onset of vasomotor and psychological symptoms. 57 patients participating in the study indicated that they smoked and had a statistically significant increase in vasomotor and psychological symptoms ($p<0.05$). 138 patients who reported alcohol use, were more likely to experience psychological symptoms. These symptoms were also more pronounced in women who did not give birth.

The symptoms of sexual dysfunction were more pronounced in women with a menopausal period of more than five years.

The symptoms of sexual dysfunction are less pronounced with hormone replacement therapy.

Hyaluronic injections and the use of platelet-rich plasma may be an alternative treatment for vuvlovaginal atrophy in women who do not want hormone therapy.

The age of the sexual partner affects the quality of sex life. Women with younger partners (30-40 years) have a better sexual intercourse.

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