ORIGINAL ARTICLE

Correlations between Severity of Menopausal Complications, Depression, and Anxiety

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Abstract

Background: Menopause is one of the female life stages affecting their mental health due to symptoms experienced by them during this period. This study aimed to investigate the relationships between severity of menopausal symptoms, depression and anxiety.

Methods: This cross-sectional analytical study was performed on 120 females aged 45-65 years in the city of Larestan, Iran. Subjects were selected by convenience sampling. Data collection tools included a demographic questionnaire, Beck depression inventory, Spielberger anxiety scale, and the modified Kupperman menopausal complication index. Data analysis was performed using SPSS software (version 25) at 95% confidence level.

Results: Out of 120 menopausal females, who participated in this study, 89.2% were married, and their mean age was 53.30±4.24 years. The majority of them (92.5%) were in their diploma level and below. According to the results of the Spearman correlation test, there was a significant relationship between depression score and severity of menopausal symptoms ($r=0.775$, $P<0.01$). There was also a significant difference between the total anxiety score and the severity of menopausal symptoms ($r=0.754$, $P<0.01$).

Conclusion: Considering the significant relationship between the severity of menopausal symptoms and the presence of anxiety and depression, the treatment of menopausal symptoms can prevent depression and anxiety in females during this sensitive period.

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Introduction

Promoting health and providing a good feeling in each period of a female's life will provide better quality of life for her and will bring many benefits to a community. Menopause is one of the critical periods in a female's life that can affect a female's mental health.[1] Menopause is a stage in the life of females that is associated with a lack of production of estrogen and progesterone hormones by the ovaries, menstrual disorders and lack of ovulation. Typically, menopause occurs over the age of 45 and menopause is complete when the period does not occur for one year.[2] With the advancement of medical science and increased life expectancy, about one-third of females's lives are spent in menopause period.[3] Therefore, the impact of menopause on females's health, especially females's mental health, is of great importance.[4, 5] Decreased levels of ovarian hormones during menopause lead to increased physiological and psychological changes that can affect females's health.[6] Studies have shown that the main consequences of menopause are mainly associated with estrogen deficiency.[7, 8] Menopause can be associated with various psychological symptoms such as mood changes and anxiety disorders.[8] However, a review of studies of the relationship between menopausal symptoms and psychological disorders such as anxiety and depression suggests that these studies have yielded conflicting results.[9] For example, some epidemiological studies have concluded that menopausal females are not at risk of depression[8] and there is no relationship between

the severity of menopausal symptoms and depression and anxiety in menopausal females.[9] According to the findings of this research, mental health problems in females between the ages of 41 and 50 may not be directly related to menopause.[10] On the other hand, some studies have reported estrogen deficiency as well as the severity of menopausal complications can cause depression, anxiety, and mood disorders.[11, 12] According to research by 2030, about 2.1 billion menopausal females will live in the world and 73 million females enter menopause each year.[13] While there is strong research and information on the biological aspects of menopause, according to researchers, the psychosocial aspect of menopause is very interesting and controversial due to the diversity of cultures and societies.[14]

Therefore, although menopause is a general physiological process but it's not the same for everyone. Mental health, emotional well-being, cultural and social context influence the severity of the crisis felt by the individual.[15] Also, the severity of symptoms and the frequency of symptoms may vary in different individuals.[9] During menopause, many females experience symptoms such as hot flashes, vaginal burning, difficulty sleeping, fatigue, and weight gain. Although menopausal symptoms may be minor discomfort for some females, other females may feel these symptoms more destructive.[8] Since menopausal symptoms can be a culture-related phenomenon and affect the mental, psychological, social and emotional well-being of individuals,[16] and if it is found that menopausal symptoms related to psychological disorders such as anxiety and depression, these psychological problems can be easily prevented by treating the menopausal symptoms and therefore improve the quality of life in menopausal females.[9] Since no similar study has been conducted on the psychological problems of menopausal females in Larestan, on the other hand, the impact of culture, society and individual differences on the severity of menopausal symptoms and related psychological issues, researchers have decided to address this issue. Therefore, the purpose of this study was to investigate the relationship between menopausal symptoms severity and depression and anxiety in menopausal females.

Methods

This cross-sectional analytical study was carried out on 120 females aged 45-65 years in the city of Larestan. Subjects were selected by convenience sampling. Inclusion criteria include: being at least 45 years old, lack of acute family problems, no use of birth control pills or hormone replacement therapy, no history of uterine resection, and no history of chronic or mental illness. Samples were excluded if they did not wish to continue their participation in the study. Data collection tools included a demographic questionnaire, Beck depression inventory, Spielberger anxiety scale, and the modified Kupperman menopausal complication index. The demographic questionnaire included age, duration of menopause, number of children, marital status, occupation, level of education, weight, height, and body mass index. The Beck depression inventory is a 21-item test, and each question has a rating scale of zero to three. The minimum score in this test is zero, and the maximum is 63. A total score of less than 10 is normal, 11 to 16 is slightly depressed, 17 to 20 need to consult a psychologist, 21 to 30 are relatively depressed, 31 to 40 are severe depression, and 41 are considered very severe depression. The reliability test of this scale has been reported 0.48 to 0.68.[17] The Spielberger anxiety scale has two levels of state and trait anxiety. Each of the two scales has 20 questions, designed as a 4-point Likert scale (very low, low, high, and very high) and weighs between 1 and 4. The total anxiety score ranged from 20 to 80. A score of 20 means no anxiety, and a score of 80 indicates the highest level of anxiety.[18] The validity and reliability of this tool have been confirmed in previous studies.[19] The modified Kupperman index contains 13 major menopausal complaints that fall into three categories: A) physical symptoms including: hot flashes and sweating, paresthesia, insomnia, vertigo, arthralgia and myalgia, headache, palpitations, and formication. B) Psychological symptoms including anger, depression, weakness, and fatigue. C) Genitourinary symptoms including urinary tract infection and sexual complaints. Each questionnaire is scored on a Likert scale ranging from 0 to 3. Score (0) no problem, score (1) mild problem, score (2) moderate problem and score (3) severe problem. In total, the score of 0–6 indicates no complication, the score of 7–15 shows a mild complication, a score of 16-30 indicates a moderate complication, and score above 30 indicates the severity complication.[20] The validity and reliability of this index have been confirmed in previous studies.[9, 20, 21] After completing the questionnaires, the data were analyzed using SPSS software version 25. The significance level was 0.05. The Ethics Committee approved this study of Larestan University of Medical Sciences (IR.LARUMS.REC.1398.013).

Results

In this study, 120 menopausal females participated. 89.2% of them were married. Their mean age was 53.30±4.24 years, and the level of education of most of them was in the diploma level and below (Table 1).

Six of participants (5%) had typical menopausal complications, 36 of participants (30%) had mild menopausal complications, 69 of participants (57.5%) had moderate menopausal complications, and 9 of participants (7.5%) had severed menopausal complications. The mean score of menopausal complications was 17.70±6.85.

Table 1: Demographic and clinical characteristics of the participants

Variables	Parameter
Age, Mean±SD*	53.30±4.24
Menopausal Age, Mean±SD*	50.27±1.41
Number of Children, Mean±SD*	3.07±1.28
BMI**, Mean±SD*	24.66±2.75
Marital status, n (%)	
Single, Widow or Divorced	13 (10.8)
Married	107 (89.2)
Job, n (%)	
Housewife	108 (90.0)
Employee	12 (10.0)
Level of Education, n (%)	
Illiterate	5 (4.2)
Diploma or less of it	111 (92.5)
Academic	4 (3.3)

*Standard Deviation, **Body Mass Index

Kruskal-Wallis test was used to assess the relationship between demographic variables and the severity of menopausal complications. No significant association was found between demographic variables and the severity of menopausal complications (P>0.05).

The mean score of depression was 12.23±9.57, the mean score of state anxiety was 34.45±11.48, the mean score of trait anxiety was 34.01±11.89, and the mean score of total anxiety was 68.47±22.95.

According to the results of the Spearman correlation test, there was a significant relationship between depression score and severity of menopausal symptoms (r=0.775, P<0.01). Also, there was a meaningful relationship between the state anxiety score and the severity of menopausal symptoms (r=0.743, P<0.01), the trait anxiety score and the severity of menopausal symptoms (r=0.754, P<0.01), and the total anxiety score and the severity of menopausal symptoms (r=0.767, P<0.01).

The results of Kruskal-Wallis test showed that there was a significant difference between the mean rank of depression in dimensions of hot flashes and sweating symptoms, paresthesia, nervousness, melancholia, and sexual complaints (Table 2). The results of Kruskal-Wallis test showed that there was a significant difference between the mean rank of total anxiety at different levels of hot flashes and sweating symptoms, paresthesia, nervousness, melancholia, and sexual complaints (Table 3).

Table 2: Mean rank of depression score according to the severity of menopausal symptoms in the studied females

Menopause symptoms	Severity scale				P value
	None Mean Rank	Mild Mean Rank	Moderate Mean Rank	Severe Mean Rank	
Sweating/hot flushes	40.15	57.92	66.14	99.32	<0.001
Paresthesia	43.83	61.60	86.10	95.50	<0.001
Insomnia	63.63	51.59	73.57	74.81	0.065
Nervousness	45.07	53.83	65.45	86.94	<0.001
Melancholia	58.07	47.01	59.24	77.42	0.016
Vertigo	59.58	64.39	-	-	0.549
Fatigue and weakness	57.07	62.76	60.28	92.50	0.675
Arthralgia, and myalgia	59.92	61.04	69.67	-	0.886
Headache	60.14	64.80	43.33	-	0.591
Palpitation	55.28	64.57	58.85	75.39	0.346
Formication	50.37	68.05	65.87	61	0.067
Urinary tract infection	72.26	57.84	61.41	92.50	0.340
Sexual complaints	53.20	76.03	87.57	81.25	0.003

Table 3: Mean rank of total anxiety score according to the severity of menopausal symptoms in the studied females

Menopause symptoms	Severity scale				P value
	None Mean Rank	Mild Mean Rank	Moderate Mean Rank	Severe Mean Rank	
Sweating/hot flushes	38.15	58.36	68.98	98.95	<0.001
Paresthesia	46.10	59.39	88.36	86.75	<0.001
Insomnia	62.12	52.05	76.93	74.25	0.052
Nervousness	54.63	52.03	63.97	78.81	0.035
Melancholia	46.83	43.05	65.21	80	<0.001
Vertigo	59.99	62.63	-	-	0.744
Fatigue and weakness	57.18	63.41	57.33	104	0.472
Arthralgia, and myalgia	61.10	57.18	84	-	0.422
Headache	61.70	58.93	32.17	-	0.341
Palpitation	54.30	60.45	65.35	79.11	0.205
Formication	52.55	66.79	64.53	43.50	0.187
Urinary tract infection	73.12	57.16	66.23	86.50	0.269
Sexual complaints	50.68	83.15	96.14	86.13	<0.001

Discussion

The findings of this study indicate that there is a significant relationship between depression and anxiety and the severity of menopausal complications in the dimensions of sweating / hot flushes, paresthesia, nervousness, melancholia, and sexual complaints.

Hot flashes are one of the most important symptoms experienced by females in menopausal period.[8] Hot flashes are the fleeting heat sensation especially on the face and neck that lasts a few minutes. For some females, hot flashes are associated with sweating and increased heart rate and post-flash chills.[8] Vasomotor symptoms typically begin during menopause, with its peak frequency and severity within two years after menopause, and gradually subside, with about 75% of females experiencing it. However, the severity and duration of the symptoms vary across races and cultures.[8] The findings of Ziagham et al. study also show that increased menopausal symptoms such as hot flashes are associated with more severe depression.[22] Warren and colleagues also reported anxiety as one of the most critical psychological complications of menopause.[8] The findings of Freeman et al. study also showed a significant relationship between menopausal hot flashes and anxiety.[23]

Abnormal skin sensations, including tingling, numbness, pressure, cold, and warmth that a person experiences without a stimulus, are called paresthesia. Paresthesia is caused by functional disorders of sensory neurons.[24, 25]

The Kupperman regards paresthesia as one of the most important menopausal complications,[26] and in various studies, paresthesia has been mentioned as one of the significant complications associated with menopause.[20, 26, 27] In a study by Rui-xia Li et al. 22.60% of females had experienced paresthesia at the onset of menopause, and there was a strong relationship between the beginning of menopausal symptoms such as paresthesia and mood disorders (anxiety and depression).[28]

Tao et al. Refer to nervousness as a psychological complication of menopause.[20] Koyuncu et al., in their study, identified nervousness as an essential symptom of menopause.[29] In a survey by Karmakar et al. on menopausal females, nervousness was the most common complication of this period, and 94% of females experienced it.[30]

Perich et al. reported that nervousness, depression, and anxiety are related to one another, and nervousness is one of the most important symptoms experienced by menopausal females.[31]

In a study conducted by Barciela Veras et al. on menopausal females, melancholia was more prevalent in patients with depression and anxiety, and a positive association was found between melancholia and anxiety and depression disorders.[32]

After menopause, the walls of the vagina become thinner and lose their elasticity. They also produce fewer secretions and lose much of their lubricating ability in response to sexual stimuli. As a result of the loss of collagen, adipose tissue, and the ability to retain water, the vulva becomes flattened and thin. These vulvovaginal changes resulting from menopause leading to significant complaints in females. These symptoms include dryness, dyspareunia, discharge, itching and sometimes bleeding.[8] Various studies have also shown that depression and anxiety have a negative effect on sexual function in menopausal females,[33-35] and depression and anxiety are major causes of sexual dysfunction.[34, 36]

There was no statistically significant relationship between other menopausal symptoms and the variables of depression and anxiety. In Bahri et al. study, there was no meaningful relationship between menopausal symptoms and the variables of depression and anxiety. Researchers cited cultural differences as one of the most important reasons for not observing a statistically significant association. In Bahri et al. study mentioned that the females under their review were culturally very patient and self-controlled and often did not report complaints about their suffering.[9]

The psychological status of the samples studied when answering questions, and their attitudes toward the menopausal issue can have an impact on their response that was beyond the control of the researchers.

Conclusion

According to the findings of this study, there is a significant relationship between sweating / hot flushes, paresthesia, nervousness, melancholia, sexual complaints, and depression, and anxiety, therefore, with the treatment of menopausal complications can be prevented psychological issues in these females and finally, the quality of life of menopausal females can be improved.

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