

Investigating the frequency and factors associated with hot flush in postmenopausal women referred to the Menopausal Clinic of Imam Khomeini Hospital in Ahwaz city in 2018

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ABSTRACT

Introduction and Purpose of the study: Hot flush is one of the most common complications in menopause period. Many factors are involved in this problem. The objective of this study was to evaluate the frequency and factors associated with hot flush in postmenopausal women in Ahwaz in 2018. **Methodology:** This descriptive and cross-sectional study was conducted to evaluate the frequency and factors associated with hot flush in postmenopausal women. The data were collected using a demographic characteristics form and a hot flush recording checklist, adapted from the Cooperman index. **Results:** In this study, 196 women with a mean menopausal age of 48.79 were included. 144 (73.5%) had hot flush, of which 35 (17.9%) had mild hot flush, 69 (35.2%) had moderate hot flush, and 40 (20.4%) had severe hot flush. The results of the study showed the effect of factors such as BMI and marital status on hot flush. **Conclusion:** In this study, the prevalence of hot flush among postmenopausal women was reported 73.5%. It was associated with BMI and marital status.

Keywords: Menopause, Hot Flushes and Night Sweats

Introduction

Menopause is a natural and physiological phenomenon in the middle or late middle age of women's life. It occurs approximately at the age of 45-55 years. Based on World Health Organization definition, menopause means permanent cessation of menstruation for at least 12 months due to the loss

of ovarian follicular activities [1]. During this period, women experience certain physical, mental, social and psychological changes [2]. Menopause is associated with complications such as hot flushes, night sweats, mood changes, sleep disorders, and changes in sexual desire, that causing great and debilitating stress in a person [3-5]. Hot flush begins from the stage of transition to menopause. It is characterized as periodic disorders, sudden sweating, shivering, palpitations, and anxiety. It varies from a few seconds to a few minutes and rarely to an hour. The frequency of hot flush may be very low or very high [6]. The prevalence of hot flush was reported 67 to 82 percent in US women [7], 70 to 85 percent in Europe [8] and 62.5 to 79.9 percent in Iran [9]. It is problematic in about 20-25 percent of women [10]. Women who complain about this issue are usually suffering from other complications in work, social activities, leisure time, mood, concentration, communication with others, sexual activity, and general quality of life [11]. An etiologic relationship seems to be between the above-mentioned symptoms and the favorable environmental and contextual

Access this article online

Website: www.japer.in

E-ISSN: 2249-3379

How to cite this article: Nasim Sadeghi Joula, Pourandokht Afshari, Hadis Moradi Farsani, Mohammad Hossein Haghhighizadeh. Investigating the frequency and factors associated with hot flush in postmenopausal women referred to the Menopausal Clinic of Imam Khomeini Hospital in Ahwaz city in 2018. *J Adv Pharm Edu Res* 2020;10(S2):79-83.
Source of Support: Nil, Conflict of Interest: None declared.

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factors, which based on the studies, the type and rate of these communications are different from the studies and articles presented in different communities and countries [12, 13]. In a study conducted in Sweden, it was shown that high levels of education, healthy lifestyle, menopause at higher age, and more physical activity decrease the clinical symptoms of menopause, especially hot flush. In contrast, low socioeconomic status, the history of ovaries removal surgery, high weight, smoking, and medical problems increases the complaints of hot flush and vaginal dryness symptoms [14]. In another study conducted in Atlanta, it was found that lower level of education, undesirable economic conditions, smoking, low physical activity, and high BMI increased menopausal symptoms in women [15]. As hot flush is the most common complication of menopause and due to the high prevalence of this complication in Iranian women, this research was conducted to evaluate the frequency and factors affecting this complication.

Methodology

The present study was a descriptive and cross-sectional study conducted after obtaining permission from Ethics Committee of Jundishapur University of Medical Sciences at the Menopause Clinic of Ahwaz of Imam Khomeini Hospital. First, medical records in clinics were examined and out of 280

postmenopausal women, 240 referred in person. According to the initial inclusion criteria of the study, considering the age between 45 and 60 years and having reading and writing literacy, 196 people were recognized eligible to be invited to the study. After obtaining written consent from all research subjects, a demographic characteristic questionnaire and a hot flush recording checklist, adapted from the Cooperman Index, were completed by the subjects under the supervision and presence of the researcher. The data were analyzed by SPSS, version 22, software. The statistical tests used in this study included independent t-test and Chi-square.

Results

In this study, 196 women with a mean age of 51.71 ± 3.41 were studied. The mean age of menopause was 48.95 ± 3.01 years and BMI was 30.05 ± 4.13 . Among the variables affecting hot flush and night sweats, only marital status and BMI showed statistically significant relationship with hot flush (Table 1). In examining the hot flush and night sweats in the subjects, 144 people (73.5%) reported degrees of hot flush. In this regard, hot flush at moderate level (69 people, 35.2%) had the highest frequency and 104 people (53.1%) reported degrees of night sweats (Table 2).

Table 1. The variables studied in postmenopausal women using descriptive tests

Variable	Frequency (%)	Significance level using statistical tests		
		Hot flush	Night sweats	
Mean age (year)	$51. \pm 71$ 3.41	P= 0.612	P= 0.190	
Mean age of menopause (years)	$48. \pm 95$ 3/01	P= 0.614	P=0.815	
BMI	$30. \pm 05$ 4.13	p<0.001	p<0.001	
Level of education	Elementary	(39.8)78	P= 0.40	P= 0.67
	High school and diploma academic	(51)100 (9.2)18		
job	housewife	(87.8)172	P= 0.34	P= 0.10
	employed	(8.2)16		
	Retired	(3.3)6		
Economic status	weak	(49.5)97	P= 0.33	P= 0.26
	moderate	(44.4)87		
	good	(6.1)12		
Marital status	married	(76.5)150	P=002.0	P=04.0
	single	(23.5)46		

Significance level at the level of 0.05 of qualitative variables (Chi-square test), quantitative variables (independent t-test)

Table 2. The prevalence of night sweats and degrees of hot flush separately based on its severity

Variable	F (%)	
Hot flush	no	(26.5)52
	mild	(17.9)35
	moderate	(35.2)69
Night sweats	severe	(20.4)40

no	(45.9)92
yes	(54.1)104

Discussion and Conclusion

Menopause is one of the most critical periods of life in some women and the most common complication in this period is hot flush [1]. Hence, the present study was conducted to evaluate the frequency of hot flush and the factors affecting it in postmenopausal women. The mean age and menopausal age in the present study were 51.71 and 48.95 years, respectively. There was no significant relationship between the menopausal age and the symptoms of hot flush and night sweats. These results were in line with the results of the research conducted by Ayati *et al.* (2008) who showed the effect of menopausal age on clinical symptoms [16]. However, based on the Zamani *et al.* (2013), the prevalence of hot flush increased with increasing the age, which was inconsistent with the results of our study [17]. The results of present study showed that 73.5% of postmenopausal women had hot flush and 35.2% of them experienced hot flush at moderate level. In studies in western countries, the prevalence of hot flush among postmenopausal women was also reported up to 90% and it was the most common symptom in postmenopausal women, which was similar to our study [12, 18]. However, in the study conducted by Makvandi *et al.*, 49.4% of women had hot flush, which was not consistent with the present study [19]. Moreover, Dillon *et al.* in Malaysia and Rahman *et al.* in Bangladesh reported the rate of hot flush 53% and 35.8%, respectively, which were not consistent with the present study. These differences might be due to ethnical and cultural differences and differences in the used diet [20, 21]. A significant relationship was found between marital status and hot flush in the present study. Studies suggested a significant correlation between the knowledge of symptoms and complications of menopause and marital status, which was consistent with our study [22]. Ayati *et al.* did not find a significant relationship between marital status and hot flush in their study, which was different from the results of our study [16]. The knowledge level of married subjects of menopausal complications was higher, leading to accepting the orders and understanding the risk factors [22]. There is a growing knowledge of the role of psychological factors in understanding the menopause effects and its associated symptoms. For example, some evidence suggested that hot flush is created in response to daily stress and anxiety [23, 24].

The results of the present study suggested the effect of BMI on hot flush in postmenopausal women, which was similar to the results of studies conducted by Zachow (1997) and Montgomery (1999), who showed an increase in hot flush with an increase in BMI [25, 26]. Results of the research conducted by Zamani *et al.*, similar to the results of the present study, showed a relationship between BMI and menopausal symptoms [17]. Seulkoo *et al.* (2017) concluded that vasomotor symptoms in obese women were significantly higher than those in normal weight and overweight women [27]. Thurston *et al.* (2007) showed that obesity was associated with a possible increase in

vasomotor symptoms [28]. In the research conducted by Ayati *et al.*, no correlation was found between these two factors. Their results were not consistent with the results of our study [16]. The effect of BMI on hot flush and night sweats can be due to the effect of different factors. The results of animal studies have shown that leptin and a tumor α necrosis factor were produced in adipose tissue, which may disrupt estrogen secretion and this result might be also reported in humans [25, 26]. The results of this research found no significant relationship between the level of education and hot flush and night sweats, which was similar to the results of the study conducted by Zamani *et al.* [17]. However, in the study conducted by Abedzadeh *et al.*, a significant relationship was reported between education level and menopausal symptoms [29]. In the present study, the results did not show a relationship between economic status and employment and hot flush and night sweats. The results of the study conducted by Ayati *et al.* did not show a relationship between the job and menopausal symptoms, while the study conducted by Soltani, menopausal complications was associated with the economic status, which was not consistent with the results of our study [16, 30]. Economic status affects the social support and access to health facilities [31]. As the subjects studied in this research were at similar level in terms of economic status and job, lack of relationship can be attributed to this similarity. One of the limitations of this study was the individual differences, psychosocial status of patients in completing the questionnaire and the difference in understanding the menopause symptoms.

Conclusion:

The results of this research suggested the prevalence of hot flush and night sweats in postmenopausal women was associated with BMI and marital status.

Acknowledgments

This study is a part of master thesis of midwifery, written by corresponding author. We thereby appreciate the Research Deputy of Ahwaz University of Medical Sciences due to cooperation and financing the research as well as women participating in this research due to the completion of the questionnaires and honorable personnel of the gynecologic clinics of hospitals of Ahwaz University of Medical Sciences.

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