Evaluation of the frequency and factors related to sleep disorders in menopause women admitted to Menopause Clinic of Imam Khomeini Hospital in Ahwaz City in 2018

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ABSTRACT

Introduction: Sleep disorders are one of the most common problems in menopause period. Several factors are involved in these problems. The objective of this research was to evaluate the frequency and factors associated with sleep disorder in menopause women in Ahwaz city in 2018. Methodology: The present study is a descriptive cross-sectional study conducted in 2018 to evaluate the frequency and factors associated with sleep disorders in menopause women in menopause clinic of Imam Khomeini hospital in Ahwaz. The data were collected using demographic characteristics form and insomnia severity index questionnaire, and Pittsburgh sleep quality questionnaire. The results were analyzed using SPSS-22 software and Chi-square and independent t-test were used as statistical tests. Results: A total of 181 women with mean menopause age of 48.85 ± 3.16 years were included in the study. It was found that 81 patients (48%) had degrees of insomnia and 93 patients (51.4%) had poor sleep quality. Evaluation of dimensions of sleep quality revealed that 62 (43.3%) of menopause women slept late and only 78 (43.1%) of them had desired level of sleep quality and had sleep more than 7 hours. Among the variables affecting sleep, only poor economic status showed significant and reverse correlation with sleep quality. Conclusion: The results of this study suggest low sleep quality and sleep disorders in menopause women are associated with poor economic status.

Keywords: sleep disorders, menopause, sleep quality

Introduction

Menopause is defined as a complete menstrual cessation for 12 months. Its main symptoms are follicular atrophy, leading to

reduced production of estrogen and inhibin, and thus, an increase in follicle-stimulating hormone [1]. Due to an increase in old population in future decades in the world, it is estimated that 1.2 billion women will be at the age of menopause or post-menopause around the world by 2030 [2]. Based on the population and housing general census in Iran in 2016, women in the age group of 45-65 are estimated to be around 7 million [3]. The most common menopause symptoms include vasomotor symptoms (hot flashes and night sweats), sleep disorders, and vaginal dryness [4]. It is estimated that 85% of menopause women to experience one of the symptoms of menopause throughout their lifetimes [5]. Sleep disorders are considered as a key symptom during transition from menopausal period. Unlike men, sleep problems in women is growingly increasing from about 12% to 40% in their late 40's and early 50's [6]. Epidemiological studies suggest that women

at their menopause age are more prone to sleep disorders than those of reproductive age [7-11], and this disorder is one of the main concerns of menopause women [12-16].

Women's Health Global Study revealed that the prevalence of sleep disorders increases with increasing age, so that their prevalence is between 16% and 42% in premenopausal women, between 39 and 40 in women around their menopausal age, and between 35 and 60% in postmenopausal women [17]. This complication has high impact on quality of life, mood, productivity and physical health, especially in women with severe sleep disorder disrupting their daily activities [18]. In addition, insomnia is associated with physical and psychological problems, such as anxiety and depression, chronic medical problems such as high blood pressure, type 2 diabetes, pain and the use of drugs and alcohol [19]. Sleep problems during menopause are involved in high prevalence of clinical depression, and depressed mood during and after menopause [20]. Several factors affect the frequency of this complication. Wilcox et al (2000) in a study conducted in USA reported that low level of education, cardiovascular disease, arthritis, inactivity; knee pain, depression, and low social support have inverse linear relationships with sleep disorder [21]. The results of the research conducted by Zenk et al. (2007) in China indicate the effect of level of education and menopause symptoms on sleep disorders [22], while Strain (2005) reported that changes in the level of secretion of female hormones, stress, illness, lifestyle and sleep environment affect sleep disorder and age and number of children have no effect on it [23]. In the results of research conducted by Tavoni et al (2009) showed significant relationship between the four characteristics of employment status, spouse employment, educational level and economic status and sleep disturbance [24]. Given the importance and quality of women's health and the effect of women's health and well-being on family health, this research was conducted to evaluate the frequency and factors related to sleep disorders, which is one of the important factors associated with women's health especially during menopause.

Methodology

The present study is a cross-sectional study conducted to evaluate the frequency and factors affecting sleep disorders in menopause women admitted to menopause clinic of Imam Khomeini Hospital in Ahwaz. It was conducted after obtaining license from the Jundishapur University of Medical Sciences (IR.AJUMS.REC.1397.014) at the Menopause Clinic of Ahwaz Imam Khomeini Hospital. First, medical records were reviewed at the clinic, and out of 267 existing records, 183 people met the inclusion criteria of study. The research inclusion criteria included the age range was 40 to 60 years, passing a minimum of one year and a maximum of 5 years after menopause, willingness to participate in the research and having consent written. The exclusion criteria included unwillingness to participate in research, medical disease interfering with sleep disorders, working at night shift, tobacco use (more than 10 cigarettes per day), drugs and alcohol use.

Then, they were invited by phone to interview and fill out in the questionnaires. Based on the Sandes Lebenko et al. [25], the minimum sample size was determined 173 people with confidence of 0.95 and accuracy of 0.07. The questionnaires used in this study included demographic characteristics questionnaire, insomnia severity index, and Pittsburgh sleep quality questionnaire.

Insomnia severity index, the symptoms of insomnia, along with their negative effects on the lives of people have questioned over the past 2 weeks. This questionnaire consists of 7 questions about assessing the severity of disorder at the beginning of sleep, staying in sleep, waking up early, satisfying with sleep status, the sleep problem interference with daily functioning, the problem of sleep for others, and being concerned about sleep problems. Pittsburgh's sleep quality scale is 19-item questionnaire, evaluating one's quality of sleep according to his or her sleep status over a one-month period. This questionnaire evaluates one's quality of sleep in seven components (sleep quality, sleep latency, sleep time, sleep adequacy, sleep disturbances, the use of sleep drugs, and daily dysfunction). The total score of the Pittsburgh Sleep Quality Scale is obtained from sum of scores of 7 components and it is from 0 to 21.

Results

In this research, 181 women with mean age of 51.71 ± 3.53 years were included. The mean age of menopause was 48.85±3.16 years and the mean BMI was 30.28±4.38. In terms of demographic variables, 84 subjects (46.6%) had high school level of education, 163 subjects (90.1%) were housewives, and 95 (52.5%) had poor economic status. Investigating the sleep problems and sleep quality showed that 81subjects (48%) had degrees of insomnia and 93 (51.4%) reported poor sleep quality. Only poor economic status showed statistically significant relationship with sleep quality (Table 1).

Table 1: Investigating the variables studied in menopause women using descriptive tests

variable		F (%)	p-value using statistical tests	
			Insomnia severity index (ISI)	Sleep quality (PSQI)
Mean age (year)		51.±71 3.53	P= 0.693	P= 0.174
Mean age of menopause (year)		48.±85 3.16	P= 0.614	P=0.838
Body mass index (BMI)		30.±28 4.38	P= 0.951	P= 0.428
Education	Elementary	(45.3)82		
	High school	(46.4)84	P= 0.184	P= 0.704
	Academic	(8.3)15		
job	Housewife	(90.1)163		
	employed	(6.6)12	P= 0.771	P= 0.281
	Retired	(3.3)6		
Economic status	poor	(52.2)95	*P= 0.025	*P= 0.04
	Moderate	(40.9)74		

	good	(6.6)12
Insomnia severity index (ISI)	Lack of sleep problem (less than 7)	(55.2)100
	Mild insomnia (8-14)	(14.4)26
	Moderate insomnia (15-22)	(22.7)41
	Severe insomnia (above 22)	(7.7)14
Sleep Quality Pitsburg Index(PSQI)	Good quality of sleep (less than 5)	(48.6)88
	poor quality of sleep (more than 5)	(51.4)93

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

In investigating the dimensions of sleep quality in the present study, it was revealed that 62 (43.3%) of menopause women had sleep latency, and 64 (35.2%) of them reported their sleep quality at the moderate level. In terms of duration of sleep, only 78 (43.1%) of them reported it at the desired level and more than 7 hours (Table 2).

Table 2 . The frequency and percentage of quality of life index dimensions in menopause women using descriptive tests

Variable		F(%)			
		Without problem	mild	moderate	Severe
Sleep quality index (PSQI)	Sleep latency (SL)	(42)76	(34.3)62	(16.6)30	(7.2)13
	Subjective sleep quality (SSQ)	(39.8)72	(15.5)28	(35.4)64	(9.4)17
	Sleep efficiency (SE)	(42.5)77	(29.8)54	(23.2)42	(4.4)8
	Sleep duration (SD)	(43.1)78	(20.4)37	(29.8)54	(6.6)12

Discussion and Conclusion

Menopause is one of the most critical periods of life for some women. Sleep disorder is one of the most common problems in this period of life [18]. Hence, the present study was conducted to evaluate sleep disorders and factors affecting it in menopause women. The mean age of menopause in this study was 48 years, which is slightly lower than that of other studies. In the study conducted by Elvsky (2012), the mean age of menopause was 50 years, and it was 51 years in the United States. One of the possible reasons for the difference in menopause age in different communities might be difference in the age range considered in various studies. This difference also might be due to differences in personality traits of people, environmental conditions and work environment, rate of exposure to chemical substances, radiation and environmental pollutants, environmental conditions, nutrition, and genetic status of women [26].

The results of present research showed that 48% of menopause women suffer from insomnia and 22% of them experience moderate insomnia. In this regard, in the study conducted by Arakane et al. (2011), 41% of menopause women had insomnia problem and 30% of them had mild insomnia [27]. In addition, the results of research conducted by Lampio et al. (2016) and Baker et al. (2018) on sleep problems in menopause women are similar to those of present study [18, 28]. Sleep problems are more associated with menopause stages and changes in the estradiol and follicle stimulating hormone rather than age. The most important factors involved in sleep disorders include personal and cultural issues, the loss of maternal role or empty nest syndrome, unavoidable death of spouse, caring for elderly parents, negative attitude towards menopause, long-term menopause, chronic pain and disability, changes in sexual desires and symptoms of menopause, such as hot flashes, night sweats, and secondary sleep disorders. In addition, depression disorders and sleep-related movements increase in most cases, especially after menopause [29].

The results of this research showed that 51% of the studied women had poor sleep quality. These results are similar to those of research conducted by Tavoni et al (2012), in which 70% of menopause women had poor sleep quality, Azhari et al (2014), in which 73% of women had poor sleep quality [24, 30], and Yang et al. (2003) [8]. Ohayon (2002) reports that one of the most important causes of sleep disorder during menopause is reduced level of sexual hormones and hormonal-dependent physical and mental changes might be involved in sleep disorders in this period [30]. In the current research, a significant and negative correlation was found between economic status and the sleep disorders, so that 57% of menopause women with severe sleep problems and 64% of women with poor sleep quality had poor economic status. This result is similar to that of research conducted by Tavoni (2015) and Leshner [24, 31]. Research suggests that economic problems and more mental conflicts to run the life lead to secretion of cortisol hormone, which affects the quality of sleep [18, 29] under the influence of life stresses [18, 29].

No significant relationship was found between age and sleep disorders. This result was similar to that of research conducted by Tavoni and Azhari [24, 32]. It could be due to the selection of all samples among the postmenopausal women. Studies have also shown that melatonin hormone is secreted less in elderly people, leading to sleep latency [18]. The results of present study revealed no significant relationship between BMI and sleep disorders. It is similar to the result of research conducted by Zenubi et al. (2002) and Yazdi et al. (2013) [33]. However, in the study conducted by Nafil et al. (2018) on the relationship between obesity and sleep disorders in menopause women showed a significant relationship between sleep latency and negative sleep efficiency and increased body mass. It was not in line with the result of present study [34]. The reason for this difference in the results can be justified by the fact that BMI of the menopause women studied in the research conducted by Nafil was much higher than that of the present study. As studies have shown, obesity is associated with respiratory disorder and sleep apnea, decreased pulmonary capacities through

involuntary control of CNS, which can cause fatigue and sleep disorders [29, 33].

In this study, there was no significant relationship between employment status and education and sleep disorders, while in the study conducted by Wilcox et al. (2000) and Tavoni, this relationship was significant, so that employed people reported more sleep disorders [21]. The reason for this difference might be justified by the fact that only 6% of the subjects were employed in this study, which this figure is lower than that of previous studies. Studies have shown that the high social burden of working women along with family duties in the long term can affect their sleep quality at retirement age [18]. In addition, the study conducted by Ohayon showed that higher level of education was associated with sleep disorders and in the study conducted by Leshner et al. (2005), a lower level of education was associated with sleep disorders [30, 31], which is not similar to the results of the present study. The results of studies have shown that people with lower educational levels have less access to health facilities, leading to a lower level lifestyle and more sleep disorders [29]. One of the limitations of this study is the individual differences and psychosocial status of patients in completing the questionnaires.

Conclusion

The research suggests that poor sleep quality and sleep disorders in menopause women are associated with poor economic status.

Acknowledgment

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