



ARE YOU GETTING ENOUGH SLEEP LADIES? – AN OBSERVATIONAL STUDY USING ATHENS INSOMNIA SCALE

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ABSTRACT

Background Sleep disorders are an extremely common ailment among the general aging population, especially emphasising on the postmenopausal women. There are a number of modifiable as well as non modifiable causes that are attributed towards its occurrence. **Method** A total of 300 postmenopausal women who visited the gynaecology outpatient department in Saveetha medical college and hospital between the period 1 January 2021 to 30 June 2021 in view of various complaints were screened for sleep disorders using the Athens Insomnia Scale(AIS-8). After obtaining informed consent and explaining the aspects of the AIS-8 in participants regional language, the questionnaire was provided, ensuring adequate privacy. A score of six and more was considered positive and the participant was considered to suffer from sleep disorder. **Results** Sleep disorder was noted to have a prevalence rate of 66%(198) in the study population. The factors analysed were also considered to have a correlation with each other, thereby bringing about the onset of multiple complaints among these women. Participants with a score of 6 and above were referred to the psychiatrist for counselling and further management. However, sleep disorder was not considered a major health issue among the population studied. Lack of awareness among the general population have lead to the high prevalence of this ailment which has a high tendency to induce major mental illnesses like depression and anxiety. **Conclusion** Screening the general population, especially those at high risk, like peri menopausal and postmenopausal age group, will aid in early diagnosis, prevention and management of a highly common mental issue in our regions.

KEYWORDS : Sleep Disorders, Postmenopausal, Insomnia, Athens Insomnia Scale

INTRODUCTION

Many of midlife women common complaints have emerged to have put a great pressure on society yet have not been advocated enough among the general population for early intervention or prevention. One such issue that is on the rise at a rapid rate is the trouble with sleep that mid life women face. According to a study of the general population, insomnia is the most prevalent sleep disturbance.¹ Sleep disturbance is often the start of a series of health problems that may impair quality of life. People reporting poor sleep quality tend to lack energy for carrying out day to day activities in the daytime and are often found to be slow in their work.²

Recent studies have suggested that severe sleep difficulties are associated with not just adverse mental but also physical health.³ Long term sleep deprivation has been shown to be strongly linked with depression^{4,5} and anxiety.⁵ Further, longitudinal studies have suggested that people with sleep disorders are at higher risk of persistent depression.⁶

Menopause refers to the period after 1 year has elapsed since the last menstrual period. Ovarian function begins to deteriorate, and function of the hypothalamic-pituitary-ovarian axis begins to change, level of follicle stimulating hormone (FSH) rise overall, and are typically ≥ 25 IU/L in the late menopausal transition. In association with the fluctuation and gradual decline in oestrogen (typically estradiol), menopausal symptoms emerge.³

Women undergo physical and psychological changes as a result of hormonal changes, e.g., mood swing, anxiety, stress, insomnia and sexual dysfunction. According to the Study of Women's Health Across the Nation (SWAN), the prevalence of sleep disorders increases with age and is about 60% in postmenopausal women the commonest complaint being

nighttime awakenings.⁷ Sleep disturbances impact health-related quality of life, work productivity, and healthcare utilisation and can have long-term effects on health and wellbeing across several years of the menopausal transition.⁸ According to National Institutes of Health State-of-the-Science Conference statement, the prevalence of self-reported sleep difficulties ranged from 16%–42% in the late-reproductive stage among all ethnicities in the United States.⁹

AIM

The aim of this study was to analyse the prevalence, pattern and severity of insomnia symptoms among postmenopausal South Indian women.

METHOD AND MATERIAL

This is a single-center, community-based, observational descriptive study conducted on 300 postmenopausal women who attended Saveetha medical college and hospital Gynaecology out patient department during a period of six months (1 January 2021 to 30 June 2021) for various complaints using the Athens Insomnia Scale(AIS-8).

Baseline criteria for study inclusion were:

- participants were generally healthy and aged 44 to 66
- do not have history of any type of hysterectomy
- no history of severe systemic diseases, including haematological disorders or malignancies
- not on hormone replacement therapy

Criteria for study exclusion were

- use of oestrogen during the study
- undergoing hysterectomy and/or oophorectomy
- on medication for complaints of sleep disorders
- known case of psychiatric disorder

In this study, the prevalence, pattern and severity of insomnia symptoms (trouble falling asleep, waking up early) were assessed separately using a questionnaire based on the Athens Insomnia Scale (AIS-8); which is reported to be have a sensitivity of 93% and specificity of 85%. AIS-8 was first introduced in Athens, Greece by a group of researchers to assess the insomnia symptoms in patients with sleep disorders. It is measured by evaluating eight factors related to sleep. Each factor is rated on a 0-3 scale and the cumulative score is calculated by adding all the individual score. A cut off more or than or equal to 6 on the AIS-8 is used to diagnose insomnia.

After obtaining informed consent from the participants, the questionnaire was explained to them in their regional language. Participants were provided adequate privacy during the study by giving them a separate room during the time they answered the questionnaire. Personal details of the participants (age, BMI, number of members in the family, place of residence, educational status, occupation, monthly income, history of psychiatric illness in self and family members) were collected along with the AIS-8 questionnaire. Participants with score 6 and more were referred for psychiatric counselling for management of their current condition.

Statistics

Results obtained were recorded in Microsoft excel and analysed using IBM descriptive statistical analysis software and Chi-square test was used to analyse the association between categorical variables and p value of 0.05 and below were considered significant.

RESULTS

A total of 300 women who were eligible for the study were considered and informed consent was obtained from all of them.

Demographic analysis

The mean age of the participants of this study was found to be 51.2 with mean BMI 25.9 and most of them having an educational qualification of lower than class 8. All of them came from a family of 3-6 members, with a family monthly income of less than 15535 (Table 1). All the participants belong to socioeconomic status of class 4 according to the Kuppasamy classification.

Of the study population considered, 21%(63) were 45 years or younger, 31% were between 46-50 years of age, 23% were between 51 to 55 years of age, 19% were between 56-60 s of age and 6% were more than 60 years old. (Figure 1)

Considering BMI, 2% were underweight, 42% were fell under normal category, 41% were overweight and 15% were obese. (Figure 2)

The percentage of the study population with educational qualification of class 1, 2, 3, 4, 5, 6, 7, 8 and no educational qualification were 10%, 19%, 15%, 12%, 14%, 1%, 6%, 14% and 9% respectively. (Figure 3)

76% of the study population were from Kanchipuram and 24% were from Chennai.

In this study, 18% came from a family of 3 members, 24% came from a family of 4 members, 27% came from a family of 5 and 31% came from a family of 6. (Figure 4)

94% of the women considered were housewives and 6% were janitors.

Only 4% of the participants of this study gave a history of psychiatric illness in family members.

No correlation could be established between the demographic data (including BMI and history of psychiatric illness in family members) collected and the occurrence of sleep disorders in the study population.

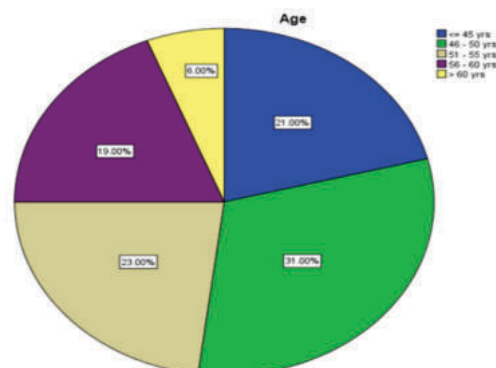


Figure 1

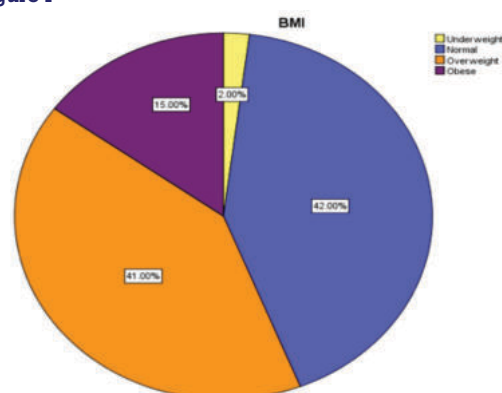


Figure 2

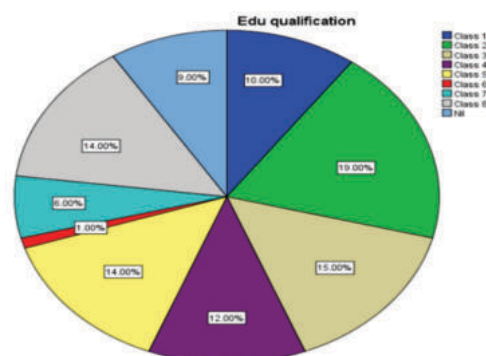


Figure 3

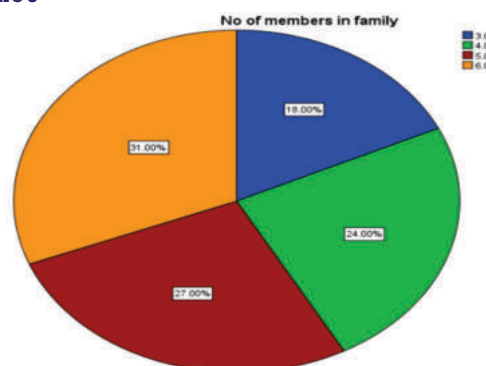


Figure 4

Prevalence

Of the total study population, the prevalence of sleep disorder (score of 6 or more) was found to be 66%(198).

Pattern

Of the total study population, 57% had problems with sleep induction, 61.33% had awakening at night, 53% reported final awakenings earlier than desired, 54% were not satisfied with their total duration of sleep, 54.67% reported impaired sense of well being during the day, 63.67% were not satisfied with the overall quality of sleep, 50% had complaints of ineffective functioning during the day, and 51.33% had complaints of sleepiness during the day.

Of the 198 participants who were diagnosed with insomnia, 170 had problems with sleep induction, 180 and complaints of awakenings during night, making it the commonest complaint, 154 had final awakening earlier than desired. 160 reported poor total duration of sleep and sense of well being during day. 188 participants were not satisfied with the overall quality of sleep. 146 women showed decreased functioning during the day. 152 women had complaints of sleepiness during the day.

On a comparison of the variables taken into consideration, a positive association was established between total duration of sleep and a sense of impairment of wellbeing during the day, dissatisfaction of overall quality of sleep, ineffective functioning during the day and complaints of sleepiness during the day with a p value of 0.0005 for all the above comparisons as shown in the tables below. (Table 2,3,4,5)

Table 2: Sense of well being during the day * Total duration of sleep

Duration of sleep			Total duration of sleep		Total
			No	Yes	
Sense of well being during the day	No	Count	102	34	136
		% of Total	34.00%	11.30%	45.30%
	Yes	Count	36	128	164
		% of Total	12.00%	42.70%	54.70%
Total		Count	138	162	300
		% of Total	46.00%	54.00%	100.00%

Pearson chi square value 84.229, df 1 with p value of 0.0005

Table 3: Not satisfied with overall quality of sleep * Total duration of sleep

Duration of sleep			Total duration of sleep		Total
			No	Yes	
Not satisfied with overall quality of sleep	No	Count	100	8	108
		% of Total	33.30%	3.00%	36.30%
	Yes	Count	38	153	191
		% of Total	12.70%	51.00%	63.70%
Total		Count	138	162	300
		% of Total	46.00%	54.00%	100.00%

Pearson chi square value 144.216, df 1, p value 0.0005

Table 4: Functioning during day * Total duration of sleep

Total duration of sleep			Total duration of sleep		Total
			No	Yes	
Functioning during day	No	Count	114	36	150
		% of Total	38.00%	12.00%	50.00%
	Yes	Count	24	162	186
		% of Total	8.00%	42.00%	50.00%
Total		Count	138	162	300
		% of Total	46.00%	54.00%	100.00%

Pearson chi square value 108.696, df 1, p value 0.0005

Table 5: Sleepiness during day * Total duration of sleep

Total duration of sleep			Total duration of sleep		Total
			No	Yes	
Sleepiness during day	No	Count	112	34	146
		% of Total	37.30%	11.30%	48.70%
	Yes	Count	26	128	154
		% of Total	8.70%	42.70%	51.30%
Total	Count	138	162	300	
	% of Total	46.00%	54.00%	100.00%	

Pearson chi square value 108.001, df 1, p value 0.0005

Severity

The prevalence and the positive association between factors studied signifies that sleep disorders have a high prevalence among our society and the severity level is such that it warrants immediate attention of the current situation for early intervention and further management.

DISCUSSION

The prevalence of sleep disorder in postmenopausal women

was found to be 66% according to this study. The mean age of women who participated in this study was noted as 50.3. However, the average age at menopause in India was reported to be 46.6 by Jang Bahadur Prasad et al. No correlation was found between demographic factors analysed and the prevalence rate. This was found to be accordance with a study conducted by Joffe test al., 2010¹⁰; Polo-Kantola, 2011 - where the prevalence was reported at 40-60%.¹¹ It was also reported as one of the top health issues in peri-menopausal and post menopausal women by van Dijk et al., 2015.¹² Sleep disorders are also known to cause significant distress and impact women's daytime functioning as reported by Ohayon, 2006.¹³

A Study by Simon et al, showed that insomnia symptoms were the most problematic among all the physical and psychological changes during the period of menopausal transition that affects daily life and working performance.¹⁴

However, a similar study conducted by Sharma et al. observed sleep disturbances in 45% of postmenopausal women, a much lesser rate than that observed in this study.¹⁵ This difference could be attributed to the socioeconomic status and lifestyle of the study population and the data collection methods.

This study notes a positive correlation between total duration of sleep and a sense of impairment of wellbeing during the day, dissatisfaction of overall quality of sleep, ineffective functioning during the day and complaints of sleepiness during the day with a significant p value of 0.0005. This conveys the fact that reduction in total duration of sleep can bring about other sleep disturbances considered as they are interrelated.

Causes of insomnia in middle age women could be numerous other than the fluctuation in oestrogen level during the menopausal transition, which further imposes these women to a higher risk for developing depressive symptoms as suggested by the SWAN study, typically about two to four times higher than the common population.

Another study suggested the 'domino theory' that predicted that vasomotor symptoms lead to insomnia, which in turn leads to the development of mood symptoms, but this has only partial support. Despite the factors mentioned above that contributes to major sleep disorders among postmenopausal women, there are other causes like family issues, financial crisis, problems with residence etc., which can be modified if identified at the appropriate time.

Screening for sleep disorders among the postmenopausal population using non invasive methods like the simple questionnaire will be beneficial as prevalence is found to be high.

Intervention at an early stage of onset of insomnia among middle age women is an absolute requirement in order to prevent the occurrence of depression, an illness that can impose a major threat to not only the individual but also the social set up as a whole.

CONCLUSION

The prevalence of sleep disturbance is found to be quite high, a stage at which it needs awareness to be created among the general population for easier identification, effective prevention, and if possible, earlier intervention. Simple measures taken at the preliminary stage can definitely bring about great changes on the long run. Hence, adequate efforts have to be taken for creating awareness amid the general population to identify and intervene sleep issues faced by midlife women for the betterment of lives of the women kind.

Limitations

It was a single-centre study thus only a particular region was analysed in this study. A larger, diverse study population is necessary to validate the results obtained here.

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Conflicts Of Interest

None

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