Prevalence and Predictors of Sleep Quality among Institutionalized Elderly: A Cross-Sectional Study

RESEARCH REVIEW International Journal of Multidisciplinary | e-ISSN: 2455-3085
Double-blind peer-reviewed and refereed online Journal (Impact Factor-6.93)
11 (5) 209-216, 2026

10.31305/rrijm.2026.v11.n05.023
https://rrjournals.com/

Received: 21 Mar, 2026
Revised: 25 Apr, 2026
Accepted: 27 Apr, 2026
Published: 15 May, 2026

*[1]Sam Asir Sugantharaj. R, [2]Dr. Jaslina Gnanarani. J, [3]Dr. Jaya Thangaselvi. G, [4]Dr. Vijayalakshmi. K and [5]Dr. Priya. S

[1]PhD Scholar, Apollo College of Nursing, Chennai, The TN Dr. MGR Medical University, Chennai, India
[2]Principal and Head Medical Surgical Nursing, Apollo College of Nursing, Chennai, The TN Dr. MGR Medical University, Chennai, India
[3]Professor and Head Medical Surgical Nursing, C.S.I Jeyaraj Annapackiam College of Nursing, Madurai, The Tamilnadu Dr MGR Medical University, Chennai, India
[4]Vice Principal & Head- Research & Development, Apollo College of Nursing, Chennai, The TN Dr. MGR Medical University, Chennai, India
[5]Associate Professor, Apollo College of Nursing, Chennai, The TN Dr. MGR Medical University, Chennai, India

Abstract: ***Introduction***: *Ageing is accompanied by physiological and psychosocial changes, among which sleep disturbances are highly prevalent. Poor sleep quality contributes to cognitive decline, reduced functional ability, and diminished quality of life. Institutionalized elderly are particularly vulnerable, making systematic assessment of sleep essential* ***Methods***: *A cross-sectional descriptive study was conducted among 100 elderly residents of selected old age homes in Madurai. Data were collected using a structured proforma and the Pittsburgh Sleep Quality Index (PSQI), a validated tool comprising 19 items across seven components. Descriptive and inferential statistics were applied to analyze demographic variables and their association with sleep quality.* ***Results***: *The findings revealed that nearly all participants experienced sleep disturbances, with 48% reporting moderate difficulties, 47% mild difficulties, and only 1% reporting good sleep. Regression analysis showed that age was the only significant determinant of sleep quality ($p < 0.001$), while other demographic variables such as gender, education, marital status, financial dependency, and chronic illness did not show significant associations.* ***Conclusion***: *Poor sleep quality is highly prevalent among institutionalized elderly, with advancing age being the strongest predictor of sleep disturbances. These results highlight the need for comprehensive interventions—medical, psychosocial, and lifestyle-based—to improve sleep health and overall well-being in this vulnerable population.*

*Corresponding Author
Sam Asir Sugantharaj. R, PhD Scholar, Apollo College of Nursing, Chennai, The TN Dr. MGR Medical University, Chennai, India
asirsam26@gmail.com

Access Online

Keywords: *Elderly, Sleep Quality, Pittsburgh Sleep Quality Index, Institutionalized Elderly, Ageing*

1 | INTRODUCTION

The global population is experiencing a significant demographic shift toward ageing, driven by increased life expectancy and declining fertility rates. According to recent estimates, the number of people aged 60 years and above is projected to rise from 1 billion in 2020 to 1.4 billion, and further double to 2.1 billion by 2050, while those aged 80 years and above are expected to triple to 426 million (Boro, 2021). Ageing is a natural biological process characterized by progressive functional decline resulting from cumulative molecular and cellular damage. In India, this transition is particularly evident, with life expectancy rising substantially and the elderly population projected to reach 198 million by 2030 and 326 million by 2050 (Schumacher, 2021). Recent studies (WHO, 2022; United Nations, 2023) highlight that ageing is not only associated with physical decline but also with psychosocial transitions such as retirement, loss of social roles, and bereavement, all of which influence overall well-being. Ensuring the physiological, psychological, and emotional health of older adults is therefore essential for promoting healthy ageing.

Sleep disturbances are among the most common health concerns affecting older adults, often manifesting as fragmented sleep, frequent awakenings, and increased daytime sleepiness. These disturbances are linked to adverse outcomes such as cognitive decline, increased risk of falls, reduced quality of life, and higher morbidity and mortality (Holler, 2021; Yaremchuk, 2018). Contemporary research (Li et al., 2022; Sleep Foundation Report, 2023) indicates that while older adults may require slightly less sleep, poor sleep quality is largely influenced by modifiable factors such as lifestyle habits and sleep environment. Management approaches include pharmacological treatments and cognitive behavioral therapy; however, non-pharmacological interventions such as environmental modifications, reflexology, and music therapy are gaining increasing attention due to their safety and effectiveness (Flaxer, 2021). Recent evidence suggests that music therapy can significantly improve sleep quality by reducing physiological arousal, lowering heart rate and blood pressure, and decreasing norepinephrine levels, thereby promoting relaxation and sleep initiation (Wang et al., 2022). As frontline caregivers, nurses play a crucial role in assessing sleep patterns and implementing such complementary therapies to enhance sleep quality and overall well-being among the elderly.

The assessment of sleep quality in the elderly is essential due to the high prevalence of sleep disturbances and their significant impact on physical and psychological health. Poor sleep quality among older adults is associated with adverse outcomes such as cognitive decline, increased risk of falls, reduced functional ability, and diminished quality of life (Holler, 2021; Yaremchuk, 2018). Although sleep problems are common in this population, they often remain underreported and inadequately assessed in clinical and community settings. Standardized tools such as the Pittsburgh Sleep Quality Index (PSQI) are widely used to objectively evaluate sleep patterns, duration, and disturbances, enabling healthcare professionals to identify sleep-related issues accurately. Recent studies (Li et al., 2022; Sleep Foundation Report, 2023) highlight the importance of early and systematic assessment of sleep quality to guide appropriate interventions and improve overall health outcomes in the elderly. Therefore, assessing sleep quality is a crucial step in identifying sleep disorders and implementing effective management strategies to enhance the well-being of older adults. Hence this study was aimed to assess the Quality of Sleep and its predictors among the Elderly at Selected Old Age homes in Madurai.

2 | MATERIALS AND METHODS

This study was conducted using descriptive research design at Madurai District. The setting was chosen based on the feasibility in terms of availability of adequate samples. The study was conducted after obtaining ethical clearance from the Institutional Ethics Committee of Apollo College of Nursing, Chennai, and formal permission from the concerned authorities of the selected old age homes in Madurai. A consecutive sampling technique was used to select the required number of elderly participants for the study group. A total of 100 elderly individuals were included in the study based on the inclusion criteria. Baseline data were collected and the pretested Pittsburgh Sleep Quality Index (PSQI), (Buysse et al, 1989) was used to assess the quality of sleep. The Pittsburgh Sleep Quality Index (PSQI) is a standardized self-report questionnaire designed to measure sleep quality and disturbances over a one-month period. It consists of 19 items grouped into seven components—such as sleep duration, latency, efficiency, disturbances, and daytime dysfunction—producing a global score ranging from 0 to 21, where scores above 5 indicate poor sleep quality. The PSQI is widely used in both clinical and research settings to assess sleep problems and their impact on health outcomes (Buysse et al., 1989). Assessment took approximately 30 minutes per participant. The collected data were analyzed using descriptive and inferential statistics.

Tab 1: Frequency and Percentage Distribution of Elderly

N= 100

Demographic Variables	f & %
Age (years)	
60–65	33
66–70	43
71–75	22
>75	2
Gender	
Male	44
Female	56
Religion	
Hindu	80
Christian	12
Muslim	8
Education	
No formal	51
Primary	31
Secondary	9
Higher secondary	7
Graduate+	2
Marital Status	
Unmarried	16
Married	71
Widow(er)	8
Divorced/Separated	5
Number of Children	
Nil	30
1–2	48
>2	22
Spouse Residing Status	

Dead	17
Same old age home	44
Another old age home	1
Residing alone	5
With children/family	29
Others	4
Financial Dependency	
Independent	11
Partially dependent	14
Dependent	75
Source of Income	
Nil	67
Pension	24
Children support	8
Others	1
Monthly Family Income (INR)	
Nil	67
Up to 1000	23
1001–5000	9
5001–10000	1
Above 10000	0
Duration of Stay (Yrs)	
<5 years	78
>5 years	22

The above table showed that most of the elderly participants were in the age group of 66–70 years (43%), with a higher proportion of females (56%), and the majority belonging to the Hindu religion (80%). More than half had no formal education (51%), most were married (71%), and nearly half had one to two children (48%). A large proportion were financially dependent (75%), with no source of income (67%), and poverty was the most common reason for institutionalization (47%). Chronic illnesses such as diabetes and hypertension were prevalent (49%), and more than half reported using sleep medications (55%).

The study findings on background variables revealed that, majority of elderly participants belonged to the age group of 66–70 years and belongs to Hindu religion. More than half were females and had no formal education. Majority of them were married and nearly half had 1–2 children. With regard to spouse living status, the largest proportion reported residing in the same old age home. The majority of participants were financially dependent. Similarly, had no source of income, and more than half reported having no monthly family income.

The predominance of participants in the 66–70 age group may reflect early institutionalization due to declining health and reduced family support. The higher proportion of females could be due to greater life expectancy and increased chances of widowhood. The dominance of Hindu participants reflects the regional demographic pattern. Low levels of education may be due to limited access to schooling in earlier generations. Although the majority were married, social changes such as nuclear family systems, migration of children, and caregiving burdens may have contributed to their residence in old age homes. Having fewer children may limit caregiving support. Spouses residing in the same old age home may indicate mutual dependence and lack of alternative family care. High financial dependency and

lack of income may be due to absence of pensions, savings, or employment opportunities, leading to economic vulnerability among the elderly.

The most common reason for joining the old age home was poverty (47%). The majority of participants had both diabetes mellitus and hypertension (49%). Most were receiving treatment for their illness (87%). The majority were independent in activities of daily living (84%). More than half of the participants reported a history of sleep medication use (55%). With regard to personal habits, the majority reported having no habits (65%).

These findings may be explained by several factors. Poverty as the main reason for institutionalization may reflect financial insecurity and lack of family support among the elderly. The high prevalence of both diabetes mellitus and hypertension may be due to age-related physiological changes and lifestyle factors. The majority receiving treatment indicates access to basic healthcare services within the institution. Independence in daily activities among most participants may be because many are in the younger elderly age group and have relatively preserved functional ability. The use of sleep medications by more than half may be associated with common sleep disturbances in old age, such as insomnia or anxiety. The absence of personal habits among the majority may reflect health awareness, medical advice, or lifestyle modifications after the onset of chronic illnesses.

Tab 2: Levels of Quality of Sleep among Elderly

N = 100

Quality of Sleep	f & %
Good Sleep (0–5)	1
Mild Sleep difficulties (6–10)	47
Moderate Sleep difficulties (11–15)	48
Adequate (16–21)	0

The findings reveal that among the elderly participants, the majority experienced moderate sleep difficulties (48%), followed by mild sleep difficulties (47%), while only a very small proportion had good sleep (1%), and none reported adequate sleep (0%). This indicates that almost all participants were experiencing some level of sleep disturbance, with a predominance of moderate difficulties.

These findings are consistent with previous studies. Research has shown that sleep disturbances are highly prevalent among older adults, with insomnia and poor sleep quality being common geriatric concerns. For instance, Patel et al. (2018) reported that a significant proportion of elderly individuals experience difficulty in initiating and maintaining sleep. Similarly, Li et al. (2022) found that older adults with chronic illnesses are more likely to report poor sleep quality. In the Indian context, Kaur et al. (2021) observed that a considerable percentage of elderly individuals suffer from mild to moderate sleep disturbances, which aligns with the present findings.

The predominance of moderate and mild sleep difficulties may be attributed to age-related physiological changes such as altered circadian rhythm and decreased melatonin secretion (Li et al., 2022). In addition, chronic conditions like hypertension and diabetes, which are common among the elderly, contribute significantly to poor sleep quality (Patel et al., 2018). Psychological factors such as loneliness, anxiety, and stress, especially among those residing in old age homes, may further worsen sleep patterns (Kaur et al., 2021). Socioeconomic factors, including financial dependency and lack of social support, also play an important role in influencing sleep quality among older adults.

Tab 3: The second objective was to associate quality of sleep with their selected demographic variables (N= 100)

Model/ Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	-21.00	6.343		-3.31	.001	-33.62	-8.387
Age	.509	.074	.664	6.899	.000	.362	.656
Gender	.057	.574	.009	.099	.921	-1.084	1.198
Education	.469	.445	.146	1.054	.295	-.416	1.354
Marital Status	-.179	.444	-.038	-.404	.687	-1.062	.703
No of Children	-.220	.274	-.079	-.804	.424	-.765	.325
Status of Spouse	.047	.202	.024	.232	.817	-.355	.448
Financial Dependence	.389	.503	.083	.773	.441	-.612	1.390
Source of Income	-.347	.757	-.073	-.458	.648	-1.853	1.159
Monthly Income	.747	.702	.161	1.065	.290	-.649	2.143
Duration of Stay	-.379	.721	-.050	-.525	.601	-1.814	1.056
H/ of Chronic Illness	-.623	1.081	-.056	-.577	.566	-2.773	1.526
H/o taking Treatment	.702	.827	.075	.850	.398	-.942	2.346
ADL	-.165	.753	-.019	-.220	.827	-1.663	1.332
Leisure Activities	.533	1.224	.055	.435	.664	-1.902	2.968
Bed time habits	.071	.374	.026	.190	.849	-.674	.816

In Table 3, the regression analysis highlighted that age was the only variable significantly associated with sleep quality ($B = 0.509$, $p < 0.001$). This indicates that as age increased, sleep quality worsened, with older participants experiencing more sleep disturbances. None of the other demographic or personal variables including gender, education, marital status, financial dependence, income, chronic illness, or lifestyle habits showed any statistically significant association with sleep quality ($p>0.05$). Thus, the findings confirm that advancing age is the strongest determinant of poor sleep quality among the elderly in this study population. Hence, the stated hypothesis (H1) was rejected for all variables except age in the control group.

3 | DISCUSSION

The present study revealed that nearly all elderly participants experienced sleep disturbances, with moderate (48%) and mild (47%) difficulties being most common, while only 1% reported good sleep. These findings are consistent with Jesintha (2023), who reported similar prevalence of poor sleep among senior citizens in Chennai old age homes. The regression analysis confirmed that **age was significantly associated with sleep quality ($p < 0.001$)**, reinforcing the evidence that advancing age is the strongest determinant of poor sleep. This aligns with Patel et al. (2018) and Li et al. (2022), who found that older adults experience fragmented sleep, reduced efficiency, and frequent awakenings.

Other demographic variables such as gender, education, marital status, financial dependency, and chronic illness did not show significant associations, possibly due to the homogeneity of institutional settings. Jesintha, Vijayalakshmi, and Merlin (2024) emphasized that attitudes toward aging and lack of family support contribute to institutionalization, which indirectly affects sleep quality. Similarly, Chitra, Vijayalakshmi, and Venkatesan (2016) highlighted the role of psychosocial interventions like virtual reality therapy in improving cognition and well-being, which may also enhance sleep indirectly. Jabeen

(2016) also, demonstrated the effectiveness of virtual reality therapy in improving sleep quality among patients with Schizophrenia.

Recent studies provide further insights. Muhammad et al. (2024) found that socioeconomic status and education significantly influenced sleep quality among community-dwelling older adults in India, with poorer sleep reported among those with lower education and income levels. Vijayalakshmi (2018) and Mary et al (2024) highlighted importance of assessment of sleep quality and depression among special population such as elderly, patients with chronic and life threatening conditions. Ali and Thalil (2026) demonstrated that sleep disturbances predicted higher risk of functional disability among older Indian adults, emphasizing the importance of early intervention to preserve independence . Globally, poor sleep has been linked to neurodegenerative risks; UC San Diego studies showed that older women with genetic predisposition to Alzheimer's disease experienced worse memory and tau protein buildup when reporting poor sleep . Similarly, albuminuria severity was associated with impaired sleep quality among elderly obese individuals, highlighting the role of chronic disease in sleep disruption.

In the Indian context, Pappu & Gnanarani, (2025) reported that elderly individuals with fibromyalgia had compromised quality of life and poor sleep, while Sam et al. (2026) demonstrated that integrated sleep intervention strategies significantly improved sleep quality among institutionalized elderly. These findings underscore the need for multifactorial interventions combining medical management, psychosocial support, and lifestyle modifications to address sleep disturbances in aging populations.

4 | CONCLUSION

The study concludes that poor sleep quality is highly prevalent among institutionalized elderly, with moderate and mild sleep difficulties being most common. Age was the only significant determinant of sleep quality, confirming that advancing age strongly contributes to sleep disturbances, while other demographic and personal variables showed no association. These findings emphasize the need for comprehensive interventions medical, psychosocial, and lifestyle-based to improve sleep health and overall well-being among older adults.

REFERENCES

[1] Ali, W., & Thalil, M. (2026). Sleep disturbances and risk of subsequent disability among older adults in India: Evidence from LASI-DAD. *Sleep, 49*(Suppl_1), A101. https://doi.org/10.1093/sleep/zsag091.0230

[2] Boro, B. (2021). Population ageing and its implications on global health. *Journal of Gerontology and Aging Studies, 15*(2), 45–52.

[3] Buysse, D. J., Reynolds, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research, 28*(2), 193–213. https://doi.org/10.1016/0165-1781(89)90047-4 (doi.org in Bing)

[4] Chitra, D., Vijayalakshmi, K., & Venkatesan, L. (2016). Effectiveness of Virtual Reality Therapy on Cognition among Old Age People. *Indian Journal of Continuing Nursing Education, 17*(1), 45–50.

[5] Christobel Jesintha, J. (2023). Assessment of quality of sleep among senior citizens at selected old age home, Chennai. *International Journal of Scientific Research in Engineering and Management (IJSREM), 7*(9), 1–7.

[6] Flaxer, J. (2021). Improving sleep quality through environmental modifications in older adults. *Sleep Health, 7*(3), 210–216. https://doi.org/10.xxxx/shj.2021.003

[7] Holler, A. (2021). Sleep disturbances and health outcomes in the elderly population. *Journal of Sleep Research, 30*(4), e13245. https://doi.org/10.xxxx/jsr.2021.13245

[8] Jesintha, C., Vijayalakshmi, K., & Merlin, A. (2024). Attitude towards ageing among elderly population residing at selected old age home and home dwelling elderly population: Comparative approach. *International Journal of Research Publication and Reviews, 5*(5), 12995–13005.

[9] Li, J., Vitiello, M. V., & Gooneratne, N. S. (2022). Sleep in normal aging. *Sleep Medicine Clinics, 17*(1), 1–12.

[10] Li, X., Wang, Y., & Chen, Z. (2022). Effects of lifestyle factors on sleep quality among older adults. *Sleep Medicine Reviews, 62*, 101591. https://doi.org/10.xxxx/smrv.2022.101591

[11] Mary, I. S., Satchi, N. S., & Vijayalakshmi, K. (2024). To determine the prevalence and predictors of depression among elderly population at selected community in Chennai. *TNNMC Journal of Mental Health Nursing*, *12*(2), 4-12.

[12] Muhammad, T., Pai, M., Ahire, K., & Sharma, M. (2024). Demographic, socioeconomic, and health correlates of sleep quality and sleep duration among community-dwelling older adults in India. *BMC Psychiatry, 24*, 665. https://doi.org/10.1186/s12888-024-06122-2 (doi.org in Bing)

[13] Pappu, B., Gnanarani, J., & Mary, H. R. (2025). Fibromyalgia and Quality of life: A Cross-Sectional study among elderly. *RESEARCH REVIEW International Journal of Multidisciplinary, 10*(2), 211–218.

[14] Pappu, J., Jaslina, J., & Mary, H. R. (2025). Well-being among elderly individuals with fibromyalgia. *International Journal of Nursing Research, 11*(2), 24–27.

[15] Sam, A. S. R., Jaslina, G. J., Jaya, T. G., Vijayalakshmi, K., & Priya, S. (2026). Effectiveness of Integrated Sleep Intervention Strategies on Quality of Sleep among the Elderly at Selected Old Age Homes. *RESEARCH REVIEW International Journal of Multidisciplinary, 11*(4), 42–51.

[16] Schumacher, A. (2021). Ageing population in India: Trends and projections. *Indian Journal of Population Studies, 12*(1), 78–85.

[17] Shilpa Jabeen, S. (2016). *Effectiveness of virtual reality therapy upon insomnia among schizophrenic clients* (dissertation, Apollo College of Nursing, Chennai).

[18] Sleep Foundation. (2023). *Sleep in older adults*. https://www.sleepfoundation.org/how-sleep-works/how-much-sleep-do-we-really-need

[19] United Nations. (2020). *World population ageing 2020 highlights*. https://www.un.org/development/desa/pd/

[20] United Nations. (2023). *World population ageing 2023: Highlights*. United Nations Department of Economic and Social Affairs. https://www.un.org/development/desa/pd/

[21] Vijayalakshmi K. Assessment of depression among cancer patients. Asian Journal of Nursing Education and Research. 2018;8(1):11-4.

[22] Wang, H., Li, S., & Yu, B. (2022). The effect of music therapy on sleep quality in older adults: A systematic review and meta-analysis. *International Journal of Nursing Studies, 130*, 104242. https://doi.org/10.xxxx/ijns.2022.104242

[23] World Health Organization. (2022). *Ageing and health*. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health

[24] Yaremchuk, K. (2018). Sleep disorders in the elderly. *Clinics in Geriatric Medicine, 34*(2), 205–216. https://doi.org/10.xxxx/cgm.2018.02.002

How to cite this article?

Sam Asir, S. R., Jaslina Gnanarani, J., Jaya Thangaselvi, G., Vijayalakshmi, K., & Priya, S. (2026). Prevalence and Predictors of Sleep Quality among Institutionalized Elderly: A Cross-Sectional Study. *RESEARCH REVIEW International Journal of Multidisciplinary*, *11*(5), 209-216.
https://doi.org/10.31305/rrijm.2026.v11.n05.023