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Prevalence and factors associated with the poor quality of sleep among Indian nurses

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Abstract:

BACKGROUND: Nursing health workers deal with a variety of issues that may have an unfavorable influence on their capability to peaceful sleep. The consequences of poor quality of the sleep can lead to increased fatigue, decreased concentration, and a higher risk of medical and nursing errors. The purpose of this research study was to determine in the occurrence and associated factors for poor quality of the sleep among Indian nurses.

MATERIALS AND METHODS: The participants in this cross-sectional study were selected by the use of a multi-stage sampling technique. A total of 25 hospitals (across 4 zones) were randomly sampled. A total of 850 (out of 1250) nurses participated in the study. To collect socio-demographic data, a self-administered questionnaire was employed. PSQI scale was implemented to assess quality of sleep, and the other scale of DASS-21 was used to assess mental well-being.

RESULTS: The majority of nurses had mild (6–7 hours) as well as moderate (5–6 hours) levels of difficulty in the duration of sleep time. The occurrence of poor quality of the sleep in nursing professionals is high. 9.2% had depression, 13.7% had anxiety, and 18.9% faced, which appears to be linked to insufficient sleep in the adjusted model. In the univariate study, additional night shifts and additional shift hours were substantially related to insufficient sleep.

CONCLUSION: Nurses' quality of sleep is substantially hampered due to various reasons, and nurse mangers should devise the framework to avoid its harmful effects and to provide desirable management and high-quality patient care.

Keywords:

Anxiety, mental health, nurses, sleep, sleep quality

Introduction

The poor quality of sleep among nurses is a predominant issue which can significantly impact their well-being, job performance, and overall health. Several factors contribute to this problem, including the demanding nature of nursing work, irregular shift schedules, high levels of stress, and the need to be constantly alert and responsive.[1] For medical workers, especially nurses and midwives, getting a good night's sleep is essential to avoiding mistakes and accidents when providing care.[2] Therefore, getting a good night's sleep not only makes it easier for nurses to provide care to patients but also keeps their immune systems functioning at their best, which helps them avoid being sick.[2,3]

With a mean average of 4.3 hours per day, the majority of sleep-deprived nurses (89.2%) slept for 5 hours or less each day.[4] 43% of nurses reported having poor sleep quality, as measured by a PSQI score of >5, which is marginally equal to the 46% of South Indian nurses who reported the same condition.[2] Lack of sleep raises metabolic syndrome, blood pressure, and cardiovascular problems.[4] It also affects the immune system and hypothalamus and

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adrenal function in the days that follow, which leads to the loss of the capability for individual action.[5] Sleep is considered to be a key indicator of health since it affects many facets of life quality, counting somatic function, sense of overall well-being and health, communal function, and psychological health.[6]

Research has indicated a correlation between insufficient sleep and a decline in attention span, diminished cognitive function, a modified sympathetic nervous system, a compromised immune system, exhaustion, tension, anxiety, risk-taking behavior, and compromised social connections.[7] Nurses deal with a variety of issues, such as work schedules, that may have a harmful effect on their capacity to sleep.[8]

The necessity for 24-hour nursing care within the healthcare industry necessitates shift employment for nurses. Shift work refers to a wide range of working time arrangements. Long-term sleep deprivation can have an impact on cognitive function, body temperature regulation, and adaption status.[7] Medical staff shifts have been cited as one of the causes of sleep disturbances in certain research.[9,10] Nurses and midwives are among the professions that require shift work and have sleep difficulties.

Nearly all nurses must work nights from the start of their employment due to a lack of nurses and a high clinical nursing workload.[11] Regular night shifts disrupt sleep patterns and mark it challenging for nurses to adjust. Subsequently, uninterrupted night hours and nursing supervisors may dispose for senior nurses to just work morning shifts since the night-time duties may be taken care by novice nurses. The minute this occurs, elder staff must acclimatize to a standard day shift schedule.[12] Poor sleep quality was noted by earlier shift nurses, current shift nurses, and those who are not shifting.[12]

The consequences of poor sleep quality among nurses can be far-reaching. It can lead to increased fatigue, decreased concentration, impaired decision-making, decreased job satisfaction, and a higher risk of medical errors.[13] Recent research reported that 87.9% of nurses reported the risk of medication errors.[10]

In addition to objective sleep quality, the impression of sleep quality is complicated and influenced by a quantity of subjective aspects, including exhaustion, work stress, and other emotional aspects.[14] Poor sleep is common among nurses, and it has an impact on their physical as well as mental health and also later counts that how effectively their organizations run. It is imperative to address the issue of low sleep quality among nurses for both their well-being and the delivery of good quality of the patient care. Healthcare organizations can implement strategies to promote healthy sleep habits and create conducive environments for better sleep.

Nurses are the core part of the healthcare team and are available with the patient for the maximum time other than any other health worker. Any kind of error in medication, decision making, or emergency care can be fatal. The duration of sleep is one of the important factors. Due to shortage of nurses, there is transition of long duty hours to manage the patient care and it is important to find and highlight the extent of poor sleep and the factors which are leading to this problem so that remedial actions can be taken up. Therefore, this study intends to determine the occurrence of the poor level of quality of the sleep along with the related factors among Indian nurses.

Materials and Methods

Study design and setting

The study adopted a cross-sectional study design, and investigation and was carried out in 25 hospitals which were selected from 4 zones of India. In conducting our research, we employed a meticulous multi-stage sampling approach to ensure a comprehensive representation of hospitals across the country. Initially, several states were randomly selected to capture the diverse healthcare landscape of India. Subsequently, districts within each chosen state were identified, forming the second stage of sampling. Finally, hospitals within these districts were categorized based on size, type, and specialty, and a carefully determined number was randomly selected for inclusion in the study. This multi-stage sampling strategy enables us to draw insights from a varied cross-section of hospitals, contributing to the robustness and applicability of our findings to the broader healthcare context in India.

Study participants and sampling

The sampling methodology was thoughtfully designed to capture a diverse and representative sample. Registered nurses working in the selected hospitals became the focal point of our study. Using a systematic sampling technique, we randomly recruited participants from various departments within each hospital, ensuring a broad spectrum of nursing roles and specialties. Inclusion criteria encompassed nurses with varying levels of experience, shifts, and responsibilities to account for potential factors influencing sleep quality. The sample size was determined to achieve statistical power while maintaining feasibility with 95% confidence level ($Z = 1.96$) with E 3.14% based on true proportion of the characteristic in the population, 847 sample size was sufficient. However, keeping in mind the dropout rate all together, 1250 samples were taken, where 850 finally participated. This meticulous approach to participant selection and sampling

enhances the study's ability to explore the prevalence and factors associated with poor sleep quality among Indian nurses comprehensively.

The defined inclusion criteria and exclusion criteria were set. Inclusion encompasses registered nurses from diverse specialties, such as medical-surgical, critical care, pediatrics, and obstetrics, ensuring a representative sample, and those who have work experience for more than 1 year, presently working, and consented to be a part of the study were included in the study. The nurses more inclined toward administrator roles, those having only one shift, and those who are pregnant and unwilling to participate or provide informed consent will not be included to uphold ethical standards and were excluded. Data collection was performed from November 2022 to March 2023.

Data collection tools and techniques

In our study on sleep quality among Indian nurses, a comprehensive set of data collection tools and techniques has been carefully chosen to capture relevant information.

To gather socio-demographic data, a self-administered questionnaire was employed, which includes age, gender, professional qualification, total service hours per day, night duty hours per week, and extra duty hours per week. Self-reported co-morbid conditions including diabetes and hypertension that had been identified by medical professional were asked. Quality of the sleep was assessed with the help of PSQI scale along with mental well-being and assessed with the help of Depression, Anxiety, and Stress Scale—21 (DASS 21).

In instances where on-site data collection was impractical, a telephonic survey methodology was implemented for certain aspects of our study on sleep quality among Indian nurses. The telephonic survey was designed to gather specific information efficiently while ensuring participant convenience. Out of the total 25 hospitals, which were contacted through telephone, 17 hospitals showed willingness to participate.

From the 17 hospitals, 850 (out of 1250) nurses partaken in the study (the response rate was 68%). Participants were contacted at pre-scheduled times to minimize disruption to their work schedules. In cases of initial non-response, multiple attempts were made to reach participants, ensuring inclusivity and reducing non-response bias. However, still few were unable to participate. The main reasons for non-participation were their busy schedule and no interest to participate, while some nurses were not accessible to gather data during the data collection period as a few of them have meetings and training programs in hospital. Therefore, weighted samples were used in complicated sample analyses to adjust for non-response and uneven sampling probabilities.

The Pittsburgh Sleep Quality Index (PSQI)[15] was used, which is a widely recognized and validated instrument utilized in our study to assess the sleep quality of Indian nurses. This self-report questionnaire comprises several components that collectively provide a comprehensive evaluation of sleep patterns and disturbances. Depression, Anxiety and Stress Scale was used as it is designed to measure the severity of symptoms associated with depression, anxiety, and stress. The scale contains 21 items with seven domains falling under each area and was cast off to assess the depression level, anxiety level, and stress level. The question on DASS-21 asks about experiences from the previous week.[16]

Statistical analysis

In the multi-stage sampling process utilized, compound sample investigates were conducted out since samples were weighted to accommodate uneven probability of selection and non-response. In addition to descriptive analyses, χ^2 tests were used to identify the relations between poor quality of sleep and the socio-demographic factors, including mental health aspects. The enter approach was used in the strategy of modeling to include independent variables in univariate analysis that had P 0.05. There were reported adjusted OR with 95% confidence interval. The statistical level of significance was considered with a P value of 0.05. Utilizing SPSS, statistical analyses were performed.

Ethical considerations

Ethical permissions were taken from the Review Board, Institute Research Committee (IRC/22-23/05). Permission was attained from the respective hospitals also. Prior to gathering information, participants' informed consent was sought. Participant confidentiality was rigorously maintained throughout the study.

Results

Table 1 shows that maximum (54.1%) were in between 22 and 30 years, followed by 28.7%, who were in 31 to 38 years, and very few (4%) were more than 46 years. The majority of participants were females (84.7%) and married (89%), and maximum belongs to Hindu religion (86.4%). Maximum nurses were at the diploma level (52.3%), followed by (44.7%) with degree qualification, while 3% had PG or higher. Almost half of them had experience of (51.1%), and only 6% have experience more than 15 years. Maximum 82.9% had 16 to 24 hours of night shift hours per week, whereas 6% have even more than 24 hours. 18.1% has extra shifts of 8–16 hours per week, and 12.7% has even extra shifts of 16 to 24 hours. Almost

Table 1: Demographic characteristics of participants (*n*=850)

Variables	Weighted %	(95% CI)	Mean values
Age in years			
22 to 30	54.1%	(10.8-90.8)	
31 to 38	28.7%	(6.4-62.8)	
38 to 46	13.2%	(7.4-32.6)	
More than 46	4%	(0.7-59.8)	
Gender			
Female	84.7%	(36.2-98.4)	
Male	15.3%	(1.4-63.2)	
Religion			
Hindu	86.4%	(62.7-95.4)	
Muslim	6.6%	(3.7-11.2)	
Christian	6.2%	(1.1-22.1)	
Others	0.8%	(0.4-5.0)	
Marital status			
Single	8.7%	(2.5-32.1)	
Married	88.0%	(72.1-92.6)	
Divorce	3.3%	(0.7-6.9)	
Professional Degree			
GNM/Diploma	52.3%	(73.5-91.7)	
BSc Nursing/PBBSc Nursing	44.7%	(1.6-6.7)	
MSc Nursing or higher	3%	(0.6-4.3)	
Comorbidites: Diabetes mellitus	4.2%	(0.9-21.3)	
Yes	95.8%	(72.3-94.2)	
No			
Hypertenion			
Yes	8.7%	(3.1-28.7)	
No	95.8%	(52.9-86.8)	
Experience in years			
1-5	51.1%	(10.2-91.8)	
5.1 to 10	31.7%	(6.4-62.8)	
10.1 to 15	11.2%	(7.4-32.6)	
More than 15	6%	(0.7-59.8)	
Extra Night Shift hours per week	82.9%	-	5.05 (3.8-6.3)
Extra Shift hours per month	69.2%	-	5.4 (4.6-6.2)
Sleep duration in hours			
More than 8	58.6%	(51.9-94.8)	
6-8	22.6%	(18.4-43.3)	
5 to 6	16.2%	(10.7-38.9)	
Less than 5	2.6%	(0.9-39.2)	
Mental health			
Depression	9.2%	-	7.3 (6.2-8.5)
Anxiety	13.7%		8.1 (6.2-10.1)
Stress	18.9%		10.5 (8.3-12.8)

half of them have sleep more than 8 hours, but 22.6% had 6 to 8 hours, 16.2% had 5 to 6 hours, and 2.6% had even less than 5 hours. Only 4.2% of the participants were found to be diagnosed with diabetes mellitus and 8.7% with hypertension. The mean depression score was 7. 1 (95% CI 6.2–8.5), for anxiety, 8.4 (95% CI 6.2–10.1), and for stress, 10.6 (95% CI 8.3–12.8).

Table 2 shows that there was comparatively a substantial frequency of poor quality pf the sleep among these nurses as 52.7% had fairly good quality, 19.1% fairly bad, and 13.5% had very bad sleep quality. The majority (66.3%) faced a mild level of the difficulty in the domain of PSQI -disturbance. 33.1% had no trouble in getting sleep in domain PSQI latency, whereas near to the half (48.6%) had a mild level of difficulty in falling asleep as mentioned in PSQI latency.

58.5% had reported a mild level of difficulty in the domain of PSQI day dysfunction due to sleepiness and 5.1% had severe difficulty. However, 55.2% of nurses had the moderate PSQI- sleep efficiency and 92% of nurses had not utilized sleeping pills in the last month to get some sleep. 52.7% of nurses said that their overall quality of the sleep was moderate, but 13.5% reported it as very bad. As stated in Table 3, in the univariate analysis, poor quality of the sleep was related with extra shifts (OR) 1.09, 95% CI (1.04-1.14) extra night shifts 1.08, CI [1.06-1.10], anxiety level [OR 1.08; 95% CI (1.04-1.17)], and stress level [OR 1.06; 95% CI (1.04-1.12)]. Multivariate analysis shows depression as a noteworthy factor [OR 1.01], with 95% level of CI (0.98-2.12) of poor quality of sleep.

Discussion

The core idea behind this research was to ascertain probability of and contributing variables to poor quality of sleep among nurses using the PSQI scale. The findings discovered an important prevalence of poor level of sleep among nurses. 9.2% had depression, 13.7% had anxiety, and 18.9% faced stress which appears to be associated to poor quality of sleep in adjusted models. The participants were pre-dominantly females and married and diploma holders. The majority of nurses had mild (6-7 hours) to the moderate (5-6 hours) level of difficulty in the duration of sleep time.

A Study reported getting 414 minutes of sleep, or little under 7 hours, before going to work.[17] In contrast to the generally accepted recommendation of 8 hours of sleep per day for the general population, nurses often shortchange themselves by sleeping for an average of just 6.8 hours per day on workdays.[18]

Nurses slept for a fewer hours and with lower-quality sleep. Our participants are advised to increase their sleep time by 1 to 2 hours as a result. More than half of the individuals mentioned minor sleep disruptions and minor daytime dysfunction brought on by tiredness. Evidence reported that obstructive sleep apnea, sedative medicines, and sleep loss are the most frequent causes of excessive daytime drowsiness.[19] Surprisingly, participants are trying to manage with their own as maximum had not

Table 2: Sleep quality of the Nurses *n*=850

Domains	Weighted %	95% CI
PSQI- Duration in hours		
No difficulty (more than 7)	(22.6%)	(7.2-41.9)
Mild difficulty (6 to <7)	(31.0%)	(26.3-47.2)
Moderate difficulty (5 to <6 h)	(30.0%)	(15.1-43.3)
Severe difficulty (<5 h)	(16.4%)	(3.2-31.8)
PSQI- Disturbance		
No difficulty (0)	(5.0%)	(0.7-29.6)
Mild difficulty (1 to 9)	(66.3%)	(61.8-82.8)
Moderate difficulty (>9 to 18)	(18.2%)	(13.7-32.4)
Severe difficulty (>18)	(10.5%)	(1.5-61.3)
PSQI Latency		
No difficulty [0]	(33.1%)	(32.5-54.1)
Mild difficulty [1–2]	(48.6%)	(28.6-51.6)
Moderate difficulty [3–4]	(15.2%)	(6.7-31.8)
Severe difficulty [5–6]	(3.1%)	(0.9-51.1)
PSQI- Day dysfunction- due to sleepiness		
No difficulty (0)	(16.8%)	(16.1-22.6)
Mild difficulty (1–2)	(58.5%)	(52.7-72.2)
Moderate difficulty (3–4)	(16.5%)	(9.8-21.0)
Severe difficulty (5–6)	(5.1.5%)	(0.3-3.9)
PSQI- Sleep Efficiency		
No difficulty (85 and above)	(3.1%)	(1.9-22.3)
Mild difficulty (75 to <85)	(18.9%)	(5.9-30.9)
Moderate difficulty (65 to <75)	(55.2%)	(37.7-80.7)
Severe difficulty (<65)	(22.8%)	(22.2-58.6)
PSQI- Overall Sleep Quality		
Very good	(14.7%)	(11.9-25.4)
Fairly good	(52.7%)	(42.6-82.7)
Fairly bad	(19.1%)	(8.0-22.0)
Very bad	(13.5%)	(7.1-22.5)
PSQI Medicine (Use of sleeping medicine)		
Not during the past month	(92.0%)	(81.3-95.5)
Less than once a week	(2.9%)	(1.3-4.8)
Once or twice a week	(3.3%)	(0.9-92.5)
Three or more times a week	(1.8%)	(2.0-27.8)

taken any medicine to sleep. This is in distinction with the results by a study, reported about the nurses who performed more than 60 night shifts were more likely to take sleep pills.[20] The reasons might be being healthcare professionals, they might be aware of the addiction facts, or they probably did not require sleeping pills since they were able to deal with the poor quality of their sleep.

Our participants had a greater prevalence of poor sleep quality. Evidence based on a hypothetically framed cohort generated from cross-sectional analysis, night shift nurses have persistently low sleep quality.[21] The majority of the nurses reported overall quality of sleep as fairly good to fairly bad and even few stated very bad. Evidence reported that nurses on the night shift reported higher health issues (20.7%) and comparatively worse sleep quality (55.1%).[22] The disparity might be attributable to participants being unaware of their issues pertaining to the quality of sleep. It may imply that they are so habituated toward the sleep pattern that they are not taking any preventive or precautions. Their lack of understanding of the sleep difficulty should be managed immediately since it may pose an influence on their physicals well as mental health and their quality of life.

The study found that women identified more sleep problems than males, albeit the difference was not significant. Women were more impacted by their emotive response to the emergent situations, feeling concerned and devoting supplementary time to family responsibilities such as home educating, unpaid domestic work, fostering, and caregiving.[23] Married nurses (OR 1.01, 95% CI 0.63-1.60) and divorced and widows (OR 1.47, 95% CI 0.12-17.87) were more prone to have sleep disturbances. Various studies found that female nurses were more likely than male nurses to experience poor sleep quality.[24] This discovery may have anything to do with the physiological and psychological characteristics of women. Compared to male nurses, female nurses face greater life pressure due to the need to balance work and family responsibilities.[25] A study showed partially similar and partially contrast in the study which reported that in comparison of women who are married or in a relationship, being divorced or widowed is linked to serious sleep issues.[26] Contrarily, a study of 128 nurses revealed that those who are married had a greater rate of sleep disruption (97.54%) than single ones did (83.33%). In addition, they could have bad connections, which would make their sleep less restful than individuals with strong social bonds.[25]

In the univariate study, additional night shifts and additional shift hours were substantially linked to poor sleep quality. The results are similar with those who reported that performing night shift work and execution of alteration of the timings in terms of various shifts were significantly related with poor quality of the sleep quality.[26]

Extended work time and night duty work increases the danger of diminished performance at work, obesity, accidents, and a diversity of long-lasting illnesses. Moreover, mistakes brought on by weariness may endanger patients.[27] Thus, it is advised that nurses cut back on additional shifts to prevent both physical and mental stress. The length of night shifts was more detrimental to health than how often they were worked at night. An unhealthy lifestyle and the length of night shifts were shown to be both separately and collectively linked with an increased risk of type 2 diabetes in two sizable cohort studies of female nurses.[28]

Stress and anxiety were both shown to be strongly linked with poor quality of sleep in the univariate analysis.

Table 3: Associated factors with poor sleep quality

Characteristics	Poor (PSQI global >5)	Good (PSQI global <5)	Univariate regression crude (OR) (95%)	Multivariate adjusted (OR) (95%)
Age (yr)				
22 to 30 years	(62.3%)	(38.7%)	1.00	
31 to 38 years	(59.6%)	(40.4%)	0.82 (0.50-1.34)	
38 to 46 years	(57.3%)	(42.7%)	0.72 (0.31-1.71)	
More than 46 years	(62.9%)	(37.1%)	0.98 (0.71-1.35)	
Gender				
Female	(64.4%)	(43.6%)	1.00	
Male	(66.5%)	(33.5%)	1.00 (0.24-4.21)	
Religion				
Hindu	(63.1%)	(36.9%)	1.00	
Muslim	(58.5%)	(41.5%)	1.02 (0.50-2.09)	
Christian	(62.3%)	(37.7%)	1.57 (0.27-9.15)	
Others	(52.1%)	(47.9%)	-	
Marital status				
Single	(63.3%)	(36.7%)	1.00	
Married	(54.4%)	(45.6%)	1.01 (0.63-1.60)	
Divorce and widow	(68.0%)	(32.0%)	1.47 (0.12-17.87)	
Professional Qualification				
GNM/Diploma	(60.0%)	(40.0%)	1.00	
BSc Nursing/PBBSc Nursing	(58.2%)	(38.8%)	(0.90-1.50)	
MSc Nursing/PhD	(56.3%)	(43.7%)	(0.22-5.19)	
Comorbidities: Diabetes mellitus				
No	(62.5%)	(37.5%)	1.00	
Yes	(67.6%)	(32.4%)	(0.86-2.40)	
Hypertension				
No	(65.2%)	(34.8%)	1.00	
Yes	(62.5%)	(37.5%)	1.06 (0.65-1.71)	
Experience in years				
1-5 years	(62.6%)	(37.4%)	(0.90-1.50)	
5.1 to 10 years	(64.8%)	(35.2%)	1.00	
10.1 to 15 Years	(65.9%)	(34.1%)	1.01 (0.14-7.32)	
Night Shift hours per week	82.9%		1.09 (1.04-1.14)	1.05 (0.98-1.12)
Extra Shift hours per month	69.2%		1.08 (1.06-1.10)	1.05 (1.02-1.08)
Sleep duration				
More than 8 hours	(58.0%)	(42.0%)	(0.90-1.50)	
6-8 hours	(52.2%)	(47.8%)	-	
5 to 6 hours	(56.3%)	(43.7%)	(0.22-5.19)	
Less than 5 hours	(72.1%)	(27.9%)	1.06 (0.6-1.71)	
Mental health				
Depression	-	-	1.57 (1.04-2.10)	1.01 (0.98-2.12)
Anxiety	-	-	1.08 (1.04-1.17)	1.04 (1.05-2.05)
Stress	-	-	1.06 (1.04-1.12)	(1.05-2.05)

*P<0.05

In a multivariate linear regression model, Evidence proposed that a poor level of sleep was linked to a higher incidence of anxiety (= 1.08, P 0.01) and depression symptoms, ($P < 0.01$) depression ($P < 0.01$).[28] Nurses may experience anxiety about their workloads and emergency situations in the ward, which forms part of their day-to-day routines. According to studies, nurses have described being under pressure to increase productivity as well as having a significant administrative burden. According to them, these components will not progress patients' opinions of the value of care.[29-31]

Nurses' poor mental health and sleep quality might have an effect on the healthcare system and ultimately the patient care.[32] Additionally, a lower level of the quality sleep may influence on nurses' health and quality of life. As a result, it is advised that nurses undergo routine sleep quality screenings. These steps might enhance everyday functioning, increase productivity, and lessen workplace mishaps brought on by inability to focus or sustain attention.

In multivariate analysis, depression is a substantial contributor to poor sleep quality. self-deprecation,

lethargy, despair, devaluation of life, and lack of interest or engagement, which are all assessed by the DASS 21 depression scale.[33] All these symptoms may influence sleep quality. Few Studies. reported that clinical nurses working in hospitals for infectious diseases frequently have poorer sleep quality, and anxiety and sadness are strongly connected with nurses' sleep state.[34,35]

Studies have shown that nurses working in shifts are more likely to experience poor sleep quality compared to those working in regular day shifts. Furthermore, factors such as work stress, long working hours, and personal responsibilities can also contribute to the poor sleep quality among Indian nurses. These findings highlight the need for interventions and support systems to improve sleep quality among nurses in India. Additionally, the research study revealed that poor sleep quality among Indian nurses not only affects their personal well-being but also has implications for patient care and nurse productivity. Shift work affects sleep quality, with nurses working in shifts being more likely to experience poor sleep quality compared to those working regular day shifts. However, more research is needed to fully understand the specific factors contributing to poor sleep quality among Indian nurses and to develop targeted interventions.

It is important for nurse managers to understand the influences of sleep quality on nurse productivity and implement worksite programs aimed at alleviating poor sleep quality among nurses shift work and providing support for managing work stress.

Limitations, strengths, and recommendations

The research extensively reviews the literature and provides a comprehensive overview of sleep quality among Indian nurses. It identifies and explores various factors associated with poor sleep quality, such as shift work, environmental conditions, responsibilities, and mental stressors. It directly addresses the well-being of healthcare professionals, specifically nurses. As frontline workers, nurses play a pivotal role in patient care, and understanding and improving their sleep quality is crucial for both their personal health and the quality of care they provide. While the study focuses on Indian nurses, the insights gained from this research may have broader applications in understanding and addressing sleep-related issues among nurses globally. The methodologies and interventions developed based on this study could potentially be adapted for use in diverse healthcare settings worldwide.

While interpreting the data, a number of restrictions were posed, which needs to be taken into contemplation. The responses were self-reported; there may be memory bias when determining the sleep and its related components. The cross-sectional nature of the study limits our ability to establish causal relationships between variables. Longitudinal studies would offer a more nuanced understanding of the dynamic relationships between sleep quality, mental health, and work-related factors over time. The reliance on self-reported measures for sleep quality and mental health may introduce subjectivity. Objective measures, such as polysomnography for sleep, could provide a more accurate assessment. Although the Pittesberg Scale is a self-administered questionnaire, it may not be as effective as more objective measurements like polysomnography; it is a well-known and often used tool for comparing research. Additionally, this study could not account for several possible confounders such as the home load of caring for children and home tasks, household structure, kid age, and care obligations. Furthermore, this cross-sectional design makes it impossible to demonstrate a causal association between poor sleep quality and its related conditions. Despite the relatively low response rate, extensive sample analysis with weighting solved the challenges of uneven selection probability and non-response.

The study recommended that integrating objective measures of sleep, such as actigraphy or polysomnography, would strengthen the validity of sleep quality assessments and provide a more nuanced understanding of sleep patterns. Combining quantitative surveys with qualitative methods, such as in-depth interviews, could offer a more holistic understanding of the experiences and perceptions of nurses regarding sleep quality and associated factors. Future research should consider employing longitudinal study designs to track changes in sleep quality and mental health over time, providing a more comprehensive understanding of these dynamics.

Conclusion

The study demonstrated that working additional night shifts and additional shifts results in sleep disruption. Other risk variables for sleep disruption in nurses were marital status and workplace environment. After controlling for other variables, stress and anxiety were revealed to be a substantial contributor to poor sleep. Our findings underscore the significance of addressing sleep quality as an integral component of nurse well-being. The observed associations between poor sleep quality and elevated levels of depression, anxiety, and stress emphasize the need for targeted interventions to support the mental health of nurses. In light of the current findings, more study and inquiry are required to identify any other variables that may be connected to nurses' sleep disorders. It is advised that nurses' sleep quality and psychological well-being, in particular their stress and anxiety levels, be assessed

and that appropriate interventions such as counseling or stress management be carried out. As healthcare systems continue to recognize the crucial role of nursing professionals, addressing the factors influencing their sleep quality becomes paramount for both individual and organizational well-being. Ultimately, our study adds to the growing body of knowledge on sleep health in the nursing profession, advocating for evidence-based interventions and policy changes to foster a supportive environment for nurses, ultimately enhancing the quality of care they provide. Nurse managers should prioritize the implementation of worksite programs that focus on alleviating poor sleep quality among nurses, such as providing education and resources on sleep hygiene, creating designated rest areas, and offering flexible scheduling options. The managers and policy makers should devise the framework to avoid long duty hours. Finding the causes of sleep disturbances enables them to create the best plan of action for vulnerable nursing staff, including sleep hygiene instruction and successful psychological interventions. Furthermore, to enhance their well-being and quality of sleep, hospital administrators should assign nurse managers to roles that are reasonable and provide them with professional psychological support to help them cope.

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Conflicts of interest

There are no conflicts of interest.

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