

Prevalence of Sleep Disturbances Among Nurses in Al-Najaf Governorate

Abrar Abdul Hussein Abdul Ameer 1; Astabrak Ali Naji Al- Hamoodi

1 Universal Nurse, MSc., Ministry of Health in AL-Najaf Health office, in Psychiatric and Mental Health Nursing Branch, College of Nursing, University of Kufa /Iraq

2 Assistant Professor, Phd., in Psychiatric and Mental Health Nursing Branch, College of Nursing, University of Kufa-Najaf/Iraq

E-mail: abrara.alarbawi@student.uokufa.edu.iq

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Abstract

Introduction: Sleep disturbances—including insomnia, fragmented sleep, difficulty initiating or maintaining sleep, and excessive daytime sleepiness—are common among nurses and pose significant risks to their mental health, physical well-being, and job performance. Contributing factors include high work pressure, shift work, and social or familial responsibilities.

Aim: This study aimed to determine the prevalence of sleep disturbances among nurses in Al-Najaf Governorate and examine their association with demographic variables such as age, gender, type of shift, and workplace unit.

Methodology: A descriptive cross-sectional study was conducted using an online survey with a non-probability convenience sample of 308 nurses working in health facilities under the Al-Najaf Health Office. Data were collected using a two-part questionnaire: the first collected demographic information, and the second used a 12-item scale to assess symptoms of sleep disturbances. Descriptive and inferential statistics, including Chi-square tests, odds ratios, and eta-squared, were used for analysis.

Results: The study found that 91.9% of participants reported symptoms of sleep disturbances, with the highest prevalence among nurses aged 25–35 years (75%) and females (64.6%). Although female nurses had a higher prevalence rate, male nurses were 1.5 times more likely to report symptoms, though this difference was not statistically significant ($p > 0.05$). No significant associations were found between sleep disturbances and demographic factors such as age, gender, shift type, or unit of work. The effect sizes for all demographic variables were weak.

Conclusion: Sleep disturbances are highly prevalent among nurses in Al-Najaf, with a substantial impact across genders and work environments. However, demographic factors showed only a weak association with sleep disturbances, suggesting that occupational stressors and environmental pressures may play a more significant role.

The study recommends the formation of a dedicated committee within healthcare institutions to address sleep-related issues and implement targeted interventions aimed at promoting nurse well-being.

Keywords: *sleep disturbances nurses prevalence shift work mental health Iraq*

Introduction

Sleep is a fundamental biological process essential for maintaining physical health, cognitive function, and emotional well-being. It occupies approximately one-third of an individual's life and plays a critical role in the restoration and regulation of various physiological systems (Segun et al., 2022). Despite its importance, sleep disturbances have become increasingly prevalent across populations, particularly among healthcare workers such as nurses. These disturbances include insomnia, fragmented sleep, excessive daytime sleepiness, and difficulty falling or staying asleep—conditions that compromise not only the individual's quality of life but also their job performance and patient safety (Bazrafshan et al., 2019; Al Maqbali et al., 2021).

Nurses are especially vulnerable to sleep disorders due to the unique demands of their profession, including long working hours, rotating shifts, high emotional stress, and exposure to critical clinical environments. Studies have shown that sleep disturbances in nurses are associated with impaired concentration, increased medical errors, reduced job satisfaction, and elevated risks of anxiety and depression (Lin et al., 2015; Membrive-Jiménez et al., 2022). The impact extends beyond the professional realm, affecting nurses' social lives and increasing the risk of burnout and chronic illness (Chattu et al., 2018).

In regions facing systemic healthcare challenges, such as Iraq, the burden of sleep disorders among nurses may be exacerbated by additional factors such as staffing shortages, political instability, economic hardship, and limited institutional support (Obaid & Qassim, 2020; Al-Ameri, 2017). Within such settings, the need to understand and address sleep-related issues becomes even more urgent, as poor sleep health can undermine the sustainability and effectiveness of the nursing workforce.

Although several international studies have documented the prevalence and contributing factors of sleep disturbances among nurses, limited data are available from Iraq, particularly from the Al-Najaf Governorate. Furthermore, while some evidence suggests that demographic variables such as age, gender, and work shifts may influence sleep quality, findings remain inconsistent, indicating the need for localized investigations (Yilmaz et al., 2021; Jahrami et al., 2021).

Therefore, this study seeks to determine the prevalence of sleep disturbances among nurses in Al-Najaf Governorate and explore their association with key demographic characteristics. By identifying

potential risk factors and patterns, the study aims to inform future interventions and support the development of targeted strategies to promote healthier sleep practices among Iraqi nurses.

Materials and Methods

Study Design and Setting

This study employed a descriptive cross-sectional design to assess the prevalence of sleep disturbances among nurses in Al-Najaf Governorate, Iraq. The research was conducted in January 2025 and targeted nurses working across various healthcare facilities affiliated with the Al-Najaf Health Office.

Study Population and Sampling

The study population included registered nurses currently employed in governmental healthcare institutions. A non-probability convenience sampling technique was used to recruit participants. A total of 308 nurses voluntarily participated in the study. The sample size was determined based on standard formulae for prevalence studies to ensure adequate representation of the target population (Al Kabi & Alhamoody, 2025).

Data Collection Tool

Data were gathered using a structured, self-administered online questionnaire composed of two main sections:

Sociodemographic Information: This section collected data on age, gender, workplace unit, and type of shift.

Sleep Disturbance Assessment: A 12-item sleep quality scale was used to evaluate symptoms of sleep disturbances. Each item was rated on a three-point Likert scale (1 = No, 2 = Sometimes, 3 = Yes). An average score below 0.7 indicated the presence of sleep disturbances, while a score of 0.7 or higher indicated the absence of significant symptoms.

Validity and Reliability

The content validity of the questionnaire was confirmed by a panel of 12 experts specializing in psychiatric and mental health nursing. Reliability testing using Cronbach's alpha yielded a coefficient of 0.82, indicating high internal consistency.

Ethical Considerations

Ethical approval was obtained from the Ethics Committee of the College of Medicine and the College of Nursing at the University of Kufa. Informed consent was obtained from all participants prior to data

collection. Confidentiality and anonymity were strictly maintained, and participation was voluntary with the right to withdraw at any stage without penalty.

Statistical Analysis

Data were entered and analyzed using Microsoft Excel 2013 and SPSS version 23. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize the data. Inferential statistics, including the Chi-square test, Odds Ratio (OR), and Eta Squared (η^2), were used to examine associations between demographic variables and sleep disturbances. A p-value of less than 0.05 was considered statistically significant.

Results

A total of 308 nurses participated in the study. The majority of respondents were female (64.6%), aged between 25 and 35 years (75%), and worked morning shifts (49.35%). The most common workplace setting was the emergency unit, accounting for 39.3% of participants.

Prevalence of Sleep Disturbance

The findings revealed a high prevalence of sleep disturbances among the nursing population in Al-Najaf Governorate. Overall, 91.9% (n = 283) of the participants reported experiencing symptoms of sleep disturbances, while only 8.1% (n = 25) reported normal sleep patterns.

Association with Demographic Variables

The Chi-square test results showed no statistically significant associations between sleep disturbances and the demographic variables of age (p = 0.94), gender (p = 0.71), type of work shift (p = 0.16), or unit of work (p = 0.76) (Table 1).

Although females represented the majority of those reporting sleep disturbances (64.6%), odds ratio analysis indicated that males were 1.5 times more likely to report sleep disturbances; however, this finding was not statistically significant, as the 95% confidence interval included the value 1 (OR = 1.52; 95% CI: 0.947–1.084) (Table 4).

Effect Size of Demographic Variables

The strength of association between demographic variables and sleep disturbances was also assessed using Eta squared (η^2). The effect sizes for age ($\eta^2 = 0.21$), gender ($\eta^2 = 0.21$), and unit of work ($\eta^2 = 0.15$) were all weak, indicating a minimal influence of these factors on sleep disturbance prevalence (Table 2).

Table 1. Relationship Between Sleep Disturbances and Nurses' Demographic Characteristics (n = 308)

Variables	Normal Sleep F (%)	Abnormal Sleep F (%)	Total F (%)	χ^2	df	P-value	Sig.
Age				0.402	3	0.94	NS
Less than 25 years	5 (1.62)	51 (16.6)	56 (18.18)				
25–35 years	19 (6.17)	212 (68.83)	231 (75.0)				
36–50 years	1 (0.32)	19 (6.17)	20 (6.49)				
More than 50 years	0 (0.00)	1 (0.32)	1 (0.32)				
Gender				0.137 *	1	0.71	NS
Female	17 (5.52)	182 (59.09)	199 (64.6)				
Male	8 (2.60)	101 (32.79)	109 (35.4)				
Type of shift				14.363 *	10	0.16	NS
Morning shift	13 (4.22)	139 (45.13)	152 (49.35)				
Evening shift	5 (1.62)	30 (9.74)	35 (11.36)				
Night shift	6 (1.95)	101 (32.79)	107 (34.74)				
Day time only	1 (0.32)	5 (1.62)	6 (1.95)				
Every other day	0 (0.00)	2 (0.65)	2 (0.65)				
Other	0 (0.00)	6 (1.95)	6 (1.95)				
Unit of work				17.107 *	20	0.76	NS
Emergency Unit	13 (4.22)	108 (35.06)	121 (39.3)				
Children's & Premature Infant Wards	1 (0.32)	18 (5.84)	19 (6.17)				
ICU	4 (1.30)	41 (13.32)	45 (14.61)				
Surgical Wards	0 (0.00)	13 (4.22)	13 (4.22)				
Medical Wards	3 (0.97)	15 (4.87)	18 (5.84)				
Operating Room	1 (0.32)	33 (10.74)	34 (11.04)				
Other Nursing Units	2 (0.65)	28 (9.09)	30 (9.74)				
Other Specializations	0 (0.00)	9 (2.92)	9 (2.92)				
Administrative Work (Nursing Affairs)	1 (0.32)	11 (3.57)	12 (3.89)				
Psychiatric Unit	0 (0.00)	1 (0.32)	1 (0.32)				
Not Employed	0 (0.00)	3 (0.97)	3 (0.97)				
Grand Total	25 (8.1)	283 (91.9)	308 (100.0)				

NS = Not Significant ($p > 0.05$); * = Chi-square test applied.

Table 2: Eta Effect Size Between Demographic Factors and sleep disturbance

Measures of Association	Eta Squared	Interpretation of Eta value
Age Class and sleep disturbance	0.21	Weak
Gender and sleep disturbance	0.21	Weak
Unit of the work and sleep disturbance	0.15	Weak

Table 3: Contingency of odd ratio for gender and sleep disturbances among nurses

			count odd ratio		Total
			normal sleep	abnormal Sleep	
Gender	Male	Count	8	101	109
		% within Gender	7.3%	92.7%	100.0%
	Female	Count	17	182	199
		% within Gender	8.5%	91.5%	100.0%
Total		Count	25	283	308
		% within variables	8.1%	91.9%	100.0%

Table 4: Odds Ratio of Gender and sleep disturbances.

Variables	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Gender	0.848	0.354	2.034
For cohort count odd ratio = normal sleep	0.859	0.383	1.926
For cohort count odd ratio = abnormal Sleep	1.013	0.947	1.084
N of Valid Cases	308		

Discussion

This study highlights the alarming prevalence of sleep disturbances among nurses working in healthcare facilities in Al-Najaf Governorate, with 91.9% of participants reporting symptoms of poor sleep. This figure exceeds the prevalence rates reported in several international studies, such as 63.9% in China (Dong et al., 2017), 56% in Iran (Bazrafshan et al., 2019), 68% in Jordan (Almhdawi et al., 2021), and 63% in the United States (Surani et al., 2015). The significantly higher rate observed in the current study suggests a critical need to address sleep-related health issues

among Iraqi nurses, potentially reflecting the combined effects of unstable healthcare infrastructure, high workload, and economic and social stressors (Obaid & Qassim, 2020).

Despite the high prevalence, the study found no statistically significant association between sleep disturbances and demographic variables such as age, gender, work shift, or unit of employment. These findings are consistent with those reported by Van Nguyen and Liu (2022), who also observed no significant differences in sleep quality across demographic groups. However, the literature remains mixed. Some studies have identified gender and shift type as important predictors of sleep quality (Yılmaz et al., 2021; Flo et al., 2012). In contrast, the present study's use of odds ratios revealed that male nurses were 1.5 times more likely to experience sleep disturbances, although this was not statistically significant. This paradox may reflect cultural and contextual differences in reporting patterns or psychological resilience.

Interestingly, while females constituted the majority of the sample and reported more cases of sleep disturbance in absolute numbers, the adjusted odds ratio suggests a slightly higher vulnerability among male nurses. This finding contrasts with the general trend in sleep research, which often reports higher rates of insomnia and poor sleep among females due to hormonal fluctuations, family responsibilities, and psychosocial stress (Mallampalli & Carter, 2014; Tsou, 2022). It is possible that in the context of Iraq, male nurses may face additional societal and occupational pressures that contribute to disrupted sleep patterns, such as expectations of being the primary provider or working in higher-risk units.

Workplace setting and shift type, which have been widely associated with sleep quality in other studies (Stimpfel et al., 2012; Zhang et al., 2019), also showed no significant effect in the present study. However, the majority of participants worked morning shifts and in emergency units—both high-stress environments known to contribute to sleep problems. Although the absence of statistical significance may be due to sample homogeneity or unmeasured confounding variables, the weak eta-squared values further confirm that demographic factors alone do not fully explain the high prevalence of sleep disorders in this population.

These findings suggest that broader organizational and psychosocial factors, such as workload intensity, lack of psychological support, inadequate rest between shifts, and socio-economic challenges, may play a more critical role in shaping sleep health. Previous research has shown that nurses who experience high levels of occupational stress and poor work-life balance are more likely to suffer from sleep-related issues (Membrive-Jiménez et al., 2022; Hayajneh et al., 2024). The Iraqi context—marked by long-term conflict, economic hardship, and healthcare workforce shortages—may exacerbate these issues, contributing to chronic sleep disruption among nurses.

Given these results, it is imperative that health administrators and policymakers in Iraq develop and implement evidence-based strategies to support nurses' sleep health. Interventions might include optimizing shift schedules, offering psychological support services, and educating nurses about sleep hygiene practices. Furthermore, future research should investigate the role of institutional and environmental stressors using qualitative or mixed-methods designs to gain deeper insights into the lived experiences of nurses facing sleep problems.

Conclusion

This study revealed a strikingly high prevalence of sleep disturbances among nurses working in healthcare facilities in Al-Najaf Governorate, with over 91% of participants reporting symptoms. Despite this alarming rate, no statistically significant associations were found between sleep disturbances and demographic variables such as age, gender, type of shift, or unit of work. The weak effect sizes further suggest that these demographic factors alone are insufficient to explain the widespread occurrence of sleep disorders in this population.

The findings point toward the influence of broader occupational, psychological, and environmental stressors—such as workload, lack of institutional support, and socio-economic pressures—as more likely contributors to sleep disturbances among nurses. These results underscore the urgent need for targeted interventions, including mental health support, staff education on sleep hygiene, and organizational policy reforms to mitigate work-related stress and improve sleep quality among nurses.

Addressing sleep disturbances is not only essential for the well-being and performance of nurses but also for ensuring patient safety and the overall quality of care in Iraq's healthcare system.

Ethical Considerations

This study fully adhered to strict ethical research standards. Formal ethical approval was obtained from the Ethics Committee of the College of Medicine and the approval of the College of Nursing at the University of Kufa, ensuring the protection of the rights of all participants. Prior to data collection, informed consent was obtained from each nurse, and participants were assured that their participation was completely voluntary.

The study ensured strict adherence to the principles of confidentiality and anonymity, as no personally identifiable information was collected that could link participants to their responses. All participants were informed of their full right to withdraw from the study at any stage without adverse consequences. Prior to data collection, the purpose and objectives of the study were clearly explained to all participants to ensure they fully understood the nature of the research and its procedures.

Conflict of interest

I declare that there are NO conflicts of interest

AI Declaration

I hereby declare that no artificial intelligence (AI) tools were used in the preparation, writing, or development of this work. All content was created entirely by me, without the assistance of any AI-based technologies.

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Conflicts of Interest

The authors declare that there are no conflicts of interest related to this work.

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