ISSN: 1607-8322, e-ISSN: 2220-5799 Anaesthesia, Pain & Intensive Care
Vol 29(6); September 2025 DOI: 10.35975/apic.v29i6.2907

ORIGINAL RESEARCH PERIOPERATIVE MEDICINE

A comparison of psychological health and sleep patterns among nurses working in general hospitals and specialized centers

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ABSTRACT

Background & objective: Nurses are frequently exposed to psychological stress and sleep disturbances due to the highly demanding nature of their job. Continued stress can lead to impaired cognitive performance and affect patient care. We aimed to compare the psychological health and sleep patterns in between nurses in general hospitals and the specialized centers to explore the impact of work setting on these outcomes.

Methodology: A comparative study design was employed, involving a convenience sample of nurses from both general hospitals and specialized medical centers in the Kufa region. Standardized assessment tools were used, including the General Health Questionnaire (GHQ-28) for psychological health and the quality of sleep (12-item) for the sleep patterns. Descriptive and inferential statistical analyses were conducted using SPSS to determine significant differences between the two groups.

Results: The study found that the majority of nurses (78%) experienced interrupted sleep. There was no statistically significant difference (0.571) in sleep quality between nurses working in general hospitals and those in specialized centers, nor between those with or without psychological distress. The weak association (Cramér's V = 0.117) further supports the conclusion that institutional setting and mental health status do not substantially affect the sleep quality of the nurses in this sample.

Conclusion: The study found no significant differences in sleep quality or psychological health between nurses in public hospitals and those in specialized centers. This similarity is likely due to both groups working under the same governmental system with comparable workloads and demographics. The unified work conditions may explain the parallel outcomes. Future research is recommended to explore differences between the public and private healthcare settings.

Abbreviations: GHQ-28: General Health Questionnaire-28,

Keywords: Nurses; Psychological Health; Sleep Patterns; General Hospitals; Specialized Centers; Occupational Stress

Citation: Abdul Ameer AAH, Al- Hamoodi AAN. A comparison of psychological health and sleep patterns among nurses working in general hospitals and specialized centers. Anaesth. pain intensive care 2025;29(6):600-606

DOI: 10.35975/apic.v29i6.2907

Received: May 09, 2024; **Revised:** October 26, 2024; **Accepted:** January 01, 2025

1. INTRODUCTION

Nursing professionals are the backbone of any healthcare system. Their critical role in patient care, advocacy, and interprofessional collaboration makes them essential to achieving optimal healthcare outcomes. However, the increasing demands of the profession have significantly affected nurses' psychological health and sleep quality worldwide. In particular, nurses are often exposed to stressful work environments characterized by long shifts, emotional exhaustion, high patient acuity, and time pressure.[1,2] These challenges have been associated with a wide range of adverse outcomes, including burnout, anxiety, depression, and poor sleep quality, despite global efforts to address healthcare worker well-being. Nurses continue to report high levels of psychological distress and sleep disturbances, posing risks to both their health and the quality of care they provide.[3]

The impact of work-related stress on nurses' psychological health is multifaceted. Work in general hospitals, for instance, is often characterized by high patient turnover, diverse clinical cases, emergency demands, and unpredictable workloads.[4] Nurses in such settings may face heightened exposure to workplace violence, ethical dilemmas, and emotional fatigue, all of which contribute to psychological strain. On the other hand, nurses working in specialized centers—such as psychiatric facilities, oncology units, or cardiovascular centers—face different but equally significant stressors. While these settings may offer more specialized and predictable work environments, they often require prolonged emotional engagement with patients facing chronic or life-threatening conditions, which may result in emotional detachment or compassion fatigue.[5] Sleep plays a critical role in psychological recovery and daily functioning. Nurses frequently experience poor sleep quality due to rotating shifts, night duties, and insufficient rest between shifts. Shift work disorder, characterized by excessive sleepiness and insomnia due to misalignment of biological and work schedules, is highly prevalent among nurses.[6]

Multiple studies have established that poor sleep quality is associated with increased risks of depression, anxiety, reduced cognitive performance, and medical errors.[7,8] These effects are particularly concerning in healthcare environments where patient safety is paramount. Thus, understanding the sleep patterns of nurses in various clinical settings is essential for optimizing healthcare delivery and ensuring workforce sustainability. Although the relationship between psychological health and sleep among nurses has been widely studied, limited research has compared these variables across different institutional settings.[9] Specifically, there is a research gap in exploring how nurses' mental well-being and sleep quality differ between general hospitals and specialized centers. Some scholars have suggested that specialized units may provide more structured work routines, resulting in better psychological outcomes and sleep hygiene.[10]

Conversely, other studies argue that the emotionally intensive nature of specialized care may amplify psychological burdens and disrupt sleep, especially in units dealing with terminally ill or mentally unstable patients.[11] These conflicting findings highlight the need for comparative studies that consider institutional contexts, unit type, workload, support systems, and organizational culture. Moreover, cultural, geographical, and systemic factors influence the mental health and sleep quality of nurses. In many low- and middle-income countries, including those in the Middle East and Asia, nurses often work in under-resourced environments with limited mental health support, exacerbating stress and fatigue.[12] In contrast, high-income countries may have more robust occupational health policies but still face challenges related to staffing shortages and the emotional demands of care. Therefore, any comprehensive comparison between general hospitals and specialized centers must account for contextual and systemic variations.[13]

The COVID-19 pandemic has further underscored the fragility of nurses' mental health and sleep hygiene. Studies conducted during and after the pandemic revealed a sharp rise in anxiety, sleep disturbances, and psychological distress among frontline nurses.[14] General hospitals, which often served as first-line COVID-19 treatment centers, reported extreme psychological pressure due to high caseloads, risk of infection, and emotional trauma. Simultaneously, specialized centers had to adapt their services while dealing with increased emotional demands from vulnerable patient populations. These experiences have amplified the urgency of addressing psychological and sleep-related issues in nursing workforces across different settings. nurses' psychological well-being and sleep quality are vital components of healthcare efficiency and safety. With increasing pressures on healthcare systems, especially in the post-pandemic world,[15] there is an urgent need for context-specific research that explores the impact of institutional settings on nurses' health.

1.1. Aim of Study

This study addresses a critical gap in the literature by comparing two distinct clinical environments—general hospitals and specialized centers—providing evidence-based insights about the psychological health and sleep patterns of nurses working in general hospitals with those working in specialized centers, to identify potential

differences related to the nature of the healthcare setting and its impact on mental well-being and sleep quality.

2. METHODOLOGY

This field-based comparative study was approved by the Ethics Committee of the Faculty of Medicine at the University of Kufa, Iraq (Code: MEC-45-2024). The study followed the principles of the Declaration of Helsinki and was conducted in January 2025. It involved a sample of 82 nurses working in healthcare facilities affiliated with the Najaf Health Directorate, located in Najaf Governorate, Iraq. The participants were divided into two groups based on their workplace settings: nurses employed in general hospitals (secondary-level care institutions) and those working in specialized medical centers (tertiary-level care), including the Middle Euphrates Center for Neurosciences, the Open Heart Center, and the Middle Euphrates Dialysis Center. The study aimed to compare psychological health and sleep patterns between the two groups to assess the impact of different institutional environments on nurses' well-being.

A convenience sampling technique was used to select nurses working day and night shifts in the participating healthcare institutions. Following informed consent, all participants were randomly assigned to two groups: A Specialized Centers Group comprising 36 participants and a General Hospital group consisting of 46. The demographic characteristics of the participants in both groups were largely comparable, which enhances the homogeneity of the sample and reduces the influence of confounding variables.

Sample size was based on an assumed attrition rate of 10%, with the confidence level set at 95% and a statistical power of 80%, to ensure the reliability of the results derived from the analysis. Data for this study were collected using a structured questionnaire comprising three main sections:

Sociodemographic data included age, gender, workplace unit, and shift type of the participants. These variables were used to characterize the sample and explore potential associations with the study outcomes.

General psychological health was assessed using the General Health Questionnaire (GHQ-28), a widely validated instrument designed to assess psychological well-being across four domains: somatic symptoms, anxiety/insomnia, social dysfunction, and severe depression. Each item was rated on a four-point Likert scale, and higher scores reflected greater psychological distress.

Table 1: Descriptive statistics of socio-demographic variables of participants

Variables		General Hospital Group (n = 46)	Specialized Centers Group (n = 36)	Total	x^2	*Df*	P-value
Age group	< 25	6 (7.3)	4 (4.9)	10	0.202*	2	0.936
	25 – 34	31 (37.8)	24 (29.3)	55			
	35 – 50	9 (11.0)	8 (9.8)	17			
Gender	Male	16 (19.5)	10 (12.2)	26	0.458	1	0.633
	Female	30 (36.6)	26 (31.7)	56			
Level of Education	Intermediate	1 (1.2)	0 (0.0)	1	5.699*	4	0.223
	Preparatory	4 (4.9)	0 (0.0)	4			
	Institute	15 (18.3)	9 (11.0)	24			
	College	25 (30.5)	25 (30.5)	50			
	Postgraduate	1 (1.2)	2 (2.4)	3			
Marital Status	Single	24 (29.3)	19 (23.2)	43	0.892*	3	0.83
	Married	18 (22.0)	15 (18.3)	33			
	Widowed	1 (1.2)	0 (0.0)	1			
	Divorced\ Separated	3 (3.7)	2 (2.4)	5			

**beside the value in column X2 means this value tested by Fisher's Exact test FET.*

Assessment of the sleep quality patterns of the participants was done using a 12-item scale specifically designed to measure various aspects of sleep disturbances. Each item was rated on a three-point scale ranging from 1 (No) to 3 (Yes). An average score was calculated for each participant: scores below 0.7 indicated the presence of sleep disturbances, while scores of 0.7 or above suggested the absence of significant sleep-related issues.

The content validity of the sleep quality scale was established through expert review by 12 specialists in psychiatry and mental health, each with a minimum of ten years of clinical and academic experience. Their evaluations confirmed the clarity, relevance, and appropriateness of the items. To assess internal consistency, the scale was subjected to reliability analysis, yielding a Cronbach's alpha coefficient of 0.82, indicating excellent reliability.[16]

3. RESULTS

According to the results of the study Table 1 majority of nurses were female (68.3%), ranging in age from 25 to 34. The data also indicated that the percentage of university-educated female ranged between 29.3% and 37.8% and majority of them are single, at 52.5%. Regarding the inferential statistical analysis, the results showed that all variables were NS at a significance level of ($p > 0.05$),

Table 2 The results showed no statistically significant differences between the two groups in most demographic and functional characteristics, except for the nature of

Table 2: Distribution nurses in both groups of study according to their economic characteristic

N=82		GH Group (n = 46)	SC Group (n = 36)	x^2	*Df*	P-value
Residence	Outside the city	11 (13.4)	4 (4.9)	3.015*	2	0.197
	Inside the city	34 (41.5)	32 (39.0)			
	Other	1 (1.2)	0 (0.0)			
	Other	11 (13.4)	7 (8.5)			
Nature Job	Morning shift	35 (42.7)	24 (29.3)	7.204*	3	0.044
	Evening shift	0 (0.0)	5 (6.1)			
	Night shift	10 (12.2)	7 (8.5)			
	Other	1 (1.2)	0 (0.0)			
Years Job	Less than 1 y	12 (14.6)	6 (7.3)	4.411*	4	0.354
	1-5 y	14 (17.1)	14 (17.1)			
	5-10 y	14 (17.1)	15 (18.3)			
	10-20 y	3 (3.7)	1 (1.2)			
	More than 20 y	3 (3.7)	0 (0.0)			
Had Other Job	Not Had Other Job	37 (42.7)	29 (35.4)	0.002	1	0.989
	Had Other Job	9 (9.8)	7 (8.5)			
Month Income	Less than 500Thos\IQ	6 (7.3)	2 (2.4)	3.358*	3	0.366
	500-750Thos-1 Million \IQ	25 (30.5)	23 (28.0)			
	751Thos-1 Million \IQ	14 (17.1)	8 (9.8)			
	More than 1 Million \IQ	1 (1.2)	3 (3.7)			
Satisfy about Income	Insufficient	22 (26.8)	13 (15.9)	1.711	2	0.425
	Moderately Sufficient	19 (23.2)	16 (19.5)			
	Sufficient	5 (6.1)	*7 (8.5)*			

Data presented as n (%); P < 0.05 considered as significant

Table 3: Comparison of sleep patterns and general psychological health in both study groups

Parameters		GH Group (n = 46)	SC Group (n = 36)	FET	*Df*	*P-value*
Average of sleep hours	Less than 6 h	14 (17.1)	0 (0.0)	14.134*	2	0.001
	6-8 h	27 (32.90	27 (32.9)			
	8-10 h.	5 (6.1)	9 (11.0)			
Average of time to fall in sleep	Less than 5 min	2 (2.4)	4 (4.9)	8.761	3	0.033
	5-30 min	23 (28.0)	26 (31.7)			
	30 min - 1 h	13 (15.9)	5 (6.1)			
	More than 1 h	8 (9.8)	1 (1.2)			
Quality of sleep patterns scale	Good sleep	8 (9.8)	9 (10.1)	1.388	2	0.673
	Interrupted sleep	37 (45.1)	27 (32.9)			
	Poor sleep	1 91.20	0 (0)			
GHQ-28	Without psychological distress	23 (28.0)	18 (22.0)	0.000	1	1
	Had psychological distress	23 (28.0)	18 (22.0)			

Data presented as n (%); P < 0.05 considered significant; FET = Fisher's Exact test

the shift (P = 0.044). Morning shifts were most common in public hospitals (42.7%), while evening and night shifts were more common in specialized centers. Most participants resided within the city (41.5% in public hospitals, 39.0% in specialized centers). Most had 1 to 10 years of experience, and the majority had no other jobs. The largest proportion of participants received salaries between 500,000 and 750,000 Iraqi dinars, and more than a quarter reported that their income was insufficient.

Table 3 shows highly statistically significant differences in the average number of hours of sleep between the two groups (P = 0.001), with the highest percentage of sleep being 6 to 8 hours in both groups (32.9%). Significant differences were also observed in the average time taken to fall asleep P = 0.033), with most participants indicating that they fell asleep within 5–30 minutes (28.0% in general hospitals, 31.7% in specialized centers). In contrast, no significant differences were recorded in the quality of sleep patterns or levels of psychological distress (GHQ-28), with 50% of participants in each group suffering from a psychological disorder, indicating similar psychological impact and sleep quality between the two groups despite the difference in workplace.

Table 4 results showed analyzes the association between sleep quality and psychological distress across general hospitals and specialized centers. Findings reveal no statistically significant differences (P = 0.571) and a low Cramer's V value (0.117), which suggests a weak association. Thus, sleep quality appears relatively similar regardless of psychological distress level or workplace type.

4. DISCUSSION

The study results indicate no statistically significant differences between nurses working in public hospitals and their counterparts in specialized centers in terms of

Table 4: Comparative psychological health and sleep patterns among study groups

Quality of sleep	Without distress		With distress		FET*	P-value	Cramér's V
	GH Group	SC Group	GH Group	SC Group			
Good	4	4	4	5	0.798	0.571	0.117
interrupted	18	14	19	13			
Poor	1	0		0			
Total	23	18	23	18			

Data presented as n (%); P < 0.05 considered significant; FET = Fisher's Exact test

sleep quality associated with psychological well-being (P = 0.571, FET = 0.798). The Cramér's V value of 0.117 also indicates that the relationship between the variables is very weak, indicating that the type of healthcare facility does not have a strong influence on the interaction of psychological well-being and sleep quality within the studied sample.

Although most participants (64 out of 82) reported disrupted sleep, the distribution between the two groups was not significantly different; 37 nurses in public hospitals and 27 in specialized centers reported disrupted sleep. The number of those who reported good sleep was similar between the two groups (approximately 8 in each), reinforcing the conclusion that there was no significant difference.

These results are consistent with those reported by Booker, et al. (2018), which demonstrated that factors associated with sleep quality among nurses are more influenced by night shifts and immediate work conditions than by the type of organization in which the nurse works.[6] Deng X, et al. (2020), too, indicated that sleep disturbance among nurses often results from occupational stress and shift rotation, rather than necessarily from organizational settings.[7]

However, the presence of a significant proportion of nurses with disrupted sleep in both settings (more than 75% of the sample) is a cause for concern. Previous studies have shown that chronic sleep disturbances are associated with higher rates of anxiety, depression, and decreased professional performance, in addition to an increased likelihood of medical errors.[3,8]

Although specialized centers may be thought to provide a more stable environment, the results do not indicate a clear improvement in sleep quality or mental health compared to general hospitals. This echoes what Alotaibi A (2022) found that the emotional stresses associated with the ongoing management of critical and chronic conditions in specialized centers may equal or exceed those resulting from the high workload and clinical diversity in general hospitals.[4] Conversely, the lack of significant differences may be due to the confounding of institutional factors (e.g., staff size, psychological support, shift schedule) that were not directly measured in this study. The limited sample size (n=82) may also have limited the ability of statistical testing to detect subtle differences, which Demerouti E, et al. (2001) noted as a factor affecting the power of nursing studies.[17]

According to these findings, the type of healthcare facility (public or specialized) is not a strong determinant of nurses' sleep quality or mental health. Therefore, intervention programs to improve psychological well-being and sleep should focus on direct individual and organizational factors, rather than the type of clinical environment alone.

5. CONCLUSION

The results of the current study indicate no statistically significant differences in sleep patterns and general mental health between nurses working in general hospitals and their counterparts in specialized centers. This is attributed to the fact that both groups work within government institutions subject to a unified operating system. General hospitals are considered second-level care institutions, while specialized centers are classified as third-level health care. Consequently, nurses working in both general and specialized healthcare institutions are subjected to comparable levels of workload, working conditions, and shift durations, which may influence their overall well-being and job performance, as well as, their age distribution is close, this explains the similar effects of the work environment on their sleep quality and mental health.

6. Recommendations

Based on the results of this study and those of earlier studies on this subject, the authors offer the following recommendations:

a. Implement institutional programs focused on improving sleep hygiene and reducing psychological distress among nurses.
b. Conduct regular mental health screenings and provide accessible psychological support services within hospitals and specialized centers.
c. Offer training sessions on stress management, coping strategies, and work-life balance for nursing staff.
d. Conduct future studies aimed at comparing the study variables between government healthcare institutions and those in the private healthcare sector.

7. Data availability

The numerical data generated during this research is available with the authors.

8. Conflict of interest

All authors declare that there was no conflict of interest.

9. Funding

The study utilized the hospital resources only, and no external or industry funding was involved.

10. Acknowledgments

The authors would like to thank the College of Nursing, University of Kufa, Najaf Health Directorate, and the study participants.

11. Ethical Considerations

This study was approved by the Ethics Committee of the Faculty of Medicine at the University of Kufa, Iraq (Code: MEC-45-2024). The study was conducted in conformity with the Declaration of Helsinki. So, the participation in the study was entirely voluntary, and written informed consent was obtained from all participants after clearly explaining the objectives and procedures. The confidentiality of the collected data was strictly maintained. Moreover, participants were informed of their right to withdraw from the study at any stage without any consequences or obligations.

12. Authors' Contributions

All authors participated in the development and design of the study, as well as in the preparation of related materials. All authors also approved the final version of the article after critically reviewing it to ensure accurate intellectual content.

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