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ASSESSMENT OF STRESS LEVELS AND QUALITY OF LIFE AMONG NIGHT SHIFT NURSES IN PUBLIC AND PRIVATE HOSPITALS OF NAROWAL

Ayesha Siddiqua[*1], Fozia Hussain[2], Tahira Mulazim[3], Aman Ali[1], Saba Javed[1], Aliza Fatima[4], Muhammad Danish[5]

[*1]*Sahara Nursing College, Narowal*
[2]*College Of Nursing Nishtar Hospital, Multan*
[3]*Children Hospital and Institute Of Child Health, Multan*
[4]*Bahawal Victoria Hospital (BVH), Bahawalpur*
[5]*Shahida Islam Nursing College, Lodhran*

[*1]siddiqaayesha926@gmail.com

Corresponding Author: *

Ayesha Siddiqua

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ABSTRACT

Introduction

Night shift work is a critical component of hospital operations, yet it often leads to sleep deprivation, elevated stress levels, and compromised quality of life (QoL) for nurses. In low-resource settings like Narowal, Pakistan, the physical and emotional demands of night shifts are often underestimated, potentially impacting both nurse health and patient care. Identifying these challenges is essential for institutional reforms and policy interventions.

Study Purpose

This study aimed to assess the levels of stress and quality of life among night shift nurses working in public and private hospitals in Narowal. It further explored the relationship between night duty, sleep disturbances, mental and physical symptoms, and support mechanisms in place for nurses.

Research Methodology

A descriptive cross-sectional study was conducted among 68 night shift nurses selected via convenience sampling from both public and private hospitals in Narowal. Data were collected using a structured, validated questionnaire covering sleep duration and quality, physical and psychological symptoms, error rates, and institutional support. Descriptive statistics were computed using SPSS Version 27.

Results

Among the 68 participants, 51.5% reported sleeping only 4-6 hours, while 10.3% slept less than 4 hours per day. Sleep quality was noted as fair (50%), poor (16.2%), or very poor (10.3%), with only 23.5% describing it as good. Stress-related issues included frequent forgetfulness (64.7%), headache (55.9%), and errors in patient care (52.9%). Psychological disturbances such as anxiety and depression affected 33.8% of the nurses. Moreover, 67.6% believed sleep deprivation impaired their decision-making, and 61.8% struggled to maintain a work-life balance. Only 23.5% were satisfied with institutional support during night shifts.

Conclusion

The findings indicate that night shift nurses in Narowal experience high levels of stress and poor sleep quality, contributing to physical symptoms, cognitive errors, and reduced overall well-being.

Improved scheduling, rest periods, and psychological support services are urgently needed to mitigate the adverse effects of night shift duties in hospital settings

Keywords: *Night Shift Nursing, Sleep Deprivation, Nurse Stress, Quality of Life, Cognitive Errors, Hospital Workload, Pakistan Healthcare, Nurse Mental Health, Institutional Support, Shift Work Burden*

INTRODUCTION

Nursing is among the most demanding professions, requiring around-the-clock service, often under stressful conditions. With modern healthcare systems increasingly relying on 24/7 service delivery, night shifts have become integral to nursing work schedules (Jeon and Kim 2022). While necessary, these shifts can disrupt circadian rhythms, induce sleep deprivation, and contribute to elevated stress levels (Dai, Qiu et al. 2019). Nurses working night shifts frequently report adverse physical, emotional, and psychological effects, which not only compromise their quality of life but also affect the quality of patient care (Di Muzio, Diella et al. 2020). In Pakistan, particularly in less-resourced districts like Narowal, both public and private sector nurses face heavy workloads and staff shortages during night hours, which may further magnify these health challenges. This situation necessitates a systematic evaluation of how night shifts impact nurses' well-being and their overall life satisfaction.

Despite being central to healthcare delivery, the night shift remains a less studied area in workforce research in South Asia. Research across various countries has highlighted that night shift nurses often suffer from poor sleep quality, heightened stress, and compromised physical health (Huang, Tian et al. 2021); (Özyürek, Çevik et al. 2021). Moreover, the irregularity and emotional demands of night work contribute to burnout, psychological fatigue, and chronic health conditions like obesity and hypertension (Huth, Eliades et al. 2013); (Al-Hrinat, Al-Ansi et al. 2024). A study conducted by (Awosoga, Steinke et al. 2020) in Canada also showed that long-term care nurses on night duty reported significantly poorer self-rated health. However, within the Pakistani context especially in tier-II cities like Narowal there is limited empirical data comparing stress and QoL indicators among night shift nurses in public versus private hospitals. The administrative differences, workload expectations, and support systems between these two sectors could lead to varied outcomes, which remain under-researched.

Although existing literature provides useful insights, certain gaps persist. Much of the current research originates from high-income countries, and findings may not fully reflect the contextual challenges of developing countries, where health systems operate under resource constraints. Moreover, there is a dearth of comparative studies that explore how institutional settings (public vs. private) influence stress levels and QoL outcomes for night shift nurses.

For example, while (Ferri, Guadi et al. 2016) confirm the psychological toll of night shifts, they do not examine how organizational factors like staffing ratios, policy enforcement, or infrastructure affect stress and well-being in different hospital types. Additionally, while sleep disturbance has been widely associated with poor health outcomes (Di Muzio, Diella et al. 2020); (Dai, Qiu et al. 2019), the broader consequences of night shifts on nurses' family life, emotional health, and caregiving capacity remain underexplored in the Pakistani context. These unanswered questions highlight the need for localized, hospital-based assessments that consider structural, psychological, and lifestyle variables.

The present study is thus designed to fill this research gap by assessing and comparing the levels of stress and quality of life among night shift nurses working in both public and private hospitals in Narowal. Understanding these dynamics can offer significant value for hospital administrators and policymakers in tailoring interventions that improve nurse well-being and patient safety. Additionally, results from this study can help guide workload distribution, mental health screening, and work-life balance initiatives specifically aimed at night shift staff. Given the foundational role that nurses play in healthcare systems, ensuring their well- being especially during demanding night shifts is not only a matter of occupational health but also a critical component of quality patient care

(Khomami and Rustomfram 2019). This study is therefore timely and relevant, aiming to provide evidence-based recommendations for enhancing support systems for night shift nurses within both public and private healthcare institutions in Pakistan.

Research Questions:
What is the level of stress and quality of life among night shift nurses working in public and private hospitals in Narowal?

Objectives:
To assess the stress levels and quality of life of night shift nurses in public and private hospitals of Narowal.

Problem Statement:
Sleep deprivation among nurses, particularly those working in high-demand environments like Intensive Care Units (ICUs), has emerged as a growing concern in healthcare systems worldwide. In Pakistan, especially in semi-urban areas such as Narowal, this issue is often overlooked despite its critical implications for both nurse well-being and patient safety. ICU nurses in public and private hospitals frequently endure extended shifts, high stress levels, and inconsistent sleep patterns, leading to chronic fatigue, emotional exhaustion, and decreased job performance. However, despite global recognition of these risks, there is limited localized research documenting how sleep deprivation affects ICU nurses in regions like Narowal. Most existing studies focus on major urban centers, leaving a significant knowledge gap regarding the physical, psychological, and professional consequences faced by nurses in smaller, underserved districts. This study addresses that gap by exploring the impact of sleep deprivation on ICU nurses' stress levels, emotional health, and overall quality of life in the context of Narowal's healthcare setting.

Significance of the Study:
This research is significant because it offers context-specific insights into an often underreported occupational health issue affecting frontline healthcare workers in Narowal. By focusing on ICU nurses, the study highlights how sleep deprivation can compromise clinical performance, increase burnout, and negatively affect patient care. The findings will be valuable for hospital administrators, nursing educators, and public health policymakers aiming to develop effective fatigue management strategies, staff support systems, and scheduling reforms. Moreover, the study provides a foundation for initiating institutional dialogue around work-life balance, occupational well-being, and sustainable nursing practices in semi-urban healthcare environments. Ultimately, by addressing the impact of sleep deprivation in this specific context, the research contributes to efforts that seek to improve both nurse welfare and patient outcomes across public and private hospitals in Southern Punjab.

METHODOLOGY

This study employed a descriptive, cross-sectional quantitative research design to assess stress levels and quality of life (QoL) among night shift nurses working in both public and private hospitals in Narowal. The design allowed for the collection of data at a single point in time to determine the prevalence and patterns of occupational stress and its association with nurses' overall well-being. The research was conducted in Shugra Shafi Medical Complex and DHQ Hospital Narowal, focusing on nurses engaged in permanent or rotational night shifts in high-demand departments such as emergency units, intensive care units (ICUs), and general wards. The study spanned six months, commencing after obtaining formal approval and ethical clearance of the research proposal.

The sample size was calculated using Cochran's formula (Fosgate 2009), with assumptions including a 90% confidence level ($Z = 1.645$), an estimated population proportion (p) of 0.5, and a 10% margin of error ($e = 0.10$). Based on these parameters, a minimum of 68 night shift nurses were required to achieve a statistically valid estimate of stress prevalence with 90% confidence and a 10% margin of error. A non-probability convenience sampling technique was employed to recruit nurses who met the inclusion criteria and were available during the data collection phase. This approach was deemed practical given the nature of shift-based nursing schedules and institutional constraints.

The inclusion criteria comprised registered nurses aged between 20 and 55 years, working night shifts in public or private hospitals in Narowal, with at least six months of night shift

experience, and who provided informed consent to participate. Nurses working only day shifts, nursing students or interns, and those on long-term leave or with diagnosed psychiatric conditions were excluded from the study.

Data collection was conducted using a structured and modified questionnaire adapted from previously validated tools, designed to measure the extent of sleep deprivation and its effects on emotional, physical, and professional performance indicators among ICU nurses. The independent variable of the study was sleep deprivation, while the dependent variable was nursing performance, encompassing physical, emotional, and professional outcomes.

Data were analyzed using IBM SPSS Statistics Version 27.0.1, where descriptive statistics such as frequencies, means, and percentages were used to summarize demographic characteristics. Ethical considerations were rigorously observed written informed consent was obtained from all participants, confidentiality and anonymity were maintained, and participants were informed about the study's purpose and their right to withdraw at any time without consequences. The study posed no physical or psychological risks, and ethical approval was granted by the Institutional Review Board of Sahara Nursing College.

Lastly, participants' knowledge levels were evaluated based on their responses to the questionnaire. Knowledge scores were categorized as excellent (>80% correct), good (65%-80%), average (50%-64%), and poor (<50%), following the standard framework adapted from Polit and Beck (2021), commonly utilized in knowledge, attitude, and practice (KAP) studies to assess health literacy.

RESULTS

1. Demographic Profile of Respondents:

A total of 68 night shift nurses participated in this study conducted in public and private hospitals of Narowal. The demographic data collected provided insights into their age, gender, ICU experience, shift patterns, and working schedules. The majority of the participants (80.9%) were between 21 and 30 years of age, indicating a relatively young workforce. 11.8% were aged 31-40 years, followed by 4.4% in the 41-50 age group, and only 3% were above 50 years of age. The gender distribution was nearly balanced, with 51.5% being female and 48.5% male. This reflects a fair representation of both genders in night shift ICU roles in the region. A significant proportion of nurses (42.6%) had 1 year of ICU experience. 29.4% reported 2 years, while 10.3% had 3 or 4 years of experience each. Only 7.4% had experience exceeding 4 years, indicating that most participants were relatively early in their ICU careers. The majority of participants (66.2%) reported working 12-hour shifts, while 27.9% worked 8-hour shifts. A small fraction (5.9%) had other shift durations, possibly irregular or extended hours. Over half of the nurses (51.5%) had a rotating shift schedule, while 36.8% worked exclusively night shifts. Only 11.8% were on a day schedule, emphasizing the study's focus on those most affected by night work patterns. (Table 01)

Table 01 : Demographics Data Of Respondents.

Age	Category	Frequency	Percentage
	21-30	55	80.9%
	31-40	8	11.8%
	41-50	3	4.4%
	Above 50	2	3%
Gender	Male	33	48.5%
	Female	35	51.5%
Years of ICU Experience	1 year	29	42.6%

	2 years	20	29.4%
	3 years	7	10.3%
	4 years	7	10.3%
	Above 4	5	7.4%
Typical Shift Length	12 Hours	45	66.2%
	8 Hours	19	27.9%
	Other	4	5.9%
Work Schedule	Rotating	35	51.5%
	Night	25	36.8%
	Day	8	11.8%

2. Sleep Habits and Quality

The analysis of sleep habits and quality among night shift nurses reveals significant disturbances and challenges. A majority of the participants (51.5%) reported sleeping only 4 to 6 hours per day, which is below the recommended duration for optimal health and cognitive function. An additional 10.3% received less than 4 hours of sleep, indicating a critical sleep deficit, while only 30.9% achieved 6-8 hours, and a mere 7.3% managed more than 8 hours of rest. When evaluating sleep quality, 50.0% of the nurses described their sleep as fair, whereas 16.2% considered it poor, and 10.3% rated it as very poor. Only 19.1% believed they had good sleep, and just 4.4% reported excellent quality sleep, suggesting that most participants experience disrupted or inadequate rest. Regarding their sense of restoration after sleep, 39.7% of nurses felt rested only sometimes, 25.0% often, and 22.1% always, while 13.2% (8.8% rarely and 4.4% never) seldom felt refreshed. These patterns indicate inconsistent sleep recovery, which may adversely affect alertness and physical health. To manage fatigue, 60% of nurses admitted to taking naps during their shifts, a common but unofficial coping mechanism in shift work. Interestingly, the overwhelming majority (89.6%) did not rely on any form of sleep aids, while only 10.4% reported using them. Overall, these findings suggest that night shift nurses in the study population are at risk of chronic sleep deprivation, which could have serious implications for their physical health, mental well- being, and job performance, especially in high-stress units like the ICU. (Table 02)

Table 02 : Sleep Habits and Quality Among Night Shift Nurses

Question	Category	Frequency (n)	Percentage (%)
Q6. Average Sleep Per Day	4-6 hours	35	51.5%
	6-8 hours	21	30.9%
	Less than 4	7	10.3%
	More than 8	5	7.3%

Q7. Sleep Quality	Fair	34	50.0%
	Good	13	19.1%
	Poor	11	16.2%
	Very Poor	7	10.3%
	Excellent	3	4.4%
Q8. Feel Rested After Sleep	Sometimes	27	39.7%
	Often	17	25.0%
	Always	15	22.1%
	Rarely	6	8.8%
	Never	3	4.4%
Q9. Take Naps During Shift	Yes	41	60%
	No	27	40%
Q10. Use Sleep Aids	No	61	89.6%
	Yes	7	10.4%

Effects on Work Performance and Health

The analysis demonstrates that sleep deprivation has a profound effect on ICU nurses' cognitive performance, emotional well-being, and physical health. A significant proportion of nurses reported lapses in attention and memory (64.7%), and more than half (52.9%) admitted to near-miss or actual errors due to tiredness. Additionally, 67.6% of participants agreed that their performance and decision-making abilities were negatively affected by insufficient sleep. Emotional and physical exhaustion were also prevalent: 29.4% reported feeling exhausted sometimes, 26.5% often, and 14.7% always, with 12-hour shift workers experiencing higher levels of fatigue compared to those working 8-hour shifts. Moreover, physical symptoms such as headaches (55.9%), mood swings (47.1%), and mental health concerns like anxiety or depression (33.8%) were frequently reported. Nurses on night shifts were more likely to experience fatigue-related errors (58.8%) and rotating shift workers showed poorer sleep quality and increased emotional exhaustion. These findings emphasize the urgent need for institutional strategies such as structured rest policies, mental health support programs, and performance monitoring systems to mitigate the impact of sleep deprivation and ensure patient safety and nurse well-being.(Table 03)

Table 03 : Effects of Sleep Deprivation on ICU Nurses' Work Performance and Health

Variable	Category	Frequency (n)	Percentage (%)
Lapses in Attention/Memory (Q11)	Yes	44	64.7
	No	24	35.3
Errors Due to Tiredness (Q12)	Yes	36	52.9
	No	32	47.1
Frequency of Exhaustion (Q13)	Sometimes	20	29.4
	Often	18	26.5
	Always	10	14.7
	Rarely	13	19.1
	Never	7	10.3
Health Symptoms (Q14)	Headaches	38	55.9
	Mood swings	32	47.1
	Anxiety or depression	23	33.8
	Increased caffeine intake	15	22.1
	Decreased job satisfaction	13	19.1
Perceived Performance Impact (Q15)	Agree/Strongly Agree	46	67.6
	Neutral	12	17.6
	Disagree/Strongly Disagree	10	14.7

3. Quality of Life and Perceptions Among ICU Nurses

The findings from this study highlight critical challenges ICU nurses face in terms of emotional well-being, job satisfaction, and overall quality of life due to sleep deprivation. Nearly half (47.1%) of the nurses reported mood disturbances linked to disrupted sleep, while 33.8% experienced symptoms of anxiety or depression, particularly among those with irregular sleeping patterns. High stress levels were prevalent, especially among those on night (58.8%) and rotating shifts (52.9%), with 42.6% admitting to feeling emotionally drained frequently. Sleep deprivation directly contributed to decreased job satisfaction in 19.1% of participants, and 28% of nurses with 1-3 years of ICU experience considered changing specialties or leaving the ICU due to fatigue. Furthermore, only 23.5% felt their management adequately addressed sleep-related concerns. The negative impact extended to personal lives as well, with 61.8% stating that irregular shifts disrupted family and social life. Physically, 55.9% reported frequent headaches, 22.1% relied on caffeine, and 39.7% said they remained unrested despite days off, underscoring the ongoing struggle with sleep debt and poor recovery (Table 04).

Table 04 : Quality of Life and Perceptions Among ICU Nurses

Question	Category	Frequency (n)	Percentage (%)
Q16. Mood Swings	Yes	32	47.1
	No	36	52.9
Q17.Anxiety/Depression	Yes	23	33.8
	No	45	66.2
Q18. Job Satisfaction	Decreased due to fatigue	13	19.1
	Unaffected	55	80.9
Q19. Work-Life Balance	Negatively affected	42	61.8
	Managed well	26	38.2
Q20. Workplace Support	Adequate	16	23.5
	Insufficient	52	76.5

DISCUSSION

This study examined the effects of sleep deprivation on nurses' emotional well-being, job satisfaction, and quality of life in both public and private ICU settings in Narowal. The findings revealed that nurses working night shifts experience significant psychological strain, physical fatigue, and impaired performance, consistent with existing literature emphasizing

the negative consequences of night shift work on health and well-being (Ferri, Guadi et al. 2016);(Dai, Qiu et al. 2019). These results highlight an urgent need for institutional and policy-level interventions to mitigate the impact of shift-related fatigue on nursing performance and patient safety.

A majority of participants reported mood disturbances, irritability, and reduced concentration due to insufficient sleep. These findings are consistent with the results of (Dai, Qiu et al. 2019), who demonstrated that prolonged night shift work among Chinese nurses led to poor sleep quality and increased depressive symptoms. Similarly, (Di Muzio, Diella et al. 2020) reported that poor sleep quality among nurses worsens psychomotor performance and leads to higher rates of errors in clinical decision-making. The present study reinforces these associations by showing that cognitive fatigue and emotional instability are common among nurses who regularly work night shifts.

The results also revealed a considerable decline in nurses' quality of life, aligning with the findings of (Al-Hrinat, Al-Ansi et al. 2024), who found that night shift stress and disrupted sleep significantly lower nurses' well-being and job satisfaction. Nurses frequently reported symptoms such as headaches, irritability, and decreased motivation similar to observations by (Özyürek, Çevik et al. 2021), who identified a strong link between oxidative stress, sleep disturbance, and emotional exhaustion among night-shift nurses.

The study further revealed that prolonged exposure to irregular schedules contributes to cumulative fatigue, which may impair both physical health and professional performance.

This observation corresponds with the findings of (Huth, Eliades et al. 2013), who demonstrated that irregular sleep cycles in nurses are associated with higher body mass index (BMI) and increased health risks. Similarly, (Huang, Tian et al. 2021) found that nurses who have worked night shifts for extended periods continue to report poor sleep quality even after returning to day shifts, suggesting long-term effects of shift-induced sleep disruption.

Another important aspect identified was the emotional and psychological burden of continuous night duties. (Jeon and Kim 2022) emphasized that extended workloads and emotional demands among night-shift workers are strongly correlated with sleep disturbances and psychological distress. Consistent with this, nurses in the present study reported frequent mood swings, anxiety, and reduced emotional resilience. Moreover, the study revealed that nurses' professional motivation declines as night duties increase reflecting (Ferri, Guadi et al. 2016), who concluded that rotating night shifts significantly compromise both physical and mental health among hospital nurses.

The negative impact of night shift work extends beyond the workplace into nurses' personal lives. Many participants reported difficulty maintaining social relationships and family routines due to erratic sleeping patterns. Similar findings were reported by (Awosoga, Steinke et al. 2020), who observed that caregivers working irregular shifts often experience poor self-rated health and impaired social well-being. The combination of sleep deprivation, workload pressure, and limited recovery time creates a cycle of stress that ultimately affects both nurses' mental health and the quality of patient care they provide.

In conclusion, the results of this study demonstrate that night shift work significantly affects nurses' physical, psychological, and professional well-being. These findings support previous research emphasizing that irregular and prolonged night shifts contribute to fatigue, emotional distress, and decreased quality of life among nursing staff. It is therefore imperative for hospital administrations to implement evidence-based interventions such as shift rotation planning, fatigue management education, and regular mental health assessments to safeguard both nurse welfare and patient safety.

CONCLUSION

This study examined the impact of sleep deprivation on nurses working in Intensive Care Units (ICUs) in both public and private hospitals in Narowal. The findings revealed that sleep deprivation is a significant issue affecting ICU nurses, contributing to elevated stress levels, compromised emotional well-being, and reduced overall quality of life. Many participants reported mood disturbances, persistent fatigue, and difficulty balancing work-life responsibilities, which reflect the taxing nature of night shift and long-hour duties. Despite their dedication, ICU

nurses are facing professional dissatisfaction, reduced job performance, and emotional exhaustion due to insufficient rest. A considerable portion of the nurses reported cognitive lapses, anxiety, and decreased motivation, which may endanger patient care and increase medical errors. These findings underscore the urgent need for institutional strategies to address the risks associated with chronic sleep deprivation among ICU staff. In conclusion, sleep deprivation among ICU nurses is not just a personal health issue it is a systemic challenge with direct implications for healthcare delivery. Addressing this concern through supportive work policies, adequate staffing, and structured rest opportunities is critical for sustaining both nurse well-being and patient safety.

Limitations

i. **Single-City Focus**

This research was conducted only in hospitals located in Narowal, which may limit the generalizability of the findings to other regions or healthcare settings in Pakistan.

ii. **Sample Size Constraints**

The study involved 68 ICU nurses. Although meaningful insights were obtained, a larger sample size could provide a more comprehensive understanding of the broader population.

iii. **Self-Reported Data**

All data were collected through self-administered questionnaires, which may be subject to response bias or exaggeration based on the participants' perceptions.

iv. **Lack of Objective Sleep Measures**

The study did not use tools like sleep trackers or clinical assessments to validate reported sleep duration or quality, which could have improved data accuracy.

v. **Time and Resource Limitations**

Due to limited time and resources, the study did not explore in-depth psychological evaluations or conduct longitudinal follow-up to assess long-term consequences.

vi. **Exclusion of External Factors**

Variables such as home environment, dietary habits, or concurrent illnesses were not considered, though they may influence sleep patterns and well-being.

Recommendations

i. Establish Structured Sleep Policies

Hospitals should develop guidelines that ensure adequate rest periods between shifts and limit overtime, particularly for ICU staff.

ii. **Promote Mental Health Counseling**

Integrate regular counseling sessions and support groups within healthcare facilities to help nurses manage emotional stress caused by sleep deprivation.

iii. **Incorporate Fatigue Education in Training**

Add sleep health and fatigue management into nursing training programs and professional development sessions.

iv. **Implement Rotational Shift Planning**

Use software-assisted shift rotations to minimize prolonged night duties and allow for consistent sleep recovery periods.

v. **Facilitate Quiet Rest Zones in Hospitals**

Create designated areas for short naps during long or night shifts, particularly for ICU nurses who face high mental workloads.

vi. **Launch Awareness Campaigns**

Educate administrators and senior staff about the impact of sleep deprivation on nurse performance and patient safety, encouraging system-wide change.

vii. **Monitor and Evaluate Nurse Wellness**

Use periodic wellness assessments and anonymous feedback tools to monitor fatigue levels and adjust work schedules accordingly.

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