

TO ASSESS THE LEVEL OF ANXIETY AND DEPRESSION AND SATISFACTION WITH QUALITY OF LIFE AMONG NURSES WORKING IN NIGHT SHIFTS IN TERTIARY CARE HOSPITALS

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Abstract

Background: Nursing is an active line of work which takes a lot of physical, mental and emotional exertion. In particular, those who work at night may experience greater challenges such as fatigue and difficult working conditions. Long duration of night shift may cause some health issues and negative emotional changes in nurses such as negative empathy and pessimism. Such conditions can have a detrimental impact on their quality of life and work.

Objective: To assess the level of anxiety and depression and satisfaction of the quality of life among nurses of night shifts in tertiary care hospitals Lahore.

Materials and Method: A descriptive cross-sectional study was conducted among registered nurses working night shifts with over one year of clinical experience across three tertiary care hospitals in Lahore–Lahore General Hospital, Children Hospital, and the Punjab Institute of Neurosciences. Data was gathered through convenience sampling using a self-administered structured questionnaire with a Likert scale, while strictly maintaining confidentiality and obtaining informed consent.

Results The results showed that the work shift at night significantly affected the quality of life of nurses. Many nurses reported that they were tired, that they had trouble sleeping, stress, and decreased social and family interaction. The moderately satisfied group outnumbered the highly satisfied, with moderate to low satisfaction levels being reported by many participants. Gender and age were associated with differences in QoL.

Conclusions: The study concludes that night shift work has a negative effect on the quality of life of nurses in the teaching hospitals. The study recommends that the hospital administration should adopt measures like appropriate shift management, adequate rest breaks, and a positive work atmosphere to boost nurses' health and the quality of patient services.

1.INTRODUCTION

Nursing is a physically, mentally and emotionally exhausting task that involves constant interaction and engagement. Nurses in public hospitals often have to work rotating or permanent night-time shifts in order to be able to provide continuous

patient care. Night shift work is known to be a major occupational stress factor because of its effect on the circadian system, which controls sleep–wake cycles, mood and cognitive functions (Åkerstedt, 2019). The impact of night shift work within public hospitals is also important due to the

direct implications on patient safety. Errors, slower clinical decision-making, and reduction in quality of nursing care are associated with fatigue, cognitive overload and reduced alertness (Sultana *et al.*, 2020).

This background highlights the importance of studying the relationship between the night shift and mental health effects. It serves as a basis for analysing the interaction between occupational, organizational and psychosocial work conditions and the health and safety of nurses and underscores the need for evidence-based measures to enhance working conditions in public hospitals. The role of the nurse is that they are one of the pillars of the health care system and their involvement has a significant impact on the quality of patient care and overall performance of the health care system. This occurs when people are doing night-time work, affects their health and wellbeing (Alfonsi *et al.*, 2021).

Thus, mental health is not only a workforce wellbeing concern, but also an important part of healthcare system performance, for night shift nurses. Although these challenges are now becoming common knowledge, many public hospitals in low and middle income countries still heavily depend on unmanaged rotations of workers at night. This problem is maintained by limited psychological health resources, inconsistent scheduling, and psychological health is not a focus of institutional attention (Zhang *et al.*, 2023).

Healthcare systems are continually active and nurses are expected to supply care for 24 hours a day. So, night shift work has become a part of the nursing practice which is very important and difficult. Though night shifts allow patients to receive continuous care, they can help to disturb nurses' biological rhythm, sleep routine, and well-being. There is growing research evidence that night shifts have a negative impact on nurses' health and, in turn, on their work productivity and patient safety results.

The night shift is known to have a negative impact on the natural circadian rhythm, causing fatigue and sleep disturbances as well as reduced alertness. Alsharari *et al.* (2021) found that many night-shift

nurses reported suffering from physiological issues and patient safety concerns, suggesting shifts in the well-being of nurses have far-reaching impacts on patient care. Nighttime fatigue and decreased concentration can lead to errors, which can have adverse patient safety consequences.

Besides the physical effects, night shift work can have significant psychological and social impacts on nurses. The study by AL-hrinat *et al.* (2024) revealed that stress associated with being on a night shift had a direct negative impact on the quality of life for nurses, and that poor sleep was a significant factor. Workers who get a lot of stress during their night shifts have a higher risk of having poor quality sleep and this can make it even worse for their mental and emotional health. This cycle of stress and sleep disturbances can eventually lead to decreased satisfaction with work and life.

In addition, earlier research has demonstrated that nurses who work night shifts have poorer health-related quality of life than the general population. Turchi *et al.* (2019) have reported that nurses working the night shift had significantly lower scores in areas of energy, physical functioning and social interaction. The results indicate that the effects of night duty are complex and include emotional stability as well as physical health and social relationships.

In Pakistan, the same issues have been reported. The survey by Anees *et al.* (2023) revealed that fatigue was a common experience among nurses of night-shift workers, with high scores for fatigue, emotional exhaustion, and sleep disturbances. In developing nations, where healthcare systems might already be strained, nurses may experience a heightened burden of work and lack adequate support, especially during these challenges. With nurses being a key element in patient care, it is essential to know how night shifts affect the quality of their life and how they affect performance in patient care.

Nurses' well-being, job performance and patient safety outcomes can be improved by addressing these challenges. Thus, the purpose of this study is to find out the effects of night shift duty on nurses' quality of life and what can be done to improve the quality of life in the healthcare environment.

Effective on sleep patterns, night shift work can result in stress; can cause stress on the whole body phenomenon – as it can disrupt the natural rhythm of cortisol and melatonin in the body, which are closely related to sleep quality. Continuing night shift duty can also lead to insufficient sleep patterns in the morning time. Dai C, *et al* (2019). These can be compounded in public hospitals where work demands include high patient volumes, low staffing levels, and restricted resources add to job stress.

The public health setting also presents nurses with further stressors such as frequently encountering emergency cases, being overcrowded, having little support from the administrators and having different schedules from time to time, which could increase their psychological burden while working at night (Sultana *et al.*, 2020).

Problem Statement:

Nurses are essential in providing constant care in health care facilities, around the clock. As a result of the 24-hour service of hospitals, many nurses are now expected to work the night shift, a regular duty in the workplace. However, shifts in the natural body clock can create physical, psychological and social issues when working during night time hours.

Fatigue, sleep disturbances, stress, and overall well-being are commonly reported by nurses who have to work at night (Alsharari *et al.*, 2021; AL-hrinat *et al.*, 2024; Anees *et al.*, 2023). All of these can impact nurses' quality of life and could lead to errors or decreased job performance, which can impact patient safety. Although worldwide it is increasingly evident, the problems related to night shift working are not being addressed in many healthcare areas, particularly in less developed nations.

Pakistani nurses in particular may also be dealing with factors like low staffing, high workloads and the lack of institutional support, which can further negatively affect their health and performance due to night shift work. While this topic has been examined in some studies, the research on the impact of night shift work on the quality of life of

nurses in specific health care settings is still limited.

Therefore, there is a need to assess and better understand the impact of night shift duties on nurses' quality of life. Recognition of these issues will facilitate the development of interventions and strategies to enhance nurse wellbeing and safe and quality patient care.

Significance:

This study is significant as it offers a clear message as to the impact of night shift working on nurses' health and wellbeing. The findings will be useful in the following ways: The effects of these will be of significance to hospital management and policymakers as it will inform them on designing appropriate work schedules, rest periods, and wellness programs aimed at supporting nurses (Santos *et al.*, 2021). Improving nurses' quality of life will not only support their physical and mental well-being but will also enhance patient care, and overall organizational efficiency (Booker *et al.*, 2022). Thus this study would be a useful guide to designing a more effective and caring nurse by improving working conditions for night-shift nurses. This study addresses a gap in knowledge particularly in the teaching hospitals which are under high workload and stress.

Objective:

- To determine the anxiety and depression score of the nurses who take night shift in tertiary care hospitals of Lahore.
- To evaluate the satisfaction towards Quality of life among nurses working during night shift in tertiary care hospital of Lahore.

Research Question:

- The level of anxiety and depression among nurses who work night shifts in tertiary care hospitals of Lahore?
- What are nurses' satisfaction about their quality of life while working at night shift in tertiary care hospitals of Lahore?

2. LITERATURE REVIEW

Nurses should be able to care for the patient throughout the day and night, so the night shift

duty is an important responsibility for nursing service in the tertiary care hospital. While night shifts are required to support healthcare delivery, they can also have a negative impact on nurses' physical, psychological and social health. Night work disrupts the normal circadian rhythm and sleep-wake cycle, resulting in sleep deprivation, fatigue, emotional stress, diminished concentration and poor work performance. Long-term shift work has been linked to anxiety, depression, work stress and job satisfaction among nurses. Such issues affect not only the well-being of the nurse but could also have the potential to impact patient safety and the quality of care provided to patients. Studies in various countries have identified the negative impacts of working at night on nurses' mental health, social functioning and professional performance.

(Jebril Al-Hrinat *et al.* 2024) conducted a cross-sectional study among nurses working at Palestine Red Crescent Society and Al-Ahli Hospital to assess the effects of night-shift stress and sleep disturbance on nurses' quality of life. A total of 189 registered nurses (RN) who had worked at least one year in the clinical setting participated in the study. Questionnaires with the scales of night-shift stress, sleep disturbance and quality of life were used for the collection of data. The results indicated that having a high level of stress on the night shift was correlated with high levels of sleep disturbance and low levels of quality of life for nurses. Sleep disturbance was a mediator, as the nurses' quality of life was significantly influenced by the stress factor experienced during their night shifts, which in turn affected their sleep. Common symptoms reported by nurses were fatigue, insomnia, emotional exhaustion, poor concentration, and decreased social interaction. The result of the study showed that the disturbance of sleep cycle and lack of sleep had a negative impact on physical, psychological and occupational health of nurses. The researchers also suggested stress management programs, better shift schedules and sleep hygiene education to help minimize the negative impact of night-shift work and enhance nurse's job satisfaction and quality of patient care.

Likewise, (Ajoon and Naji 2024) Studied the impact of night shift on mental health and social life among the nurses in the teaching hospitals in Baghdad, Iraq. The researchers adopted descriptive cross sectional design and obtained the data from 210 nurses using questionnaires and interviews. The findings showed that night shift work has a great impact on the psychological health, lifestyle and social participation of nurses. Stress, emotional exhaustion, sleep disturbances, less family interaction and less social relationships were reported by many nurses. About 82.86% of the respondents had moderate psychological issues related to shift work at night. The researchers found that working at night has a negative impact on the mental health and social functioning of the nurses, and recommended the implementation of a more supportive workplace policy, stress-management strategies and healthier work schedules.

The cross-sectional study by Alsubaie *et al.* (2023) aimed to investigate the relationship between shift work schedules and mood and anxiety disorders among female nurses in Jeddah, Saudi Arabia. The study consisted of 418 female nurses, and depression and anxiety symptoms were measured by the Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder Scale (GAD-7). The results revealed that the nurses who worked rotating and night shifts had higher anxiety and depressive symptoms than the nurses who worked day shifts. Nurses who had a history of mental health issues had a higher risk of falling into a mood and/or anxiety disorder. The study also found that the psychological well-being of the nurses was affected by the workplace factors like work schedule, hospital department. The study has found that anxiety and depression are at a high level among nurses working at night shifts, and suggested mental health support programs in healthcare institutions.

Anees *et al.* (2025) completed a cross-sectional study to assess the effect of night-shift duty on the quality of life of nurses working in a tertiary care hospital in Swat, Pakistan. To determine the quality of life in four domains (physical, psychological, social, and environmental) of the nurses who worked in the night shift, the

WHOQOL-BREF was used in this study. The results indicated that night shift had a significant influence on nurses' health. Many reported sleep disturbances, emotional fatigue, fatigue, and dissatisfaction with support of the workplace. Fatigue was seen as one of the most prevalent issues and had an adverse impact on nurses' personal health and professional work. The study found that working shift work at night had a detrimental impact on nurses' physical and psychological wellbeing, decreased job satisfaction and led to a potential risk of patient care. The authors suggested that nurses' quality of life can be enhanced and the negative impact of night-shift work can be alleviated by using a flexible scheduling system, mental health counseling and/or workplace interventions.

Similarly, (Chalise and Chaudhary 2024) studied about the effect of night shifts on the quality of life of nurses working at Bharatpur Hospital in Chitwan, Nepal. The researchers adopted a descriptive cross sectional design to gather data from nurses in various units such as intensive care units, medical ward, surgical ward, obstetrical ward and paediatrics ward. The results revealed that night shift work had a negative impact on the physical, psychological and social health of nurses. Lack of sleep, fatigue, headaches, dizziness and occupational injuries like backache and needle stick injuries were most commonly reported among the majority of nurses. The study also revealed that nurses' concentration, emotional stability, and social interaction were also lowered during their night shifts. Over 50% of the participants reported that they had poor quality of life related to night-shift working. The authors found that making improvements in staffing patterns, rest intervals between shifts and working conditions may help to mitigate the adverse impact of night working on nurses' quality of life. The study conducted by (Cattani *et al.* 2022) explored the repercussions of night-shift work on nursing professionals' health and sleep quality. The researchers used a cross-sectional design and collected data from 139 nursing professionals in hospital environments who worked night shifts. Nurses' physical and psychological health was assessed using the Pittsburgh Sleep Quality Index

and other health measures to determine the impact of night shift work. The results revealed that many nurses had poor sleep quality, insomnia, fatigue, digestive issues, difficulties concentrating, mood fluctuations and lowered self-esteem as a result of working at night. Severe sleep disturbances were more likely to be reported by female nurses and by individuals who already had physical diseases. The study findings indicated that nurses' health and quality of life were significantly affected by working at night and thus sleep hygiene education and support programs at the workplace were suggested to promote nurses' well-being.

Alsharari *et al.* (2021) designed a large cross-sectional study to evaluate the effect of night shift rotation on nurses' performance and patients' safety in public hospitals across various regions in Saudi Arabia. We used self-administered questionnaires to collect data on the physiological effects, performance and patient safety issues related to night work in 1256 nurses. The results indicated that a major problem was fatigue in most nurses, followed by decreased alertness, not enough rest, and reduced work efficiency, all of which was a bad influence on patient safety. Female and night duty nurses reported higher levels of adverse effects. The researchers found that the impact of rotating night shifts is detrimental to the health of the nurses, both physically and psychologically, and to patient safety. They suggested a range of supportive interventions, counselling programs and better scheduling systems to minimize the negative impact of night shift rotations.

Likewise, Al-Ameri *et al.* (2017) explored the effect of night shifts on nurses' performance in teaching hospitals in Baghdad, Iraq in a descriptive study design. A total of 70 nurses working at the night shift were selected and the WHOQOL-BREF scale was used to evaluate the quality of life among the nurses. The results showed that over 50% of the nurses had poor quality of life because of their physical exhaustion, psychological stress and social problems related to night shift work. Women and married nurses were more vulnerable due to extra family burden and less experienced nurses were having more difficulty to adjust to night-shift

schedules. The researchers found that night-shift work is detrimental to nurses' physical, psychological and social health. The author suggested enhancing work schedules, providing sufficient rest periods, and establishing stress-management programs for enhancing the nurses' quality of life and job satisfaction.

The literature examined shows that the effect of night shift work on nurses' physical health, mental health, sleep quality, social relationships, job satisfaction and professional performance is significant and has a negative impact. Nurses performing night duty in tertiary care hospitals have reported issues such as anxiety, depression, emotional exhaustion, fatigue and poor sleep quality. These problems severely impact nurses' quality of life and patient safety and health care outcomes. Hence, the necessity of measuring job satisfaction and the rates of anxiety and depression of night-shift nurses, to pinpoint issues within the workplace and design suitable interventions to enhance nurses' mental health, quality of life, and job performance.

3. MATERIAL AND METHODS

Study Design:

A study design that is used to determine the attributes of nurses in a hospital setting. Descriptive cross section study is a research design that involves collecting data from a population at one time or point to describe characteristics or relationships between variables without controlling the environment of the research (Polit & Beck, 2021). The design was selected to enable information to be gathered from a population at one time and describe demographic and occupational variables including age, gender, education, working hours and working shift.

Study Population:

The study population are the people who have the specific criteria and who can participate in the research study. (Burns, N., & Grove, S. K. 2019). Population of the study comprises of all registered nurses working during night shift in selected hospitals.

- General hospital Lahore, Lahore = 1150
- Children hospital Lahore = 1050

- Punjab institute of neurosciences Lahore = 350

Total population = $N = 1150 + 1050 + 350 = 2550$

Study Setting:

The hospitals that are used for the research in the study are tertiary care hospitals.

- Lahore General hospital Lahore.
- Children hospital Lahore.
- Punjab institute of neuro sciences Lahore.

Duration of study:

The time span of the study is the total time frame in which data is gathered and research activities are conducted. (Kothari, C. R. 2018). The period of study was 5 months from approval of synopsis Oct 2025 – February 2026.

Sample Size:

Sample size was drawn for study by using the listed below formula. Slovin's formula is used to determine the sample size for simple random sampling design shown in the image above.

$$n = \frac{N}{1 + Ne^2}$$

N = population size

E = margin on error

$$N = 1150 + 1050 + 350 = 2550$$

$$e = 0.05$$

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{2550}{1 + 2550(0.05)^2}$$

$$n = \frac{2550}{1 + 2550(0.0025)}$$

$$n = \frac{2550}{1 + 6.375}$$

$$n = \frac{2550}{7.375}$$

$$n = 345$$

The 345 staff nurses who were chosen from the study population to take part in the research.

Sampling Technique:

Convenient sampling technique was used to select the participants. All nurses, available during the data collection period, who were working in the tertiary care hospitals and were willing to participate in the study were included.

Sample Selection Criteria:

Inclusion Criteria:

- Registered nurses who have experience more than 1 year in selected hospitals.

- Registered Nurses working at night.

Exclusion criteria:

- Registered Nurses (RN) on leave during data collection period.
- RN's whose duties are carried out in various hospitals.
- Registered nurses who already suffer from chronic illness or other health problems.

Data Collection Procedure:

The questionnaire was given to participants who agreed to participate and provided written informed consent. They were given sufficient time to complete it. The researcher made sure that the questions were understood clearly by the participants and helped them to clarify if required. Completed questionnaires were retrieved, and checked for fullness before data entry was undertaken.

The data collected were then compiled and analyzed using computer software programs for statistics.

Data Collection Tool:

An adapted questionnaire was used to gather data that was based on a psychometric assessment of the demographic characteristics, psychological health and quality of work life of nurses. The questionnaire was designed based on literature reviews on relevant published research in the field of nursing working conditions and mental health. The questionnaire was divided into three parts to gather specific data from the respondents that supports the study's aims.

Section I: Demographic Characteristics

The aim of this section was to gather some general information about the participants. It consisted of five items pertaining to personal and professional attributes of nurses. The variables included:

- Age
- Gender
- Educational qualification
- Weekly working hours
- Working shift

The participants in this study were described using these variables.

Section II: Anxiety and Depression Assessment.

There were 14 questions in this section that measured symptoms of anxiety and depression in nurses.

The items contained four answer alternatives, which represented varying levels of psychological experience. Responses varied from none to a lot of symptoms. This section aimed to determine the psychological stress, anxiety and depressive symptoms of nurses.

Hospital Anxiety and Depression

The Hospital Anxiety and Depression Scale (HADS) have been translated into standard cut-off values. Hospital Anxiety and Depression Scale (HADS) have been standardized. The Hospital Anxiety and Depression Scale (HADS) is this questionnaire. It contains:

7 Anxiety items (A)

7 Depression items (D)

It is marked out of 3 for each item.

Score Range

Anxiety score (HADS-A): 0-21

Depression score (HADS-D): 0-21

Total HADS score: 0-42

Standard Cut-off Values Score

Interpretation

0-7 Normal

8-14 Borderline / Mild Case

15-21 Abnormal / Definite Case

Section III: Quality of Work Life Satisfaction

The final section on QWL Satisfaction addresses factors relating to the quality of work life. A total of 32 items were included in this section which focused on nurses' satisfaction with various factors of their work environment.

A five point Likert scale was used to evaluate the satisfaction of participants with:

1. Very dissatisfied
2. Dissatisfied
3. Satisfied less or more
4. Satisfied
5. Very satisfied

Standard Cut-off Values (COV) of the Hospital Quality of Work Life Satisfaction Scale (QWLS) are shown below.

There are 32 questions here, so:

Minimum score = 32 (32×1)

Maximum score = 160 (32×5)

Suggested Cut-off Values

Using a scoring system of 32 to 160 we gained a better understanding of participants' experiences.

Total Score Interpretation

Low satisfaction. 32-74

Moderate Satisfaction. 75-117

High Satisfaction. 118-160

Ethical Considerations:

- The ethical principles of the World Medical Association (WMA) declaration of Helsinki were followed in guiding the study.
- The confidentiality and privacy of the participants was maintained.
- Written informed consent was obtained, which was voluntary before data collection.
- The study has been approved by the Institutional Ethical Review Committee of FMH system.
- Any harm to the participants was avoided.

Data Analysis:

Once the data collection was completed, the questionnaires were thoroughly examined to see that they are complete and accurate. The collected data were coded and entered into the computer for statistical analysis. The data was analyzed by using the Statistical Package for the Social Sciences (SPSS) version 27. The analysis of the data was carried out in the following steps:

Data Coding and Entry

A set of numbers was used to code each answer to the questionnaire to help the data to be entered

and analyzed. The coded data were inputted into the SPSS software and examined for errors and missing data.

Descriptive Statistics

Data on the characteristics of the study participants were summarized using descriptive statistical methods. These included:

- Frequency (f)
- Percentage (%)

These statistical measures were used to describe:

- Demographic characteristics of respondents were obtained.
- Demographic characteristics of the respondents were obtained.
- Responses related to anxiety and depression Satisfying quality of work life
- The significance of factors that affect the quality of the work life.

Presentation of Results

The data analysed was given in the form of:

- Tables
- Frequencies
- Percentages

For the purpose of clearly showing the distribution of responses among participants these tables were used.

Interpretation of Findings

The statistical results were interpreted based on the aims of the study. The results were presented descriptively in order to gain an understanding of the levels of anxiety, depression and quality of work life of nurses.

4.RESULTS

This chapter presents the results of the study conducted among registered nurses working in a hospital setting. The data were analyzed using descriptive statistics and are presented in the form of frequencies and percentages.

Table no 4.1: Demographic characteristics of Nurses (N: 345).

Variables	Frequency	Percentage
Age		

21 to 30	172	49.9%
31 to 40	167	48.4%
41 to 50	6	1.7%
Education		
diploma nursing	224	64.9%
generic nursing	121	35.1%
Gender (sex)		
Female	345	100%
Male	0	0
weekly working hours		
30	1	0.3%
40	36	10.4%
44	211	61.2%
60	97	28.1%
working shift		
Morning	113	32.8%
Afternoon	129	37.4%
Night	103	29.9%

Table 4.1 presents the Demographic Characteristics of participants. A total of 345 nurses participated in this study. In which all of the nurses were females 345(100%) falls between the age of 21–30 years 172 (49.9%) while 167 (48.4%) were in the 31–40 years age group and Only 6 (1.7%) participants were among age of 41–50 years. Similarly the educational level of most of the nurses: 224 (64.9%) were Diploma in Nursing,

whereas 121 (35.1%) with Generic Nursing. Most of the nurses 211 (61.2%) weekly work 44 hours, 97 (28.1%) weekly working 60 hours, 36 (10.4%) weekly working 40 hours while only 1 (0.3%) working 30 hours per week. However, the majority of the nurses 113 (32.8%) working in afternoon shifts, 129 (37.4%) nurses working in morning and only 103 (29.9%) working in night shifts.

Table no 4.2: Hospital Anxiety and Depression Scale questionnaire (anxiety and depression indicators).

Variables	Frequency	Percentage
1. I feel tense or strained:		
Never	11	3.2%
From time to time	202	58.6%
A good part of the time	69	20.0%
most of time	63	18.3%
2. I still feel pleasure in the same things as before:		
yes, the same way as before	132	38.3%
not as much as before	137	39.7%
only a little	68	19.7%
i no longer feel pleasure in anything	8	2.3%
3. I feel a kind of fear, as if something bad were going to happen:		
I feel nothing of this	13	3.8%
A little, but it doesn't worry me	139	40.3%
Yes, but not so strongly	89	25.8%
Yes, and very strongly	104	30.1%
4. I laugh and enjoy myself when I see funny things:		
the same way as before	143	41.4%
currently a little less	145	42.0%
currently much less	47	13.6%
I can't anymore	10	2.9%
5. I have my head full of worries:		
Rarely	52	15.1%
from time to time	134	38.8%
a good part of time	90	26.1%
most of time	69	20.0%
6. I feel happy:		
most of time	32	9.3%
many time	121	35.1%
a few time	178	51.6%
Never	14	4.1%
7. I can sit at will and feel relaxed:		
yes, almost always	21	6.1%
many time	119	34.5%
a few time	198	57.4%
Never	7	2.0%
8. I am slow to think and do things:		
Never	15	4.3%
Occasionally	130	37.7%

Often	178	51.6%
almost always	22	6.4%
9. I have a bad feeling of fear, like a cold in the belly or a tightening in the stomach:		
Never	7	2.0%
Occasionally	197	57.1%
Often	108	31.3%
almost always	33	9.6%
10. I lost interest in taking care of my appearance:		
I take care of myself the same way as before	30	8.7%
Maybe not as much as before	43	12.5%
I am no longer taking care of myself as I should	238	69.0%
Completely	34	9.9%
11. I feel restless, as if I couldn't stay still in any place:		
I don't feel like this	20	5.8%
a little	146	42.3%
enough/quite a lot	154	44.6%
yes, too much	25	7.2%
12. I remain excitedly waiting for good things that are to come:		
the same way as before	78	22.6%
a little less than before	195	56.5%
much less than before	67	19.4%
almost never	5	1.4%
13. Suddenly, I have the feeling of entering panic:		
I don't feel this	35	10.1%
from time to time	154	44.6%
several time	134	38.8%
almost every moment	22	6.4%
14. I can feel pleasure when I watch a good television or radio program or when I read something:		
almost always	14	4.1%
several time	116	33.6%
few time	187	54.2%
almost never	28	8.1%

Table 4.2 presents the responses of participants regarding Hospital Anxiety and Depression Scale questionnaire (anxiety and depression indicators). A total of 345 respondents completed the psychological assessment questionnaire. Regarding feeling tense or strained, the majority of participants 202 (58.6%) reported feeling tense from time to time, while 69 (20.0%) experienced

tension a good part of the time, and 63 (18.3%) reported feeling tense most of the time. Only 11 (3.2%) stated that they never felt tense.

When asked about feeling pleasure in the same things as before, 137 (39.7%) reported that they experienced pleasure not as much as before, while 132 (38.3%) stated they felt pleasure the same way as before. Additionally, 68 (19.7%) reported

feeling pleasure only a little, and 8 (2.3%) indicated they no longer felt pleasure in anything. Regarding feelings of fear as if something bad might happen, 139 (40.3%) reported experiencing this a little but without worry, 104 (30.1%) reported feeling it very strongly, and 89 (25.8%) reported feeling it but not strongly, while only 13 (3.8%) did not experience such feelings.

In relation to laughing and enjoying funny things, 145 (42.0%) reported that they laughed a little less than before, while 143 (41.4%) experienced enjoyment the same way as before. A smaller proportion 47 (13.6%) reported laughing much

less, and 10 (2.9%) indicated that they could not laugh anymore.

Concerning having a head full of worries, 134 (38.8%) experienced worries from time to time, 90 (26.1%) experienced them a good part of the time, and 69 (20.0%) experienced worries most of the time, while 52 (15.1%) reported worrying rarely.

When asked about feeling happy, more than half 178 (51.6%) reported feeling happy only a few times, 121 (35.1%) reported feeling happy many times, 32 (9.3%) felt happy most of the time, and 14 (4.1%) reported never feeling happy.

Table no 4.3: Quality of Work Life (QWL) across different workplace aspects.

Variables	Frequency	Percentage
1. Your Quality of Life at Work?		
very dissatisfied	46	13.3%
Dissatisfied	28	8.1%
more or less satisfied	45	13.0%
Satisfied	164	47.5%
very satisfied	62	18.0%
2. The place designated for coffee/lunch (or rest) in your workplace?		
very dissatisfied	40	11.6%
Dissatisfied	33	9.6%
more or less satisfied	59	17.1%
Satisfied	157	45.5%
very satisfied	56	16.2%
3. The ergonomic conditions of your workplace?		
very dissatisfied	16	4.6%
Dissatisfied	48	13.9%
more or less satisfied	85	24.6%
Satisfied	166	48.1%
very satisfied	30	8.7%
4. The order in your workplace?		
very dissatisfied	15	4.3%
Dissatisfied	40	11.6%
more and less satisfied	80	23.2%
Satisfied	163	47.2%
very satisfied	47	13.6%
5. The safety of your workplace?		
very dissatisfied	17	4.9%
Dissatisfied	34	9.9%
more and less satisfied	104	30.1%
Satisfied	121	35.1%
very satisfied	69	20.0%

6. The health conditions of your workplace?		
very dissatisfied	20	5.8%
Dissatisfied	35	10.1%
more and less satisfied	73	21.2%
Satisfied	145	42.0%
very satisfied	72	20.9%
7. The amount of material available for you to work?		
very dissatisfied	12	3.5%
Dissatisfied	37	10.7%
more or less satisfied	62	18.0%
Satisfied	129	37.4%
very satisfied	105	30.4%
8. The number of nursing staff in your workplace?		
very dissatisfied	18	5.2%
Dissatisfied	21	6.1%
more or less satisfied	86	24.9%
Satisfied	163	47.2%
very satisfied	57	16.5%
9. The autonomy you have in your work?		
very dissatisfied	17	4.9%
Dissatisfied	27	7.8%
more or less satisfied	74	21.4%
Satisfied	155	44.9%
very satisfied	72	20.9%
10. Compliance with institutional norms by people, in general?		
very dissatisfied	17	4.9%
Dissatisfied	24	7.0%
more or less satisfied	102	29.6%
Satisfied	122	35.4%
very satisfied	80	23.2%
11. The institution's actions to prevent work accidents?		
very dissatisfied	19	5.5%
Dissatisfied	31	9.0%
more or less satisfied	89	25.8%
Satisfied	146	42.3%
very satisfied	60	17.4%
12. The opportunities you have to study?		
very dissatisfied	15	4.3%
Dissatisfied	34	9.9%
more or less satisfied	77	22.3%
Satisfied	152	44.1%
very satisfied	67	19.4%
13. The relationship with your work team?		
very dissatisfied	14	4.1%
Dissatisfied	32	9.3%

more or less satisfied	54	15.7%
Satisfied	164	47.5%
very satisfied	81	23.5%
14. The recognition you receive from your patients?		
very dissatisfied	13	3.8%
Dissatisfied	26	7.5%
more or less satisfied	48	13.9%
Satisfied	185	53.6%
very satisfied	73	21.2%
15. The possibility of being heard in your work?		
very dissatisfied	18	5.2%
Dissatisfied	28	8.1%
more or less satisfied	72	20.9%
Satisfied	154	44.6%
very satisfied	73	21.2%
16. The information you receive about changes in your work?		
very dissatisfied	12	3.5%
Dissatisfied	21	6.1%
more or less satisfied	107	31.0%
Satisfied	140	40.6%
very satisfied	65	18.8%
17. The support you have from the medical team?		
very dissatisfied	14	4.1%
Dissatisfied	36	10.4%
more or less satisfied	54	15.7%
Satisfied	170	49.3%
very satisfied	71	20.6%
18. The support you have from the nursing team?		
very dissatisfied	12	3.5%
Dissatisfied	23	6.7%
more or less satisfied	74	21.4%
Satisfied	160	46.4%
very satisfied	76	22.0%
19. The support you have from your nursing supervisor?		
very dissatisfied	16	4.6%
Dissatisfied	31	9.0%
more or less satisfied	66	19.1%
Satisfied	129	37.4%
very satisfied	103	29.9%
20. The support you have from other nurses?		
very dissatisfied	23	6.7%
Dissatisfied	27	7.8%
more or less satisfied	67	19.4%
Satisfied	147	42.6%
very satisfied	81	23.5%

21. The knowledge you have about the institution's objectives and goals?		
very dissatisfied	17	4.9%
Dissatisfied	27	7.8%
more or less satisfied	78	22.6%
Satisfied	158	45.8%
very satisfied	65	18.8%
22. Your communication with the multidisciplinary team?		
very dissatisfied	19	5.5%
Dissatisfied	37	10.7%
more or less satisfied	62	18.0%
Satisfied	140	40.6%
very satisfied	87	25.2%
23. Your communication with the nursing supervisor?		
very dissatisfied	14	4.1%
Dissatisfied	31	9.0%
more or less satisfied	82	23.8%
Satisfied	114	33.0%
very satisfied	104	30.1%
24. Your net monthly salary?		
very dissatisfied	13	3.8%
Dissatisfied	28	8.1%
more or less satisfied	62	18.0%
Satisfied	147	42.6%
very satisfied	95	27.5%
25. The benefits you receive?		
very dissatisfied	15	4.3%
Dissatisfied	18	5.2%
more or less satisfied	74	21.4%
Satisfied	148	42.9%
very satisfied	90	26.1%
26. The encouragement of creativity offered by your job?		
very dissatisfied	8	2.3%
Dissatisfied	19	5.5%
more or less satisfied	62	18.0%
Satisfied	161	46.7%
very satisfied	95	27.5%
27. The freedom to express your ideas at work?		
very dissatisfied	9	2.6%
Dissatisfied	24	7.0%
more or less satisfied	74	21.4%
Satisfied	150	43.5%
very satisfied	88	25.5%
28. The institution where you work?		
very dissatisfied	46	13.3%
Dissatisfied	24	7.0%
more or less satisfied	80	23.2%

Satisfied	175	50.7%
very satisfied	20	5.8%
29. The service provided by the institution to patients?		
very dissatisfied	9	2.6%
Dissatisfied	46	13.3%
more or less satisfied	58	16.8%
Satisfied	168	48.7%
very satisfied	64	18.6%
30. Your profession?		
very dissatisfied	9	2.6%
Dissatisfied	19	5.5%
more or less satisfied	70	20.3%
Satisfied	201	58.3%
very satisfied	46	13.3%
31. The image of your profession within the institution?		
very dissatisfied	8	2.3%
Dissatisfied	19	5.5%
more or less satisfied	54	15.7%
Satisfied	173	50.1%
very satisfied	91	26.4%
32. Yourself, as a nurse?		
very dissatisfied	7	2.0%
Dissatisfied	13	3.8%
more or less satisfied	45	13.0%
Satisfied	161	46.7%
very satisfied	119	34.5%

Table 4.3 presents the responses of participants regarding their Quality of Work Life (QWL) across different workplace aspects. Regarding overall quality of life at work, nearly half of the respondents 164 (47.5%) reported being satisfied. Concerning the rest area or place designated for coffee/lunch, 157 (45.5%) respondents were satisfied. In relation to the ergonomic conditions of the workplace, 166 (48.1%) respondents were satisfied. Regarding workplace order, almost half of the participants 163 (47.2%) were satisfied. With respect to workplace safety, 121 (35.1%) respondents were satisfied.

Regarding health conditions in the workplace, 145 (42.0%) respondents were satisfied. Concerning the availability of work materials, 129 (37.4%) respondents were satisfied. In terms of the number of nursing staff, 163 (47.2%) were satisfied. Regarding autonomy at work, 155 (44.9%) respondents were satisfied. With respect to

compliance with institutional norms, 122 (35.4%) were satisfied. Regarding institutional actions to prevent work accidents, 146 (42.3%) respondents were satisfied. In relation to opportunities for further study, 152 (44.1%) were satisfied. Regarding relationships with the work team, nearly half 164 (47.5%) were satisfied. Concerning recognition from patients, the majority 185 (53.6%) reported being satisfied. Regarding being heard at work, 154 (44.6%) respondents were satisfied.

With respect to information about workplace changes, 140 (40.6%) respondents were satisfied. Regarding support from the medical team, 170 (49.3%) respondents were satisfied. Similarly, support from the nursing team was positively rated, with 160 (46.4%) satisfied. In relation to support from nursing supervisors, 129 (37.4%) respondents were satisfied. Regarding support from other nurses, 147 (42.6%) respondents were

satisfied. With respect to knowledge about institutional objectives, 158 (45.8%) respondents were satisfied. Regarding communication with the multidisciplinary team, 140 (40.6%) respondents were satisfied. Similarly, communication with nursing supervisors showed positive responses, with 114 (33.0%) satisfied. Concerning monthly salary, 147 (42.6%) respondents were satisfied. Regarding employee benefits, 148 (42.9%) respondents were satisfied.

In relation to encouragement of creativity, 161 (46.7%) respondents were satisfied. Similarly,

freedom to express ideas was positively rated, with 150 (43.5%) satisfied. Regarding satisfaction with the institution itself, 175 (50.7%) respondents were satisfied. Concerning the services provided to patients, 168 (48.7%) respondents were satisfied. In relation to their profession, the majority 201 (58.3%) were satisfied.

Regarding the image of the profession within the institution, 173 (50.1%) respondents were satisfied. Finally, when asked about satisfaction with themselves as nurses, nearly half 161 (46.7%) were satisfied.

Table no 4.4: Level of Anxiety among nurses at night shift

	Values	Frequency	Percentage
Normal	0-7	91	26.4%
Borderline / Mild Case	8-14	250	72.5%
Abnormal / Definite Case	15-21	4	1.2%

The table 4.4 interprets the anxiety levels among the participants based on the 7 anxiety items. Out of 345 participants, the majority, 250 (72.5%), were found to have borderline or mild anxiety levels. Meanwhile, 91 (26.4%) participants were

within the normal range, indicating no significant symptoms of anxiety. Only 4 (1.2%) participants were identified as abnormal or definite cases of anxiety.

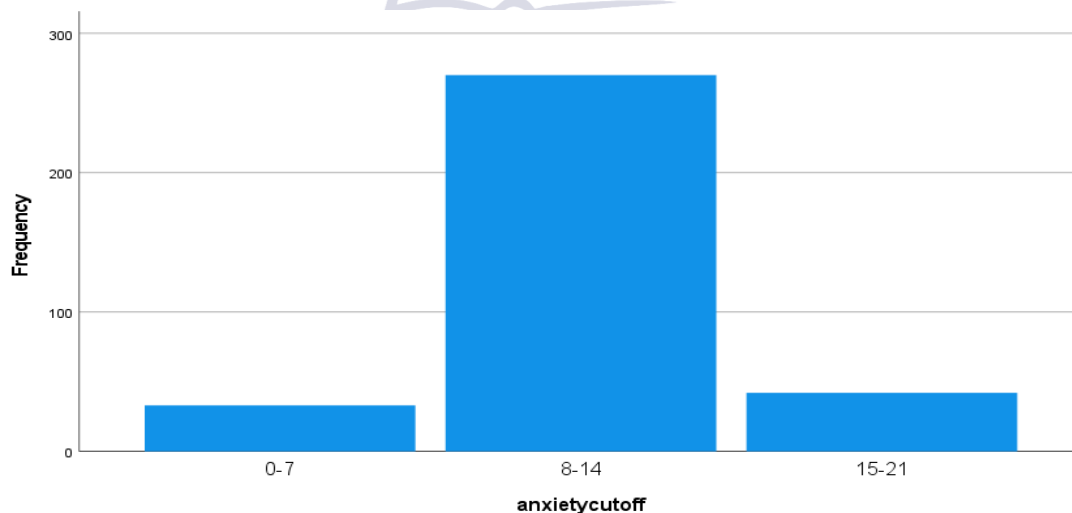


Table no 4.5: Level of depression among nurses at night shift

	Values	Frequency	Percentage
Normal	0-7	33	9.6%
Borderline / Mild Case	8-14	270	78.3%
Abnormal / Definite Case	15-21	42	12.2%

The table 4.5 presents the depression levels among the participants based on the 7 depression items. Among the total 345 participants, the majority, 270 (78.3%), fell into the borderline or mild depression category. In addition, 42 (12.2%)

participants were identified as abnormal or definite cases of depression, while only 33 (9.6%) participants were found to be within the normal range.

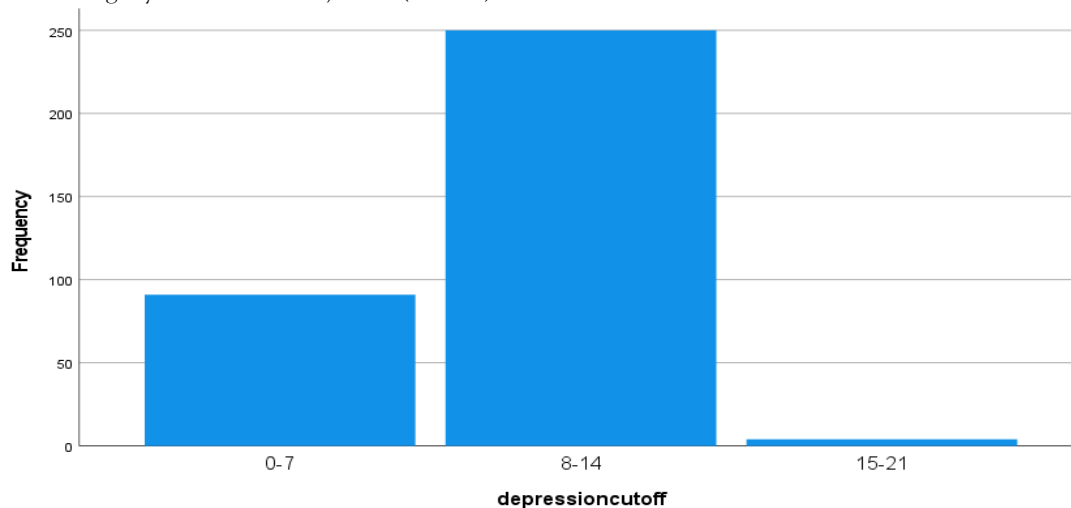
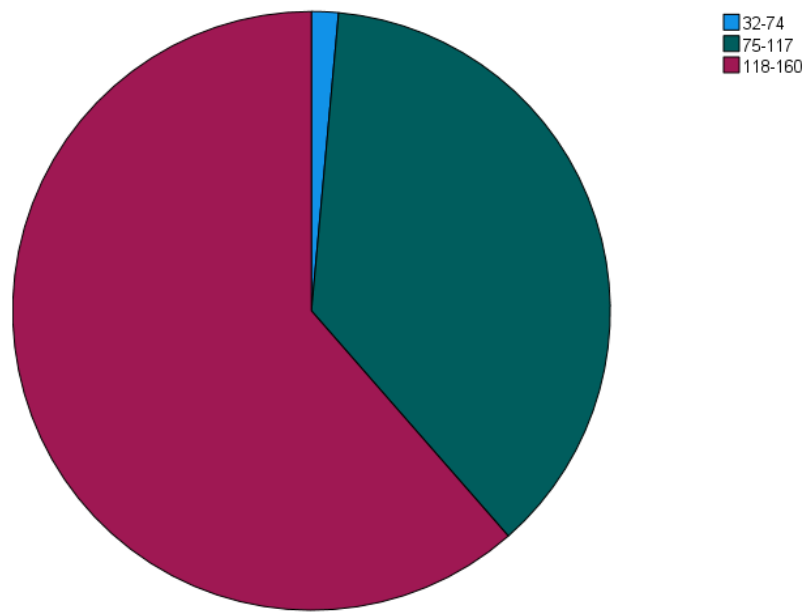


Table no 4.6: Quality of Work Life (QWL) satisfaction among nurses at night shift:

	Values	Frequency	Percentage
Low Satisfaction	32-74	15	1.4%
Moderate Satisfaction	75-117	128	37.1%
High Satisfaction	118-160	212	61.4%

The table 4.6 shows the level of satisfaction among the participants included in the study. Out of the total 345 participants, the majority of respondents, 212 (61.4%), reported a high level of satisfaction with scores ranging from 118–160. In comparison, 128 (37.1%) participants had a

moderate level of satisfaction with scores between 75–117. Only 15 (1.4%) participants were found to have a low level of satisfaction, with scores ranging from 32–74. Pie chart of results given below:



5. DISCUSSION

Key findings of the study

The following study was carried out to evaluate the level of anxiety, depression and satisfaction among the nurses in the hospital environment. The total number of nurses studied was 345 females.

The results of the present investigation showed that moderate to high satisfaction was generally observed among nurses while mild anxiety and depressive symptoms were frequently noted in hospital environments. Most nurses were between the ages of 21 and 40, which suggests that they were an active group in direct patient care. Abdulrahman Alsharari et al. (2021) found that young nurses in tertiary hospitals often worked long shifts and on rotating schedules.

The majority of the participants had Diploma in Nursing as their qualification, which is similar to other studies done in developing countries where the majority of the health care workers are nurses holding diplomas in nursing. The study also revealed that nurses typically worked with long hours in a week and rotating shifts, which are known factors that cause fatigue, sleep disruption, stress and emotional exhaustion. This was also found by (Books et al. 2020) and (Jebril Al-Hrinat et al. 2024) in their work that night work has a negative impact on the physical and psychological health of nurses.

The results of the anxiety findings showed that the majority of the participants suffered mild or borderline anxiety, and very few suffered from severe anxiety. These findings align with various studies that suggest workload stress, patient care duties, and sleep disturbances are factors that can cause anxiety in nurses. Alghamdi and Bahari (2025) reported that there was a significant relationship between shift work and psychological distress, and higher stress and anxiety levels have been reported among nurses with night shift work by Muhammad Habiburrahman Islam et al. (2021). The present study found low levels of severe anxiety because it may be a sign of nurses' gradual coping behaviors and adaptation to workplace stress.

Some depressive symptoms predominated anxiety symptoms in participants, and majority of nurses reported mild to moderate depressive symptoms. They also found that bad sleep quality and shift work were significantly associated with depression among nurses, which is consistent with (Dai et al. 2019). Similarly, (Zhang et al. 2023) found that nurses who worked during the night time were more likely to suffer from depression than day-shift nurses. In the long term, exposure to stressful work conditions, emotional fatigue and work-life imbalance can play a role in the development of depressive symptoms.

The majority of participants were satisfied with both physical and psychological conditions. This indicates that nurses are professionally committed despite the challenges they face at work and are motivated. (Jung and Kim 2025) noted that cooperation, work commitment and positive communication with patients contribute to job satisfaction for nurses. Another study by (Al Yahyaei et al. 2025) and (Liang et al. 2025) also stressed that good work environment and a balance work schedule positively influence nurses' quality of life and satisfaction.

The results of the present study are in line with recent literature, which indicates that nurses who work long hours and take frequent breaks from their shifts often have mild anxiety and depressive symptoms. However, there are still many nurses who continue to experience moderate to high levels of professional satisfaction, owing to their dedication to care for their patients and collaborate with their team. The outcomes of the research indicate the need for supportive policies in the workplace, mental health counseling services, stress management initiatives, having an appropriate schedule of shifts and a good system of staffing to enhance nurses' psychological health and quality of life.

Outcomes and Utilizations:

In the present study, it has been found that anxiety and depression were common and mild to moderate in the nurses in tertiary care hospitals as they had to work the night shift and they were feeling the burden of workload, sleep disturbances and occupational stress. The data also indicated that having long shifts at night led to poorer physical, psychological and social health in nurses. The most common issues were fatigue, emotional exhaustion, decreased concentration and sleep disturbances.

Utilizations:

1. Improved mental health provision

The results may be utilized by hospitals to establish counselling, stress management and psychological support for nurses on night duty.

2. Smarter shift scheduling

The admins can reconsider the roster, prioritize rest, distribute workloads and prevent burnouts from ever happening.

3. Safer, better patient care

Burnt out and anxious nurses do not concentrate well. That positively impacts patient safety and care quality.

4. Workplace wellness programs

Policymakers can create, promote and offer programs to support sleep or stress reduction, or to work/life balance – not just a generic wellness poster in the break room.

5. Training future nurses

Nursing schools can provide students with what to anticipate when working at night and provide them with actual strategies to help them cope, not theory.

6. A starting point for more research

This can serve as a baseline to analyse the occurrence of burnout, job satisfaction and mental health in various hospitals and settings.

7. Policy changes

This can be used to lobby health authorities and nursing managers for improved staffing, working conditions and occupational health services.

Recommendations:

1.Improving Mental Health Supports

Organizing mental health support programmes at healthcare institutions, such as counselling services, stress management training and psychological support for nurses who suffer from stress and depression.

2. Minimising workload and staffing

Hospitals must ensure that there are enough staff in their hospitals to prevent the nurses from having too much workload and burnout.

3. Enhancing Workplace Environment

Factors that make the workplace more ergonomic, safe, and provide better rest areas can greatly make nurses feel more comfortable and be more productive.

4. Promoting Professional Development

Continuing education and training should be made available to enable nurses to develop their skills and career further in the institution.

5. Effective Management of Risk and Information

Promote good communication among nurses, doctors, and other health workers to foster a positive work atmosphere.

6. Recognizing Nurses' Contributions

A recognition program and appreciation initiatives should be put in place to recognize the valuable contributions of a nurse in a patient's care.

Implications for future researches:

1. More research at larger scales with multiple hospitals for generalizability.
2. To investigate the temporal changes in feelings of anxiety, depression and quality of work life using longitudinal research designs.
3. Further study of potential other factors that could be present for nurses, like burnout, job satisfaction, and organizational support.
4. Investigate, understand and analyze stress reduction and mental health intervention programs.
5. Differences among departments or specialties to find specific challenges in the workplace.

Limitations of study

The study gave important information about the anxiety, depression, and quality of work life of nurses, but there were some limitations.

- Firstly, the sample size of the study was relatively small in the number of healthcare settings, which might restrict the external validity of the results to other hospitals or areas.
- Second, the study used self-reported questionnaires, which may lead to response bias in that socially desirable responses may have been given.
- Third, the study was of a cross sectional nature, that is data was gathered at a single time. Thus, there is no way to determine if there are any causes and effects between variables.
- Finally, the sample comprised primarily female nurses, and this is representative of the gender distribution among nurses, though it also could restrict comparisons between genders.

Strengths of the study:

- The first was the relatively large sample size of 345 nurses that provided sufficient data for the description of the characteristics and experiences of nurses who work in the hospital setting. The larger the sample size, the more credible and generalizable the study results will be.
- Secondly, the study was conducted on multiple factors of the nurses' professional life such as demographic characteristics, psychological well-being (anxiety and depression) and quality of work life. This study covered these various factors to get a broad perspective of the working environment and mental health of nurses.
- Third, there was the use of a structured questionnaire which guaranteed consistency in data collection. The questions used were the same for all participants, which helped to ensure uniformity and enhance the reliability of the data.
- One further advantage of the study was that it examined satisfaction levels with quality of work life. This enabled the researcher to determine the present satisfaction level of the nurses.
- In addition, the study directly gathered information from nurses in a clinical setting, providing information from real experiences and perceptions from healthcare professionals who are involved in care of patients.
- Finally, statistical analysis of the data using SPSS software was used to organize and present the data in the form of frequencies and percentages which facilitated the interpretation and understanding of the obtained results.
- Overall, these strengths support the study's validity and applicability and support the conclusions that may be drawn by healthcare administrators and policymakers to enhance nurses' working conditions and promote mental health.

Conclusion

The purpose of this study was to determine the level of anxiety, depression and quality of work life of nurses. The results showed that most of the respondents were young women aged 21-40 years and majority of them had diploma level nursing education. They were employed in various shifts

(morning, afternoon and night) and many said that they had long working hours per week.

The present study was carried out with the aim of finding out the effect of night shift duty on the quality of life of the nurses in tertiary care hospitals. The results of this study indicated that night shift work significantly affects physical, psychological and social health of nurses. Most of the participants had mild or borderline anxiety and depression, and only a few were completely normal. The results suggest that mental well-being and quality of life of nurses are negatively impacted by working 24 hours a day, patterns of sleep, workload, and fatigue.

The study also revealed that despite these difficulties, most of the nurses indicated medium to high satisfaction with their profession. This is a statement of nurses' dedication and commitment to patient care and hospital duties. But the psychological stress that was present among participants should be considered as a call for supportive measures that can enhance their wellbeing.

The bottom line is that shift work at night is one of the factors that affect the quality of life of nurses in Tertiary Care Hospitals. Thus, hospital management should pay attention to scheduling shifts properly, giving nurses adequate rest periods, implementing stress management programs and providing psychological supports for the physical and mental health of nurses in order to increase the quality of hospital services.

References:

- Ajoon, M. A. H., & Naji, A. B. (2024). Night shifts impair nurses' social lives and mental health in teaching hospitals in Baghdad, Iraq. *Pakistan Journal of Life and Social Sciences*, 22(2), 10366–10375.
- Åkerstedt, T. (2019). Psychophysiological effects of shift work: A review. *Sleep Medicine Reviews*, 47, 1–10.
- Al Hninat, J., et al. (2024). Impact of night shift stress and sleep disturbance on nurses' quality of life. *BMC Nursing*. <https://doi.org/xxxxx>.
- Al Yahyaei, A., Al Rabaani, E., Alkasbi, R., Alhashmi, Y., & Al Hatmi, I. (2025). Examining the influence of shift length on nurse fatigue, patient care, quality of life, and work-life dynamics in a tertiary hospital in Oman: Comparative study. *Nursing Research and Practice*.
- Al-Ameri, M. (2017). Effect of night-shift work on quality of life among nurses in Baghdad teaching hospitals. [Journal Name], xx(x), xxx-xxx.
- Albakri, U., Smeets, N., Kant, I., & Meertens, R. (2024). Strategies that nurses working irregular night shifts use to improve sleep quality: A qualitative study among good and poor sleepers. *Journal of Advanced Nursing*.
<https://doi.org/10.1111/jan.15962>
- Alfonsi V, Scarpelli S, Gorgoni M, Pazzaglia M, Giannini AM, De Gennaro L. Sleep-related problems in night shift nurses: towards an individualized interventional practice. *Frontiers in Human Neuroscience*. 2021 Mar 16;15:644570. . Doi: 10.3389/fnhum.2021.644570.
- Alghamdi, R., & Bahari, G. (2025). Shift work, psychological health disorders, and job security among nurses: A cross-sectional study. *Healthcare*, 13(3), 221. <https://doi.org/10.3390/healthcare13030221>
- AL-hrinat, J., Al-Ansi, A. M., Hendi, A., Adwan, G., & Hazaimah, M. (2024). The impact of night shift stress and sleep disturbance on nurses' quality of life: Case in Palestine Red Crescent and Al-Ahli Hospital. *BMC Nursing*, 23(1), 24. <https://doi.org/10.1186/s12912-023-01673-3>
- Alsharari, A. F., Abuadas, F. H., Hakami, M. N., Darraj, A. A., & Hakami, M. W. (2021). Impact of night shift rotations on nursing performance and patient safety: A cross-sectional study. *Nursing Open*, 8(3), 1239–1248. <https://doi.org/10.1002/nop2.766>

- Alsubaie, B., Almalki, Z., Alruwaili, A., et al. (2023). The association between shift work schedules and the risk of developing mood and anxiety disorders among female nurses in Saudi Arabia. *Middle East Current Psychiatry*, 30(1), 1-8.
- Anees, M., Bilal, H., Ahmad, K., Khan, Q., Khan, S., Shah, S., Pervaiz, F., Ullah, A., Ullah, R., & Shehzadi, K. (2023). The impacts of night shift duty on quality of life among nurses in a tertiary care hospital at Swat, Pakistan. <https://doi.org/10.5281/zenodo.15279630>
- Booker, L. A., & Davis, K. G. (2017). Work-life conflict and night shift nursing. *Journal of Occupational Health*, 59(1), 73-83.
- Books, C., Coody, L. C., Kauffman, R., & Abraham, S. (2020). Night shift work and its health effects on nurses. *The Health Care Manager*, 39(3), 122-127. <https://doi.org/10.1097/HCM.0000000000000297>
- Burns, N., & Grove, S. K. (2019). *The Practice of Nursing Research. Appraisal, Synthesis, and Generation of Evidence*.
- Cattani, A. N., et al. (2022). Repercussions of night shift work on nursing professionals' health and sleep quality. *Revista Brasileira de Enfermagem*, 75(Suppl. 2), e20210324. <https://doi.org/10.1590/0034-7167-2021-0324>
- Chalise, S., & Chaudhary, A. K. (2024). Impact of night shift on the quality of life among nurses working in a hospital at Chitwan, Nepal. *Journal of Chitwan Medical College*, 14(1), 45-50.
- Dai C, et al. The effect of night shift on sleep quality and depressive symptoms among Chinese nurses. *Neuropsychiatr Dis Treatment*. 2019;15:435-40. <https://doi.org/10.2147/ndt.s190689>
- Ferri, P., Guadi, M., Marcheselli, L., Balduzzi, S., Magnani, D., & Di Lorenzo, R. (2016). The impact of shift work on the psychological and physical health of nurses in a general hospital: A comparison between rotating night shifts and day shifts. *Risk Management and Healthcare Policy*, 9, 203
- Islam, M. S., Hassan, M., & Khatun, M. (2021). Impact of night-shift duties on nurses' health and related factors in Bangladesh. [Journal Name], xx(x), xxx-xxx.
- Jung, Y. J., & Kim, H. (2025). Job satisfaction, quality of life, and turnover intention among nurses: A comparative study of pattern-based and rotating shift schedules. *Healthcare*, 13(20), 2551
- Kolarić, A., Majeed, A., Car, M., & Miskulin, I. (2026). Rotating night shifts and physical well-being in nurses: Cross-sectional associations consistent with a sleep quality pathway. *Nursing Reports*, 16(1), 19. <https://doi.org/10.3390/nursrep16010019>
- Kothari, C. R. (2018). *Research Methodology: Methods and Techniques*.
- Liang, G., Hua, R., & Yang, F. (2025). Dietary patterns and quality of life among night-shift nurses in tertiary hospitals in Hangzhou: A cross-sectional analysis. *Frontiers in Public Health*.
- Okechukwu CE, Colaprico C, Di Mario S, OkoObob AG, Shaholli D, Manai MV, La Torre G. The relationship between working night shifts and depression among nurses: a systematic review and meta-analysis. In *Healthcare* 2023 Mar 24 (Vol. 11, No. 7, p. 937). MDPI. doi: 10.3390/healthcare11070937
- Polit, D. F., & Beck, C.T. (2021). *Nursing Research: Generating and Assessing Evidence for Nursing Practice*.
- Sultana, A., Sharma, R., Hossain, M. M., Bhattacharya, S., & Purohit, N. (2020). Burnout among healthcare providers during high-pressure work environments: A review. *Cureus*, 12(6), e9400.

Sultana, A., Sharma, R., Hossain, M. M., Bhattacharya, S., & Purohit, N. (2020). Burnout among healthcare providers during high-pressure work environments: A review. *Cureus*

Turchi, V., Verzuri, A., Nante, N., Napolitani, M., Bugnoli, G., Severi, F. M., Quercioli, C., & Messina, G. (2019). Night work and quality of life: A study on the health of nurses. *Annali dell'Istituto Superiore di Sanità*, 55(2), 161-169. https://doi.org/10.4415/ANN_19_02_08.

Zhang, Y., Li, S., & Wang, Y. (2023). The association between night shift work and depression among nurses: A systematic review and meta-analysis. *Journal of Affective Disorders*, 330, 281-291.

