



EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING SLEEP DEPRIVATION DUE TO SHIFT WORK IN HOSPITAL AMONG STAFF NURSES IN A SELECTED HOSPITAL – A QUASI-EXPERIMENTAL STUDY.

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ABSTRACT

Background: Sleep deprivation is a significant occupational health concern among staff nurses working in rotational shifts. Disrupted circadian rhythms due to night duties adversely affect nurses' physical health, cognitive performance, and patient safety. Prolonged sleep deprivation can result in fatigue, decreased alertness, and increased medical errors. Despite its implications, awareness about the causes, effects, and preventive strategies related to sleep deprivation remains limited among hospital nurses. Structured teaching programs can serve as an effective intervention to enhance knowledge and promote healthy sleep practices among shift-working nurses. **Objective:** The study aimed to evaluate the effectiveness of a structured teaching program on knowledge regarding sleep deprivation due to shift work among staff nurses in a selected hospital. Specific objectives were to assess existing knowledge, evaluate the effectiveness of the intervention, and determine the association between pre-test knowledge scores and selected demographic variables. **Methodology:** A quasi-experimental one-group pre-test post-test design was adopted. The study was conducted among 75 staff nurses selected through non-probability purposive sampling in a hospital with rotating shift schedules. The study procedure included pre-test assessment, implementation of the structured teaching program, and post-test conducted after seven days. **Results:** Findings revealed that 50.67% of nurses had poor knowledge and 42.67% had average knowledge during the pre-test, while only 6.67% demonstrated good knowledge. Post-intervention, knowledge levels improved markedly—62.67% attained good knowledge and 37.33% achieved average knowledge. **Conclusion:** The study concludes that the structured teaching program was highly effective in improving knowledge regarding sleep deprivation due to shift work among staff nurses.

KEYWORDS : Staff Nurses, Sleep Deprivation, Shift Work, Knowledge, Structured Teaching Program, Quasi-Experimental Study.

INTRODUCTION

Nursing is widely acknowledged as one of the most demanding healthcare professions, requiring nurses to combine scientific knowledge with practical skills and compassionate care. Staff nurses are the backbone of hospital services, providing holistic care that includes administering medications, monitoring patients, offering emotional support, and ensuring the smooth operation of healthcare units. Unlike many professions, nursing is a 24-hour responsibility, with services running continuously to safeguard patient health. To maintain this uninterrupted care, hospitals often require nurses to work in rotational and night shifts, a practice essential for patient safety but highly disruptive to the biological rhythms of the human body.¹

Shift work, particularly night duty, directly conflicts with the natural circadian rhythm—the internal biological clock that regulates the sleep-wake cycle. When circadian rhythms are disturbed, sleep deprivation occurs, leading to significant physical, psychological, and occupational consequences. Sleep deprivation, whether acute or chronic, has been linked to reduced attention span, impaired decision-making, memory deficits, and slower reaction times. Prolonged wakefulness has even been compared to the cognitive impairment seen under alcohol intoxication. For nurses, these deficits are not merely personal concerns but professional risks, as fatigue and reduced alertness can translate into medication errors, delayed interventions, and compromised patient safety.²

Background of Study

Sleep is a fundamental biological necessity for maintaining optimal health, performance, and overall well-being. The human body requires approximately 7–9 hours of restorative sleep each night to support physiological repair, memory consolidation, and cognitive functioning. Sleep is regulated by the circadian rhythm—an internal biological clock that

synchronizes daily activities with environmental light-dark cycles. Disruptions to this cycle, such as those caused by night shifts or rotating duty schedules, result in sleep deprivation, a condition that has both short-term and long-term health implications.³

Need of the Study

Nursing is one of the most demanding professions in healthcare, requiring physical endurance, psychological resilience, and intellectual vigilance. Staff nurses serve as the frontline caregivers in hospitals, providing direct patient care, monitoring clinical conditions, administering medications, and supporting patients and their families. Because hospitals operate round the clock, nurses are required to work rotational shifts and extended hours, often including night duties. While shift work is essential for continuity of care, it profoundly disrupts the natural circadian rhythm, predisposing nurses to sleep deprivation.

Objectives

Primary Objective

1. To assess the effectiveness of structured teaching program on knowledge regarding sleep deprivation due to shift work in hospital among staff nurses in selected hospitals.

Secondary Objective

1. To assess the existing knowledge regarding sleep deprivation due to shift work in hospital among staff nurses in selected hospitals.
2. To find the association between post-test knowledge scores with their selected demographic variables.

Hypothesis

Will be Tested at 0.05 Level of Significance.

H0: There will be no significant difference between Pre & Post test knowledge regarding sleep deprivation due to shift work in hospital among staff nurses in selected hospitals.

H1: There will be significant difference between Post test knowledge score regarding sleep deprivation due to shift work in hospital among the staff nurses in selected hospitals.

MATERIAL AND METHODS

Research Approach: Quantitative research approach

Research Desing: Quasi experimental One group pre-test post-test design.

Study Setting: In a Selected hospital.

Sample: staff nurses working in selected hospitals.

Sampling Technique: Non probability convenient sampling technique.

Sample Size: The sample size was 75 staff nurses.

1. Inclusion Criteria

Staff nurses who are:

1. Working in shift duty.
2. Willing to participate in the study.
3. Available at the time of data collection.
4. who can read write Marathi or English.

2. Exclusion Criteria

Staff nurses who:

1. have common 9am to 5 pm duties.

Data Collection Tool

Section I - Demographic Variables

This section collected personal and professional information of the participants, including Age, Gender, Religion, Type of family, Marital status, Per capita monthly income (in rupees), Educational qualification, Years of nursing experience, Exposure to night shifts.

Section II- Structured Knowledge Questionnaire

This section was designed to assess the nurses' knowledge regarding:

- Causes of sleep deprivation due to shift work
- Effects of sleep deprivation on health and performance
- Preventive strategies and sleep hygiene practices
- Management of sleep deprivation in clinical settings.

The questionnaire was developed after an extensive review of relevant literature, consultation with experts in Psychiatric Nursing and Biostatistics, and alignment with the objectives of the study. The items were carefully constructed to be clear, concise, and measurable, ensuring that they accurately captured the intended knowledge domains. The data collection procedure involved a pre-test and post-test approach, in which participants completed the knowledge questionnaire before and after receiving the structured teaching program (STP). This approach allowed the researcher to measure the baseline knowledge, implement the intervention, and then assess the change in knowledge attributable to the teaching program.

Knowledge Score Grading

Level of Knowledge	Score Range
Poor	0 – 6
Average	7 – 12
Good	13 – 18
Very Good	19 – 24
Excellent	25 – 30

Study Procedure and Data Collection:

Steps Involved:

1. Permission and ethical clearance were obtained from hospital authorities and the institutional ethics committee.
2. Pre-test was administered to assess baseline knowledge.
3. Structured teaching program (STP) was conducted using charts, PowerPoint presentations, and discussions.
4. After a 7-day interval, a post-test using the same questionnaire was conducted.
5. Data were coded, tabulated, and analyzed statistically.

Validity over the questionnaire was established for build up through both the construct & content manner to seek for the results what has intended purposely for the inferences & conclusion to measure. Reliability of the questionnaire was calculated by using appropriate statistical test.

Data Analysis

All results were calculated using SPSS version 26. Overall results for the outcome variables were listed in tables and graphs for both descriptive (Mean, mean percentage, Standard deviation), & inferential statistics (Paired t - test was used to find the significance difference between two groups (before & after), Association results is analyse using chi square analysis).

RESULTS

Section – I

Table No.- 1: Showing Frequency and Percentage Wise Distribution of Staff Nurses According to their Demographic Variables.

N = 75

SN	Variable	Category	Frequency (f)	Percentage (%)
1	Age (in years)	19–29 years	20	26.67
		30–39 years	35	46.67
		40–49 years	15	20.00
		Above 50 years	5	06.66
2	Gender	Male	28	37.33
		Female	47	62.67
3	Religion	Hindu	50	66.67
		Muslim	15	20.00
		Christian	7	09.33
		Other	3	04.00
4	Type of family	Nuclear family	30	40.00
		Joint family	35	46.67
		Extended	7	09.33
		Single parent	3	04.00
5	Marital status	Married	55	73.33
		Single	15	20.00
		Widow	3	04.00
		Separated	2	02.67
6	Per capita monthly income (₹)	< 10000	10	13.33
		10001–20000	35	46.67
		20001–30000	25	33.33
		> 30001	5	06.67
7	Qualification	ANM	5	06.67
		GNM	20	26.67
		B.Sc.(N)	35	46.67
		M.Sc.(N)	15	20.00
8	Years of experience	< 2 years	10	13.33
		2–6 years	30	40.00
		7–10 years	20	26.67
		> 10 years	15	20.00
9	Exposure to night shift	< 6 days/month	15	20.00
		7–9 days/month	25	33.33
		10–12 days/month	20	26.67
		> 12 days/month	15	20.00

Section II

Table No.-2: Showing Frequency and Percentage Wise Distribution of Pre-test (Before Intervention) Regarding Sleep Deprivation Due to Shift Work Among Staff Nurses.

N = 75

SN	Level of knowledge	Pre-test	
		F	%
1	Poor knowledge (0 – 06)	38	50.67
2	Average knowledge (07 – 12)	32	42.67
3	Good knowledge (13 – 18)	05	06.67
4	Very good knowledge (19 – 24)	00	00.00
5	Excellent (25-30)	00	00.00

Section III

Table No.- 3: Showing Frequency Percentage Wise Dis-

tribution of Post Test Knowledge Regarding Sleep Deprivation Due to Shift Among Staff Nurses. N = 75

SN	Level of knowledge	Post-test	
		F	%
1	Poor knowledge (0 – 06)	00	00
2	Average knowledge (07 – 12)	00	37.33
3	Good knowledge (13 – 18)	28	62.67
4	Very good knowledge (19 – 24)	47	00
5	Excellent (25-30)	00	00

Section IV

Table No.- 3: Evaluation of Effectiveness of the Structured Teaching Program on Knowledge Regarding Sleep Deprivation Due to Shift Work Among Staff Nurses. N = 75

SN	Level of knowledge	Pre-test		Post-test	
		F	%	F	%
1	Poor knowledge (0 – 06)	38	50.67	00	00
2	Average knowledge (07 – 12)	32	42.67	00	37.33
3	Good knowledge (13 – 18)	05	06.67	28	62.67
4	Very good knowledge (19 – 24)	00	00.00	47	00
5	Excellent (25-30)	00	00.00	00	00

Level of significance $p < 0.005$

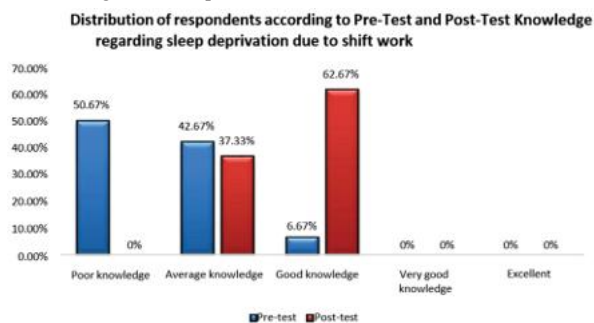


Figure : Bar Diagram Showing Distribution of Respondents According to Pre-Test and Post-Test Knowledge Regarding Sleep Deprivation Due to Shift Work.

DISCUSSION

Findings of present study was supported by previous studies where structured teaching program have been shown significant increase knowledge score regarding sleep deprivation due to shift work in hospital among the staff nurses in selected hospitals. The present study findings consistent with those of other studies, especially regarding the significant increase knowledge score regarding sleep deprivation due to shift work in hospital among the staff nurses in selected hospitals.

CONCLUSION

The study concludes that the structured teaching program was highly effective in improving knowledge regarding sleep deprivation due to shift work among staff nurses. Educational status and prior exposure to night shifts influenced baseline awareness. Implementing structured educational interventions in hospital settings can enhance nurses' understanding of sleep health, promote self-care, and ultimately improve patient safety and quality of care.

Recommendations

Based on the findings of the study the following recommendations are made:

1. Conduct regular educational sessions on sleep hygiene and shift work management.
2. Employ audiovisual and interactive teaching tools for better engagement.
3. Target nurses with lower educational backgrounds or high night-shift exposure for tailored interventions.
4. Monitor knowledge retention and behavioral changes periodically.
5. Integrate structured sleep education into routine in-

service training.

6. Train nursing staff in counseling, teaching methods, and occupational health awareness.
7. Conduct multi-center studies with larger samples to improve generalizability.
8. Compare the effectiveness of various teaching methods for sleep-related interventions.

Consent and Ethical Approval

The study was conducted after approval of Institutional Ethics Committee. Written consent will be taken from the participants for participation in the study. Staff nurses was instructed that their participation in this study was entirely voluntary, and they may opt out at any point of study. Throughout the Study, confidentiality was maintained. The study's findings were disseminated to participants.

Authors Contributions

The author carries out tasks from data collection, data analysis, making discussions to making manuscripts

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The research was not funded, all the expenses were carried out by the researcher.

Conflict of Interest

No conflicts of interest declare by the authors.

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