

An Evaluation of the Impact of a Structured Teaching Program on Staff Nurses' Knowledge of Low Back Pain Prevention in Intensive Care Units at Selected Hospitals in Bangalore

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Abstract

The study aimed to assess the knowledge of ICU nurses concerning the prevention of low back pain (LBP), determine the effectiveness of a structured teaching program (STP) in improving their knowledge, and examine the relationship between pre-test knowledge levels and various demographic factors. A pre-experimental research design was utilized, featuring a one-group pre-test and post-test method. The study employed non-probability convenience sampling to recruit 60 ICU nurses for participation. Data were collected using a structured knowledge questionnaire, which included two sections: socio-demographic data and knowledge on LBP prevention. Descriptive and inferential statistics, including frequencies, percentages, mean, standard deviation, chi-square, and 't' tests, were used for data analysis. The majority of participants (35%) were in the 20–25 age group, with 68.33% being female and 45% identifying as Christian. Most nurses (43.33%) had 1–5 years of experience, and 78.33% held staff nurse positions. A significant percentage (38.33%) had a B.Sc. in Nursing, and 85% came from nuclear families. In terms of working hours, all nurses worked 6–8 hours daily, with 80% receiving information about LBP prevention from health personnel. The pre-test revealed that 60% of nurses had moderate knowledge of LBP prevention. Following the STP, 75% of the participants demonstrated adequate knowledge, 25% showed moderate knowledge, and none had inadequate knowledge, reflecting a notable improvement. The chi-square test showed a significant association between pre-test knowledge and demographic variables such as staff designation, education, type of family, and information source. In conclusion, staff nurses initially had limited knowledge about LBP prevention, but the STP effectively improved their knowledge. This highlights the importance of targeted educational interventions in enhancing nurses' awareness of LBP prevention strategies.

Keywords: ICU nurses, low back pain (LBP), structured teaching program (STP), demographic variables, structured knowledge questionnaire.

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INTRODUCTION

“Life is not merely being alive but being well”

—Marcus Aurelius

The World Health Organization (WHO) defines health as a state of complete physical, mental, social, and spiritual well-being, rather than just the absence of illness or disability. This definition highlights that health is a comprehensive and ideal condition, but it acknowledges that not everyone can attain the same level of health due to inherent individual differences.

There is a growing demand for evidence-based healthcare, particularly for conditions like back pain, which is a prevalent and challenging occupational health issue. Despite the availability of clinical guidelines for managing low back pain (LBP), these guidelines offer limited guidance on occupational factors. In March 2000, the Faculty of Occupational Medicine in the UK introduced the first national guidelines for managing low back pain in the workplace, known as the Occupational Health Guidelines for Managing Low Back Pain at Work. These guidelines, which are based on a comprehensive review of scientific literature from occupational settings, were the first to be linked to evidence on managing back pain in the workplace [1–3].

Low back pain is a major global contributor to disability. In the absence of a standardized pain classification system, LBP is often categorized into two types: axial pain (localized to the lower back) and radicular pain (radiating to the legs). These classifications are significant for clinical practice, as the distribution of pain usually correlates with specific diseases affecting the lumbar spine. Common causes of axial LBP include issues with the intervertebral disc, facet joints, sacroiliac joints, and paraspinal muscles, while radicular pain is often caused by a herniated disc or spinal stenosis. The reliability of historical and physical exams in diagnosing sacroiliac joint pain, radiculopathy, and lumbar spinal stenosis is well-documented [4].

In India, low back pain (LBP) is a common work-related injury across various professions, with workers frequently exposed to poor posture, improper lifting techniques, heavy loads, and repetitive movements. The nursing profession is especially vulnerable to LBP due to the physical demands it entails. The prevalence of LBP among nurses ranges from 6.2% to 92%, with older individuals and women being more susceptible. Many nursing tasks involve the coordinated use of muscles, and having a solid understanding of proper body mechanics can help prevent injury. Overall, LBP remains a significant and costly issue in the nursing field. Numerous studies indicate that nurses experience a higher rate of back pain and occupational injuries compared to other professional groups. For example, Swedish data reveals that assistant nurses face a six times greater risk of overexertion-related back injuries than other employed women in the country. These injuries often result in sick leave, ongoing medical issues, or even job changes, with most occurring during patient transfers [5–8].

Low back pain (LBP) is a common musculoskeletal condition that affects up to 80% of individuals at some point in their lives. In the United States, the lifetime prevalence of mechanical LBP ranges from 60% to 80%, with 14% of individuals experiencing persistent pain lasting longer than two weeks. The National Institutes of Health reports that 80% of individuals will experience low back pain (LBP) at some point in their lives. LBP is a leading cause of absenteeism, disability, and reduced productivity. It can be caused by factors such as extended periods of sitting or standing, heavy lifting, poor posture, or insufficient physical activity. While treatments like pain relievers, muscle relaxants, and physiotherapy can help manage symptoms, long-term relief is often achieved through a comprehensive approach, which may include alternative therapies.

Pain is a complex experience that involves both sensory and emotional components, and it can be highly disabling. The World Health Organization (WHO) acknowledges pain as a significant public health issue, yet it is often overlooked, particularly due to factors like treatment costs, poor pain assessment, and a lack of professional accountability in addressing it [9–10].

LBP is a nonspecific condition that can be acute or chronic, affecting the lumbosacral spine and resulting from inflammatory, degenerative, traumatic, metabolic, or other disorders. It is a universal problem that not only impacts individuals but also contributes significantly to both direct and indirect costs in healthcare systems, particularly in industrialized nations. Nursing, as a physically demanding profession, is highly susceptible to back injuries, with a high rate of nonfatal, work-related injuries in India. The causes of LBP in nurses are multifactorial, often arising from the combination of physical and mental demands of the job, making it challenging to separate the two.

Nurses also face unique challenges due to shift work, which disrupts their circadian rhythm. This disruption can lead to sleep disturbances, fatigue, and reduced work performance and safety awareness, further contributing to health problems.

In India, the prevalence of LBP ranges from 6.2% in the general population to 92% among construction workers. This variation is likely due to differences in the study populations, objectives, demographic factors, and the definition of LBP used in the research. The prevalence of low back pain (LBP) tends to rise with age and is more frequently observed in women. Additionally, prolonged work hours and longer tenure in a job are linked to higher rates of LBP.

LBP remains a significant health and socioeconomic concern in modern society. This review highlights the epidemiology of LBP in the Indian population, noting the higher prevalence in women and older individuals. Many people with LBP do not seek medical consultation and instead prefer traditional treatments. However, the existing literature on LBP in India remains inconclusive due to small sample sizes, inconsistent definitions of LBP, a lack of comprehensive risk factor analysis, and insufficient epidemiological studies in the general population. Therefore, well-designed studies with robust statistical methods are necessary to determine the various factors influencing LBP in India.

A study was conducted to examine the attitudes and beliefs related to chronic pain among nursing professionals at a multispecialty hospital in Bangalore. The results revealed that the overall score for factor 1 was 52.95 ± 10.23 , while the score for factor 2 was 20.93 ± 4.72 ($P = 0.00$). Female nurses scored higher on the behavioural dimension (21.1 ± 4.81) compared to their male counterparts (19.55 ± 3.67), with the difference being statistically significant ($P < 0.05$). The findings indicated that nurses were more focused on the biomedical aspect of chronic pain rather than the behavioural dimension. These results highlight important considerations for nursing education and have practical relevance in the context of palliative care [11].

OPERATIONAL DEFINITION

- *Assess*: This refers to the process of evaluating the expected or intended outcomes of the study.
- *Effectiveness*: This indicates a notable improvement in the knowledge scores related to low back pain prevention among nurses working in the intensive care unit.
- *Structured teaching programme*: This refers to a well-organized educational plan focused on educating staff nurses in the intensive care unit about the prevention of low back pain.
- *Knowledge*: This pertains to the responses of the staff nurses regarding the prevention of low back pain, which are evaluated through the scores on a knowledge questionnaire.
- *Prevention of low back pain*: It refers to the pain in the lumbosacral region due to strain on musculoskeletal system and its preventive measures are included.

In this study, “staff nurses working in the intensive care unit” refers to nursing professionals who have completed either a B.Sc. Nursing or a Diploma in Nursing (GNM), are registered with the state nursing council, and have over six months of experience in selected hospitals in Bangalore.

HYPOTHESIS

- *H1* - There is a significant difference in the knowledge scores of staff nurses working in the intensive care unit before and after the intervention regarding the prevention of low back pain.
- *H2* - A significant correlation exists between the pre-test knowledge scores of staff nurses and their selected socio-demographic factors.

ASSUMPTIONS

- Nurses may have limited understanding of low back pain prevention.
- The Structured Teaching Program aims to improve ICU staff nurses' understanding of how to prevent low back pain.
- The increased knowledge of staff nurses concerning the prevention of low back pain.

DELIMITATION

- This study targets staff nurses working in the intensive care units of specific hospitals in Bangalore.
- Data collection for this study will occur over a four-week duration.
- The sample consists of 60 staff nurses working in the intensive care units of chosen hospitals in Bangalore.

RESEARCH DESIGN

Research design refers to the comprehensive plan that an investigator follows to answer the research question or test a hypothesis. It aids the researcher in selecting participants, identifying relevant variables, and determining how to manipulate and control these variables. The selection of the design is guided by the study's goals, research methodology, and the variables being investigated. For this study, a pre-experimental research design was chosen (Table 1).

VARIABLES

Variables refer to the attributes, traits, or characteristics of individuals, objects, or situations that can change or vary. The primary variables included in this study are socio-demographic variables and the dependent variable.

1. *Demographic variable:* In this study the demographic variable includes the characteristic of staff nurses working in intensive care unit such as age, gender, religion, total year of experience, designation, educational status, type of family, working hours and source of information regarding prevention of low back pain.
2. *Dependent variable:* In this study, the dependent variable refers to the level of knowledge among staff nurses working in the intensive care unit regarding the prevention of low back pain.
3. *Independent variables:* In this study, the independent variable is the structured teaching program designed to improve knowledge regarding the prevention of low back pain.

SAMPLE

A sample is a subset chosen from a larger population to take part in a specific study. In this research, the sample consists of 60 staff nurses employed in the ICU at Sagar Hospital in Bangalore. The pilot study involved a sample size of 5, while the main study had a sample size of 60.

SAMPLING TECHNIQUE

Non-probability sampling was employed, where the researcher used their judgment to select participants in order to meet the specific objectives of the study. The convenience sampling technique was utilized, relying on the researcher's understanding of the population and its characteristics to choose samples that are representative of the group. The study selected 60 staff nurses employed in the ICU at Sagar Hospital.

Sampling Criteria

Inclusion Criteria

The inclusion criteria for the study were as follows:

1. Staff nurses currently employed in the intensive care units of selected hospitals in Bangalore.
2. Staff nurses in the ICU who are able to communicate effectively in either English or Kannada.
3. Staff nurses working in the ICU who consented to participate in the study.

Table 1. Research design.

Group	Pre-test	Intervention	Post-test
Staff nurses working in ICU (60)	01	X	02

Key: 01 = Evaluating the current level of knowledge on the prevention of low back pain (LBP) using a structured questionnaire, X = Administering an intervention (structured teaching program) on the prevention of LBP to staff nurses working in the ICU, 02 = Assessing the post-intervention knowledge level regarding the prevention of LBP using the same questionnaire for the same participants.

Exclusion Criteria

The exclusion criteria for the study were as follows:

1. Staff nurses who participated in the pilot study.
2. Staff nurses working in the intensive care unit who are on leave.

SELECTION AND DEVELOPMENT OF TOOL

The tools for the study were designed based on its objectives. A structured questionnaire was created to align with the study's goals, as it was deemed the most suitable instrument to gather responses from staff nurses. The main aim of the study was to evaluate the knowledge of staff nurses about the prevention of low back pain (LBP). As a result, the questionnaire was structured into two sections, addressing the following aspects:

1. *Section A: socio-demographic data:* It consist of characteristics of staff nurses working in ICU such as age, gender, religion, total year of experience, designation, educational status, type of family, working hours and source of information regarding prevention of LBP.
2. *Section B: structured knowledge questionnaire:* The knowledge questionnaire was developed after a thorough review of literature, including research articles and consultations with experts. The questionnaire comprised 30 multiple-choice questions centered on the prevention of low back pain (LBP), with each question having one correct response. The staff nurses were asked to select the appropriate response. The questionnaire was presented in English. A blueprint was created to guide the formulation of the test items for the tool. Items related to cognitive domain only were selected. Content area was classified under different aspects such as Knowledge on General aspects of low back pain and Knowledge on prevention of low back pain (Table 2).

Scoring of Knowledge Questionnaire

The knowledge regarding prevention of low back pain were assessed in terms of knowledge scores, each correct answer was given a score of 1 and score of 0 for wrong answers. The maximum score was 30. For the purpose of the study the knowledge scores were categorized as follows in Table 3.

The plans of data analysis were as follows:

- Demographic variables were analysed using frequencies and percentages.
- The mean, mean percentage, and standard deviation were computed to assess the pre-test and post-test knowledge of staff nurses regarding the prevention of LBP.
- A paired 't' test was conducted to evaluate the impact of the structured teaching program (STP) on LBP prevention.
- The Chi-square test was used to examine the association between pre-test knowledge of LBP prevention and various demographic factors (Table 4).

Table 2. Blue print of structured knowledge questionnaire.

S.N.	Assessment variables	No. of questions	Minimum score	Maximum score
1.	Knowledge on general aspects of LBP	15	0	15
2.	Knowledge on prevention of low back pain	15	0	15
3.	Overall	30	0	30

Table 3. Classification of the level of knowledge of staff nurses regarding prevention of LBP.

Score	Level of Knowledge
Below 50%	Inadequate
50–75%	Moderate
Above 75%	Adequate

Table 4. Data analysis and methods used for the study.

No.	Data analysis	Statistical methods	Remarks
1.	Descriptive analysis	1. Frequency and percentage 2. Mean score and standard deviation	1. To analyze the demographic variables 2. To assess the pre-test and post-test knowledge regarding prevention of low back pain
2.	Inferential analysis	1. Paired 't' test 2. Chi-square test	1. To assess the effectiveness of STP regarding prevention of low back pain 2. To associate the pre-test level of knowledge of staff nurses with their selected demographic variables

RESULTS

Section-I: Frequency and Percentage Distribution of Selected Socio Demographic Variables of Staff Nurses

Table 5 and Figure 2 display the distribution of staff nurses based on age. Among the 60 staff nurses, 35% (21) were in the 20–25 years age group, 30% (18) were in the 26–35 years age group, 15% (9) were in the 36–45 years age group, and 20% (12) were above 45 years. This indicates that the majority of the staff nurses fell within the 20–25 years age group.

Table 5. Frequency and percentage distribution of selected socio demographic variables of staff nurses (N=60).

Characteristics	Category	Respondents	
		N	%
Age in year	20–25 years	21	35
	26–30 years	18	30
	31–35 years	9	15
	Above 36 years	12	20
Gender	Male	19	31.67
	Female	41	68.33
Religion	Hindu	21	35
	Christian	27	45
	Muslim	12	20
	Others	0	0
Years of experience in ICU	Less than 1 year	17	28.33
	1–5 years	26	43.33
	6–10 years	12	20
	11 years or above	5	8.34
Designation of staff	Staff nurse	47	78.33
	Head nurse	4	6.67
	Ward in charge	9	15
Educational Status	GNM	2	3.33
	B.Sc. nursing	23	38.33
	P.B. B.Sc. Nursing	18	30
	M.Sc. Nursing	17	28.33
Type of family	Nuclear family	51	85
	Joint family	9	15
	Extended family	0	0
Working hours	6–8 hrs	60	100
	9–11 hrs	0	0
	12–14 hrs	0	0
	15–17 hrs	0	0
Source of information	Mass media	11	18.33
	Friends and relatives	1	1.67
	Health personal	48	80
	Nil	0	0

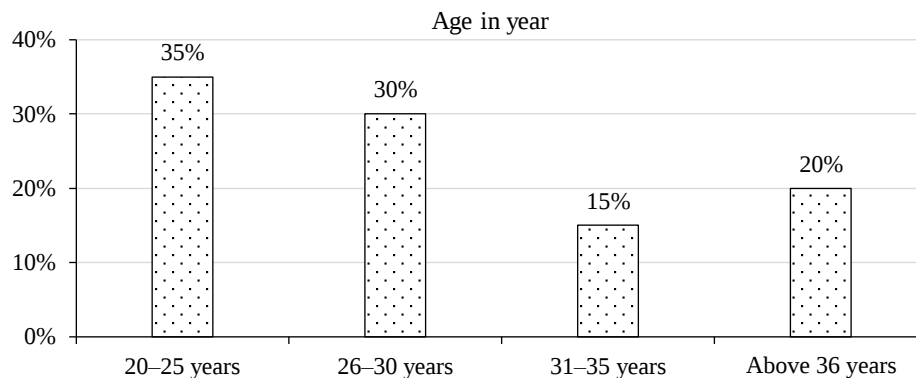


Figure 1. Distribution of staff nurses on the basis of age.

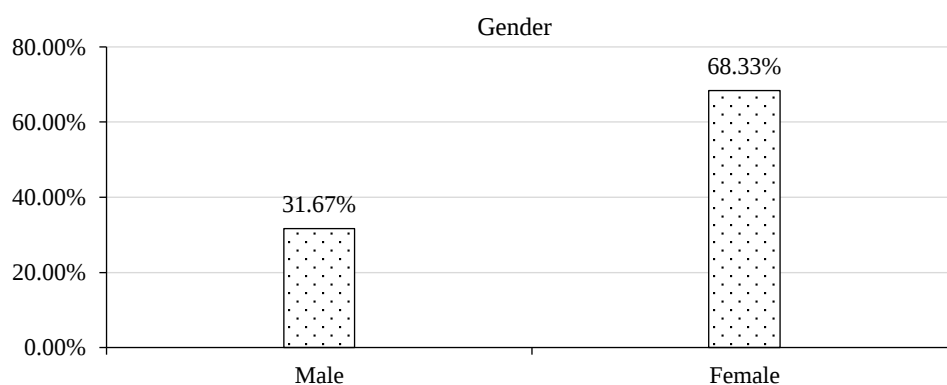


Figure 2. Distribution of staff nurses on the basis of gender.

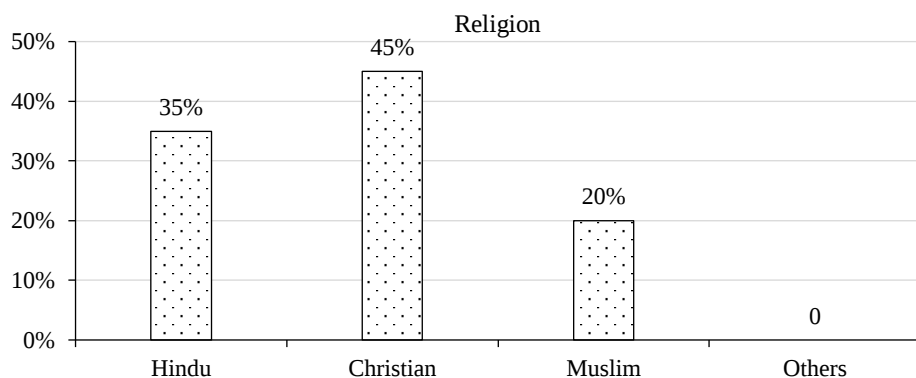


Figure 3. Distribution of staff nurses on the basis of religion.

Table 5 and Figure 3 present the distribution of staff nurses based on gender. Among the staff nurses, 68.33% (41) were female, while 31.67% (19) were male. Thus, it can be concluded that the majority of the staff nurses were women.

Table 5 and Figure 4 display the distribution of staff nurses by religion. Among the staff nurses, 35% (21) were Hindu, 45% (27) were Christian, 20% (12) were Muslim, and none (0%) identified with other religions. Therefore, it can be concluded that the majority of the staff nurses follow the Christian faith.

Table 5 and Figure 5 present the distribution of staff nurses based on their years of experience in the ICU. Among the 60 staff nurses, 28.33% (17) had less than 1 year of experience, 43.33% (26) had 1–5 years of experience, 20% (12) had 6–10 years of experience, and 8.34% (5) had more than 11 years of experience. It can therefore be concluded that most of the staff nurses had 1–5 years of experience working in the ICU.

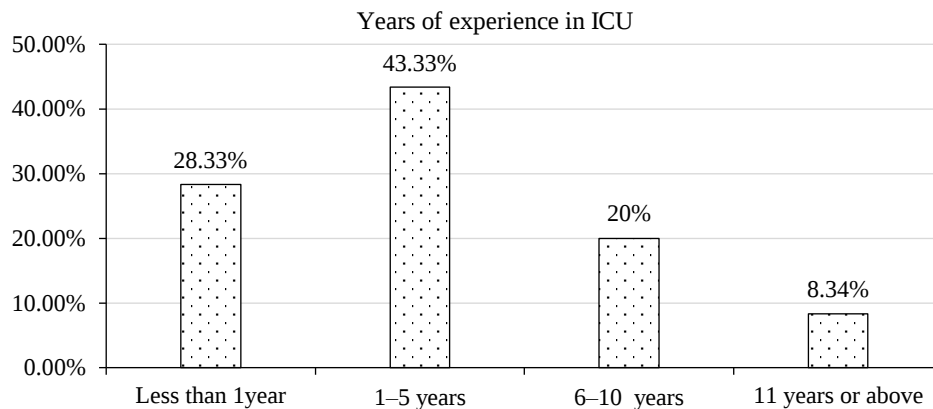


Figure 4. Distribution of staff nurses on the basis of years of experience in ICU.

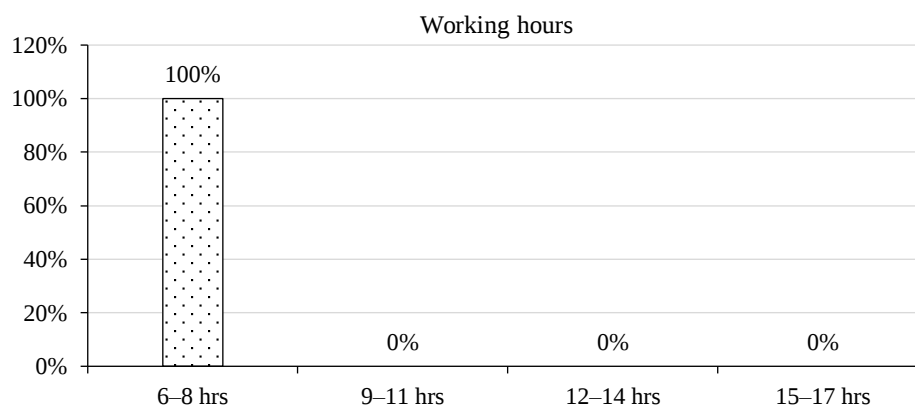


Figure 5. Distribution of staff nurses on the basis of working hours.

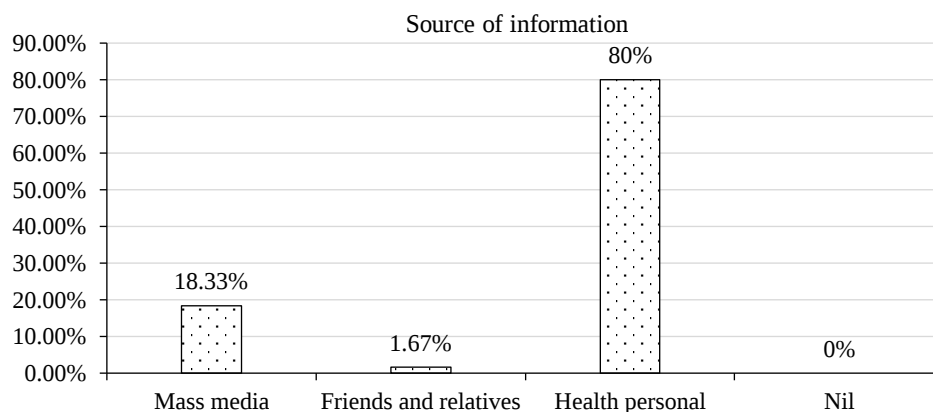


Figure 6. Distribution of staff nurses on the basis of source of information.

Table 5 and Figure 6 illustrate the distribution of staff nurses based on their working hours. Out of the 60 staff nurses, the majority, 100% (28), worked for 6-8 hours, while none (0) worked for 9-17 hours. Thus, it can be concluded that most of the staff nurses worked for 6 to 8 hours.

Table 5 present the distribution of staff nurses based on their sources of information. Among the 60 staff nurses, the majority, 80% (48), received information from healthcare professionals, 18.33% (11) accessed information through mass media, and 1.67% (1) obtained information from friends and relatives. No staff nurses (0%) reported obtaining information from other sources. Hence it can be interpreted that majority of the staff nurses got information from health personal.

Section-1I (A): Pre-test Knowledge Score of Staff Nurses Working in ICU Regarding Prevention of LBP

Objective 1: To Assess the Baseline Knowledge of ICU Staff Nurses Regarding Low Back Pain Prevention

Table 6 and Figure 8 illustrate the pre-test knowledge scores of ICU staff nurses concerning the prevention of low back pain. In this study, the majority of staff nurses, 40%, had an inadequate level of knowledge regarding the prevention of low back pain (LBP), while 60% had a moderate level of knowledge. None of the staff nurses demonstrated an adequate level of knowledge on the topic.

Table 7 displays the mean, standard deviation (SD), and percentage of the pre-test knowledge scores of ICU staff nurses regarding the prevention of low back pain (LBP), organized by each specific aspect. In the aspects of knowledge on general aspects of LBP the staff nurses had mean score of 7.03, SD 1.72 and mean% (46.8%). Staff nurses had mean score of 7.81, SD 1.68 and mean% (52.0) in the aspect on LBP. The overall mean, SD and mean% were 14.85, 2.27 and 49.5% respectively.

Table 6. Pre-test knowledge score of staff nurses working in ICU regarding prevention of LBP (N=60).

Level of knowledge	Score	No of respondents (%)	
		No	%
Inadequate	<50%	24	40
Moderate	51–75%	36	60
Adequate	>75%	0	0
Total		60	100

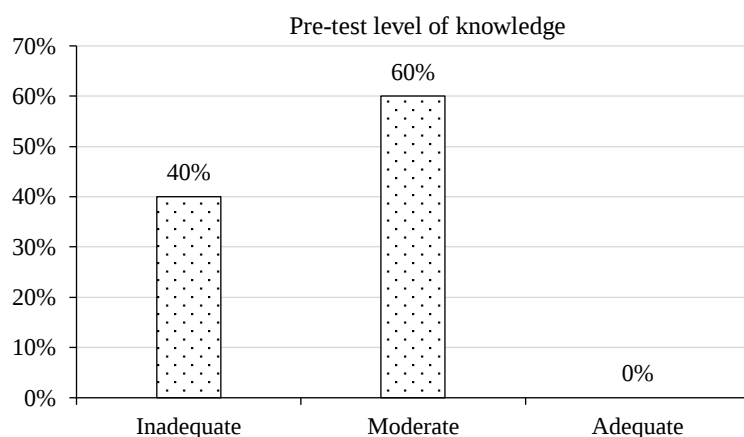


Figure 7. Pre-test knowledge score of staff nurses working in ICU regarding prevention of LBP.

Table 7. Aspect wise mean, SD and mean% of the pre-test knowledge score of staff nurses working in ICU regarding prevention of LBP (N=60).

Aspects wise knowledge	No. of questions	Min - Max score	Mean	SD	Mean%
General information of low back pain	15	0 - 15	7.03	1.72	46.8%
Prevention of low back pain	15	0 - 15	7.81	1.68	52.0%
Overall	30	0 - 30	14.85	2.27	49.5%

Section-II (B): Post-test Knowledge Score of Staff Nurses Working in ICU Regarding Prevention of LBP

Table 8 illustrates the post-test knowledge scores of ICU staff nurses regarding the prevention of low back pain (LBP). After the intervention, 75% of the staff nurses exhibited an adequate level of knowledge, 25% demonstrated a moderate level of knowledge, and none showed an inadequate level of knowledge regarding LBP prevention.

Figure 9 present the post-test knowledge scores of ICU staff nurses concerning the prevention of low back pain (LBP). After the intervention, 75% of the staff nurses demonstrated an adequate level of knowledge, 25% showed a moderate level of knowledge, and none exhibited an inadequate level of knowledge regarding LBP prevention.

Aspect Wise Mean Post-test Knowledge Score of Staff Nurses Working in ICU Regarding Prevention of LBP

Table 9 provides the aspect-wise mean, standard deviation (SD), and mean percentage of the post-test knowledge scores of ICU staff nurses regarding the prevention of low back pain (LBP). In the area of general knowledge about LBP, the staff nurses had a mean score of 12.25, an SD of 1.97, and a mean percentage of 81.6%. For the prevention of LBP, the mean score was 12.1, SD was 1.83, and the mean percentage was 80.6%. The overall mean score was 24.35, with an SD of 2.61 and a mean percentage of 81.1%.

Table 8. Post test knowledge score of staff nurses working in ICU regarding prevention of LBP (N=60).

Level of knowledge	Score	No of respondents (%)	
		No	%
Inadequate	<50%	0	0
Moderate	51–80%	15	25
Adequate	>81%	45	75
Total		60	100

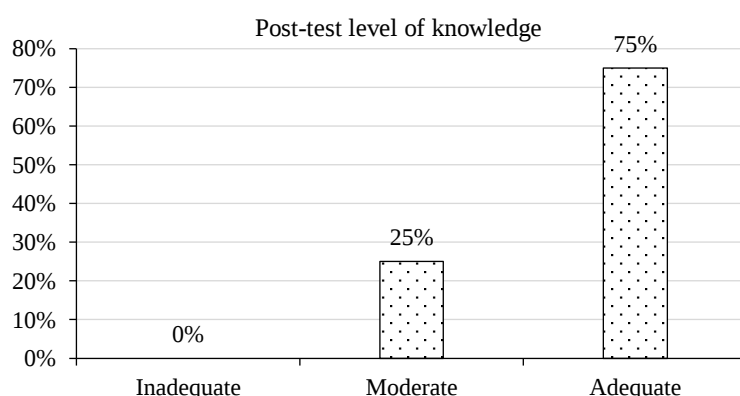


Figure 8. Post-test knowledge score of staff nurses working in ICU regarding prevention of LBP.

Table 9. Aspect wise mean, SD and mean% post-test knowledge score of staff nurses working in ICU regarding prevention of LBP (N=60).

Aspects wise knowledge	No. of questions	Min - Max score	Mean	SD	Mean%
General information of low back pain	15	0 - 15	12.25	1.97	81.6%
Prevention of low back pain	15	0 - 15	12.1	1.83	80.6%
Overall	30	0 - 30	24.35	2.61	81.1%

Section-III: Effectiveness of Structured Teaching Programme Regarding Prevention of LBP

Objective 2: To Evaluate the Effect of a Structured Teaching Program on Improving ICU Staff Nurses' Knowledge about Preventing Low Back Pain

Table 10 presents the effectiveness of the structured teaching program (STP) on preventing low back pain (LBP) among staff nurses working in the ICU. The results show that the overall paired 't' test value was 21.39, which is statistically significant. This indicates that the STP effectively enhanced the knowledge of staff nurses in the ICU regarding the prevention of LBP.

Section-IV: Comparison Between Pre-test and Post-test Level of Knowledge of Staff Nurses Working in ICU Regarding Prevention of LBP

Table 11 and Figure 9 display a comparison of the pre-test and post-test knowledge scores of ICU staff nurses concerning the prevention of LBP. In pre-test majority of staff nurses 24% were having inadequate level of knowledge 36% of them having moderate level of knowledge regarding prevention of LBP Whereas in post-test 75% were having adequate level and remaining 25% of them having moderate level of knowledge regarding prevention of LBP.

Table 10. Effectiveness of structured teaching programme regarding prevention of LBP among staff nurses working in ICU (N=60).

Prevention of LBP among staff nurses working in ICU (N=66).						
S.N.	Aspect wise knowledge	Knowledge of respondents				Paired 't' test
		Pre-test		Post-test		
		Mean	SD	Mean	SD	
I	General information of low back pain	7.03	1.72	12.25	1.97	t = 21.39 P=0.001*** significant
II	Prevention of low back pain	7.81	1.68	12.1	1.83	
	Overall	14.85	2.27	24.35	2.61	

*Significant at $P < 0.05$, **highly significant at $P < 0.01$, ***very high significant at $P < 0.001$

Table 11. Comparison between pre-test and post-test level of knowledge regarding prevention of LBP among staff nurses working in ICU (N=60).

Level of knowledge	Score	Pre-test		Post-test	
		No	%	No	%
Inadequate	<50%	24	40	0	0
Moderate	50–75%	36	60	15	25
Adequate	>75%	0	0	45	75
Total		60	100	60	100

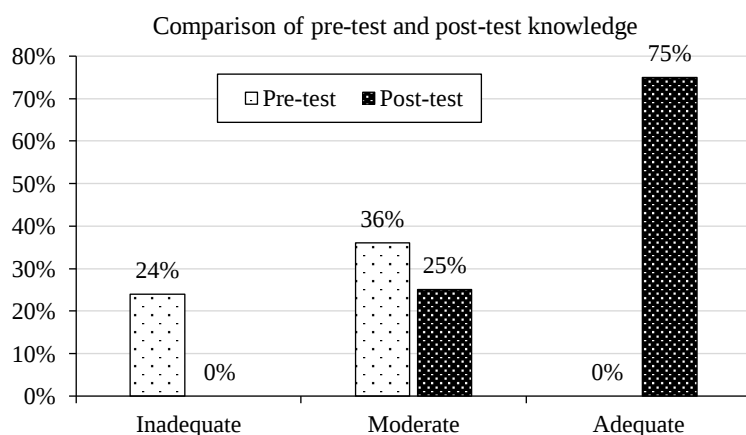


Figure 9. Comparison between pre-test and post-test score.
FINDINGS

The results of this study revealed that in the pre-test, the majority of staff nurses (40%, 24) had inadequate knowledge regarding the prevention of low back pain (LBP), while 60% (36) had a moderate level of knowledge. In the post-test, every staff nurse demonstrated an increase in their knowledge. Specifically, 75% (45) reached an adequate level of knowledge, while 25% (15) retained a moderate level regarding the prevention of low back pain (LBP). This demonstrates the effectiveness of the structured teaching program (STP) in enhancing the nurses' knowledge. Furthermore, the chi-square analysis of the pre-test knowledge levels in relation to various socio-demographic factors revealed significant results at $P < 0.05$, indicating a meaningful association between the nurses' knowledge and variables such as job position, education, family type, and information sources.

IMPLICATIONS OF THE STUDY

The results of the study have important implications for nursing education, practice, research, and management.

Nursing Education

- Incorporating the prevention of LBP into the core curriculum of nursing education programs can help improve the knowledge of staff nurses working in the ICU.
- Organizing seminars, symposiums, and workshops on LBP prevention can further enhance the knowledge of nursing students.

Nursing Practice

Health education is a vital component of the healthcare system. Educating nursing students about low back pain prevention is key to improving their knowledge on the subject. In-service education regarding prevention of LBP can improve the knowledge of staff nurses working in ICU. It helps them to implement in their life and impart knowledge to others to prevent LBP.

Nursing Research

Research must be carried out on newer practices and innovative teaching methods are in-corporated. This study will offer important insights for future research, with subsequent studies able to expand on its findings.

Nursing Administration

- Nursing administrators should implement seminars to make staff nurses aware about prevention of LBP.
- Public awareness program for the public regarding prevention of low back pain and in order to make them aware about the preventive measures.
- It also helps the nursing administrators to plan for man power, money, materials, methods and time to conduct successful in-service and public education programme regarding prevention of low back pain.

Recommendations for Further Research

Considering the findings and limitations of this study, the following recommendations are proposed for future research:

- A similar study can be conducted with a larger sample size.
- Future research can explore other domains, such as practical application.
- Studies can be carried out using different teaching methods.
- A similar study can be performed in various settings to identify potential differences.

Limitation of the study

- This study is confined to staff nurses working in the ICU at selected hospitals in Bangalore.
- The data collection for this study is limited to a duration of 4 weeks.

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