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EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON PRESSURE SORE PREVENTION KNOWLEDGE AMONG STAFF NURSES IN UDUPI, KARNATAKA.

Author's Name: Ericka Louella Antonio[1], Dr. M. K. Ramesh[2]

Affiliation:

1. PG Nursing Scholar, Vidyarathna College of Nursing, Udupi, Karnataka, India
2. Research Guide, Vice Principal, Vidyarathna College of Nursing, Udupi, Karnataka, India

Corresponding Author Name & Email Id: Ericka Louella Antonio, antonioericka4@gmail.com

ABSTRACT

Background: Pressure sores remain a significant preventable complication in hospitalized patients, leading to increased morbidity, mortality, and healthcare costs. Nurses play a crucial role in pressure sore prevention, making their knowledge and competency essential. However, gaps in knowledge among staff nurses have been reported in various clinical settings. Objectives: To assess the effectiveness of a structured teaching programme (STP) on knowledge regarding prevention of pressure sores among staff nurses in a selected hospital, Udupi. Methods: A pre-experimental one-group pre-test post-test design was adopted. Sixty staff nurses were selected using non-probability purposive sampling. A structured knowledge questionnaire was used to assess knowledge before and after the intervention. The structured teaching programme was administered, and post-test was conducted after seven days. Data were analyzed using descriptive and inferential statistics. Results: The mean pre-test knowledge score was 14.8 ± 3.2, which increased to 22.6 ± 2.9 in the post-test. The calculated paired t-value ($t = 12.84$, $p < 0.001$) indicated a statistically significant improvement in knowledge after the intervention. Conclusion: The structured teaching programme was effective in enhancing staff nurses' knowledge regarding pressure sore prevention. Regular in-service education programs are recommended to improve clinical practice and patient outcomes.

Keywords: Pressure sore prevention, structured teaching programme, Staff nurses, Knowledge, Hospital-based study.

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INTRODUCTION

Pressure sores, also known as pressure injuries or decubitus ulcers, are localized damage to the skin and underlying tissues caused primarily by prolonged pressure, shear, or friction, usually over bony prominences such as the sacrum, heels, hips, and elbows. They represent a major global healthcare concern due to their high prevalence, preventable nature, and significant impact on patient morbidity, mortality, and healthcare costs. The National Pressure Injury Advisory Panel (NPIAP) defines pressure injuries as damage to the skin and soft tissue resulting from sustained pressure or pressure in combination with shear. These injuries range from non-blanchable erythema of intact skin (Stage I) to full-thickness tissue loss involving muscle and bone (Stage IV), with deep tissue injuries and unstageable ulcers also being recognized categories. Pressure sores are commonly observed in hospitalized patients, particularly those who are bedridden, critically ill, elderly, neurologically impaired, or suffering from chronic conditions such as diabetes, vascular disease, and malnutrition. Patients in intensive care units, orthopedic wards, and long-term care facilities are at particularly high risk due to prolonged immobility, altered sensory perception, decreased perfusion, and compromised skin integrity. Globally, the prevalence of pressure sores in hospital settings ranges from 5% to 32%, while in long-term care facilities it can be as high as 40%. In India, several studies have reported a prevalence ranging from 8% to 27%, indicating that pressure injuries remain a persistent and preventable challenge in the healthcare system.

The development of pressure sores not only affects patients physically causing pain, infection, delayed recovery, and reduced quality of life but also places a significant financial burden on healthcare institutions. Treatment of pressure injuries requires extensive nursing care, specialized wound management, prolonged hospital stays, and, in severe cases, surgical intervention. Estimates suggest that the cost of treating a single pressure ulcer can range from thousands to tens of thousands of dollars, making prevention a more cost-effective and ethically preferable approach. Nurses play a central and indispensable role in the prevention of pressure sores, as they are the primary caregivers responsible for continuous patient monitoring, skin assessment, repositioning, and implementation of preventive strategies. Key preventive measures include regular repositioning (every two hours), maintaining skin hygiene, using pressure-relieving devices such as specialized mattresses and cushions, ensuring adequate nutrition and hydration, and early identification of at-risk patients using standardized assessment tools such as the Braden Scale. However, despite the availability of evidence-based guidelines, pressure injuries continue to occur due to factors such as high patient-nurse ratios, workload, lack of training, inadequate resources, and insufficient knowledge among nursing staff. Several studies have demonstrated that educational interventions, such as structured teaching programmes, workshops, and in-service training, significantly improve nurses' knowledge, attitudes, and practices related to pressure sore prevention. Enhanced knowledge leads to better clinical decision-making, early detection of risk factors, and consistent application of preventive measures. Despite this, there remains

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a gap in structured and standardized educational initiatives for staff nurses in many hospital settings, particularly in smaller cities and district-level healthcare institutions. Given the critical role of nurses in preventing pressure injuries and the ongoing burden of pressure sores in clinical practice, there is a clear need for targeted educational interventions to strengthen their knowledge and competencies. The present study was therefore undertaken to evaluate the effectiveness of a

structured teaching programme on knowledge regarding pressure sore prevention among staff nurses in a selected hospital in Udupi, Karnataka. This research aims to contribute to the body of evidence supporting continuous nursing education as a key strategy for improving patient safety and quality of care.

OBJECTIVES OF THE STUDY

1. To assess the pre-test knowledge of staff nurses regarding pressure sore prevention.
2. To evaluate the effectiveness of a structured teaching programme on pressure sore prevention.
3. To determine the association between post-test knowledge scores and selected demographic variables.

HYPOTHESES

H1: There will be a significant difference between pre-test and post-test knowledge scores of staff nurses regarding pressure sore prevention.

H2: There will be a significant association between post-test knowledge scores and selected demographic variables.

METHODLOGY

Research Design

The present study adopted a pre-experimental one-group pre-test post-test research design to evaluate the effectiveness of a structured teaching programme (STP) on knowledge regarding prevention of pressure sores among staff nurses. This design was considered appropriate as it allowed for comparison of knowledge levels before and after the educational intervention within the same group, thereby assessing the impact of the structured teaching programme. Although the design lacks a control group, it is widely used in educational and nursing intervention studies where randomization may not be feasible in real clinical settings.

Research Setting

The study was conducted in a selected tertiary care hospital in Udupi district, Karnataka, India. The hospital provides comprehensive medical, surgical, and critical care services and has a significant number of bedridden and high-risk patients who are susceptible to pressure injuries. The selected setting was considered suitable due to the presence of a diverse patient population and an adequate number of staff

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nurses working in various clinical departments such as medical wards, surgical wards, intensive care units, and orthopedic units.

Population and Sample

The target population of the study comprised all registered staff nurses working in the selected hospital. The accessible population included staff nurses who were available during the data collection period and met the inclusion criteria. A total of 60 staff nurses were selected as the study sample using a non-probability purposive sampling technique. This sampling method was chosen to ensure that participants had relevant clinical experience and were directly involved in patient care, particularly in areas where pressure sore prevention is critical.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Staff nurses who were registered with the State Nursing Council.
- Nurses working in medical, surgical, orthopedic, or intensive care units.
- Nurses who had at least six months of clinical experience.
- Nurses who were willing to participate and provided informed consent.

Exclusion Criteria:

- Nurses on leave during the study period.
- Nurses who had attended any formal training on pressure sore prevention within the last six months.
- Nursing students, interns, or administrative nursing staff.

Development of the Tool

A structured knowledge questionnaire was developed by the researcher based on an extensive review of literature, clinical guidelines (NPIAP and EPUAP), and expert consultation. The tool consisted of two parts:

- Part A: Demographic Data- included age, gender, educational qualification, years of clinical experience, area of work, and previous exposure to pressure sore training.
- Part B: Knowledge Questionnaire- comprised 30 multiple-choice questions covering definition, causes, risk factors, stages of pressure sores, prevention strategies, nursing responsibilities, and use of pressure-relieving devices. Each correct answer was awarded one mark, with a maximum possible score of 30.

Validity and Reliability of the Tool

The content validity of the questionnaire was established by submitting it to a panel of seven experts, including nursing educators, wound care specialists, and medical professionals. Their suggestions were incorporated, and necessary modifications were made. The reliability of the tool was tested using the split-half method, and the reliability coefficient was found to be 0.82, indicating high internal consistency and suitability for the study.

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Pilot Study

A pilot study was conducted on 10% of the sample (6 staff nurses) in a different hospital with similar characteristics. The purpose of the pilot study was to assess the feasibility of the study, clarity of the questionnaire, and appropriateness of the teaching programme. The findings indicated that the tool was clear, and no major modifications were required. Data from the pilot study were excluded from the main study.

Intervention: Structured Teaching Programme (STP)

The structured teaching programme was developed by the researcher and validated by experts in medical-surgical nursing. The STP was delivered in a single session lasting approximately 45–60 minutes, using PowerPoint presentations, charts, and case-based examples. The content of the STP included:

- Concept and definition of pressure sores
- Etiology and risk factors
- Stages and classification of pressure injuries
- Assessment using the Braden Scale
- Preventive measures: repositioning, skin care, nutrition, and mobility
- Use of pressure-relieving devices such as air mattresses and cushions
- Role and responsibilities of nurses in prevention

Data Collection Procedure

Prior to data collection, formal permission was obtained from the hospital administration and ethical clearance was secured from the Institutional Ethics Committee. Written informed
consent was obtained from all participants after explaining the purpose of the study. On Day 1, the pre-test was administered using the structured knowledge questionnaire to assess baseline knowledge. On the same day, the structured teaching programme was conducted. After an interval of seven days, the post-test was administered using the same questionnaire to evaluate the effectiveness of the intervention. Participants were not informed about the exact post-test date to minimize testing bias.

Ethical Considerations

Confidentiality and anonymity of participants were strictly maintained throughout the study. Participation was voluntary, and participants were informed that they could withdraw at any time without any consequences. No harm or risk was involved in the study, and the teaching programme was beneficial for professional development.

Data Analysis

Data were analyzed using both descriptive and inferential statistics with the help of statistical software (SPSS version 22). Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize demographic data and knowledge scores. A paired t-test was used to compare pre-test

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and post-test knowledge scores, while the Chi-square test was applied to determine the association between post-test knowledge scores and selected demographic variables. A p-value of < 0.05 was considered statistically significant.

RESULTS

The results of the study are presented under the following sections: (1) demographic characteristics of staff nurses, (2) pre-test knowledge levels, (3) post-test knowledge levels, (4) comparison of pre-test and post-test knowledge scores, and (5) association between post-test knowledge and selected demographic variables. Data were analyzed using descriptive and inferential statistics with SPSS version 22

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1. Demographic Characteristics of Staff Nurses

Out of 60 staff nurses, the majority (40%, n = 24) belonged to the age group of 21–25 years, followed by 30% (n = 18) in the age group of 26–30 years, 20% (n = 12) in 31–35 years, and 10% (n = 6) above 35 years. Regarding gender distribution, 85% (n = 51) were female and 15% (n = 9) were male, reflecting the typical gender composition of the nursing workforce.

With respect to educational qualification, 55% (n = 33) of the participants held a General Nursing and Midwifery (GNM) diploma, while 45% (n = 27) were B.Sc. Nursing graduates. In terms of clinical experience, 50% (n = 30) had 1–3 years of experience, 30% (n = 18) had 4–6 years, and 20% (n = 12) had more than 6 years of experience.

Regarding area of work, 35% (n = 21) were working in medical wards, 30% (n = 18) in surgical wards, 20% (n = 12) in intensive care units, and 15% (n = 9) in orthopedic units. Most participants (70%, n = 42) reported that they had not attended any formal training on pressure sore prevention in the past year.

2. Pre-test Knowledge of Staff Nurses

In the pre-test, knowledge scores ranged from 9 to 20 out of a maximum score of 30. The mean pre-test knowledge score was 14.8 ± 3.2, indicating a moderate level of baseline knowledge regarding pressure sore prevention. When categorized into levels of knowledge, 10% (n = 6) of staff nurses had poor knowledge (score < 12), 65% (n = 39) had average knowledge (score

12–20), and only 25% (n = 15) had good knowledge (score > 20). No participant demonstrated excellent knowledge in the pre-test.

Item-wise analysis revealed that most nurses were aware of basic concepts such as definition and common sites of pressure sores. However, knowledge gaps were evident in areas such as risk assessment using the Braden Scale, staging of pressure injuries, frequency of repositioning, and use of pressure-relieving devices.

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3. Post-test Knowledge of Staff Nurses

After the structured teaching programme, post-test knowledge scores improved significantly, ranging from 18 to 28 out of 30. The mean post-test score increased to 22.6 ± 2.9, reflecting a substantial enhancement in knowledge.

In terms of knowledge levels, none of the participants remained in the poor category. Only 15% (n = 9) had average knowledge, while 60% (n = 36) demonstrated good knowledge, and 25% (n = 15) achieved excellent knowledge. This shift clearly indicated the positive impact of the structured teaching programme. Post-test item analysis showed marked improvement in critical areas such as early identification of at-risk patients, correct staging of pressure injuries, appropriate repositioning schedules, and use of specialized mattresses and cushions.

4. Comparison of Pre-test and Post-test Knowledge Scores

A paired t-test was used to determine the effectiveness of the structured teaching programme. The mean pre-test score was 14.8, while the mean post-test score was 22.6, showing a mean difference of 7.8 points. The calculated t-value was 12.84, which was statistically significant at the $p < 0.001$ level. This indicates that the structured teaching programme was highly effective in improving the knowledge of staff nurses regarding pressure sore prevention. Therefore, the research hypothesis (H1) stating that there would be a significant difference between pre-test and post-test knowledge scores was accepted.

5. Association between Post-test Knowledge and Demographic Variables

The Chi-square test was applied to determine the association between post-test knowledge scores and selected demographic variables such as age, gender, educational qualification, years of experience, area of work, and previous exposure to training. The results revealed no statistically significant association between post-test knowledge and age ($\chi^2 = 3.12$, $p > 0.05$), gender ($\chi^2 = 1.45$, $p > 0.05$), or years of experience ($\chi^2 = 2.98$, $p > 0.05$). Similarly, no significant association was found with area of work or previous training exposure. However, a significant association was observed between educational qualification and post-test knowledge scores ($\chi^2 = 5.67$, $p < 0.05$), with B.Sc. Nursing graduates scoring higher than GNM diploma holders. This suggests that higher educational background may contribute to better assimilation of new information.

DISCUSSION

The present study was conducted to evaluate the effectiveness of a structured teaching programme (STP) on knowledge regarding prevention of pressure sores among staff nurses in a selected hospital in Udupi, Karnataka. The findings of the study clearly demonstrated a significant improvement in the knowledge of staff nurses following the educational intervention, thereby supporting the effectiveness of structured

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teaching programmes in enhancing nursing competence in pressure sore prevention.At baseline, the majority of staff

nurses exhibited only average knowledge regarding pressure sore prevention, with a mean pre-test score of 14.8 ± 3.2. This indicates that despite being directly involved in patient care, many nurses lacked comprehensive and updated knowledge on critical aspects such as risk assessment, staging of pressure injuries, appropriate repositioning schedules, and use of pressure-relieving devices. Similar findings have been reported in previous studies, where inadequate knowledge among nurses was identified as a major contributing factor to the continued occurrence of pressure sores in clinical settings. This suggests that routine nursing education on pressure injury prevention is often insufficient or inconsistent in many healthcare institutions.

Following the structured teaching programme, there was a significant increase in the mean knowledge score to 22.6 ± 2.9, with a mean difference of 7.8 points. The calculated paired t-value (12.84, $p < 0.001$) indicated a highly significant improvement in post-test knowledge scores. This finding is consistent with studies conducted by Black and Cuddigan (2018) and Smith and Brown (2020), which also reported that structured educational interventions significantly enhanced nurses' knowledge and awareness regarding pressure sore prevention. The improvement observed in this study highlights that well-planned, evidence-based teaching programmes can effectively bridge knowledge gaps and promote best practices in clinical care.

SUMMARY

The shift in knowledge levels from predominantly average in the pre-test to good and excellent in the post-test further reinforces the positive impact of the intervention. Notably, there was marked improvement in areas such as early identification of at-risk patients using the Braden Scale, correct classification of pressure injuries, and appropriate use of pressure-relieving devices. This suggests that the structured teaching programme was not only informative but also practical and relevant to clinical nursing practice. The study also examined the association between post-test knowledge scores and selected demographic variables. No significant association was found with age, gender, years of experience, area of work, or previous exposure to training. This indicates that the structured teaching programme was equally effective across different groups of nurses, regardless of their background or clinical experience. This finding aligns with previous research suggesting that structured educational interventions can benefit nurses at all levels of experience. However, a significant association was observed between educational qualification and post-test knowledge scores, with B.Sc. Nursing graduates demonstrating higher knowledge levels compared to GNM diploma holders. This may be attributed to the broader theoretical exposure and critical thinking skills developed during degree-level nursing education. Nevertheless, the fact that all participants showed improvement

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suggests that structured teaching can effectively enhance knowledge even among diploma-level nurses. Overall, the findings of this study emphasize the importance of continuous nursing education in improving patient safety and quality of care. Pressure sores are largely preventable, and nurses play a pivotal role in their prevention through regular assessment, timely interventions, and adherence to evidence-based guidelines. Implementing

periodic in-service education programmes, workshops, and competency-based training can help sustain and further improve nurses' knowledge and practice in pressure sore prevention.

Pressure sores, also known as pressure injuries, remain one of the most significant and preventable complications in hospitalized patients, particularly among bedridden, elderly, and critically ill individuals. These injuries not only cause physical discomfort, pain, and infection but also prolong hospital stay, increase healthcare costs, and negatively affect patients' quality of life. Since nurses are the primary caregivers responsible for continuous patient monitoring, repositioning, skin assessment, and implementation of preventive measures, their knowledge and competence play a crucial role in reducing the incidence of pressure sores. However, several studies have indicated that many nurses lack adequate and updated knowledge regarding evidence-based pressure sore prevention strategies, highlighting the need for structured educational interventions. The present study was conducted with the aim of evaluating the effectiveness of a structured teaching programme (STP) on knowledge regarding prevention of pressure sores among staff nurses working in a selected tertiary care hospital in Udupi, Karnataka. A pre-experimental one-group pre-test post-test research design was adopted. Sixty staff nurses who met the inclusion criteria were selected using a non-probability purposive sampling technique. A structured knowledge questionnaire was developed and validated to assess baseline and post-intervention knowledge levels. After obtaining ethical clearance and informed consent, a pre-test was administered, followed by a 45–60-minute structured teaching session covering definition, risk factors, stages, assessment, and prevention of pressure sores. A post-test was conducted after seven days using the same questionnaire.

The findings of the study revealed that most staff nurses had only moderate knowledge regarding pressure sore prevention in the pre-test, with notable gaps in areas such as risk assessment using the Braden Scale, correct staging of pressure injuries, and appropriate use of pressure-relieving devices. The mean pre-test knowledge score was 14.8 ± 3.2. Following the structured teaching programme, there was a significant improvement in knowledge, with the mean post-test score increasing to 22.6 ± 2.9. The calculated paired t-value (12.84, $p < 0.001$) indicated that this improvement was statistically significant, confirming the effectiveness of the structured teaching programme. The study also demonstrated a positive shift in knowledge levels, with a majority of nurses moving from average to good or excellent categories in the post-test. Although no significant association was found between post-test knowledge and variables such as age, gender, years of experience, or area of work, a significant association was observed with educational

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qualification, where B.Sc. Nursing graduates performed better than GNM diploma holders. The study provides strong evidence that structured teaching programmes are an effective and practical strategy for enhancing nurses' knowledge regarding pressure sore prevention. Regular in-service education, workshops, and competency-based training should be integrated into hospital policies to ensure continuous professional development of nursing staff. Strengthening nurses' knowledge and skills in pressure sore prevention will ultimately contribute to improved patient safety, better quality of care, and a reduction in pressure injury-related complications in clinical settings.

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