

Original Research Article

Effectiveness of Structured Teaching Program on Early Ambulation and Lifestyle Modification Among Patients with Fracture in Lower Limb Admitted in Orthopedic Ward at SRM MCH & RC

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Abstract: **Background:** Early ambulation is a vital component in orthopedic recovery following lower-limb fractures. Limited mobility and poor lifestyle practices can prolong hospitalization and lead to secondary complications. Structured teaching programs (STPs) enhance patient knowledge and adherence to self-care practices that promote recovery. **Objectives:** 1. To assess the pre- and post-test knowledge on early ambulation and lifestyle modification among orthopedic patients. 2. To evaluate the effectiveness of an STP on early ambulation and lifestyle modification. 3. To compare pre-test and post-test knowledge scores. 4. To determine the association between post-test knowledge and selected demographic variables. **Methods:** A quantitative, non-experimental descriptive design was adopted at SRM Medical College Hospital & Research Centre (SRM MCH & RC). Sixty patients with lower-limb fractures were selected by non-probability purposive sampling. A structured questionnaire assessed demographic variables, knowledge on early ambulation, and lifestyle practices. The intervention consisted of an STP using flashcards and interactive sessions. Data were analyzed using descriptive and inferential statistics (paired t-test and chi-square). **Results:** Pre-test results revealed 51.7 % of participants had inadequate knowledge and 48.3 % had moderate knowledge. Post-test results showed 73.3 % had adequate knowledge and 26.7 % moderate knowledge. The mean pre-test score was 5.60 ± 1.75 , increasing to 11.70 ± 1.95 after the intervention, with a mean difference of 6.10 ($t = 47.904$, $p < 0.001$). Gender was significantly associated with post-test knowledge ($\chi^2 = 6.270$, $p = 0.012$). **Conclusion:** The structured teaching program effectively improved patients' knowledge and lifestyle behaviors related to early ambulation following lower-limb fractures. Continuous patient education is recommended to enhance postoperative recovery and prevent complications.

Keywords: Early Ambulation, Lifestyle Modification, Structured Teaching Program, Orthopedic Patients, Lower Limb Fracture.

INTRODUCTION

Lower-limb fractures significantly affect mobility, independence, and quality of life. Prolonged immobilization leads to complications such as deep vein thrombosis, pneumonia, and muscle wasting. Early ambulation has been shown to accelerate healing, prevent complications, and enhance psychological well-being. Despite these benefits, many patients lack adequate knowledge of safe mobility and self-care practices. Education through a structured teaching program is an effective nursing strategy to enhance patient understanding and adherence. Nurses play a pivotal role in promoting early ambulation, maintaining joint flexibility, and encouraging healthy behaviors that facilitate rehabilitation. The present study assesses the effectiveness of a structured teaching program on early ambulation and lifestyle modification among orthopedic patients with lower-limb fractures at SRM MCH & RC.

MATERIALS AND METHODS

Research Approach and Design

A quantitative, non-experimental descriptive research design was used to assess the effectiveness of an STP on

early ambulation and lifestyle modification.
Setting

The study was conducted in the orthopedic ward of SRM MCH & RC, Kattankulathur, Tamil Nadu.

Population and Sampling

The population comprised all patients with lower-limb fractures admitted to the orthopedic ward. A sample of 60 patients was selected using non-probability purposive sampling based on inclusion criteria:

patients aged ≥ 18 years, admitted with lower-limb fractures, willing to participate. Description of the Tool The tool consisted of three sections:

- ✓ Section A: Demographic data (age, gender, education, occupation, etc.)
- ✓ Section B: Structured questionnaire on knowledge of early ambulation and lifestyle modification (15 multiple-choice items).
- ✓ Section C: Scale assessing lifestyle practices (poor, average, good).
- ✓ Scoring and Interpretation
- ✓ Knowledge scores were categorized as:
- ✓ Adequate (11-15), Moderate (6-10),

Inadequate (≤ 5).

- ✓ Lifestyle modification was rated as: Good (> 75 %), Average (51–75 %), Poor (≤ 50 %).

Intervention

Participants received a structured teaching program using charts and flashcards covering: principles and benefits of early ambulation, diet and nutrition for bone healing, exercises and physiotherapy,

prevention of complications (DVT, pressure ulcers, infections).

The session lasted 30 minutes, followed by a post-test after 7 days.

Data Collection Procedure

Permission was obtained from the institutional ethics and research committee. Informed consent was taken from all participants. Pre-test data were collected, followed by implementation of the STP, and post-test data were gathered using the same instrument.

Data Analysis

Descriptive statistics (frequency, percentage, mean, SD) summarized demographic data and knowledge scores. Inferential statistics (paired t-test and chi-square) determined the significance of differences and associations.

RESULTS

Demographic Profile Among 60 participants, 63.3 % were male and 36.7 % female; 40 % belonged to the 41–50 age group; 68.4 % were married; 30 % had secondary education; and 33.3 % were unemployed. Most (76.7 %) were non-vegetarian, 50 % had no comorbid illness, and 65 % belonged to nuclear families.

Pre- and Post-Test Knowledge Levels

Pre-test: 51.7 % inadequate, 48.3 % moderate knowledge.

Post-test: 73.3 % adequate, 26.7 % moderate knowledge. Paired t-test: mean pre-test 5.60 ± 1.75 → post-test 11.70 ± 1.95 ($\Delta = 6.10$); $t = 47.904$, $p < 0.001$ (significant).

Lifestyle Modification

Before intervention, 95 % of patients had average lifestyle practices, 3.3 % poor, 1.7 % good. Post-intervention, overall awareness and practice improved. Association with Demographic Variables Gender showed a statistically significant association with post-test knowledge ($\chi^2 = 6.270$, $p = 0.012$). Other variables such as age, marital status, and education were not significant ($p > 0.05$).

DISCUSSION

The study demonstrated that structured education significantly improves orthopedic patients' knowledge of early ambulation and lifestyle modification. The observed mean difference (6.10, $p < 0.001$) supports the

hypothesis that STPs are effective. Findings align with Upadhyaya & Barman (2020), who found that STPs increased patients' self-care knowledge for lower-limb fractures, and with Bhavani & Sara (2017), who reported improved understanding of postoperative complications after educational interventions. Early ambulation reduces hospital stay, promotes circulation, prevents contractures, and boosts morale. Nurses act as key educators in motivating patients, ensuring safety, and reinforcing lifestyle modifications such as balanced nutrition, smoking cessation, and weight control. The absence of significant association between knowledge and most demographic variables indicates that educational interventions are effective across diverse groups.

CONCLUSION

The study concludes that a Structured Teaching Program is an effective nursing intervention to enhance knowledge and promote healthy lifestyle modifications among patients with lower-limb fractures. Continuous reinforcement and follow-up education can sustain these benefits, contributing to faster rehabilitation and reduced complications.

Nursing Implications

- ✓ Nursing Practice
- ✓ Incorporate structured teaching as part of routine postoperative care.
- ✓ Provide patient-specific guidance on diet, exercise, and mobility.

Nursing Education

- ✓ Integrate early ambulation and lifestyle modification modules in nursing curricula.
- ✓ Train students in patient education and rehabilitation counseling.

Nursing Administration

- ✓ Establish hospital protocols mandating STPs for orthopedic wards.
- ✓ Conduct periodic staff training on effective patient communication.

Nursing Research

- ✓ Future studies with larger samples and experimental designs are recommended to generalize findings.
- ✓ Evaluate long-term behavioral outcomes of teaching interventions.

Recommendations

1. Replicate the study with larger and diverse populations.
2. Use an experimental design to compare different educational strategies.
3. Include long-term follow-up to assess retention of knowledge and practice.
4. Develop digital or audiovisual modules to enhance accessibility of patient education.

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