



Original Research Article

EFFECTIVENESS OF AN EDUCATIONAL MODULE ON KNOWLEDGE REGARDING PEDIATRIC PAIN MANAGEMENT AMONG POST BASIC B.SC. NURSING STUDENTS: A PRE-EXPERIMENTAL STUDY

Sunita Kiran Chandurkar¹

¹Assistant Professor, HOD Child Health Nursing Department, Institute of Nursing Education Sir JJ Hospital, Mumbai, Maharashtra, India.

Received : 18/06/2026
Received in revised form : 24/08/2026
Accepted : 08/08/2026

Corresponding Author:

Dr. Sunita Kiran Chandurkar,
Assistant Professor, HOD Child Health
Nursing Department, Institute of
Nursing Education Sir JJ Hospital,
Mumbai, Maharashtra, India.
Email: sunitakirannov@gmail.com

DOI: 10.70034/ijmedph.2026.3.648

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2026; 16 (3); 4161-4164

ABSTRACT

Background: Pediatric pain management is an essential component of quality nursing care. Inadequate knowledge regarding pain assessment, pharmacological and non-pharmacological management among nursing students may affect the quality of pain management provided to children. Therefore, an educational module can help improve the knowledge of PB-B.Sc. Nursing students regarding pain management in children.

Materials and Methods: A quantitative research approach with a pre-experimental one-group pre-test and post-test design was adopted for the study. The study was conducted among 60 PB-B.Sc. Nursing students in selected government colleges of a metropolitan city. The participants were selected using non-probability convenient sampling.

Results: In the pre-test, 18.33% of students had poor knowledge, 66.67% had average knowledge, and 15% had good knowledge. The pre-test mean knowledge score was 12.73 ± 2.51 . In the post-test, 1.67% had average knowledge, 66.67% had good knowledge, and 31.67% had excellent knowledge, with a mean score of 19.13 ± 2.01 . The paired t-test value was 15.46 with $p < 0.001$, indicating a statistically significant improvement in knowledge after administration of the educational module.

Keywords: Effectiveness, Educational module, Knowledge, Pediatric pain management, PB-B.Sc. Nursing students, Children.

INTRODUCTION

Pain is one of the most common and distressing experiences among children during illness, injury, medical procedures, and treatment. Effective pain management is an essential component of quality pediatric nursing care, as poorly managed pain can adversely affect the child's physical and emotional well-being.^[1-3]

Children differ in their ability to understand and express pain according to their age and developmental level. Therefore, nurses need adequate knowledge and skills to assess pain accurately using appropriate tools such as the FLACC scale and Wong-Baker Faces Pain Rating Scale. Pediatric pain management includes both pharmacological and non-pharmacological interventions, along with appropriate nursing care and continuous evaluation.^[4-6]

Nursing students are future healthcare professionals who will participate in the care of children experiencing pain. However, studies reviewed in the present research indicate inadequate to moderate knowledge among nursing students regarding pediatric pain assessment and management.^[7,8]

Therefore, a structured educational module can help strengthen students' knowledge regarding pain assessment, pharmacological and non-pharmacological management, and the nursing role in pediatric pain care. The present study was undertaken to assess the effectiveness of such an educational module among PB-B.Sc. Nursing students in selected government colleges of a metropolitan city.^[9,10]

Background of the Study: Children experience pain differently according to their age, developmental level, cognitive ability, and previous experiences. Accurate assessment of pain in children requires appropriate and age-specific tools such as the

FLACC scale and Wong-Baker Faces Pain Rating Scale. Pediatric pain management includes both pharmacological and non-pharmacological approaches along with appropriate nursing interventions and continuous assessment.

Despite the importance of pediatric pain management, nursing students may have inadequate knowledge regarding pain assessment, pharmacological interventions, non-pharmacological techniques, and misconceptions related to pain. The present study was therefore undertaken among PB-B.Sc. Nursing students to assess their knowledge and determine whether a structured educational module could improve their understanding of pain management in children.

The educational module developed for the study included information regarding introduction to pain, pediatric pain assessment tools, pharmacological management, non-pharmacological techniques, and the nursing role in pain management, delivered through lecture, PowerPoint presentation, and discussion.

Need for the Study: The belief that children do not experience pain is a myth. Children, including newborns and premature infants, can experience pain because the neurological pathways responsible for pain perception are present and functional from an early stage of life. Although young children may not be able to describe their pain verbally, they can express it through crying, facial expressions, irritability, changes in behaviour, withdrawal, disturbed sleep or feeding, and changes in heart rate and respiratory rate. Therefore, the absence of verbal expression does not mean the absence of pain. Pain in children should always be recognized, assessed, and appropriately managed according to their age, developmental level, and ability to communicate.

Bahise Aydın (2020) Study assessed the pediatric pain management knowledge (PPMK) of 72 nursing internship students using a descriptive, comparative, correlational, and cross-sectional design. Data were collected through a demographic form and a pain management knowledge questionnaire covering pain awareness, pathophysiology, barriers, diagnosis, assessment, and control. The mean age of participants was 22.64 ± 1.02 years, and 63.9% considered their knowledge inadequate. The overall PPMK score was 67.58 ± 7.37 , indicating a moderate level of knowledge. Students scored highest in pain assessment and lowest in pain control. The study concluded that nursing students had moderate knowledge of pediatric pain management, highlighting the need for improved education, particularly regarding pain control.

Problem Statement: "A Study to Assess the Effectiveness of an Education Module on the Knowledge of PB-B.Sc. (Post Basic B.Sc.) Nursing Students Related to Pain Management in Children in Selected Government Colleges of a Metropolitan City."

Objectives of the Study Primary Objective: To evaluate the effectiveness of the educational module

on the knowledge of PB-B.Sc. Nursing students regarding pain management in children in selected government colleges of a metropolitan city.

Secondary Objectives: To assess the existing knowledge of PB-B.Sc. Nursing students regarding pain management in children.

To find the association between pre-test knowledge and selected demographic variables among PB-B.Sc. Nursing students.

Hypothesis of the Study:

H₀₁: There will be no significant difference between the pre-test and post-test knowledge scores of PB-B.Sc. Nursing students regarding pain management in children after implementation of the educational module.

H₁: There will be a significant difference between the pre-test and post-test knowledge scores of PB-B.Sc. Nursing students regarding pain management in children after implementation of the educational module.

H₀₂: There will be no significant association between selected demographic variables and the pre-test knowledge scores of PB-B.Sc. Nursing students.

H₂: There will be a significant association between selected demographic variables and the pre-test knowledge scores of PB-B.Sc. Nursing students.

Scope of the Study: The study will provide guidelines for nursing students regarding appropriate pain management in children and may be useful for strengthening educational content and developing standardized teaching materials related to pediatric pain management.

Analysis of the study will be helpful in identifying the knowledge gaps and improvement in knowledge of PB-B.Sc. Nursing students regarding pain assessment, pharmacological and non-pharmacological pain management, and nursing responsibilities. The educational module may help to improve students' knowledge and understanding of pediatric pain management, which can further contribute to skilled and effective management of pain and reduction of suffering among children.

De-Limitations: The study was confined to the PB-B.Sc. Nursing students studying in selected government colleges of a metropolitan city. The study included only the PB-B.Sc. Nursing students who were willing to participate and fulfilled the inclusion criteria. The study was confined to selected government colleges of a metropolitan city. The study was confined to 60 PB-B.Sc. Nursing students selected by non-probability convenient sampling technique. The study was confined to a one-group pre-test and post-test design for assessing the effectiveness of the educational module.

Ethical Aspects: Ethical permission was obtained from the concerned authorities of the selected government colleges. The purpose and objectives of the study were explained to the participants, and informed consent was obtained before data collection. Participation was voluntary, and confidentiality, privacy, and anonymity of the

participants were maintained throughout the study. The collected information was used only for research purposes, and participants were assured that their participation would not affect their academic or clinical status.

MATERIALS AND METHODS

Research Approach: Quantitative research approach.

Research Design: Pre-experimental one-group pre-test and post-test design.

Setting: Selected government colleges of a metropolitan city.

Sample Size: 60 PB-B.Sc. Nursing students.

Sampling Technique: Non-probability convenient sampling technique.

Tool for Data Collection:

Part I: Demographic Data: It consists of four items regarding age, gender, previous knowledge regarding pain management, and clinical experience.

Part II: Structured Knowledge Questionnaire: It consists of 25 multiple-choice questions regarding pediatric pain management, covering definition of pain, pain assessment tools such as FLACC and Wong-Baker scales, pharmacological management, non-pharmacological methods, and nursing responsibilities. Each correct answer carries 1 mark.

Part III: Educational Module: The educational module was developed based on literature review and expert opinion. It covered introduction to pain, pediatric pain assessment tools, pharmacological management, non-pharmacological techniques, and nursing responsibilities, using lecture, PowerPoint presentation, and discussion.



Reliability: The reliability of the knowledge questionnaire was established by the split-half method, and the reliability coefficient was 0.912, indicating high reliability.

Method of data collection: Prior permission was obtained from the concerned authorities of the selected government colleges and ethical approval was secured. The purpose of the study was explained to the participants and written informed consent was obtained. The selected PB-B.Sc. Nursing students were administered a pre-test using the structured knowledge questionnaire. After the pre-test, the researcher administered the educational module on pain management in children using appropriate teaching methods. After the specified interval, a post-

test was conducted using the same structured knowledge questionnaire to assess the effectiveness of the educational module. Confidentiality and anonymity of the participants were maintained throughout the data collection process.

Data Analysis: The data collected from the participants was organized, coded, tabulated, and analyzed using appropriate statistical measures. The Part I demographic data were analyzed using frequency and percentage. The Part II structured knowledge questionnaire consisted of multiple-choice questions, where each correct answer was assigned 1 mark and each incorrect answer 0 mark. The pre-test and post-test knowledge scores were analyzed using frequency, percentage, mean, and standard deviation.

Descriptive statistics: Frequency, percentage, mean, and standard deviation were used to describe the demographic characteristics and knowledge scores of the PB-B.Sc. Nursing students.

Inferential statistics: The paired t-test was used to compare the pre-test and post-test knowledge scores and assess the effectiveness of the educational module. The Chi-square test was used to determine the association between pre-test knowledge scores and selected demographic variables. The level of significance was set at 0.05.

RESULTS

The study was conducted among 60 PB-B.Sc. Nursing students in selected government colleges of a metropolitan city.

Regarding demographic characteristics, 80% of students were aged 22–25 years, 88.33% were female, 85% had no previous knowledge regarding pain management, and 70% had less than one year of clinical experience.

In the pre-test, 18.33% of students had poor knowledge, 66.67% had average knowledge, and 15% had good knowledge. The mean pre-test knowledge score was 12.73 ± 2.51 .

In the post-test, 1.67% had average knowledge, 66.67% had good knowledge, and 31.67% had excellent knowledge. The mean post-test knowledge score was 19.13 ± 2.01 .



Figure 1: The paired t-test showed a t-value of 15.46 with $p < 0.001$, indicating a statistically significant improvement in knowledge after administration of the educational module. Hence, the null hypothesis was rejected and the research hypothesis was accepted.



Figure 2: The study therefore demonstrated that the educational module was effective in improving knowledge regarding pain management in children among PB-B.Sc. Nursing students.

DISCUSSION

?

CONCLUSION

The present study concluded that the educational module was effective in improving the knowledge of PB-B.Sc. Nursing students regarding pain management in children. The mean knowledge score increased from 12.73 ± 2.51 in the pre-test to 19.13 ± 2.01 in the post-test. The paired t-test value was 15.46 with $p < 0.001$, showing a statistically significant improvement in knowledge after the intervention. Therefore, the educational module was found to be an effective teaching strategy for improving knowledge

regarding pediatric pain management among PB-B.Sc. Nursing students.

REFERENCES

1. International Association for the Study of Pain. IASP terminology and pain definition. Washington (DC): IASP; 2020.
2. Hockenberry MJ, Wilson D. Wong's Essentials of Pediatric Nursing, 11th ed. St. Louis: Elsevier; 2023.
3. Alshehri FA, Al-Zahrani A, Alanazi A. Nursing students' knowledge toward pain management: an integrative review. *Nurse Educ Today*. 2024;134:106091.
4. Amponsah AK, Oduro E, Bam V, Kyei-Arhin E. Nursing students' and nurses' knowledge regarding pediatric pain assessment and management. *PLoS One*. 2019;14(10):e0223730.
5. Kusi Amponsah A, Kyei-Dompim J, Kyei EF, Oduro E, Afaya RA, Aphoto CK. Final Year Nursing Students' Knowledge and Attitudes regarding Children's Pain. *Pain Res Manag*. 2020 Feb 13;2020:7283473. doi: 10.1155/2020/7283473. PMID: 32148600; PMCID: PMC7042548.
6. McCaffery M, Pasero C. Pain: Clinical Manual. 3rd ed. St. Louis: Mosby; 2019.
7. Canadian Paediatric Society. Preventing and managing pain and stress in neonates. Ottawa: Canadian Paediatric Society; 2021.
8. Anand KJS, Hall RW. Long-term effects of neonatal pain and stress. *Clin Perinatol*. 2018;45(4):709-721.
9. Grunau RE. Neonatal pain and long-term outcomes. *Clin Perinatol*. 2019;46(4):793-805.
10. Twycross A, Williams A. Improving nurses' knowledge toward children's pain management. *J Child Health Care*. 2013;17(1):30-41.