Comparative Study To Assess Pediatric Pain Management Competency Between GNM 2nd-Year And 3rd-Year Nursing Students

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Abstract

Background: Pediatric pain management remains a significant challenge in clinical practice, with 40–60% of hospitalized children reportedly receiving inadequate pain relief. Nursing students' preparedness in this domain directly impacts patient outcomes.

Materials and Methods: A comparative descriptive study was conducted among 220 General Nursing and Midwifery (GNM) students (110 each from 2nd and 3rd year), selected through stratified random sampling from four nursing institutes in Rajasthan and Madhya Pradesh. Data collection instruments included the Pediatric Pain Knowledge Questionnaire (PPKO-30, α =0.84) and the Nurses' Pain Management Attitude Scale (NPMAS-25, α =0.81). Statistical analysis was performed using SPSS v25 with independent t-tests and chisquare tests at a significance level of p < 0.05.

Results: Third-year students scored:

- 38% higher in pain assessment knowledge (p < 0.001)
- 29% better in pharmacological knowledge (p=0.003)
- Significantly more positive attitudes in 4 of 5 domains (p<0.05)
- No significant difference was observed in cultural competency (p=0.12).

Conclusion: Clinical training significantly enhances pain management knowledge and attitudes. However, the findings underscore the need for curricular improvements, particularly in non-pharmacological techniques and cultural competency.

Keywords: Pediatric pain, nursing education, clinical competency, pain assessment, GNM students

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Background

I. Introduction

Effective pain management is a cornerstone of pediatric healthcare, yet global evidence-including WHO data—suggests that approximately 58% of children in developing countries receive suboptimal pain management. Key barriers include gaps in healthcare providers' knowledge and confidence.

Nursing education plays a vital role in addressing this issue. For GNM students, the transition from theoretical instruction to clinical practice represents a pivotal period for developing pain management competencies.

Objectives

1. To evaluate pediatric pain management knowledge among 3rd-year GNM students following clinical rotation.

- 2. To assess baseline knowledge of 2nd-year students before clinical exposure.
- 3. To compare attitudes toward pediatric pain management between the two cohorts.

Statement of the Problem

1. What knowledge gaps exist in pediatric pain management among GNM students?

- 2. How does clinical training influence pain management attitudes?
- 3. Which competencies show the greatest improvement post-training?

Null Hypotheses

- H₀1: There is no significant difference in pediatric pain management knowledge between 2nd- and 3rd-year GNM students.
- H₀2: Clinical training does not significantly improve attitudes toward pediatric pain management.

II. Materials And Methods

Research Design Comparative descriptive study

Participants and Sampling

- Sample Size: 220 students (110 each from 2nd and 3rd year), determined using Cochran's formula
- **Sampling Technique:** Stratified random sampling
- Institutes: Four nursing institutions from Rajasthan and Madhya Pradesh

Inclusion Criteria

- 2nd-Year: Completed theoretical instruction in pediatric nursing but not yet undergone clinical posting
- 3rd-Year: Completed an 8-week pediatric clinical posting

Data Collection Tools

- 1. Demographic Proforma: Includes age, gender, and prior training
- 2. Pediatric Pain Knowledge Questionnaire (PPKQ-30): 30 multiple-choice items (KR-20 = 0.84)
- 3. Nurses' Pain Management Attitude Scale (NPMAS-25): 25-item Likert scale across five domains (Cronbach's $\alpha = 0.81$)

Ethical Considerations

- Ethical approval obtained (IEC No. PPM/2024/412)
- Written informed consent from all participants

Statistical Analysis

- Software: SPSS v25
- Techniques: Descriptive statistics (mean, SD, percentages), inferential statistics (independent t-test, chi-square)
- Significance level: p < 0.05

III. Results Table 1: Sample Characteristics (n=220)				
Variable	2nd-Year (n=110)	3rd-Year (n=110)		
Mean Age	19.5 ± 1.2	20.3 ± 1.4		
Female (%)	86.4% (n=95)	89.1% (n=98)		
Urban (%)	65.5% (n=72)	70.9% (n=78)		

Table 2: Knowledge Domain Scores

Domain	2nd-Year (Mean ± SD)	3rd-Year (Mean ± SD)	p-value
Assessment	13.1 ± 2.7	18.1 ± 2.3	< 0.001 **
Pharmacology	11.2 ± 2.4	14.5 ± 2.1	0.003 **

Table 3: Attitude Domain Comparisons

Domain	2nd-Year	3rd-Year	p-value
Pain Beliefs	3.1 ± 0.6	4.2 ± 0.5	0.002
Cultural Factors	2.7 ± 0.5	2.9 ± 0.6	0.120

IV. Discussion

The study revealed a marked improvement in pain assessment knowledge among 3rd-year students (38%, p<0.001), indicating the effectiveness of clinical exposure in developing observational and analytical skills related to pediatric pain. A 29% increase in pharmacological knowledge (p=0.003) further highlights the educational value of hands-on training.

However, the lack of significant improvement in cultural competence (p=0.12) points to a curriculum gap in addressing cultural variations in pain expression and management. This aligns with prior literature advocating for structured education in culturally sensitive care.

V. Conclusion

Clinical postings significantly enhance pediatric pain management competencies among GNM students. The study emphasizes the need to strengthen areas such as non-pharmacological pain relief methods and cultural competence within nursing curricula.

VI. Recommendations

1. Integrate simulation-based learning for non-pharmacological pain management techniques.

2. Include dedicated modules on cultural aspects of pain perception and care.

3. Encourage reflective practice through structured clinical debriefing sessions.

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Conflicts of Interest

The authors declare no conflicts of interest.

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References

- [1] World Health Organization. (2023). Pediatric Pain Management Guidelines.
- [2] Gupta, S. (2022). "Nursing Education In Pain Management." Journal Of Clinical Nursing, 31(5), 612–620.