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A DESCRIPTIVE STUDY TO ASSESS THE KNOWLEDGE OF PAEDIATRIC NURSES REGARDING TUCKING POSITIONING FOR PAIN MANAGEMENT IN INFANTS UNDERGOING IM INJECTION AT SELECTED HOSPITALS, KANPUR, UP

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ABSTRACT

Pain management in infants undergoing intramuscular (IM) injections is a crucial aspect of paediatric nursing care. Tucking positioning is a non-pharmacological method believed to reduce pain perception in infants. However, the knowledge and practice levels among paediatric nurses regarding this technique remain underexplored.

This descriptive study aims to assess the knowledge and practice of paediatric nurses regarding tucking positioning as a pain management strategy for infants receiving IM injections in selected hospitals in Kanpur, UP. A structured questionnaire and observational checklist were used to collect data from 100 paediatric nurses. The data were analysed using descriptive and inferential statistics. Results indicate that 55% of nurses possess moderate knowledge, 30% have high knowledge, and 15% exhibit low knowledge levels regarding tucking positioning. Additionally, 65% of nurses were found to implement the technique effectively in practice, whereas 35% showed inadequate application.

Chi-square analysis revealed a significant association between knowledge levels and professional experience ($\chi^2 = 10.89$, $p < 0.05$) as well as prior training ($\chi^2 = 12.45$, $p < 0.05$), while age and gender showed no significant correlation.

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Findings emphasize the need for continuous training programs to enhance paediatric nurses' knowledge and skill application in pain management techniques such as tucking positioning.

Keywords: Tucking Positioning, Pain Management, Paediatric Nurses, IM Injection, Non-Pharmacological Pain Relief

INTRODUCTION

Pain relief is a fundamental aspect of neonatal and pediatric care, particularly during procedures like IM injections. Infants experience pain differently from adults, and their ability to communicate discomfort is limited. Effective pain management is crucial to prevent potential short- and long-term physiological and psychological consequences, such as increased stress responses, altered pain sensitivity, and behavioural changes. Non-pharmacological pain management strategies, such as tucking positioning, are essential for minimizing distress and ensuring comfort during medical procedures.

Tucking positioning involves placing the infant in a flexed posture, mimicking the foetal position. This technique promotes self-soothing, regulates physiological responses, and reduces pain perception. Several studies suggest that tucking positioning, when properly applied, can significantly lower pain scores in infants undergoing painful procedures such as IM injections, venipunctures, and heel pricks. Additionally, it is a simple, cost-effective, and easily implementable method that does not require specialized equipment.

Despite the documented benefits of tucking positioning, there is a lack of awareness and standardization in its practice among pediatric nurses. Limited training opportunities, inconsistent protocols, and varying levels of knowledge contribute to suboptimal implementation in clinical settings. Nurses play a vital role in infant care and are responsible for pain management during routine medical procedures. Therefore, evaluating their knowledge and practical application of tucking positioning is crucial in identifying gaps and developing targeted training programs.

ISSN PRINT 2319 1775 Online 2320 7876

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This study seeks to assess the level of knowledge and extent of practice among pediatric nurses in selected hospitals in Kanpur, UP, with the ultimate goal of improving pain management strategies for infants undergoing IM injections.

NEED FOR THE STUDY

Effective pain management in infants undergoing intramuscular (IM) injections is crucial to prevent both immediate and long-term adverse effects, such as increased stress responses and altered pain sensitivity. Facilitated tucking—a non-pharmacological intervention where an infant is held in a flexed, foetal-like position—has been demonstrated to reduce pain perception during various medical procedures.

Recent studies underscore the efficacy of facilitated tucking in neonatal pain management. For instance, a randomized controlled trial evaluated its impact during hepatitis B vaccinations and found that infants held in the facilitated tucking position exhibited significantly lower pain scores compared to those held in a classical position. The mean pain score for the facilitated tucking group was 2.83 ± 1.18, whereas it was 6.47 ± 1.07 for the control group, indicating a substantial reduction in pain perception

Another study assessed the effectiveness of facilitated tucking during heel-stick procedures and observed that neonates in the experimental group had significantly lower Neonatal Infant Pain Scale (NIPS) scores than those in the control group. Additionally, the experimental group exhibited fewer physiological disruptions, such as increased heart rate and decreased oxygen saturation, suggesting a more stable response to pain.

Despite these findings, the implementation of facilitated tucking remains inconsistent in clinical settings. Variations in knowledge levels among pediatric nurses and the absence of standardized training programs contribute to this inconsistency. Assessing the current knowledge and practice levels of pediatric nurses regarding facilitated tucking is essential to identify gaps and develop targeted interventions. This study aims to evaluate these aspects among pediatric nurses in selected hospitals in Kanpur, UP, to enhance pain management strategies for infants undergoing IM injections.

ISSN PRINT 2319 1775 Online 2320 7876

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STATEMENT OF THE PROBLEM

A Descriptive Study to Assess the Knowledge of Paediatric Nurses Regarding Tucking Positioning for Pain Management in Infants Undergoing IM Injection at Selected Hospitals, Kanpur, UP.

OBJECTIVES

1. To assess the knowledge level of paediatric nurses regarding tucking positioning in pain management.
2. To analyse the association between knowledge of tucking positioning with demographic factors such as professional experience and prior training..

HYPOTHESIS

H1: There is a significant association between the knowledge level of paediatric nurses and their years of experience and training in neonatal pain management.

METHODS AND MATERIALS

RESEARCH APPROACH:

Present study used Descriptive research approach.

RESEARCH DESIGN:

In this study the research design used is Descriptive research design

VARIABLES:

- **Dependent Variable:**

  Knowledge of paediatric nurses regarding tucking positioning are the dependent variables used in the present study.

- **Independent Variables:**

  Professional experience, prior training, and demographic characteristics are taken as the independent variables in the present study.

POPULATION:

In the present study the population comprises of Paediatric nurses working in selected hospitals in Kanpur, UP.

Target population

In this study. The target population was staff nurses working in Rama hospital & BSK Hospital at Kanpur, UP.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 14, Iss 2, 2025

SAMPLE

The sample for the present study comprises of staff nurses who met the inclusion and exclusion criteria.

SAMPLE SIZE:

The sample size for the present study consists of 100 paediatric nurses from selected hospitals at Kanpur, UP

SAMPLING TECHNIQUE:

In the present study, convenient sampling technique has been used for the selection of staff nurses.

SAMPLING CRITERIA:

Inclusion criteria:

- Pediatric nurses working in selected hospitals in Kanpur.
- Nurses willing to participate in the study.
- Nurses with at least six months of clinical experience.

Exclusion criteria:

- Nurses who do not handle IM injections for infants.
- Nurses unwilling to participate.

METHODS OF DATA COLLECTION:

Data was collected using a structured questionnaire assessing knowledge.

DEVELOPMENT OF RESEARCH TOOL

A structured research tool was developed to assess the knowledge of pediatric nurses regarding tucking positioning for pain management in infants. The tool was designed based on existing literature, expert opinions, and validated pain assessment frameworks. The tool underwent content validation by a panel of pediatric nursing and pain management experts to ensure its relevance, clarity, and reliability.

DESCRIPTION OF THE TOOL

The research tool consisted of two sections:

1. **Structured Questionnaire:** This section included 20 multiple-choice and Likert-scale questions assessing the nurses' knowledge regarding the principles, benefits,

ISSN PRINT 2319 1775 Online 2320 7876

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and proper application of tucking positioning. It also covered demographic details such as age, years of experience, and prior training in neonatal pain management.

RESULTS AND FINDINGS

Section A:

Findings related to Findings related to Socio-Demographic Distribution

- 60% of participants were aged 25-40 years.
- 75% were female, and 25% were male.
- 50% had more than five years of experience in pediatric nursing.

Section B:

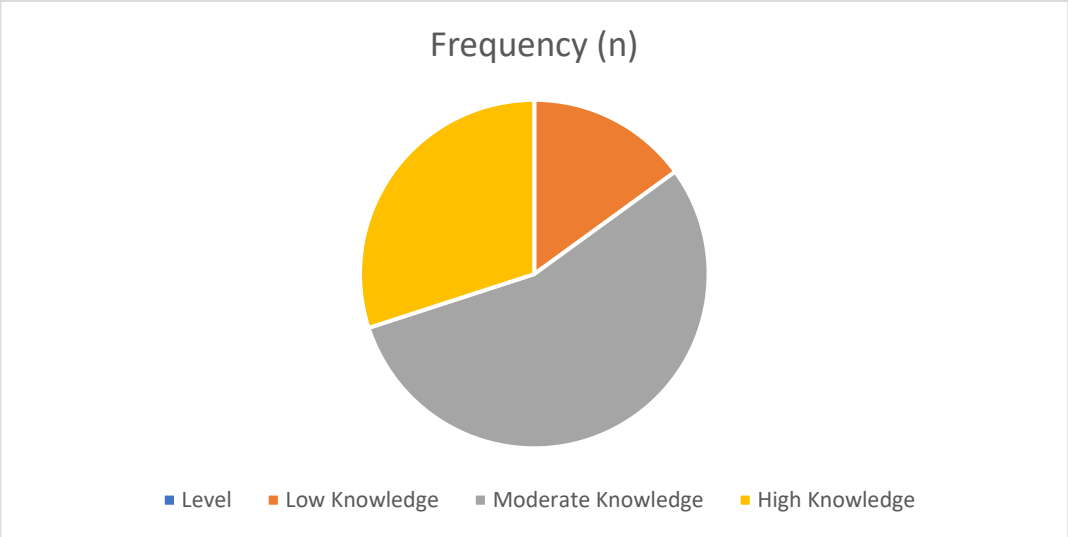
Findings related to Knowledge Level of Pediatric Nurses Regarding Tucking Positioning

Knowledge Level	Frequency (n)	Percentage (%)
Low Knowledge	15	15%
Moderate Knowledge	55	55%
High Knowledge	30	30%

Knowledge Level of Pediatric Nurses Regarding Tucking Positioning

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 14, Iss 2, 2025



The study findings revealed that 55% of pediatric nurses demonstrated a moderate level of knowledge regarding tucking positioning for pain management in infants, while 30% exhibited a high level of understanding. In contrast, 15% of the participants had low knowledge levels, indicating a significant gap in awareness and familiarity with the technique. These results suggest that while a majority of nurses possess a reasonable understanding of tucking positioning, there remains a need for further education and training to enhance proficiency. The presence of a substantial proportion with low knowledge highlights the necessity of targeted interventions, including workshops and hands-on training sessions, to improve the overall competence of pediatric nurses in implementing tucking positioning effectively during IM injections.

Section C:

Association Between Knowledge and Demographic Factors

Variable	**Chi-Square Value (χ^2)**	**p-value**	**Significance**
Years of Experience	10.89	< 0.05	Significant
Prior Training	12.45	< 0.05	Significant

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 14, Iss 2, 2025

Age	6.78	> 0.05	Not Significant
Gender	4.56	> 0.05	Not Significant

The study found a significant association between knowledge levels and professional experience, as well as prior training in pain management techniques, while age and gender showed no significant correlation.

NURSING IMPLICATIONS

Nursing Practice:

Pediatric nurses play a critical role in pain management for infants undergoing IM injections. Incorporating tucking positioning into routine clinical practice can significantly reduce pain perception in neonates. Nurses should be trained to apply this technique effectively and integrate it with other comfort measures to enhance patient care.

Nursing Education:

Educational programs should emphasize non-pharmacological pain management strategies, including tucking positioning. Training workshops, simulation-based learning, and hands-on demonstrations can help nurses develop competence in using this technique effectively in their daily practice.

Nursing Administration:

Hospital administrators should ensure that policies and protocols incorporate non-pharmacological pain management strategies, such as tucking positioning. Resources should be allocated to support continuing education programs and competency assessments for nursing staff.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 14, Iss 2, 2025

Nursing Research:

Further research is needed to explore the long-term benefits of tucking positioning on infant stress responses and overall pain management outcomes. Comparative studies evaluating its effectiveness against other non-pharmacological methods will help strengthen the evidence base for its widespread adoption.

LIMITATIONS

- The study was limited to selected hospitals in Kanpur, reducing generalizability.
- Self-reported data may introduce response bias.
- The study did not assess the long-term impact of tucking positioning on infant stress responses.

RECOMMENDATIONS

- Implement structured training programs for pediatric nurses on pain management techniques.
- Conduct further studies with larger sample sizes for broader generalization.
- Develop hospital policies emphasizing the integration of non-pharmacological pain management techniques.

CONCLUSION

The study highlighted that while most pediatric nurses possess moderate to high knowledge regarding tucking positioning, its practical application remains inconsistent. Professional experience and prior training significantly influence

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 14, Iss 2, 2025

nurses' knowledge and practice levels. Continuous education and hospital-based training programs are recommended to ensure effective pain management for infants undergoing IM injections.

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