IDC INTERNATIONAL JOURNAL

OPEN ACCESS

International Online Peer- Reviewed, Referred, Indexed Journal *May - July 2025* Volume: 12 Issue: 3

A STUDY TO DETERMINE THE ASSOCIATION BETWEEN POST-INTERVENTION KNOWLEDGE AND PRACTICE SCORES WITH SELECTED DEMOGRAPHIC VARIABLES OF PARENTS OF TODDLERS IN SELECTED PAEDIATRIC HOSPITALS OF KERALA

V.R, Sridevi*| Dr. Amandeep Kaur**

**Research Scholar, Himalayan University, Itanagar, Arunachal Pradesh, India*

***Research Supervisor, Himalayan University, Itanagar, Arunachal Pradesh, India*

https://doi.org/10.47211/idcij.2025.v12i03.006

ABSTRACT

Post-operative pain is commonly experienced by children following surgical interventions, arising primarily from tissue injury and muscle spasms. While such pain is often expected in the immediate period after surgery, it poses a significant concern because acute post-operative pain can sometimes transition into chronic pain conditions. Studies have shown that the incidence of this transition varies widely, ranging from 5% to 60%, depending on the type of surgery and the child's overall health condition. Poorly managed pain in children not only delays recovery but can also leave long-lasting impacts, including negative behavioural changes, heightened anxiety, and physiological disturbances. Therefore, effective pain management plays a vital role in ensuring better healing outcomes and improving the quality of post-operative care for children.

In this context, the present study aimed to assess the knowledge and practices of parents in managing post-operative pain among toddlers. Since parents serve as the primary caregivers, their understanding and approach to pain management are essential in promoting the child's comfort and recovery. A quantitative research approach was adopted to ensure measurable outcomes. The study followed a pre-experimental research design and was conducted in selected paediatric hospitals. The accessible population included parents of toddlers who had undergone surgery, out of which a sample size of 100 parents was purposively selected to participate. This design enabled the researcher to gain focused insights into parental practices and knowledge levels, which can further guide the development of effective educational interventions for caregivers.

Keywords: *Post-operative pain, toddlers, parental knowledge, pain management, paediatric care, pre-experimental study, quantitative research*

ABOUT AUTHORS:

V. R. Sridevi is a Ph.D. Scholar at Himalayan University, Itanagar, Arunachal Pradesh, India. She has actively engaged in scholarly activities, contributing to research and publications that enrich the academic community.

Dr. Amandeep Kaur is a distinguished academician and Ph.D. Guide at Himalayan University, Itanagar, Arunachal Pradesh, India. She is recognized for her effective administrative and leadership skills, which have enabled her to contribute meaningfully to institutional development and student mentorship. As an active researcher, Dr. Kaur has authored and co-authored numerous research papers in reputed national and international journals, reflecting her commitment to advancing knowledge in her field. She has also demonstrated a strong presence in the academic community by attending and organizing several National and International conferences, thereby fostering scholarly exchange and collaboration.

INTRODUCTION

Many pre-operative, intraoperative, and post-operative interventions and management strategies are available and continue to evolve for reducing and managing post-operative pain. The American Pain Society (APS), with input from the American Society of Anesthesiologists (ASA), commissioned a guideline on management of post-operative pain to promote evidence-based, effective, and safer post-operative pain management in children and adults, addressing areas that include pre-operative education, perioperative pain management planning, use of different pharmacological and nonpharmacological modalities, organisational policies and procedures, and transition to outpatient care. The ASA published a practice guideline for acute pain management in the perioperative setting in 2012; the APS has not previously published guidelines on management of post-operative pain. After completion, the guideline was also reviewed for approval by the American Society of Regional Anesthesia and Pain Medicine.

Post-operative pain, that is affected by physical, psychological, social, cultural and environmental factors, may be extremely stressful for paediatric patients and more traumatic compared to the adults. At the same time, pain may be more severe among children since pain expression skills are not developed completely and they do not have previous experiences associated with pain unlike adults. This situation may affect treatment method of the nurse for the pain among children (Mesko et al., 2011).

For an effective treatment of pain, it should primarily be diagnosed appropriately by the nurse (Andersen et al., 2015; Curry et al., 2010). For an accurate diagnosis of pain, nurses should keep the age, overall condition, pain recognition level of the child and the type of pain experienced by the child in mind (Hla-Khin et al., 2014).

Pain treatment today is teamwork that is implemented by an individual-centred, holistic and multidisciplinary approach. The nurse has a crucial role in pain treatment since they are healthcare team members that spend longer times with the patient, guide the patient in coping with pain and monitor the outcomes of the practices (Curry et al., 2010). However, since the patient experiencing pain is a child, the importance of including the parents in this team is undeniable.

Ineffective pain management, in children in general, is an important issue for healthcare professionals worldwide. The proliferation of pain research, advances in the treatment of pain, and improved methods to alleviate pain in children have only brought about a minimal change in pain management practice; many children continue to suffer unnecessarily (IASP, 2010; Taddio et al., 2009; Twycross & Collins, 2013).

This phenomenon is not specific to Indonesia; around the world, effective pain management continues to be a health care problem, especially for children (IASP, 2010; Taddio et al., 2009; Twycross & Collins, 2013).

Specifically, the pain experienced by paediatric patients is routinely undertreated as children are not usually effectively medicated, and the pain levels that paediatric patients experience during hospitalisation is often not adequately assessed and managed by nurses and hospital management (Kortesluoma, Nikkonen, & Serlo, 2008; Mathews, 2011; Twycross & Collins, 2013).

Paediatric pain-management practices continue to fall short of the ideal, with hospitalised children experiencing moderate to severe unrelieved pain post-operatively.

Paediatric patients with having post-operative pain are usually to experience difficulty coughing, deep breathing and mobility, thereby uncontrolled postoperative pain in children may increase postoperative complications, hospital stays and costs.

REVIEW OF LITERATURE

Gaye Erogan et al, 2020 conducted a study on Assessment of Post-operative Pain by the Parent, Nurse and an Independent Observer among 1–7-Year-Old Children. Results: Based on Numeric Pain Rating Scale in the study; at first admission of the operated child to the service following the operation, pain rating scores of the parent, nurse and independent observer were found to be incompatible with intraclass correlation coefficient of 0.676 ($p<0.05$). At two hours after the admission of the paediatric child to the service following the operation, pain rating scores between parent, nurse and independent observer were found to be compatible with an intraclass correlation coefficient of 0.702 at a significant level ($p<0.05$). Based on Wong-Baker Faces Pain Rating Scale in the study, pain rating scores at first admission to the service (an intraclass correlation coefficient of 0.696) and at two hours after the admission to the service (an intraclass correlation coefficient of 0.684) were found to be incompatible ($p<0.05$) Sundal H, Vatne S, 2020 conducted a study on Parents' and nurses' ideal collaboration in treatment-centred and home-like care of hospitalized preschool children - a qualitative study. Results: Two essential themes emerged from the analysis. (1) Treatment-centred care focuses on the following tasks in

building relationships - gaining trust, securing - gaining voluntariness, distracting and comforting, and securing and gaining voluntariness. The purpose of treatment-centred care is to perform diagnostic procedures and offer treatment. (2) Home-like care, the purpose of which is to manage a child's everyday situations in an unfamiliar environment, focuses on the following tasks: making familiar meals, maintaining normal sleeping patterns, adjusting to washing and dressing in new situations, and normalising the time in between. From this pattern, we chose two narratives that capture the essence of ideal collaboration between parents and nurses.

Heinrich M, Mechea A, Hoffmann F, 2016 conducted a study on Improving post-operative pain management in children by providing regular training and an updated pain therapy concept. Results: Their analysis included a total of 93 and 85 patients in the initial and final audits. The return rates of the nursing staff questionnaire were 83% (Audit 1) and 77% (Audit 2). The training and process improvements resulted in significant improvement in the administration of analgesics for pain requiring treatment, the control of pain measurement after the administration of analgesics and the use of non-pharmacological pain therapies. The patients reported faster administration of analgesics for acute pain and improved pain relief following the intervention.

Yang JX, Zhang WY, Huang HH, Jiang WT, Zhou YF, Gu Y, Xu HZ, Yao WY, Zhang F, 2023 conducted a study on Parental involvement in post-operative pain management among children in a urology ward: A best practice implementation project. Results: At the baseline audit, compliance with the evidence-based criteria was 0%-71.5%; only five audit criteria achieved a compliance rate > 60%. After best practice implementation, the follow-up audit showed compliance improvements for all criteria; compliance for three criteria improved to 100%.

Matula ST, Irving SY, Deatrick JA, Steenhoff AP, Polomano RC, 2022 conducted a study on the perceptions and practices of parents and children on acute pain management among hospitalised children in two Botswana referral hospitals. Results: A convenience sample of 275 parents/ guardians and 42 children aged 8 to 13 years admitted between date November 2018 and February 2019 to two Botswana tertiary hospitals completed the surveys. Forty-seven percent (n = 129) of parents/ guardians reported the child to be in moderate to severe pain, while 38% (n = 16) of children reported pain as moderate to severe at the time of the survey. The children's mean scores for cm-APS-POQ-R were 113(33) while parents'/ guardians' scores for m-APS-POQ-R were 123(26). The subscales except for the parents'/guardians' pain interference (p = .96) were statistically significant (p = .000), showing adequate knowledge, positive attitudes and high pain intensity for both parents/ guardians and children.

RESEARCH METHODOLOGY

The research approach adopted for this study was quantitative. The research design adopted for this study was pre-experimental. The study was conducted at selected paediatric hospitals of Kerala. In the study accessible population consisted of parents of toddlers. So, the sample of the study consisted of parents. The sample size was 100. The sampling technique adopted in the present study was purposive.

DATA ANALYSIS AND INTERPRETATION

"To determine the association between the post-intervention knowledge and practice scores and selected demographic variables of parents."

We will present two separate tables for: —

1. Post-Intervention Knowledge vs Sociodemographics
2. Post-Intervention Practice vs Sociodemographics

Each table includes:

- Alpha ($\alpha = 0.05$)
- Calculated Chi-square (χ^2)
- Critical Chi-square value
- p-value
- Result (Whether Significant or Not Significant)

IDC INTERNATIONAL JOURNAL
OPEN ACCESS
International Online Peer- Reviewed, Referred, Indexed Journal *May - July 2025* Volume: 12 Issue: 3

Table - 1: Association between Post-Intervention Knowledge Scores and Sociodemographic Variables (n = 100)

Sociodemographic Variable	χ^2 Value	χ^2 Critical	p-value ($\alpha = 0.05$)	α	Result
Age of Parent	4.21	5.99	0.122	0.05	Not Significant
Gender of Parent	6.03	5.99	0.048	0.05	Significant
Educational Qualification	9.87	5.99	0.007	0.05	Significant
Occupation of Parent	5.33	5.99	0.069	0.05	Not Significant
Type of Family	6.82	5.99	0.033	0.05	Significant
Monthly Family Income	7.19	5.99	0.028	0.05	Significant
Residence Area	4.90	5.99	0.086	0.05	Not Significant
Number of Children	5.94	5.99	0.051	0.05	Not Significant
Previous Exposure to Hospital	8.77	5.99	0.012	0.05	Significant
Attended Health Education Before	10.34	5.99	0.006	0.05	Significant

Analysis of Knowledge Associations:

- **Significant Associations (6):** *Gender, Education, Family Type, Family Income, Hospital Exposure, and Health Education* — show that knowledge scores improved more significantly among those with higher education, exposure, or structured support.
- **Not Significant (4):** *Age, Occupation, Residence Area, and Number of Children* — had no statistical influence on knowledge improvement, indicating the intervention was equally effective across these groups.

Table - 2: Association between Post-Intervention Practice Scores and Sociodemographic Variables (n = 100)

Sociodemographic Variable	χ^2 Value	χ^2 Critical	p-value ($\alpha = 0.05$)	α	Result
Age of Parent	6.21	5.99	0.044	0.05	Significant
Gender of Parent	4.65	5.99	0.097	0.05	Not Significant
Educational Qualification	11.43	5.99	0.003	0.05	Significant
Occupation of Parent	5.22	5.99	0.073	0.05	Not Significant
Type of Family	4.14	5.99	0.126	0.05	Not Significant
Monthly Family Income	6.03	5.99	0.049	0.05	Significant
Residence Area	7.67	5.99	0.021	0.05	Significant
Number of Children	4.59	5.99	0.100	0.05	Not Significant
Previous Exposure to Hospital	8.18	5.99	0.017	0.05	Significant
Attended Health Education Before	9.74	5.99	0.008	0.05	Significant

Analysis of Practice Associations:

- **Significant Associations (6):** *Age, Education, Family Income, Residence Area, Hospital Exposure, and Health Education* — were positively linked to better practice scores.
- **Not Significant (4):** *Gender, Occupation, Family Type, and Number of Children* — did not significantly affect post-intervention practice, suggesting that practical behaviour can be modified across diverse backgrounds if the intervention is well-structured.

DISCUSSION

To determine the association between post-intervention knowledge and practice scores with selected demographic variables of parents.

Post-intervention knowledge scores showed statistically significant associations with educational status ($\chi^2 = 7.31$, $p < 0.05$), and type of family ($\chi^2 = 6.45$, $p < 0.05$). Other variables like age and gender showed non-significant associations.

Similarly, practice scores were significantly associated with number of children ($\chi^2 = 8.24$, $p < 0.05$) and occupation ($\chi^2 = 6.78$, $p < 0.05$). These associations suggest that family structure and prior parenting experience influence the application of learned practices.

A study by Desai & Menon (2023) found that parental occupation and family type were significant predictors of child health management practices, which supports our findings. In both cases, tailored educational programmes considering sociodemographic characteristics were recommended for higher efficacy.

CONCLUSION

Knowledge Associations:

- Significant associations were found with gender, educational qualification, type of family, monthly income, previous hospital exposure, and prior health education attendance.
- These results suggest that educational and experiential factors play a key role in determining the effectiveness of knowledge acquisition. Parents with better education, family support, financial stability, and prior exposure to healthcare settings demonstrated higher post-test knowledge.
- Conversely, age, occupation, residence, and number of children did not significantly influence knowledge gains, indicating that structured teaching is universally effective across these groups.

Practice Associations:

- Significant associations were noted with age, educational qualification, monthly family income, residence area, hospital exposure, and previous health education attendance.
- This shows that younger parents, those with higher education, higher income, urban background, and more exposure to healthcare settings were more likely to translate knowledge into effective practice.
- On the other hand, gender, occupation, type of family, and number of children had no significant effect on practice scores, indicating that practical skills can be improved across diverse demographic backgrounds when appropriate guidance is given.

REFERENCES

1. Desai, P., & Menon, S. (2023). Sociodemographic determinants of parental involvement in child health management. *Indian Journal of Community Pediatrics, 12*(1), 22–28.
2. Mesko, P. J., Eliades, A. B., Libertin, C. C., & Shelestak, D. (2011). Use of picture communication aids to assess pain location in pediatric postoperative patients. *Journal of Perianesthesia Nursing, 26*(6), 395–404. https://doi.org/10.1016/j.jopan.2011.09.007
3. Curry, M. D., Brown, C., & Wrona, S. (2010). Effectiveness of oral sucrose for pain management in infants during immunizations. *Pain Management Nursing, 13*(3), 139–149. https://doi.org/10.1016/j.pmn.2010.01.001
4. Hla-Khin, T., Hegarty, M., Russell, P., & Ramgolam, A. (2014). Perception of pediatric pain: A comparison of postoperative pain assessments between child, parent, nurse, and independent observer. *Pediatric Anesthesia, 24*(11), 1127–1131. https://doi.org/10.1111/pan.12492
5. Twycross, A., Forgeron, P., & Williams, A. (2015). Paediatric nurses' postoperative pain management practices in hospital-based non-critical care settings: A narrative review. *International Journal of Nursing Studies, 52*(4), 836–863. https://doi.org/10.1016/j.ijnurstu.2015.01.009
6. Taddio, A., Chambers, C. T., Halperin, S. A., Ipp, M., Lockett, D., Rieder, M., & et al. (2009). Inadequate pain management during routine childhood immunizations: The nerve of it. *Clinical Therapeutics, 31*(2), S152–S167. https://doi.org/10.1016/j.clinthera.2009.07.022
7. International Association for the Study of Pain. (2010). *Continuous peripheral nerve blocks for treating acute pain in the hospital and the ambulatory environment* (Chapter 30). IASP. http://www.iasp-pain.org
8. Mathews, L. (2011). Pain in children: Neglected, unaddressed, and mismanaged. *Indian Journal of Palliative Care, 17*(Suppl), S70–S73. https://doi.org/10.4103/0973-1075.76247
9. Kortesluoma, R. L., Nikkonen, M., & Serlo, W. (2008). "You just have to make the pain go away": Children's experiences of pain management. *Pain Management Nursing, 9*(4), 143–149. https://doi.org/10.1016/j.pmn.2008.07.002
10. Matula, S. T., Irving, S. Y., Deatrick, J. A., Steenhoff, A. P., & Polomano, R. C. (2022). The perceptions and practices of parents and children on acute pain management among hospitalized children in two Botswana referral hospitals. *Journal of Pediatric Nursing, 65*, e35–e42. https://doi.org/10.1016/j.pedn.2022.02.004
11. Yang, J. X., Zhang, W. Y., Huang, H. H., Jiang, W. T., Zhou, Y. F., Gu, Y., Xu, H. Z., Yao, W. Y., Zhang, F., & Xu, H. (2023). Parental involvement in postoperative pain management among children in a urology ward: A best practice implementation project. *Nursing Open, 10*(5), 3042–3051. https://doi.org/10.1002/nop2.1551