



“A COMPARATIVE STUDY TO EVALUATE THE EFFECTIVENESS OF PARENT HOLD VERSUS HELPER SKIN TAP TECHNIQUE ON PAIN DURING IMMUNIZATION AMONG INFANTS IN SELECTED HOSPITALS.”

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Abstract :

Background: Immunization is one of the most commonly performed painful procedures in infancy and can cause significant distress to infants and their parents. Unmanaged pain during vaccination may lead to fear, anxiety, and negative behavioral responses in children. Simple, safe, and non-pharmacological methods such as Parent Hold Technique and Helper Skin Tap Technique are used to reduce pain during immunization, but their comparative effectiveness needs to be evaluated. **Objectives:** 1. To assess the pain in parent hold among infants during Immunization. 2. To assess the pain in helper skin tap technique among infants during Immunization. 3. To compare the pain in parent hold versus helper skin tap technique among infants. 4. To find the association of study finding with selected demographic variables. **Methodology:** A quantitative approach with a two-group comparative research design was adopted. The study was conducted in selected hospitals and 50 infants undergoing routine immunization were selected using non-probability convenience sampling technique. The infants were divided into two groups: 25 infants received the Parent Hold Technique and 25 infants received the Helper Skin Tap Technique. Data were collected using a structured demographic questionnaire and the FLACC pain scale to assess pain during immunization. The data were analyzed using descriptive and inferential statistics. **Results:** The comparison of pain score during immunization among infants of parent hold technique and helper skin tap technique from selected hospitals. Mean, standard deviation and mean difference values are compared and student's unpaired 't' test is applied at 5% level of significance. The tabulated value for $n=25+25-2$ i.e. 48 degrees of freedom was 2.00. The calculated 't' value i.e. 3.92 are much higher than the tabulated value at 5% level of significance for overall Pain score of Infants from selected hospitals which is statistically acceptable level of significance. Hence it is statistically interpreted that Parent Hold Technique was more effective than Helper Skin Tap Technique on Pain Score during immunization among Infants from selected hospitals of the city was effective. Thus, the H1 is accepted. **Conclusion:** The study concluded that the Parent Hold Technique is more effective than the Helper Skin Tap Technique in reducing pain during immunization among infants. The findings highlight the importance of parental involvement and comforting strategies in minimizing procedural pain and improving the immunization experience. **Recommendations:** Since the present study was conducted on moderate sample more extensive studies on wider sample are recommended. Similar studies can be conducted with a larger sample size to improve the generalization of findings. The study can be replicated in different settings such as community health centers and rural hospitals. Future studies can compare other non-pharmacological pain relief methods like breastfeeding, distraction, or sucrose along with Parent Hold and Helper Skin Tap techniques.

I. INTRODUCTION

The term "infant" comes from the Latin word "infant" meaning "unable to speak" or "speechless," which highlights the way infants communicate through crying. Their cries express a range of needs and emotions, such as hunger, discomfort, pain, loneliness, or overstimulation. In healthcare settings, minimizing pain during procedures like injections is essential, and there are techniques to

help achieve this. One such method is the Helper skin tap technique, which is designed to make the injection experience less painful.¹One of the strategies to reduce pain is positioning. Research shows that holding an infant in a particular way during vaccinations can reduce pain, although the ideal position remains debated. Parents also play a key role in comforting their infants, as holding them can help reduce pain responses. Holding offers both physical comfort and a distraction, easing the baby's stress during the procedure.²

Pain is a complex and individualized sensation for infants, particularly when it comes to common procedures like vaccinations. Vaccinations, though necessary for disease prevention, are among the most common painful procedures infants experience. While immunizations offer significant protection by preventing severe diseases, they often come with pain, which can affect infants both physically and behaviorally. Understanding how to minimize this pain is crucial. Childhood immunization is a critically important public health initiative. However, since most vaccines are administered by injection, it is associated with considerable pain and distress.³

When infants feel pain, their brains send signals to their bodies, and each baby responds to pain in their own way. As nurses, it's our responsibility to ensure that we provide the best possible pain relief for infants, utilizing safe, non-pharmacological methods such as the Helper skin tap technique.⁴

I. PROBLEM STATEMENT

"A Comparative Study to Evaluate the Effectiveness of Parent Hold Versus Helper Skin Tap Technique on Pain during Immunization Among Infants in Selected Hospitals."

II. OBJECTIVES

1. To assess the pain in parent hold among infants during Immunization.
2. To assess the pain in helper skin tap technique among infants during Immunization.
3. To compare the pain in parent hold versus helper skin tap technique among infants.
4. To find the association of study finding with selected demographic variables.

IV. MATERIALS AND METHODS:

4.1 Study setting and design : A Quantitative research approach and Two group post test only research design was used to evaluate the Effectiveness of Parent Hold Versus Helper Skin Tap Technique on Pain during Immunization Among Infants in Selected Hospitals. 50 infants were selected by non probability convenience sampling technique

4.2 Inclusion Criteria The inclusion criteria were: Infants receiving routine immunization with Pneumococcal Conjugate Vaccine (PCV), Pentavalent (Penta) VACCINE, or Measles-Rubella (MR) vaccine in selected hospitals.

4.3 Variables of the study:

- **Independent variable-** Parent hold versus helper skin tap technique.
- **Dependent variable-** level of pain.

4.4 Data Collection Tool

Section-A Demographic variables It consists of demographic profile of infants and parents i. c. Age, gender, weight of child educational qualification, type of vaccine.

Section B - FLACC SCALE -face, leg, activity, cry, consolability. it is a standardized scale used to assess the pain in infant during immunization. Interpretation :- 0-3: Relaxed or Comfortable 4-6: Moderate pain 7-10: Severe pain

Section C-Standard Operating Procedure of intervention Parent hold versus Helper skin tap technique used for experimental group.

4.5 Validity and Reliability of Tool

- **Content Validity-** The content validity of the FLACC Pain Assessment Scale was established through expert evaluation for relevance, clarity and appropriateness of the items. Necessary modifications were made based on the experts' suggestions, and the tool was considered valid for assessing pain among infants during immunization.
- **Construct Validity-** The construct validity of the FLACC Pain Assessment Scale was ensured by assessing its five components—Face, Legs, Activity, Cry and Consolability—which appropriately represent the intended construct of pain among infants during immunization.
- **Reliability** the reliability of tool was determined 12 sample and the reliability of the tool was calculated by the using t test method of reliability. By using Parallel form method of reliability, it is found to be 0.9817 and hence tool is reliable and valid.

4.6 Hypothesis

- **Null hypothesis (H₀):** There is no significant difference in pain between the Parent Hold versus Helper Skin Tap Technique during immunization among infants in selected Hospitals.
- **Research hypothesis (H₁):** There is significant difference in pain between the Parent Hold versus Helper Skin Tap Technique during immunization among infants in selected Hospitals.

4.7 Statistical analysis:

The data were analyzed using Statistical Package for the Social Sciences (SPSS) version 24.0. A probability level of $p < 0.05$ was considered statistically significant. Descriptive statistics such as frequency and percentage were used to describe the selected demographic variables of infants, including age, gender, weight of the child, educational status of parents and type of vaccine.

Mean, mean percentage and standard deviation were computed to assess the pain scores among infants in the Parent Hold group and Helper Skin Tap Technique group. Student's unpaired 't' test was used to compare the mean pain scores between the Parent Hold Position group and Helper Skin Tap Technique group. Chi-square test was used to determine the association between selected demographic variables and pain levels among infants during immunization in both groups.

4.7 Ethical consideration:

The present study was approved by the Institutional Ethical Committee of Government Medical College, Nagpur (IEC/170/25 dated 28.02.2025). Written informed consent was obtained from the parents or legal guardians of the infants after explaining the purpose and procedure of the study. They were informed that participation was voluntary and that they could withdraw from the study at any time. Confidentiality and privacy of the participants were ensured throughout the study.

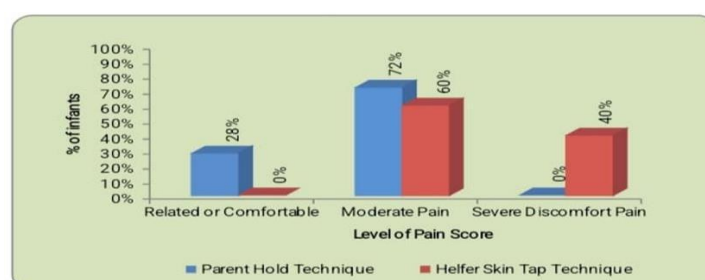
V. RESULTS

Table 1: percentage wise distribution of infants according to their demographic characteristics.

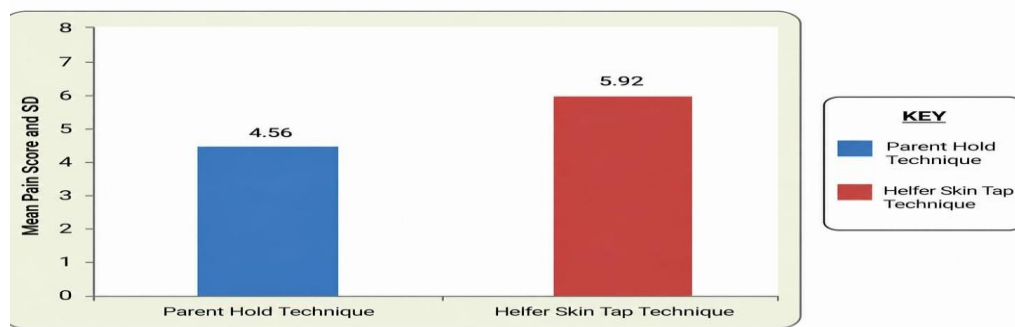
Demographic Variables	Parent Technique(n=25)	Hold	Helper Skin Tap Technique(n=25)
Age(yrs)			
0-3 months	9(36%)		14(56%)
3.1-6 month	6(24%)		7(28%)
6.1-9 months	2(8%)		1(4%)
9.1-12 months	8(32%)		3(12%)
Gender of the child			
Male	14(56%)		13(52%)
Female	11(44%)		12(48%)
Others	0(0%)		0(0%)
Educational Status of Parents			
No formal education	2(8%)		3(12%)
Primary Education	15(60%)		12(48%)
Secondary Education	8(32%)		6(24%)
Graduation and above	0(0%)		4(16%)
Weight of the child(kg)			
3.5 kg	17(68%)		15(60%)
5.1-7 kg	4(16%)		6(24%)
7.1-9 kg	4(16%)		4(16%)
9.1-11 kg	0(0%)		0(0%)
Type of vaccine			
Pneumococcal Conjugate (PCV)	8(32%)		8(32%)
Pentavalent	10(40%)		14(56%)
Measles and Rubella (MR)	7(28%)		3(12%)

Distribution of Infants with Regard to Demographic Variables in terms of frequency and percentage.-

As shown in Table 1, the majority of infants were in the age group of 0–3 months in both the Parent Hold Technique (36%) and Helper Skin Tap Technique (56%) groups. Males were predominant in both groups (56% and 52%, respectively). Most parents had primary education (60% and 48%), and the majority of infants weighed 3.5 kg (68% and 60%). Pentavalent vaccine was the most commonly administered vaccine in both groups (40% and 56%).



Graph No. 1. graphical representation of assessment of level of pain during immunization in parent hold versus helper skin tap technique among infants from selected hospitals.



Graph No.2 Graphical representation of evaluate the effectiveness of the pain score during immunization in parent hold technique and helper skin tap technique among infants from selected hospitals.

Table No. 2 Association of the level of the pain score during immunization of infants of parent hold technique and helper skin tap technique from the selected hospitals in relation to their demographic variables.

Variables	χ^2 value	df	Tabulated value	p-value \$Significance
Age of infants	42.08	3	7.82	0.0001, S
Gender	2.84	1	3.84	0.14, NS
Educational status of parents	0.19	3	7.82	0.015, S
Weight of infants	26.14	2	5.99	0.0001, S
Type of vaccine	2.41	2	5.99	0.49, NS

VI. DISCUSSION:

The present study shows that Majority of infants were 0–3 months: 36% in Parent Hold and 56% in Helper Skin Tap. Males were 56% and 52%, respectively. Most parents had primary education. PCV, Penta and MR vaccines were included.

Kaur et al. reported that 73.3% of infants in the experimental group and 76.66% in the control group were aged 1–3 months. Regarding pain, 60% of infants in the experimental group experienced moderate pain, whereas 53.3% of the control group experienced severe pain, indicating that HSTT was effective in reducing pain. No significant association was found between pain score and selected demographic variables ($p > 0.05$).⁵

The present study compared Parent Hold Technique and Helper Skin Tap Technique for reducing pain during immunization among infants. The mean pain score was 4.56 ± 1.19 in the Parent Hold group and 5.92 ± 1.25 in the Helper Skin Tap group. The calculated t value was 3.92, which was higher than the tabulated value of 2.00 at 0.05 level of significance.

A comparative investigated the effects of Shot Blocker and the Helper Skin Tap Technique (HSTT) on reducing pain in infants during intramuscular injection. randomized controlled experimental study was conducted with 120 infants Results During the procedure, mean pain scores were 6.47 ± 0.55 in the Shot Blocker group, 5.92 ± 0.79 in the Helper Skin Tap group, and 5.75 ± 0.92 in the control group. Post-procedure mean pain scores were 6.00 ± 1.03 , 5.95 ± 1.56 , and 6.92 ± 0.52 , respectively. Pain scores were significantly higher in the Shot Blocker group during injection and in the control group after injection compared to the intervention groups ($p < 0.001$).⁶

In the Parent Hold group, 28% infants had comfortable/mild pain and 72% had moderate pain. In the Helper Skin Tap group, 60% infants had moderate pain and 40% had severe discomfort. The minimum pain score was 3 in Parent Hold and 4 in Helper Skin Tap. The maximum pain score was 6 in Parent Hold and 8 in Helper Skin Tap.

Sahoo et al. (2025) found that the Helper Skin Tap Technique significantly reduced vaccination pain among infants. The mean pain score was 5.52 ± 1.411 in the Helper Skin Tap group compared with 6.55 ± 1.028 in the control group ($p=0.002$).⁷

In the present study, age of infants was significantly associated with pain score in both groups. Parental educational status was significantly associated with pain score in the Parent Hold group, while infant weight was significantly associated in the Helper Skin Tap group. Gender and type of vaccine were not significantly associated with pain score in either group.

VII. CONCLUSION:

The present study concluded that Parent Hold Technique is more effective than Helper Skin Tap Technique in reducing pain during immunization among infants. Immunization is an unavoidable yet painful experience for infants, and the way it is administered can significantly influence the level of pain perceived by the child. The results of this study clearly indicate that when infants are held securely and comforted by their parents during vaccination, they experience less pain and distress compared to when skin tapping is used as a pain relief method. The lower mean pain score observed in the Parent Hold Technique highlights the importance of parental involvement, emotional security, and physical comfort in managing procedural pain. The Helper Skin Tap Technique, although non-invasive and easy to perform, was found to be less effective in minimizing pain, as it does not provide emotional reassurance or comfort to the infant. The association findings further suggest that infant characteristics such as age and weight, as

well as parental factors like education, can influence pain perception, emphasizing the need for individualized and supportive care during immunization. In conclusion, the Parent Hold Technique is a simple, safe, cost-effective, and easily applicable nursing intervention that can be used in routine immunization practice to reduce pain and distress among infants. Incorporating this technique into standard immunization procedures can improve the quality of pediatric nursing care, enhance parental satisfaction, and promote a more positive immunization experience for infants.

VIII. RECOMMENDATION:

- Similar studies can be conducted with a larger sample size to improve the generalization of findings.
- The study can be replicated in different settings such as community health centers and rural hospitals.
- Individualized techniques may be more effective according to each infant's needs and response.

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