

**A STUDY TO ASSESS THE EFFECTIVENESS OF HELPER SKIN TAP TECHNIQUE ON THE  
LEVEL OF PAIN DURING INTRAMUSCULAR VACCINATION AMONG INFANT IN  
SELECTED HOSPITAL OF MEHSANA DISTRICT.**

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**ABSTRACT**

*INTRODUCTION:* Intramuscular vaccination is complex technique used to deliver vaccine among children deep into the large muscles of the body. Pain at vaccine site is one of the most commonly reported local reaction associated with administration of vaccine. It is more painful when combination of more than two vaccine injected at a time among infant. Pain management in invasive procedure is a challenge to the nurse. This study helper skin tap technique refers to the taping skin several times with the palmar aspect of the fingers of the dominant hand for approximately five seconds to relax the muscle on vaccine site with three times tap during inserting and removing of injection. *OBJECTIVE:* 1. To assess the effectiveness of helper skin tap technique on the level of pain during intramuscular vaccination among infants on experimental group. 2. To compare the effectiveness of helper skin tap technique on the level of pain during intramuscular vaccination among infants on experimental and control group. 3. To find the association between level of pain among the infant on experimental group and control group with their selected demographic variables. *HYPOTHESIS:* H<sub>0</sub>: There will be no significant difference in the level of pain on the infant receiving intramuscular vaccine in experimental and control groups. H<sub>1</sub>: There will be significant difference in the level of pain on the infant receiving intramuscular vaccine in experimental and control group. *PARTICIPANTS:* 60 infants who are coming for intramuscular vaccination. (30 control group and 30 experimental group) selected using non probability purposive sampling technique in selected hospital of Mehsana district. *INTERVENTION:* Helper skin tap technique is tapping over the intramuscular site with the palmar aspect of finger 16 times before and the 3 counts during the procedure. The Helper skin tap technique has positive effect on pain, anxiety and fear in children during intramuscular vaccine. This technique can be used by nurses to reduce the pain anxiety and fear felt by infant receiving an intramuscular vaccine. *TOOLS:* Behavioural observational pain scale (FLACC scale) used to assess the level of pain during intramuscular vaccination among infants. *RESULTS:* the mean score of experimental group infants 1.06 was less than control group 7.45s and “t” test show that there was a significant difference in the occurrence of intramuscular vaccination (“t”=2.01, p>0.05) between experimental group and control group. *CONCLUSION:* From the above findings, it is evident that helper skin tap technique is effective to assess the level of pain during intramuscular vaccination among infants.

**Keywords:** Helper skin tap technique, FLACC scale, Intramuscular vaccination

## INTRODUCTION

Intramuscular vaccination is complex technique used to deliver vaccine among children deep into the large muscles of the body. Pain at vaccine site is one of the most commonly reported local reaction associated with administration of vaccine. It is more painful when combination of more than two vaccine injected at a time among infant. Pain management in invasive procedure is a challenge to the nurse. Hence complementary therapy like Helper skin tap technique has its own significance and provides a mechanical stimulation and distraction during intramuscular vaccination and thus helps to decrease pain as described by gate control theory which keeps the muscle relaxed while administering intramuscular vaccination. Helper skin tap technique intramuscular vaccination is done by tapping the area again three times. It is a technique in which the researcher taps the dorsa gluteal muscle by counting 1-15 with the palmar aspect of fingers (non-dominant hand) in rhythmic manner before inserting the vaccine intramuscularly at 90 degree and remove the needle quickly again by tapping and counting. This study helper skin tap technique refers to the tapping skin several times with the palmar aspect of the fingers of the dominant hand for approximately five seconds to relax the muscle on vaccine site with three time tap during inserting and removing of injection. The mechanism of helper skin tap technique is gate control theory. In this technique, rhythmic tapping before and during vaccination over the skin at the site of injection keeps the muscle relaxed and stimulates large diameter fibers. As per the gate control theory described by Roger Melzack and Patrick Wall, this technique provides a mechanical stimulation as well as distraction during administration of intramuscular vaccine, thereby helping in the reduction of pain. In this technique while doing tapping before intramuscular vaccination the nervous system will shut down the sensory gate and the pain sensation of the injection will not reach the brain. So vaccination pain goes unnoticed.

## OBJECTIVES:

- To assess the effectiveness of helper skin tap technique on the level of pain during intramuscular vaccination among infants on experimental group
- To compare the effectiveness of helper skin tap technique on the level of pain during intramuscular vaccination among infants on experimental and control group
- To find the association between level of pain among the infant on experimental group and control group with their selected demographic variables.

## HYPOTHESIS:

- **H1:** There will be no significant difference between the pre-test and post-test knowledge regarding healthy habits among school age children.

- **H2:** There will be significant difference between the pre-test and post-test knowledge regarding healthy habits among school age children

## RESEARCH METHODOLOGY

### RESEARCH DESIGN

Quasi experimental before and after control group was adopted.

Two group post- test only control group and experimental group design

### SETTING OF THE STUDY

The study was conducted in selected hospitals of Mehsana District, Gujarat.

### SAMPLE AND SAMPLING TECHNIQUE

In this study, the **sample** included infants who are coming for intramuscular vaccination in selected hospitals of mahsana district.. The sample size was determined based on feasibility and statistical power (e.g.,  $n = 60$ ). The **sampling technique** was **non-probability convenient sampling technique.**, participants were selected based on inclusion criteria and were available during the study period.

### DEVELOPMENT AND DESCRIPTION OF THE TOOL

A **structured knowledge questionnaire** was developed to assess the knowledge of the caregivers regarding healthy habits .

The tool included the following sections: **SECTION-A (Demographic variable)**

It consist of demographic variable of infant receiving intramuscular vaccination that include age, gender, gestational age, religion, parental education history of allergic reaction , baby weight, mode of delivery, complication and infant having any health issue.

### SECTION-B (Assessment tool)

It consist of standardized FLACC scale 0-10 numerical pain scale. It is a standardized numerical scale used to assess the level pf pain in infant. It consist of 0 to10 scores and four categories `0` representing no pain , 1-3 represent mild pain, 4-6 represent moderate pain and 7-10 represent severe pain. The scale has five criteria (FLACC), which are assigned a score of 0,1or 2.

### INTERVENTION :- INFANT HELPER SKIN TAP TECHNIQUE

## DATA ANALYSIS

1. Level of pain during intramuscular vaccination among infant in using helper skin tap technique by using **frequency and distribution**.
2. Ratio between the effectiveness of helper skin tap technique on level of pain during intramuscular vaccination among infant was analyzed by using **mean, standard deviation, mean difference, unpaired 't' test, df, calculated 't' value and level of significance**.
3. Association between post-test score of intramuscular vaccination among infant with vaccination pain and their selected demographic variables was analyzed by using **chi-square test**.

## RESULT

- Frequency & percentage distribution of post test score of level of pain during intramuscular vaccination among infant without received helper skin tap technique in e control group. Shows that in post-test majority of the infants in the control group 9(30%) had moderate pain of the occurrence of level of pain during intramuscular vaccination and 21(70%) infants had severe pain of the occurrence of level of pain during intramuscular vaccination.
- Frequency & percentage distribution of post test score of level of pain during intramuscular vaccination among infant received helper skin tap technique in experimental group. Shows that in post- test majority of the infants in the experimental group 22(73.33%) had mild pain of the occurrence of level of pain during intramuscular vaccination and 8(26.6%) infants had moderate pain of the occurrence of level of pain during intramuscular vaccination.
- Based on the third objectives the behavioural observational pain scale mean score of level of pain during intramuscular vaccination in experimental group was 1.6 with S.D 1.78 whereas in the control group the behavioural observational pain scale mean score 7.45 With SD 1.62. The mean difference was 5.85 and the calculated unpaired 't' value of t- 13.29 was found to be statistically significant at  $p < 0.05$  level. There will be significant difference in the level of pain on the infant receiving intramuscular vaccine in experimental and control group. H1 hypotheses is accepted.

## DISCUSSION

“This study was conducted to assess the effectiveness of Helfer skin tap technique on the level of pain during intramuscular vaccination among infants in selected hospital of Mehsana district.” Objectives of the study were To assess the effectiveness of Helfer skin tap technique on the level of pain during

intramuscular vaccination among infants in the experimental group. To compare the effectiveness of Helfer skin tap technique on the level of pain during intramuscular vaccination among infants in the experimental and control group. To find the association between level of pain among the infants in experimental group and control group with their selected demographic variables.

## **DISCUSSION OF OBJECTIVES**

### **1. The first objective of the study was to assess the effectiveness of Helfer skin tap technique on the level of pain during intramuscular vaccination among infants in the experimental group.**

In Behavioural Observational Pain Scale (FLACC scale), majority of the infants in the experimental group 22 (73.33%) had mild pain during intramuscular vaccination and 8 (26.66%) infants had moderate pain during intramuscular vaccination.

In Behavioural Observational Pain Scale (FLACC scale), majority of the infants in the control group 9 (30%) had moderate pain during intramuscular vaccination and 21 (70%) infants had severe pain during intramuscular vaccination.

### **2. The second objective of the study was to compare the effectiveness of Helfer skin tap technique on the level of pain during intramuscular vaccination among infants in the experimental and control group.**

The Behavioural Observational Pain Scale mean score of level of pain during intramuscular vaccination in experimental group was 1.6 with S.D 1.78 whereas in the control group the Behavioural Observational Pain Scale mean score was 7.45 with S.D 1.62. The mean difference was 5.85 and the calculated unpaired 't' value ( $t = 13.29$ ) was found to be statistically significant at  $p < 0.05$  level.

Based on the study findings the stated hypothesis  $H_1$ , there will be significant difference in the level of pain among infants receiving intramuscular vaccination, was accepted.

### **3. The third objective of the study was to find the association between level of pain among the infants with their selected demographic variables.**

The demographic variables such as age, gender, gestational age at birth, religion, parental education, history of allergic reaction due to intramuscular vaccination previously, baby weight at birth, mode of delivery, complications during childbirth and presence of any health issue in the child were not found to have statistically significant association with the Behavioural Observational Pain Scale score of level of

pain among the infants in the experimental group.

Similarly, the demographic variables were not found to have statistically significant association with the Behavioural Observational Pain Scale score of level of pain among the infants in the control group.

## CONCLUSION

The purpose of this study was used to assess the effectiveness of helper skin tap technique on the level of pain during the intramuscular vaccination among infant in selected hospitals of mahsana district. From the above findings, it evident that helper skin tap technique is effective on level of pain. On the whole, carrying out the present study was really an enriching experience to the investigator. It also helped a great deal to explore and improve the knowledge of the researcher and improve the knowledge of the researcher and the respondent.

## REFERENCES

### ⇔ JOURNAL REFERENCES

- Mrs. Muthulakshmi ,S Monisha, PARIPEX- Indian Journal Of Research, Volume:VIII:VIII, August-2019.
- Ms. Hemangi Chaudhary, Mr.Vipin Vageriya, International Journal Of Innovative Studies In Sociology And Humanities (IJSSH), Volume-3 Issue: 12.December-2018.
- Mr.Ulfat Rashid, Mrs.Muneera Bashir, International Journal Of Nursing Midwifery Research, Vol. 7 No, 2020.
- Mr.Ulfat Rashid, Mrs.Muneera Bashir, International Journal Of Nursing & Midwifery Research, Vol. 7 No, 2020.
- Mr. Anna Taddio, Ms. Vinita Dubey, National Library Of Medicine, December-October-2024.
- Mr. Kristin Bohannon, National Library Of Medicine, J Paediatric Pharmacology Ther.2016 March- April.
- Ms. Manvi Singh1, Mr. Bhavneet Bharti, International Journal Of Nursing & Midwifery Research, Vol. 7 No 2021 April- 24.
- Ms.. Sushma Mishra, Bioequivalence & Bioavailability International Journal,Vol-7, Issue-1,June-29.
- Mr. Anna Taddio, Ms. Vinita Dubey, National Library Of Medicine, December-October-2024.
- United National Inter-Agency Group For Child Mortality Rate Estimation (UN IGME), Report ,March-2024.

#### ⇔ BOOKS REFERENCES

- Basavanthappa, B.T.. In Nursing Research. (1st ed.). New Delhi: Jaypee brother's publications, (2009).
- Burns, N. x. In Understanding Nursing Research. (4th ed.). Philadelphia: W.B Saunders publications, (2009)
- Dorothy .R. Marlow.. Textbook Of Paediatric Nursing. (6th ed.). Philadelphia: W. B. Saunders publication, (1998)
- Mosby Peggy, In theory and nursing. (3rd ed.). New Delhi: St. Louis Publication, (1994)
- Polis & Beck, nursing research: Generating and Assessing Evidence for Nursing Practice. (8th ed.). Philadelphia: Wolters Kluwer Publications, (2009).
- Parthasarathy, IAP Text book of paediatrics. (4th ed.). New Delhi: Jaypee publication, (2009).
- Suraj kupta, Short Textbook of Paediatrics. (17th ed.). New Delhi: Jaypee Publication, (2009)
- Wilson, J. Hockenberry,.Nursing Care of Infant and Children. (10th ed.).New Delhi: Mosby Publication, (2009)
- Baskarraj E.D. (2010). "Nursing research & Biostatics". Emmess medical Publishers, Pg 132-136.

#### ⇔ NET REFERENCES

- <https://www.researchgate.net>
- <https://www.ijarnd.com/>
- <https://www.worldwidejournals.com/>
- <http://medical.advancedresearchpublications.com/>
- <https://pubmed.ncbi.nlm.nih.gov/27535654/>
- <https://brainly.in/question/2344758>
- <http://www.ru/res/4/phtzmz>
- <http://www.mydr.com.au/asthma/buteyko/>
- <http://www.medicalencyclopedia>
- <http://www.2009medicine.com>.
- <http://www.mja.com>
- <http://www.nzma.org.nz/>
- <http://www.aaaai.org>
- <http://www.asthmaassistant.com>