

**EFFECTIVENESS OF HELPER SKIN TAP TECHNIQUE
ON PAIN DURING INTRAMUSCULAR INJECTION
AMONG INFANTS ATTENDING IMMUNIZATION CLINIC
AT URBAN HEALTH POST, SELLUR, MADURAI.**

**M.Sc (NURSING) DEGREE EXAMINATION
BRANCH – IV COMMUNITY HEALTH NURSING
COLLEGE OF NURSING
MADURAI MEDICAL COLLEGE, MADURAI - 20**



A dissertation submitted to
**THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY,
CHENNAI – 600 032.**

Inpartial fulfillment of requirement for the degree of
MASTER OF SCIENCE IN NURSING

APRIL – 2013

CERTIFICATE

This is to certify that this dissertation titled, “EFFECTIVENESS OF HELPER SKINTAP TECHNIQUE ON PAIN DURING INTRAMUSCULAR INJECTION AMONG INFANTS ATTENDING IMMUNIZATION CLINIC AT URBAN HEALTH POST, SELLUR, MADURAI.” is a bonafide work done by Miss. MANJU.R, College of Nursing, Madurai Medical College, Madurai - 20, submitted to the Tamilnadu Dr.M.G.R. Medical University, Chennai in partial fulfillment of the university rules and regulations towards the award of the degree of Master of Science in Nursing, Branch IV, Community health Nursing under our guidance and supervision during the academic period from 2010 – 2012.

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ACKNOWLEDGEMENT

I consider it as a privilege to express my gratitude and respect to all those who helped me in accomplishing this task successfully. The satisfaction and pleasure that accompany the successful completion of any task would be incomplete without mentioning the people who made it possible.

First of all I praise and thank my **God Almighty** with reverence and sincerity for his heavenly choicest blessings and abundant grace, which strengthened me in each and every step throughout this endeavor.

My sincere thanks to **Dr.N.Mohan, M.S., F.I.C.S., F.A.I.S., Dean, Madurai medical college, Madurai**, for granting me permission to conduct the study in this esteemed institution.

I express my heartfelt and faithful thanks to **Mrs.S.Poonguzhali, M.Sc(N), M.A, M.B.A, Ph.D., Principal I/C, College Of Nursing ,Madurai Medical College, Madurai** for her untiring intellectual guidance, her expertise and prompt suggestions concern, patience and keen interest in this study.

My sincere thanks to **Mrs.J.Alphonsa Maschrenas, M.Sc(N)., Reader in Nursing, College of nursing, Madurai medical college, Madurai** for rendering her greatest help in sharing her valuable thoughts and guiding me for the completion of the study.

I thank **all faculties of college of Nursing, Madurai medical college, Madurai** for their guidance and support for the completion of my study.

My sincere thanks to **Ms.Jenette Fernandes M.Sc.(N)., Former Principal, College of Nursing, Madurai Medical College, Madurai** for her enlightening ideas, support and reassurance in completing the study.

I express my thanks to **Mrs.S.Jahitha, M.Sc(N)., Former Lecturer, Community health nursing dept., College of Nursing, Madurai medical college, Madurai** for her valuable guidance, support and reassurance in completing the study.

I express my thanks to **Mr.S.Kalaiselven, M.A, B.I.L.Sc., Librarian,** College of nursing, Madurai Medical College, Madurai, for his cooperation in collecting the related literature for this study.

My deep sense of gratitude to **Dr. Subramanian,M.B.B.S., D.P.H, City Health Officer,** Madurai Corporation, **Dr. Beula Devi, M.B.B.S., Medical officer,** Urban health post, Sellur, Madurai for giving permissions and also for her valuable suggestions and guidance to complete this study

I wish to express my sincere thanks to **Mr.Mani Velusamy, M.Sc., Lecturer in Statistics,** for extending necessary guidance for statistical analysis.

I also thank **Dr.C.Raju, M.A., M.Ed., M.Phil., Ph.D.,** and **V. Mohan, M.A., M.A., M.Phil., Ph.D.,** English Literature and Tamil Literature, for their help in editing the tool and dissertation.

I express my thanks to **Mr.R.Rajkumar** and **Mr.Samsutheen,** for her support for the completion of the study I thank for their help and untiring work in the preparation for this study.

My affectionate thanks to my lovable parents **Mr.G.Raja** and **Mrs.R.Chinnonnu,** who has been the backbone of my endeavors. And family members **Mr. G.Jeeva, Mrs. J.Geetha, Mr.R.Prabakaran, J.Monika** for their care, assistance and support throughout this study which cannot be expressed in words.

Gratitude is extended to my friends and colleagues **Ms.J.Subashree, Mrs.R.K.Sathya, Ms.S.Saranya, Ms.J.Rose Infantina, Mrs.G.Selvarani, Mrs.V.Sheela, Mrs.P.Tamil Selvi** who provided encouragement, who listened to, sometimes counselled and always supported me during my studies.

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ABSTRACT

Newborns and young infants routinely experience pain associated with commonly used invasive procedures. The main objective of the study is to evaluate the Effectiveness of Helfer skin tap technique on pain during intramuscular injection among the infants undergoing immunization. Modified widenbach's prescriptive theory was used. Quantitative approach with True experimental design - Post test only design was adopted for this study. With the use of simple random sampling technique 30 infants were assigned to experimental group, and 30 were in control group (n=60). Helfer skin tap technique was given to the experimental group. In this technique gentle tapping was given for 5 seconds before immunization, during administering injection 3 taps were given, and after administering the injection tapping was given for 5 seconds. The usual standard technique was given to the control group. Consequently, the pain level was measured by FLACC (Face, Legs, Activity, Cry, Consolability) pain scale. Result revealed the control group mean (7.36) is higher than the experimental group mean (4.43) of the infants. The obtained 't' value is 11.78, at $p < 0.001$ level of significance. There was no significant association between pain level among experimental group and baseline variables. The study concludes that experimental group experienced less pain than control group. Hence, the Helfer skin tap technique had effect on reducing the pain during Intramuscular injection.

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Introduction

CHAPTER - I

INTRODUCTION

*“First love is a kind of vaccination which saves a man from
Catching the complaint of second time”*

- *Honore de Balzac*

Injections of any kind can hurt! The word “pain” is derived from the Latin word “Poena” which means punishment, which is in turn derived from the Sanskrit root ‘pu’, meaning purification. Pain is a common and an ever present sensation for children and adult. Every child has his or her own perception of pain. Newborns and young infants routinely experience pain associated with commonly used invasive procedures such as blood sampling and intramuscular injection, immunizations, and heel lancing procedure etc ., Pain is a subjective experience, infants and young children respond to pain with behavioral reactions that depend on their age and cognitive processes. Since pain was deemed the fifth vital sign, proper evaluation and management of this symptom has become an essential element of nursing practice. Moreover, pain is a source of concern and distress for new parents and may disturb mother–infant bonding. A number of factors influence the pain perceived by the child, including maturation of the nervous system, the child’s developmental stage, and previous pain experiences. Newborns and infants develop a memory of pain.

Pain management is one of the main facets of nursing care. Most nurse clinicians hear on a frequent basis, “Please do not give me a “shot.” Being able to provide patients with a less painful experience is a standard for nursing care. Medical procedures cause anxiety, fear, and behavioural distress for children and their families, further intensifying their pain and interfering with the procedure. Medical procedures, particularly injections are among the most fearful experiences reported by children. Immunization is an important part of health promotion and disease prevention strategy for all children. Report from children, parents and nurses consistently indicate that many children do indeed fear of the “shot”. A child’s anxiety and fear of a procedure and actual pain experience during the procedure often are manifested by the child’s distress behaviour such as crying and refusal to cooperate.

Vaccines are regarded as one of medicine's greatest achievement. Since the implementation of the immunization programme worldwide there has been a substantial reduction in both morbidity and mortality caused by infectious diseases. The great public health achievement happened in development and administration of immunization among the 20th century and their positive impact on disease prevention. Immunization is one of the best buys in community health and one of the most cost-effective health interventions. The pain associated with immunizations is a source of anxiety and distress for infants receiving the immunizations, their parents, and the providers who must administer them. 12 billion injections are given annually and that 5% are childhood vaccinations. In India 2010, census states that the surviving infants are 25,804,000. And infant mortality rate (per 1,000 live birth) – is 48 as per WHO - 2010.

The injection process has been divided into 2 time periods, that is, before the injection and during the injection. Aspects of the immunization before the injection that are reviewed include preparing the child and family, site selection for the injection, selection of needle length and gauge, and specific properties of the injectate. Elements during the injection itself that are reviewed include parental demeanor, use of sucrose, and use of topical anesthetic agents, non pharmacologic and physical strategies, and specific aspects of administration technique.

It is estimated that 25% of adults have fear of needles and in most cases their fear developed in childhood (Canadian medical association journal). If not addressed, this pain can lead to pre procedural anxiety in the future, needle fears and health care avoidance behaviours, including non adherence with vaccination schedules. Rather than developing a tolerance for pain, if exposed to repeated procedures, children may actually develop a conditioned anxiety response that manifests as “pre-procedural anxiety”. Approximately 10% of the adult population have needle phobia, a condition that develops in childhood following a negative medical experience involving an injection. Over time, the phobia may become generalized to all medical situations. Adults who have needle fears or needle phobia tend to avoid preventive medical care for themselves and may avoid immunizations for their children. While the immunization experience can be anxiety-provoking for the child and for the parent, it is also an opportunity for parents and the child (of preschool age and older) to learn coping strategies that will be useful in any stressful situation.

Interventions aimed at improving the health and wellbeing of children may also cause pain and anxiety. Interventions would ideally be inexpensive, non invasive, and rapidly applied to improve paediatric pain control. Inadequate pain control during medical procedures can have long-term harmful effects, especially among very young children. Pharmacotherapy has been shown to be effective in reducing some of the pain and anxiety associated with medical procedures but it may come with adverse side effects. There are various Complementary therapies and non pharmacologic methods used for pain management that can be used with analgesics, such as cognitive and behavioral strategies, Distraction technique, sucrose solution, breast feeding, breathing exercises etc.,

The importance of pain avoidance in the delivery of health care is recognized in the medical principle first 'does no harm'. It is an art of nursing to implement pain relieving measures. Relaxation of muscle reduces pain. There are various techniques to keep the muscle relaxed, while giving injections such as applying manual pressure, stroking at the injection site, rhythmic taping over the injection site, and cutaneous stimulation. This gives the child a chance to recover, feel mastery and remember coping. Cutaneous stimulation, electro analgesia, imagery, relaxation technique, applying manual pressure, and distraction are non-pharmacological techniques for reducing pain.

Providing pain relief is considered a most basic human right. Furthermore, untreated pain leads to dissatisfaction with the immunization experience and contribute low vaccine uptake. So it is the responsibility of the nurse to use most effective approach to pain control. Nurses are ethically and legally responsible for managing pain and reliving suffering. Effective pain management not only reduces physical discomfort, but also improves quality of life. So, nurses want to modify our traditional practice in order to control the pain of infants. In this various techniques are there such as pragmatic technique and Helfer skin tap technique. Helfer skin tap technique means tapping over the intramuscular injection site with the palmar aspect of fingers 5 seconds before the procedure, 3 taps during the procedure and follow up gentle tapping for 5 seconds after the procedure. The tapping helps to relax the muscle there by it reduces the pain.

1.1 NEED FOR THE STUDY

The infant's body is the most super sensitive, delicate and susceptible form which can be easily harmed if not taken care of. The triad problems, poverty, population explosion and environmental stress are great threat towards child's health in developing countries. Infectious diseases are common in children. Better nutrition, Immunization, education, and family planning are the essential aspects to improve child's health.

World scenario states that 76% of infants were fully immunized. Indian scenario represents that 431,033 infants were fully immunized in the year of 2011-2012 according to Ministry of Health and Family welfare, India. The immunisation coverage is increased DPT1 coverage is 83%, DPT2 coverage is 72%at 2010 by UNICEF and WHO. Tamilnadu scenario depict that the immunization coverage is increased to 91% by Department of Public health and Preventive Medicine. Despite of this coverage Hib (Haemophilus influenza type b) kills more than 370,000 children under five every year; nearly 20% of these children die in India. 2.95% of deaths were due to Pneumonia. A recent study shows that Hib vaccine could prevent about 1/3 of life-threatening cases of bacterial pneumonia, the leading infectious cause of death in Asian children.

Immunization plays a major role in reducing infant mortality rate. WHO has declared that Year 2012, as a "Year of Intensification of routine Immunization" in South East Region. In the year of 2011, our Government of India has recently launched Pentavalent vaccine in Tamil Nadu and Kerala. This Pentavalent has reduced number of pricks from 9+1 (3 each for DPT, HepB and Hib + HepB birth dose). But the pain during immunization is the great source of distress to children as well as Parents.

Family members also are often quite concerned about immunization pain. Meyerhoff.et al., in an attempt to quantify parental concern regarding multiple immunizations, developed a "willingness-to-pay" method for estimating that distress. According to their survey of 294 families drawn from a random sample of 26 centers around the United States, parents reported they would be willing to pay an average of

\$57 to avoid a 2-injection visit and nearly \$80 to avoid a 3- or 4-injection visit. Regardless of the specific numerical sum parents reported and the veracity of their actual willingness to pay it, the data of Meyerhoff. et al., indicate significant parental concern about the pain associated with immunizations.

About 10% of the population avoids vaccination and other needle procedures because of needle fears. Over time, this kind of phobia may become generalized to all medical situations. Adults who have needle fears or needle phobia tend to avoid preventive medical care for themselves and may avoid immunizations for their children. Subsequently, assessment of pain in the preverbal child is difficult, especially in the neonate and infant, because the most reliable indicator of pain is self report, is not possible. So the evaluation must be based on physiologic changes and behavioral observations such as vocalization, facial expressions, body movements and crying.

In the medical practice, Intramuscular injection is one of the most frequent procedures done almost every day in hospital settings. An evidence-based review done by Schechter,et al., in 2004 concluded that there is limited research available to address the pain associated with the painful procedure most commonly performed among pediatric patients. Research has demonstrated that there is reduced pain in giving injections into a relaxed muscle. Dietrich, mentioned performing a skin tap while inserting the needle at the injection site, relaxes the muscle. Brentnall, an Australian physician, advocated using a skin tap technique into a muscle by “smartly tapping the injection site with the side of the hand immediately before giving the injection”.

Joanne Kieffer Helfer, BSN, RN, MICN, CEN, Sonoma State University, Modesto, California mentioned that simultaneously inserting the needle and stimulating the muscle fibers is crucial for success. A pilot research study, conducted in 1998 on 74 adult patients in an emergency department, demonstrated that the technique worked. Thirteen nurses gave the patients two injections of the same pharmaceutical mix, using the same gauge needle; one injection was done using standard technique, the other using the Helfer Skin Tap Technique. Nurses were asked to compare them using a visual analogue scale. Ninety-six percent found the skin tap

method to be less painful. Eighty-eight percent perceived the skin tap technique as totally painless. Four percent of all patients perceived both injections as painless. On a scale of 0 to 10, most patients rated the skin tap technique as 0, compared with an average of 3 or 4 for the standard technique. Most patients commented that they "didn't feel it" in relation to the skin tap technique.

Pain perception has both physiologic and psychologic components, and it is accepted that infants recognize and respond to painful stimuli. However pain is a sensation with strong emotional associations, and the relationship of consciousness of the infant to the perception of pain has not been agreed. Therefore the term nociception (the perception by the nerves of injurious influences or painful stimuli) is used. Therefore, during infancy, distraction and anticipatory preparation are not effective in decreasing pain and fear during painful procedures. Because these distraction techniques are not influence on nerve injury only on pain reduction by means of diversion.

Although, Helfer skin tap technique was used to reduce pain during intramuscular injection. Helfer skin tap technique uses basic concepts of pain theory. Mechanical stimulation of the large-diameter muscle fibers diminishes the influence of small, pain-carrying fibers. There are two basic points: muscle relaxation, which physically decreases the resistance to needle entry, and diversion, by simultaneous tapping of the skin while the needle is inserted and removed. By means of this technique the pain level was reduced. A light tap will not have the same effect, and a slap may sting the skin. Tapping several times helps to relax the muscle more and counting to three helps the nurse synchronize the muscle tap with the needle insertion and helps to standardize the technique. Needle entry must be done simultaneously with a skin tap to ensure painless injection.

Above mentioned studies shows that immunization is a stressful experience for children as well as parents. During the field of experience, the researcher found that vaccine administration causes iatrogenic pain in children. The researcher also felt that there is a paucity of studies in this area in Indian setup. The immunization clinic of Urban health post, Sellur receives an average of 20 children each day for immunization. Hence, Helfer skin tap technique is helpful in reducing the pain

during intramuscular injection. The skin tap technique produce a relaxation of muscles and feels comfort while receiving intramuscular injection. Considering all the above facts the researcher found that it is very essential to conduct this study to determine the effectiveness of Helfer skin tap technique on pain during intramuscular injection among infants attending immunization clinic at urban health post, Sellur.

1.2 STATEMENT OF THE PROBLEM

A study to evaluate the effectiveness of Helfer skin tap technique on pain during intramuscular injection among Infants attending immunization clinic at Urban health post, Sellur, Madurai.

1.3 OBJECTIVES

- To assess the pain level of Infants during intramuscular injection in immunization clinic with Helfer skin tap technique among experimental group.
- To assess the pain level of Infants during intramuscular injection in immunization clinic with usual standard technique among control group.
- To compare the pain level of infants during intramuscular injection in experimental and control group.
- To associate the pain level of infants among experimental group with selected baseline variables.

1.4 HYPOTHESES

H₁: There will be a significant difference in the pain level between Helfer skin tap technique and usual standard technique during intramuscular injection.

H₂: There will be significant association between pain level of infants among experimental group during intramuscular injection with selected baseline variables.

1.5 OPERATIONAL DEFINITION

Effectiveness

It refers to the ability of Helfer skin tap technique in reducing the pain as measured by the scores on FLACC (Face, Legs, Activity, Cry, and Consolability) pain scale.

Helfer skin tap technique

It refers to, tapping over the intramuscular injection site (Antero – lateral aspect of thigh) with the palmer aspect of fingers 16 times approximately 5 seconds before the procedure, 3 taps during the procedure and after administration of injection gentle tapping was given for 5 seconds.

Pain

It refers to, unpleasant sensation experienced by the infants during intramuscular injection which is elicited by various expressions like crying, mourning, and facial grimaces. This is measured by FLACC (Face, Legs, Activity, Cry, and Consolability) pain scale.

Intramuscular injection

It refers to administration of Pentavalent vaccination through Vastus Lateralis site.

Infants

It refers to the infants in the age group of 1 month to 12 months.

Immunization clinic

It refers to, the place where the infants receive Pentavalent vaccine.

Urban health post

It refers to, the place located in Sellur, Urban area where the immunization clinic is conducted, and other curative, preventive services delivered people.

1.6 ASSUMPTION

- Every child is unique and responds in a unique way during injection.
- Helfer skin tap technique will reduce the intramuscular injection pain.
- Relaxation of muscles reduces the pain

1.7 DELIMITATION

The study is limited to

- Infants receiving Pentavalent vaccination.
- Data collection period limited to 4 weeks

1.8 PROJECTED OUTCOME

This study will reveal the level of Pain experienced by the infants who undergo intramuscular injection during immunization at Urban health post, Sellur, Madurai. It will give strong evidence that the infants who receive Helfer skin tap technique will experience reduced levels of pain compared to the infants who take usual standard technique. In addition, the results will motivate the health care workers to use this non pharmacological and cost effective technique to reduce the pain during Intramuscular injection.

*Review of
Literature*

CHAPTER - II

REVIEW OF LITERATURE

A literature review is a body of text that aims to review the critical points of knowledge on a particular topic of research. (American Nurses Association, 2000). The literature review is used in two ways by the research community. The first refer to the activities involved in identifying and searching for information on a topic and the second one is developing an understanding of the state of knowledge on the topic.

This chapter deals with two parts:

Section A : Review of literature

Section B : Modified Conceptual framework on Widenbach's Prescriptive theory

SECTION - A

The literature has been organized under following sections:

- PART I** : Literature related to assessment of pain during Intramuscular injection
- PART II** : Literature related to physical interventions on pain during intramuscular injection
- PART III** : Literature related to psychological interventions on pain during intramuscular injection
- PART IV** : Literature related to skin tap technique on pain during intramuscular injection

2.1 LITERATURE RELATED TO ASSESSMENT OF PAIN DURING INTRAMUSCULAR INJECTION

Rosenbloom et al., (2011) conducted a prospective cohort study on Parental Sex and Age: Their Effect on Pain Assessment of Young Children. A total of 61 couples were examined. The investigators provided instructions regarding the use of a visual analogue scale (VAS) to both parents at the same time using a standard information kit. Both parents were asked to rank the child's pain on a 100-mm VAS. The result conclude that there was no significant difference between mothers' VAS (59.1 ± 27.4) compared with father's VAS (57.9 ± 26.3) ($P = 0.75$).

Rasha Srouji, Savithri Ratnabalan and Susan schneweiss, (2010) conducted a study on Pain assessment and non pharmacological management. The researcher concluded that pain perception in children is complex, and is often difficult to assess. A review of pain assessment scales that can be used in children across all ages Neonatal Facial Coding System (NFCS), Neonatal Infant Pain Scale (NIPS) , The Premature Infant Pain Profile (PIPP), Crying Requires Increased Vital Signs Expression Sleeplessness (CRIES), Maximally Discriminate Facial Movement Coding System (MAX) were used for neonates, The Faces Legs Activity Cry Consolability Scale (FLACC), The COMFORT scale used for infants. Observational Pain Scale (OPS), The Toddler-Preschooler Postoperative Pain Scale (TPPPS), were used for toddlers. The Child Facial Coding System (CFCS) , Poker Chip Tool , Ouchers scale used for preschoolers. Visual Analogue Scale (VAS), Paediatric Pain Questionnaire were used for Schoolers. The distractions techniques are provided by nurses to manage pain in children is most effective when adapted to the developmental level of the child.

Anna Taddio.et al., (2009) conducted a systemic review on inadequate pain management during routine childhood immunization: the nerve of it. MEDLINE, Psyc INFO, EMBASE, CINAHL and the Cochrane central register for primary research and review articles published from beginning of October 2008 data bases were searched for the study. Result showed that on average younger children exhibit more distress and pain than do older children. More than 90% of toddlers and 50% of

primary school children exhibit severe distress during immunization. Individual child factors such as developmental level, temperament may have a considerable effect on children's immunization.

Harrison, D., Loughnan, P., and Johnston, L. (2006) conducted a postal survey on current pain assessment and procedural pain management practices in neonatal units in Australia. The survey comprised questions relating to pain assessment scores, pain reduction strategies for minor painful procedures and the use of articulated policies relating to procedural pain management. Surveys were sent to 181 eligible organizations, and 105 of these were returned (58%). Six units (6%) used pain assessment scores on a regular basis, and 16 units (15%) had an articulated policy directing pain management practices during painful procedures. Non-nutritive sucking and various nursing comfort measures were the pain reduction strategies most frequently used during minor painful procedures. Result suggested that twenty-four units (24%) used sucrose or other sweet-tasting solutions during procedures. Breast-feeding during venepuncture, heel lance and intramuscular or subcutaneous injection was infrequently practiced and topical anesthetic agents were rarely used.

Pat Hummel. (2006) state that Neonatal pain assessment has received much attention over the past decade. Behavioural indicators of pain include facial action, body movement and tone, cry, state/sleep, and consolability. Physiological indicators of pain include increased heart rate, respiratory rate, and blood pressure, as well as decreased heart rate variability and oxygen desaturation. Pain assessment in neonates is difficult in neurologically compromised, chemically paralyzed, and non-responsive infants. Multiple pain assessment tools are summarized. Pain assessment and management protocols are delineated.

Elizabeth, A., Stanford, Christine, T., Chambers, Kenneth, D., Patrick, J., and Keri-Leigh Cassidy. (2005) conducted a study on "Ow!": Spontaneous Verbal Pain Expression among Young Children during Immunization. Fifty-eight children between the ages of 4 years 8 months and 6 years 3 months (67% female) were videotaped while receiving their routine preschool immunization. Children provided self-report of pain using a 7-point faces pain scale. Fifty-three percent (53%) of children used verbalizations spontaneously to express their pain. The modal verbalization was the interaction "Ow!," which expressed negative affect and was specific to the experience of pain.

Catherine B. McClellan, Lindsey L. Cohen, and Karen E. Joseph. (2003) conducted a study on Infant Distress during Immunization. A multimethod assessment of distress was conducted to investigate infants ($N = 37$) undergoing routine immunizations. Measures of infant distress included Parent report, nurse report, infant heart rate, and an observational measure of infant distress. Parents rated their infant's distress and pain significantly higher than did nurses. Observational and physiological ratings of infant distress were found to vary significantly by phase, and there were no correlations between adult ratings of pain and distress and physiological ratings. Findings suggest that infant procedural distress can be assessed in a number of manners. The discordance between these measures emphasizes the need for multimethod assessment of paediatric procedural distress in both research and clinical settings.

2.2 LITERATURE RELATED TO PHYSICAL INTERVENTIONS ON PAIN DURING INTRAMUSCULAR INJECTION

John W. Harrington. et al., (2012) conducted a prospective, randomized, placebo-controlled trial study on Effective analgesia using Physical interventions for Infant Immunizations 2- and 4-month-old 230 infants were selected. Infants were assigned into 4 groups (2 x 2) receiving either 2 mL of water or 2 mL of 24% oral sucrose and then either standard-of-care comfort measures by parents or intervention with the 5 S's (swaddling, side/stomach position, shushing, swinging, and sucking) immediately post vaccination. Results revealed significantly different mean pain scores between study groups with the exception of the 5S's and 5S's with sucrose groups. These 2 groups had lower similar mean scores over time, followed by sucrose alone, then control. The same trend was found with the proportion of children crying as with the mean pain score outcome measure.

Jen-Jiuan Liaw. et al., (2011) conducted a randomized clinical trial on Non-nutritive Sucking and Oral Sucrose Relieve Neonatal Pain during Intramuscular Injection of Hepatitis Vaccine. 165 (gestational age, ≥ 36 weeks) infants received IM injections and were randomized to three treatment groups: non-nutritive sucking (NNS), 20% oral sucrose, or routine care. Pain was measured by the Neonatal Facial

Coding System, physiological signals by electrocardiogram monitors, and cry duration using a stopwatch. Result shown that Pain was significantly lower among infants in the Non Nutritive Sucking ($B = -11.27$, $P < 0.001$) and sucrose ($B = -11.75$, $P < 0.001$) groups than that in controls.

Mary-Ellen Hogan. (2011) conducted a single blind, randomized controlled trial study on effectiveness of tactile stimulation (rubbing before 15 seconds and after 15 seconds) when added to a combination of pain reducing interventions in infants undergoing immunization. 120 infant's ages 4-6 months were participated in this study. Result showed that Characteristics did not differ ($p > 0.05$) between those allocated to tactile stimulation and usual care groups. Mean MBPS pain scores did not differ between groups: 8.2 (1.1) vs. 8.0 (1.3), respectively ($p = 0.57$).

Pillai Riddell ,RR . et al., (2011) conducted a systemic review to assess the efficacy of non-pharmacological interventions for infant and child (up to three years) acute pain, excluding breast milk, sucrose, and music. Fifty-one studies, with 3396 participants, were analyzed. They searched CENTRAL in The Cochrane Library (2011, Issue 1), MEDLINE (1966 to April 2011), EMBASE (1980 to April 2011), Psyc INFO (1967 to April 2011), Cumulative Index to Nursing and Allied Health Literature (1982 to 2011), Dissertation Abstracts International (1980 to 2011) and www.clinicaltrials.gov. The result revealed that the largest Standard Mean Deviation for treatment improvement over control conditions on pain reactivity were: non-nutritive sucking-related interventions (preterm: SMD -0.42; neonate: SMD -1.45), kangaroo care (preterm: SMD -1.12), and swaddling/facilitated tucking (preterm: SMD -0.97). For immediate pain-related regulation, the largest SMDs were: non-nutritive sucking-related interventions (preterm: SMD -0.38; neonate: SMD -0.90), kangaroo care (SMD -0.77), swaddling/facilitated tucking (preterm: SMD -0.75), and rocking/holding (neonate: SMD -0.75).

Tisvy Thomas, Asha P Shetty and Praveen V Bagali. (2011) conducted a post only control group study on Role of Breastfeeding in Pain Response During Injectable Immunisation among Infants. The samples were 40 infants receiving the 1st, 2nd and 3rd doses of DPT immunization in the age group of 5 – 15 weeks selected by Non probability purposive sampling technique. Breastfeeding was given

by the mother in sitting position and the infant in lying position on mother's lap while administering injectable immunization. The immunization was administered 2 minutes after the initiation of breastfeeding. The pain score assessed by using the modified neonatal infant pain scale. The mean pain score 4.7 of the 1st minute in the experimental group was lower than the mean pain score 6.6 in the control group, the mean pain score at 5th minute in the experimental group was 0.55 which is lower than that of the control group score of 1.95.

Barnhill , BT., Holbert, Jackson and Erickson. (2010) conducted a study on using pressure to decrease the pain of intramuscular injections. The subjects were 93 patients who had dorso gluteal intramuscular injections of immune globulin at a county health department. Forty-eight received the pressure treatment and 45 received a standard injection in which no pressure was applied. Mean pain intensity on a 100-mm visual analogue scale, adjusted for differences in injection volume, was 13.6 mm for the experimental group and 21.5 mm for the control group ($P=0.03$). The findings suggested that simple manual pressure applied for 10 sec. prior to the injection site is a useful technique to decrease injection pain.

Denise Harrison. et al.,(2010) conducted a systemic review on Efficacy of sweet solutions for analgesia in infants between 1 and 12 months of age. Of the 695 studies identified, 14 (Randomized controlled trials) RCTs with 1674 injections met the inclusion criteria. Sucrose or glucose, compared to water or no treatment decreased crying during or following immunization in 13 of the 14 studies. Infants receiving 30% glucose (three trials, 243 infants) had a decreased relative risk in crying incidence following immunization.

Dilli,D., Kucuk,IG., and Dallar,Y. (2009) conducted a study on Interventions to reduce pain during vaccination in infancy. A consecutive sample of 243 children between age 0 and 48 months were selected. A total of 158 infants were randomly assigned to breast-feeding or no breast-feeding during immunization, and 85 children were randomly assigned to receive 12% sucrose solution, lidocaine - prilocaine cream, or no intervention. All children were evaluated for crying time and pain score using the Neonatal Infant Pain Scale (NIPS) for those under age 12 months and the Children's Hospital of Eastern Ontario Pain Scale (CHEOPS) for those over age 12

months. The study result suggest that Breast-feeding in infants under age 6 months and use of sucrose or lidocaine-prilocaine in children age 6 to 48 months significantly reduced crying time and pain scores compared with controls. No difference in outcome was seen between the sucrose and lidocaine-prilocaine treatment groups.

Ipp, M. et al., (2009) conducted a Single-center, double-blind, randomized clinical trial study on Order of vaccine injection and infant pain response. Healthy 120 infants 2 to 6 months of age were selected. The Modified Behavioural Pain Scale (MBPS), using videotaped recordings of the procedure. In addition, parents rated pain using a 10-cm visual analogue scale (VAS). Crying (yes/no) was also measured. 60 received the DPTaP-Hib vaccine first and 60 received the PCV (Pneumococcal conjugate vaccine) first. Infant characteristics did not differ between groups. The result suggested that the DPTaP-Hib vaccine caused significantly less pain ($P < .001$) than the PCV, as assessed by the Modified Behavioural Pain Scale, Visual Analogue Scale, and crying.

Lovepreet Kaur, Sukhwinder Kaur, Raman Kalia and Bhavneet Bharti. (2009) conducted a randomized control trial on Analgesic effect of breast feeding in infants during immunization Injections. A total of 216 infants receiving DPT and its combinant vaccines were randomly distributed into control and experimental group. Infants in the control group ($n=106$) were administered vaccine without breast feeding and the infants in experimental group ($n=110$) were administered vaccine during breast feeding. Pre-vaccination and post-vaccination behaviour of infants was scored on Modified Behavioural Pain Scale. Cry duration was recorded. The net pain scores and duration of cry was compared among the two groups. The result suggest that Significant difference in behavioural response of the infants was observed among the infants, $t= 5.5$ at $df = 214$ ($p<0.01$).

Taddio, A. et al.,(2009) conducted a systemic review of randomized trials on experimental and quasi randomized controlled trials on Physical interventions and injection techniques for reducing injection pain during routine childhood immunizations in children 0 to 18 years of age, Nineteen Randomized Controlled Trials involving 2814 infants and children (0-18 years of age) were included in the systematic review using validated child self-reported pain or assessments of child

distress or pain made by others (parent, nurse, physician, observer). The study sought to determine the effects of: (1) different formulations of the same vaccine; (2) position of the child during injection; (3) intramuscular versus subcutaneous injection; (4) cooling of the skin at the injection site with ice before injection; (5) stroking the skin or applying pressure close to the injection site before and during injection; (6) order of vaccine injection when 2 vaccines were administered sequentially; (7) simultaneous versus sequential injection of 2 vaccines; (8) vaccine temperature; (9) aspiration before injection; (10) anatomic location of injection; (11) aspects of the needle (gauge, length, angle of insertion, speed of injection); and (12) combinations of these interventions. All meta-analyses were performed using a fixed-effects model. The study conclude that Pain during immunization can be decreased by: (1) injecting the least painful formulation of a vaccine; (2) having the child sit up (or holding an infant); (3) stroking the skin or applying pressure close to the injection site before and during injection; (4) injecting the least painful vaccine first when 2 vaccines are being administered sequentially during a single office visit; and (5) performing a rapid intramuscular injection without aspiration.

Efe, E. et al.,(2007) conducted a study on the use of breast-feeding for pain relief during neonatal immunization injections. Sixty-six healthy infants for their second, third, or fourth-month immunization with intramuscular diphtheria, tetanus, and pertussis were randomized to be breast-fed before, during, and after the injection or to be given the injection according to routine clinic procedure (no breast-feeding). To assess the pain responses of the neonates during and after immunization, their heart rates, oxygen saturation levels, and length of crying. The crying time was shorter in the experimental (breast-feeding) group (M +/- SD duration, 35.85 +/- 40.11 seconds) than in the control group (M +/- SD duration, 76.24 +/- 49.61 seconds; $p = .001$). The heart rate and oxygen saturation levels were almost the same in both groups. The study result showed that breast-feeding, maternal holding, and skin-to-skin contact significantly reduced crying in infants receiving an immunization injection for diphtheria, tetanus, and pertussis.

Moshe Ipp, Anna Taddio, Jonathan Sam, Morton Goldbach, and Patricia C Parkin. (2007) conducted a randomized controlled trial study on Vaccine-related pain of two injection techniques. The subjects were 113 Healthy infants 4–6 months

of age receiving their routine DPTaP-Hib immunization. Interventions were Standard of care group: slow aspiration prior to injection, slow injection and slow withdrawal. Pragmatic group: no aspiration, rapid injection and rapid withdrawal. The result revealed that the Mean Modified Behavioural Pain Scale scores (95% confidence interval (CI)) were higher ($p < 0.001$) for the standard group compared to the pragmatic group, 5.6 (5 to 6.3) vs. 3.3 (2.6 to 3.9).

Pragya Pathak, Raman Kalia and Bhavneet Bharti. (2007) conducted a true experimental study on the Effect of needle gauge (23 G, 25G) on perception of pain intensity among infants receiving D.P.T. vaccination. 320 infants receiving DPT vaccine were vaccinated with 25G ($n=161$) or 23G ($n=159$) needle in the two randomized groups. Pre and post-vaccination behaviour of infants was scored on Modified behaviour pain scale (MBPS) and recorded on Video clips. The result revealed that Significant difference in behavioural response to pain was observed among infants in the two groups, $t = 4.25$, $df=318$, ($p < 0.01$). The results revealed that 23 G. needle causes less pain as compared to 25 G. needle.

Schechter, NL. (2007) conducted a systemic review on Pain reduction during paediatric immunizations; The limited available data suggest that intramuscular administration of immunizations should occur in the vastus lateralis (anterolateral thigh) for children < 18 months of age and in the deltoid (upper arm) for those > 36 months of age. Controversy exists in site selection for 18- to 36-month-old children. A number of studies suggest that the ventrogluteal area is the most appropriate for all age groups. Longer needles are usually associated with less pain and less local reaction. During the injection, parental demeanor clearly affects the child's pain behaviors. Excessive parental reassurance, criticism, or apology seems to increase distress, whereas humor and distraction tend to decrease distress. Distraction techniques vary with the age, temperament, and interests of the child, but their efficacy is well supported in the literature. Sucrose solution instilled directly into the mouth or administered on a pacifier reduces evidence of distress reliably in children < 6 months of age and should be used routinely. Although there is no perfect topical anesthetic available at this time, selective use for children who are particularly fearful or who have had negative experiences in the past is highly endorsed. Pressure at the site, applied with either a device or a finger, clearly reduces pain.

Chung, JW., Ng, WM., Wong, TK. (2002) conducted an experimental study on the use of manual pressure to reduce pain in intramuscular injections. Seventy-four subjects, participating in an immunization vaccination campaign, were recruited by convenience sampling. They were required to receive two doses of vaccines via intramuscular injections. One was given in a conventional way, i.e. without manual pressure being applied prior to the injection (control condition). The other was given with manual pressure being applied prior to the injection (experimental condition) for 10 seconds. The instrument for measuring the perceived pain intensity was the Pain Intensity Verbal Rating Scale (Cantonese). The mean manual pressure applied was 190.82 mmHg (SD=5.25). Results demonstrated a Subjects with manual pressure applied before injections reported lower pain intensity scores, whilst those without the application of manual pressure before injections reported higher pain intensity scores.

2.3 LITERATURE RELATED TO PSYCHOLOGICAL INTERVENTIONS ON PAIN DURING INTRAMUSCULAR INJECTION

Nicole M. Racine, Pillai riddell, David flora, Hartley garfiled and Saul Green berg. (2011) conducted a cross sectional analysis on A Longitudinal Examination of Verbal Reassurance during Infant Immunization: Occurrence and Examination of Emotional Availability as a Potential Moderator. The study was conducted with 606 infants (and their parents) at 4 different ages ($n=376$ at 2 months, $n=455$ at 4 months, $n=484$ at 6 months, and $n=407$ at 12 months). Results showed that Verbal reassurance was positively associated with infant distress across all four ages. Emotional Availability was only negatively related to verbal reassurance at 12 months of age. Emotional Availability was not a significant moderator at any age. Findings demonstrated consistent but small relationships between verbal reassurance and infant pain over the first year of life.

Dustin P. Wallace, Keith D. Allen, Amy E. Lacroix and Sheryl L. Pitner. (2010) conducted a randomized controlled unblinded study on the effect of a “cough trick” technique on self-reported pain of children receiving routine immunizations. 68 children of prekindergarten (ages 4 –5) or pre–junior high school (ages 11–13) were selected as sample. A single “warm-up” cough of moderate force, followed by a

second cough that coincided with needle puncture was given then assesses the pain level by Visual Analogue Scale. The result suggest that the strategy was acceptable, effective, and worth doing ($t_{40} = 3.5$; $P = .001$). Finally, of the 11 nurses who rated their satisfaction with the cough trick, 10 thought that the strategy was both acceptable and effective.

Chambers,CT. et al., (2009) conducted a systemic review on randomized controlled trials and quasi randomized controlled trials on effect of Psychological interventions for reducing pain and distress during routine childhood immunizations. Twenty Randomised controlled trials involving 1380 infants and children (1 month to 11 years of age) were included in the systematic review. MEDLINE, PsycINFO, EMBASE, CINAHL, and the Cochrane Central Register of Controlled Trials databases were searched. They examined the efficacy of 7 psychological interventions: (1) breathing exercises; (2) suggestion; (3) child-directed distraction; (4) parent-led distraction; (5) nurse-led distraction; (6) parent coaching; and (7) combined cognitive-behavioural interventions. Result revealed that Breathing exercises were effective in reducing children's self-reported pain (standardized mean difference [SMD], -0.43; $P = 0.01$) No evidence was found to support suggestion as a psychological intervention for reducing pain associated with paediatric immunization. Child-directed distraction was effective in reducing self-reported pain (SMD, -0.28; $P = 0.03$). Parent-led distraction was effective in reducing observer-rated distress (SMD, -0.50; $P = 0.002$), but not other measures of pain or distress. Nurse-led distraction was effective in reducing distress ratings as assessed by the observer (SMD, -0.40; $P = 0.005$). Combined cognitive-behavioural interventions were effective in reducing children's self-reported pain (SMD, -0.75; $P < 0.001$).

Lindsay S. Uman, Christine.T. Chambers, Patrick J. McGrath and Stephen Kisely, (2008) conducted a Randomized Controlled Trial on Psychological Interventions for Needle-related Procedural Pain and Distress in Children and Adolescents. The trials included 1,039 participants in treatment conditions and 951 in control conditions. A variety of cognitive-behavioural psychological interventions were given to the trials. The Outcome measures included pain and distress as assessed by self-report, observer report, behavioural/observational measures, and physiological measures. Result shown the largest effect sizes for treatment improvement over

control conditions were found for distraction, combined cognitive-behavioural interventions, and hypnosis, with promising but limited evidence for several other psychological interventions.

Patricia.J.Gousie. (2007) conducted a study on The Effects of Live Music on the Distress of Paediatric Patients Receiving Injections. An experimental group of 19 paediatric patients ranging from age 2 to 10 years were randomly selected to receive music therapy during their injections. The experimental group was then compared to a control group of 16 paediatric patients' ages 2 to 10 years who did not receive music therapy. Results implied that with the music the two, four, six, seven, eight, and ten-year-old demonstrated that they were get less behavioural stress during the injection. The three and ten year olds showed no changes and five-year-olds that represent 9 percent of the total subjects, demonstrated to have more distress with the music.

Sparks, L. (2003) conducted a quasi experimental study on compared the effect of two forms of distraction on injection pain in a convenience sample of preschool children. 105 children (53 girls and 52 boys) ages 4 to 6 years needing Diphtheria Pertusis Tetanus (DPT) immunizations were selected for the study. Study children were randomly assigned to receive one of three treatments with their DTP injection: touch, bubble-blowing, or standard care. Prior to injection, a measure of medical fear was obtained (Child Medical Fear Scale) and pain was measured through use of the Oucher Scale. Result showed that both forms of distraction touch and bubble-blowing, significantly reduced pain perception. There were no interaction effects of either age or gender.

Cassidy.KL.et al., (2002) conducted a study to evaluate the effectiveness of audiovisual distraction compared with a blank TV screen in the reduction of pain associated with intramuscular immunization. Five-year-old children (N = 62), undergoing diphtheria, polio, tetanus, and pertussis immunization were selected as samples. Intervention is an age-appropriate musical cartoon or a blank TV screen Subjects were randomly assigned to watch television (TV) (N = 29) or a blank TV screen (control) (N = 33) during immunization, and were videotaped. Immediately after the injection, the children rated their pain. The result showed that there were no significant group differences for any pain or distraction measures. The relative risk

estimate for clinically significant pain among the distraction group was 0.64 (range: 0.23-1.80). Higher levels measures of distraction (i.e., greater time looking at the TV screen) related to lower levels of pain on all three pain

French, GM., Painter, EC., and Coury, DL. (1994) conducted a randomized unblinded controlled study on the effect of an active distraction technique on pain in preschool children receiving Diphtheria, Pertussis, and Tetanus immunization. One hundred forty-nine children were selected for the study. The intervention is Children were taught to blow out air repeatedly during the injection, as if they were blowing bubbles. The result suggest that Children who were taught to blow out air during their shots had significantly fewer pain behaviors ($P < .04$) and demonstrated a trend toward lower subjectively reported pain ($P = .06$). There was no significant difference in the nurse or parent visual analog scale scores.

2.4 LITERATURE RELATED TO SKIN TAP TECHNIQUE ON PAIN DURING INTRAMUSCUALR INJECTION

Jose Rose Mary, Sulochana, and Shetty sheela, (2011) conducted a true experimental study on Effectiveness of skin tap technique in reducing pain during vaccination. The sample size is 60. The sample design was purposive sampling with random allocation of treatment using chit method with non replacement technique. The study results revealed that Majority, i.e. 24 (80%) of the infants in experimental group had mild pain whereas only 5(16.66%) of the infants in control group experienced mild pain. Independent t test was done to establish the effectiveness of skin tap technique. The t value was found to be 7.401 at $p < 0.001$. The study concluded that the pain response was less in experimental group.

Sr Serena (2010) conducted a one group pre test post test study on rhythmic skin tapping: An effective measure to reduce procedural pain during Intra Muscular injection. 60 adult patients were selected by purposive sampling technique. Each sample was given 4 injections in which two injections were given with usual standard technique and remaining with skin tap technique. Pain assessment was done soon after each injection by using 0-10 numerical pain intensity scale by a clinical

instructor in order to avoid personal bias of the investigator. Pulse rate also was checked with pulse oxymeter before and after each injection, since it was one of the baseline variables. The result suggests that The overall mean pain intensity by using skin tap technique (1.5 ± 1.1) was much lower than the pain with usual standard technique.

George.(2009) A quasi experimental study was conducted in St. John's Medical College, Bangalore to determine the effectiveness of Helfer skin tap technique on pain during intramuscular injection among adult patients. There were 60 subjects who received four injections in which two injections with standard technique and two injections with Helfer skin tap technique. Pain assessment was done using 6-10 numerical intensity pain scale. The mean pain score using Helfer skin tap technique (1.5 ± 1.1) was less than the pain scored by standard technique (2.9 ± 1.9). The pain level was significantly reduced in the experimental group ($p<0.001$) than the control group.

PART - B

2.5 CONCEPTUAL FRAMEWORK

The conceptual framework provides a conceptual perspective regarding the interrelating phenomena. It deals with abstractions (concepts) that are assembled by virtue of their relevance to a common theme. Conceptual models are useful in the research process in clarifying concepts and their associations, in enabling researchers to place a specific problem into appropriate context.

This study was based on the concept of Helfer skin tap technique reduces the pain level during intramuscular injection among the infants attending immunization clinic. The investigator adopted a Widenbach's prescriptive theory (1969) as the foundation for developing the conceptual framework.

Widenbach's theory is made up of three factors as follows:

- The central purpose
- Prescription
- Realities

Central purpose:

The nurse's central purpose defines that quality of health she desires to effect and she recognizes to be her special responsibility in caring for the patient. In this study the central purpose is to assess the effectiveness of Helfer skintap technique on pain during intramuscular injection among infants attending immunization clinic.

Prescriptions:

Once the nurse identified needs of the patient, she develops a prescription or plan of care. In this study, the investigator planned to provide a Helfer skin tap technique for experimental group.

Realities:

The realities are:

- Agent
- Recipient
- Goal
- Framework

THE CONCEPTUAL FRAMEWORK OF THIS NURSING THEORY CONSISTS OF FOLLOWING STEPS

- 1) Identification of the patients need for help
- 2) Ministration of the help needed
- 3) Validation that the action taken was helpful to patient

Identification:

The nurse identifies the patient need. In this study the need was pain during intramuscular injection among the infants.

Ministration:

Ministering to the patient, the nurses apply a comfort measure, or therapeutic procedure.

Ministration had three two components:

Prescription:

The nurse provides care to the patient. Helfer skin tap technique was given for the infants with experimental group. Usual standard technique was given for the control group. The procedure of Helfer skin tap technique means a gentle tapping was given for 5 seconds before the intramuscular injection, 3 taps was given during the intramuscular injection and after the intramuscular injection skin tap was given for 5 seconds. Usual standard technique was given for control group.

Realities:

Agent : It means who is the practising nurse. In this study the researcher is the agent.

Recipient : The patient's are the recipients of the nurse's action. In this study the infants were the recipients.

Goal : The goal is the desired outcome the nurse wishes to achieve. In this study the goal is to reduce the pain level of infants.

Framework : Framework consists of human, environmental, professional and organization facilities. In this study the framework is immunization clinic.

Validation:

After help has been ministered the nurse validates that the actions were indeed helpful. Here the investigator validate by means of post test assessment of pain level measured by FLACC (Face, Legs, Activity, Cry, Consolaility) pain scale both in experimental and control group. The experimental group had relaxed position, relaxed facial expression after Helfer skin tap technique. The control group had crying, tensed muscle, stiff joints, and difficult to console.

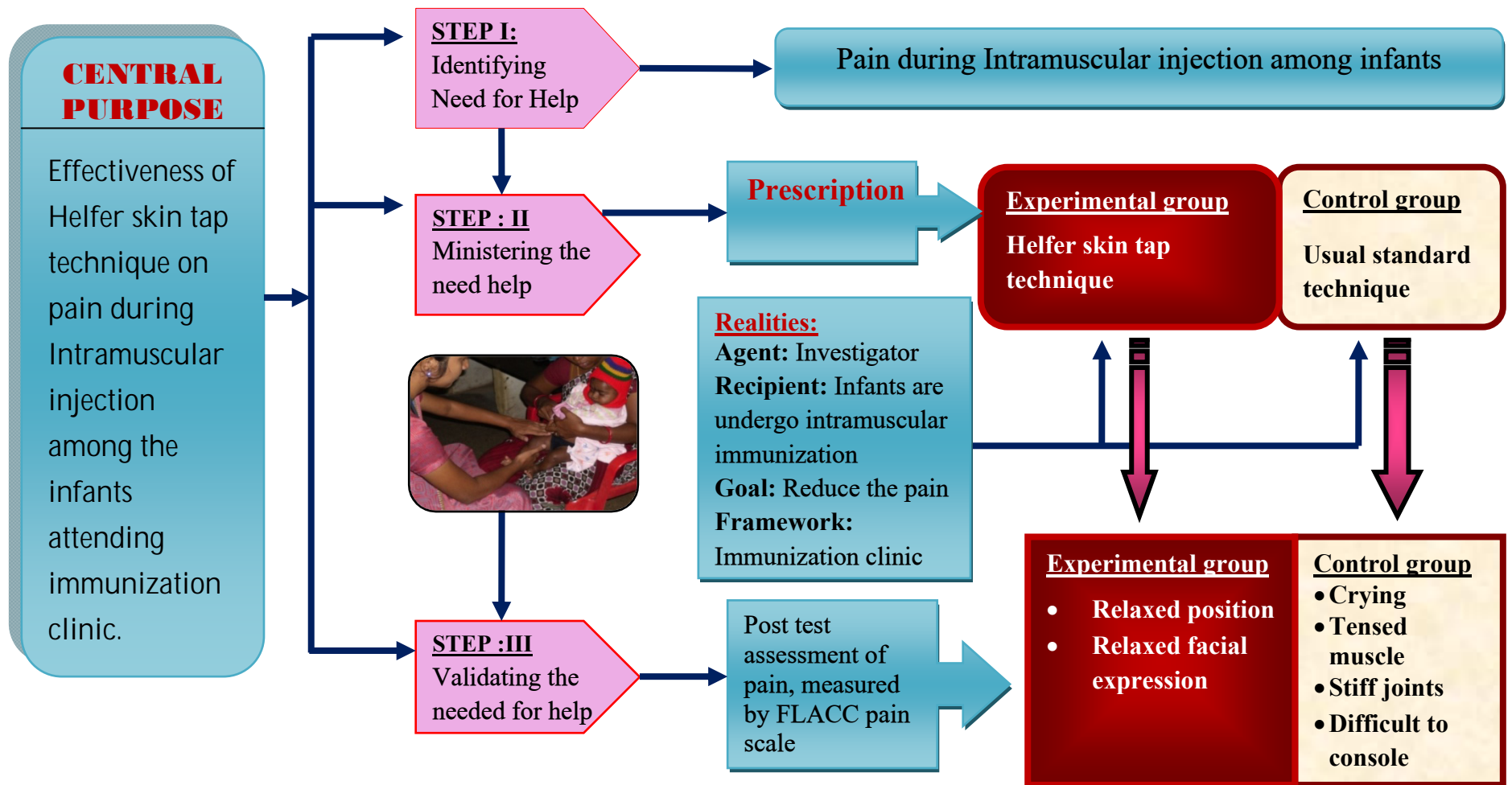


Fig: 1 MODIFIED WIDENBACH'S PRESCRIPTIVE THEORY (1969)

Methodology

CHAPTER - III

METHODOLOGY

This chapter includes research approach, research design, variables, setting, population, sample and sample size, sampling technique, development of the tool, content validity, pilot study, data collection procedure, plan for data analysis, and ethical consideration.

3.1 RESEARCH APPROACH

Quantitative approach was used for the study to evaluate the effectiveness of Helfer skin tap technique on pain during intramuscular injection among infants attending immunization clinic, Sellur.

3.2 RESEARCH DESIGN

The research design selected for the present study was True Experimental Study – Post test only Design adapted. A true experiment involves Manipulation, Control and Randomization. The study intended to evaluate the effectiveness of Helfer skin tap technique on pain during intramuscular injection among the infants attending immunization clinic, Sellur.

	GROUP	INTERVENTION	POST TEST
R	Experimental group	X	O1
	Control group	-	O1

- R - Randomization
- O1 - Post test for both experimental group and control group
- X - Intervention to experimental group
(Helfer skin tap technique)

3.3 VARIABLES

Variables included in the study were

Independent Variable : Helper skintap technique
Dependent Variable : Pain during intramuscular injection
Baseline Variables : Age of the infants, Sex, Nutritional status, Gestational age, Mode of delivery, Birth weight, Birth order, Feeding status of the baby, Any previous exposure of injection and Present dose of Pentavalent.

3.4 SETTING OF THE STUDY

This study was conducted in Urban health Post, Sellur. Monthly more than 250 children were receiving immunization from the Health post. Among these approximately more than 70 infants were receiving Pentavalent vaccine. The health post covers 52,194 populations. Specifically more than 923 infants were there.

3.5 POPULATION

Target population:

Infants receiving intramuscular injection during immunization.

Accessible population:

Infants receiving intramuscular injection during immunization in Urban Health Post, Sellur.

3.6 SAMPLE SIZE

The total sample size was 60; among these 30 were in experimental group, 30 were in control group.

3.7 SAMPLING CRITERIA

The following were the criteria for selection of samples for the study.

Inclusion criteria

- Infants who were in the age group of 1-12 months.
- Infants who were received Pentavalent vaccine.
- Infants in both sexes male and female.

Exclusion criteria

- Infants of mothers who were not willing to give consent.
- Infants receiving intra dermal, intravenous and other injections.
- Infants with neurological deficit.
- Infants with fever and other distress during immunization process.
- Infants those who were critically ill.

3.8 SAMPLING TECHNIQUE

In this study Probability sampling - Simple Random Sampling Technique was used.

3.9 METHOD OF SAMPLE SELECTION

The samples were selected those who were arrive at the inclusion criteria. Simple random sampling technique was used with non replacement method. The odd and even numbers were given to the samples. From this with the use of lottery method the odd numbers were considered as control group. And even numbers were considered as experimental group.

3.10 RESEARCH TOOL

The tool was developed after extensive review of literature, internet sources and discussion with experts.

3.10.1 DESCRIPTION OF THE TOOL

The tool consists of following two sections;

Section I:

It consists of 10 items seeking information about Age, Sex, Nutritional status, Mode of Delivery, Gestational age, Birth order, Feeding status, any Previous injection exposure and Present dose of Pentavalent etc.,

Section II:

FLACC pain scale: (Face, Legs, Activity, Cry, Consolability) standardized scale cum observation check list. The FLACC scale was developed by Sandra Merkel, MS, RN, Terri Voepel-Lewis, MS, RN, and Shobha Malviya, MD, (2003) at S. Mott Children's Hospital, University of Michigan Health System

3.10.2 SCORING PROCEDURE

The minimum obtainable score for each category of pain response was zero and maximum score 2. The total of maximum pain score was 10.

SCORE INTERPRETATION

Based on the score the pain response is graded as follows:

SCORE CATEGORIES

SCORE	-	INTERPRETATION
0	-	No pain
1-3	-	Mild pain
4-6	-	Moderate pain
7-10	-	Severe pain

3.11 TESTING OF THE TOOL

VALIDITY

The study was validated by 2 nursing experts, The Director of Department of Preventive and Social Medicine and Paediatric Physician. Suggestions were considered. All the experts have their consensus, and then the tool was finalized.

RELIABILITY

The reliability of the tool was tested using Cronbach's Alpha method with a sample size of 10 samples, 5 samples in each experimental and control group. The internal consistency reliability coefficients for FLACC (Face, Legs, activity, Cry, Consolability) pain scale were found to be high, with Cronbach's alpha value $r = 0.75$. Hence the tool was considered highly reliable for proceeding with the main study.

3.12 ETHICAL CONSIDERATION

A formal permission was obtained from City health officer, Madurai Corporation, Madurai. Ethical consideration was acquired from the Ethical committee, Madurai medical college, Madurai. Information was given to all the sample of mothers about purpose of the study. Written informed consent was obtained from the sample of Mothers. The sample had the complete freedom to withdraw the study to their reason. No physical or psychological harm was made to the samples.

3.13 PILOT STUDY

A formal permission obtained from the City health officer, Madurai Corporation, Madurai to conduct the pilot study. Pilot study was conducted in urban health post, Sellur. The pilot study was undertaken from 1.08.2012 to 07.08.2012. A brief self introduction was given to the mothers. The purpose of the study explained to the mother and get consent from the Mothers. 10 Infants were selected those who come under the inclusion criteria with the use of Simple Random Sampling technique. Lottery method was used odd and even numbers were given to the samples. The odd number of 5 infants were control group, and even numbers of 5 were experimental group.

Interview method was used to collect the baseline variables. The weight of the baby was checked. Usual standard technique was given to the control group. Then the investigator assessed the pain score with the use of FLACC (Face, Legs, Activity, Cry, Consolability) pain scale. For the experimental group first selected the site of injection. Helfer skin tapping were given to the injection site for 5 seconds before immunization. Then, while administering injection 3 taps were given over the skin. After administered the injection tapping were given for 5 seconds. Then the investigator assessed the pain score for the experimental group with the use of FLACC (Face, Legs, Activity, Cry, Consolability) pain scale. For each sample the tapping was taken for 15 seconds.

3.13.1 FINDINGS OF THE PILOT STUDY

Pilot study suggests that in control group 80% of the infants had severe pain during immunization, 20% of infants had moderate pain. And majority of the infants in experimental group 80% had moderate pain, 20% had mild pain during immunization. Finding of the pilot study revealed that the sample were ample enough for the main study; Tool was adequate; Study was feasible and practicable to conduct the main study in Urban Health Post, Sellur.

3.14 DATA COLLECTION PROCEDURE

The main study was conducted from 16.08.2012 to 15.09.12 at Urban Health Post, Sellur. The formal permission was obtained from the City health Officer, Madurai Corporation, Madurai. A brief self introduction was given to the mothers. In the immunization clinic the samples were selected those who satisfied the inclusion criteria. With the use of lottery method the samples were chosen. Odd and even numbers were given to the samples. The odd numbers were considered as control group. And even numbers were considered as experimental group. The purpose of the study was explained to the mother and assured of confidentiality of the data collected. Both verbal and written consent was obtained from the mother. Interview method was used to collect the base line variables. The researcher was given usual standard technique for the control group whereas, Helfer skin tap technique was given for the experimental group. Followed by pain score measured by FLACC (Face, Legs, Activity, Cry, Consolability) pain scale.

During the first week 14 samples were taken. With the use of simple random sampling technique 7 samples were selected as experimental group and 7 were in control group. Baseline variables were collected by interview method. Helfer skin tap technique was given for the experimental group. The researcher selected the injection site (antero- lateral aspect of mid thigh) and tapped the skin 16 times, approximately 5 seconds with the palmar aspect of the fingers to relax the muscle. Pentavalent vaccine was administered. During the time of administration 3 gentle taps were given. After administration of injection skin tapping were given for 5 seconds. The total time taken for Helfer skin tap technique on each sample was 15 seconds. Followed by, the pain score was measured by FLACC (Face, Legs, Activity, Cry, Consolability) pain scale. Usual standard technique was given for the control group. The appropriate injection site (antero- lateral aspect of mid thigh) was selected. Pentavalent vaccine was administered. Subsequently, pain level was measured by FLACC (Face, Legs, Activity, Cry, Consolability) Pain scale.

During the second week the same procedure was repeated for 14 samples, in that 7 samples were in experimental group received Helfer skin tap technique and 7 samples were in control group received usual standard technique. During the third week 16 samples were selected, in that 8 were in experimental and 8 were in control group the same procedure was repeated. During the fourth week 16 samples were selected in that 8 were in experimental group and 8 were in control group and the same procedure was repeated.

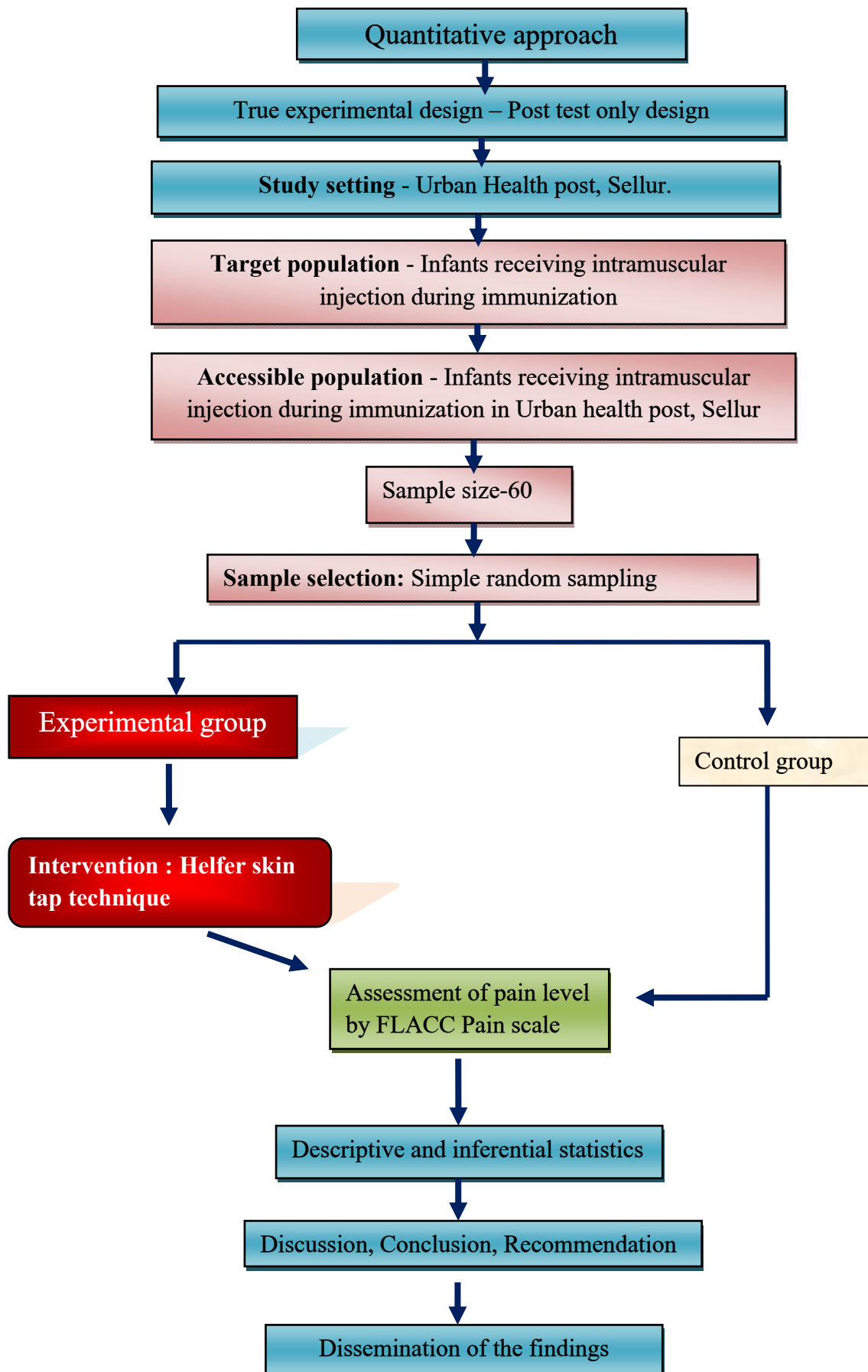
3.15 PLAN FOR DATA ANALYSIS

Data were analyzed using both descriptive and inferential statistics. Tests used in this study were frequency and percentage distribution, standard deviation, mean, Chi square test, and Paired 't' test. Base line variables were analyzed by frequency and percentage distribution. Mean, Standard deviation were used to analyze the pain level of infants both in experimental and in the control group. Paired 't' test was used to evaluate the effectiveness of Helfer skin tap technique on intramuscular injection pain. Chi square test was used to find the association between the pain level of infants in experimental group and base line variables.

3.16 PROTECTION OF HUMAN RIGHTS

The proposed study was conducted after the approval of dissertation committee of College of nursing, Madurai medical college, Madurai. In order to protect the human rights ethical committee approval obtained on the month of July from Ethical Committee, Madurai medical college, Madurai. In addition the permission was obtained from City health officer, Madurai Corporation, Madurai. Both verbal and written consent was obtained from all the study subjects and the data collection was kept confidential. The possible benefit of participating in the study was explained to all the samples. Reassurance was given to the study samples, that confidentiality and privacy was maintained throughout the study.

3.17 SCHEMATIC REPRESENTATION OF RESEARCH STUDY



*Data Analysis
And
Interpretation*

CHAPTER - IV

DATA ANALYSIS AND INTERPRETATION

Analysis is the process of organizing and synthesizing the data so as to answer research questions and test hypothesis. (Suresh K. Sharma).

This chapter deals with the analysis and interpretation of data collected from the 60 infants those who were undergoing intramuscular injection during immunization. The data have been analyzed and presented under the following headings.

SECTION: A

Base line characteristics of the experimental and control group

This analysis has been done to find out the frequency and percentage distribution of demographic variables such as Age, Sex, Nutritional status, Mode of Delivery, Any Previous injection exposure and Present dose of Pentavalent etc., in experimental and control group.

SECTION: B

Assessment of pain level of infants during Intramuscular injection with usual standard technique and Helfer skin tap technique

Pain has been analyzed in four degrees (No pain, Mild pain, Moderate pain, severe pain) for the experimental and control group during Immunisation in frequency and percentage.

SECTION: C

Compare the pain level of infants receiving intramuscular injection in both experimental and control group.

Comparison of degree of pain in experimental and control group has been done by mean score and its significance by statistical test

SECTION: D

Association between pain level of infants among experimental group with selected base line variables

Base line variables of experimental group have been analyzed in association with pain level during intra muscular injection.

SECTION - A
BASE LINE CHARACTERISTICS OF EXPERIMENTAL AND CONTROL GROUP

TABLE 1

Frequency and percentage distribution of Base line variable of infants in experimental and control group

n =60

S.NO	Baseline variables	Experimental group (n=30)		Control group (n=30)	
		f	%	f	%
1.	Age(in months):				
	a) 1-2	11	37	9	30
	b) 2-3	11	37	8	27
	c) 3-4	6	20	10	33
	d) Above 4 months	2	6	3	10
2.	Sex:				
	a) Male	15	50	18	60
	b) Female	15	50	12	40
3.	Nutritional status:				
	a) Normal(80%and above)	28	93	25	83
	b) Grade I (71 - 80%)	2	7	5	17
	c) Grade II(61 -70%)	0	0	0	0
	d) Grade III(51 - 60%)	0	0	0	0
	e) Grade IV (50% and below)	0	0	0	0
4.	Gestational age :				
	a) <7 months	2	7	6	20
	b) 8-10 months	27	90	24	80
	c) >10 months	1	3	0	0
5.	Mode of delivery:				
	a) Normal vaginal delivery	9	30	7	23
	b) Normal vaginal delivery with episiotomy	11	37	12	40
	c) Instrumental deliveries	10	33	11	37
	d) Lower segmental caesarean section	0	0	0	0
6.	Birth weight:				
	a) Below 2500 gm	3	10	6	20
	b) 2500-3000 gm	27	90	23	77
	c) 3000-3500gm	0	0	1	3
	d) 3500 and above	0	0	0	0

S.NO	Baseline variables	Experimental group (n=30)		Control group (n=30)	
		f	%	f	%
7.	Birth order:				
	a) 1	20	67	19	63
	b) 2	10	33	11	37
	c) 3	0	0	0	0
	d) 4 and so on	0	0	0	0
8.	Feeding status:				
	a) Breast feeding	25	83	29	97
	b) Weaning	3	10	1	3
	c) Breast feeding with weaning	2	7	0	0
	d) Supplementary feeding	0	0	0	0
9.i.	Received any injections after birth:				
	a) Yes	30	100	30	100
	b) No	0	0	0	0
9. ii.	If yes, type of injection:				
	a) Intra dermal	11	37	11	37
	b) Intra muscular	19	63	19	63
	c) Intravenous	0	0	0	0
	d) Others	0	0	0	0
10.	Dose of present Pentavalent				
	a) I	12	40	9	30
	b) II	10	33	10	33
	c) III	8	27	11	37

The above table represent that, the age group among experimental group were 11(37%) in the age group of 1-2 months, 11(37%) were in the age group of 2-3 months, 6(20%) were in the age group of 3-4 months, and 2(6%) were in the age of above 4 months. In control group 9(30%) were in the age group of 1-2 months, 8(27%) were in the age group of 2-3 months, 10(33%) were in the age group of 3-4 months, and 3(10%) were in the age group of above 4 months.

With the view of sex, experimental group half of them 15(50%) were males, and 15(50%) were females. In control group 18(60%) were males and 12(40%) were females. Majority, 28(93%) were in normal nutritional status, 2(7%) were in the Grade I level of nutrition and none of them were in Grade II, III and IV in experimental group. In control group 25(83%) were in normal nutritional status, 5(17%) were in the Grade I level of nutrition and none of them were in Grade II, III and IV.

With regard to the gestational age, 2(7%) infants were in the gestational age of below 7 months, 27(90%) were in full term (8-10 months) and 1(3%) was in post term (more than 10 months) in experimental group. In the control group 6(20%) infants were in the gestational age of below 7 months, 24(80%) were in full term (8-10 months) and none of them in post term (more than 10 months). Majority of infants 11(37%) were by normal vaginal delivery with episiotomy, 10(33%) were by instrumental deliveries, 9(30%) were born by normal vaginal delivery, and none of them were born by lower segmental caesarean section in experimental group. In control group 7(23%) were born by normal vaginal delivery, 12(40%) were by normal vaginal delivery with episiotomy, 11(37%) were by instrumental deliveries, and none of them by lower segmental caesarean section.

In the aspect of birth weight, in experimental group 3(10%) were in the low birth weight (below 2500 grams), 27(90%) were in the normal birth weight (2500-3000 grams). In control group 6(20%) were in the low birth weight (below 2500 grams), 23(77%) were in the normal birth weight (2500-3000 grams) and 1(3%) infant was in the birth weight of 3000-3500 grams. With the aspect of birth order, in experimental group 20(67%) infants were the first child, 10(33%) were in the second child of the family. In the control group 19(63%) infants were the first child, 11(37%) were in the second child of the family. Most of the infants, 25(83%) were received breast feeding, 3(10%) were in weaning and 2(7%) infants were in breast feeding along with weaning in experimental group. In control group 29(97%) infants were received breast feeding, 1(3%) was in weaning.

Both in experimental and control group all 30(100%) were received previous injection. Both in control and experimental group 11(37%) were previously received intra dermal injection and 19(63%) infants were previously received intra muscular injection. With regard to the present dose of Pentavalent, in experimental group 12(40%) were received I dose of Pentavalent, 10(33%) were received II dose of Pentavalent, and 18(27%) were received III dose of Pentavalent. In control group 9(30%) were received I dose of Pentavalent, 10(33%) were received II dose of Pentavalent, and 11(37%) were received III dose of Pentavalent.

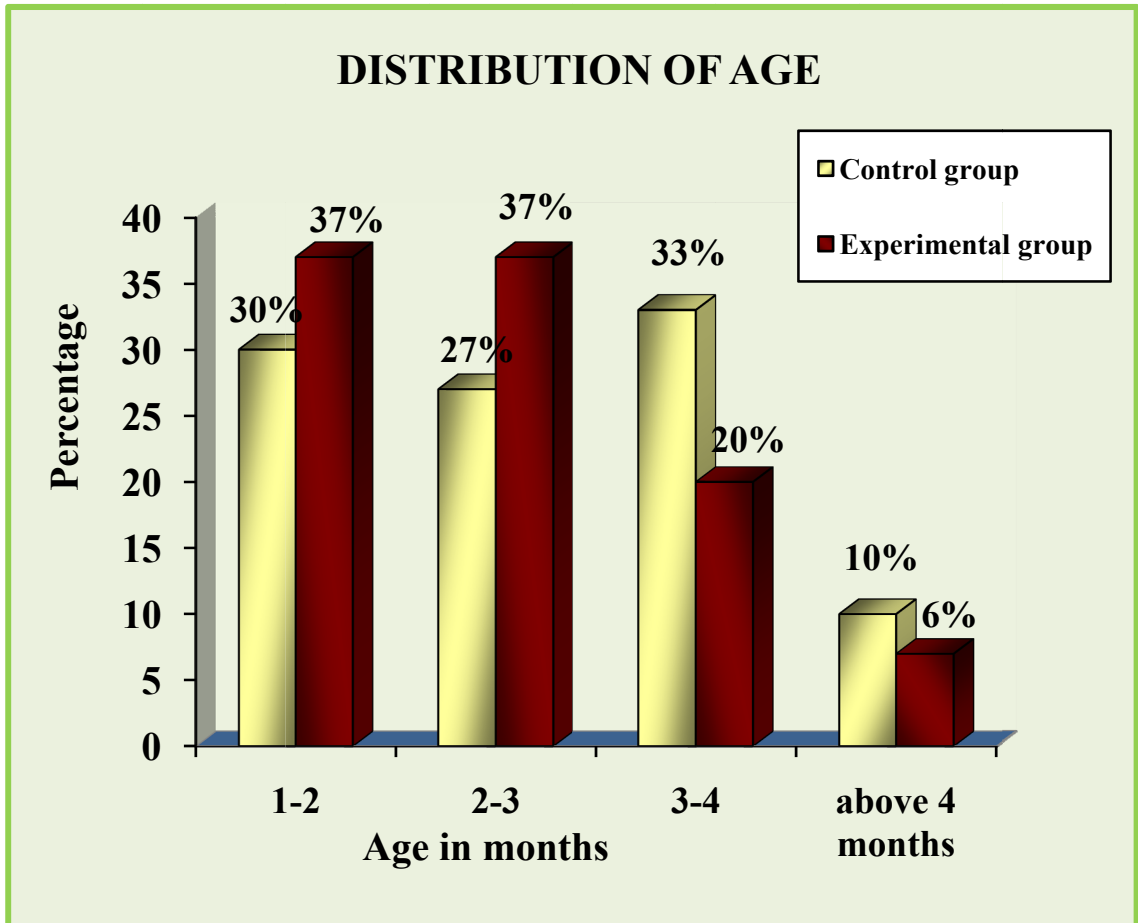


Fig.2. Percentage distribution of age among experimental and control group

In experimental group majority 11(37%) were in the age group of 1-2 months and 11(37%) were in the age group of 2-3 months. In control group majority 10(33%) were in the age group of 3-4 months.

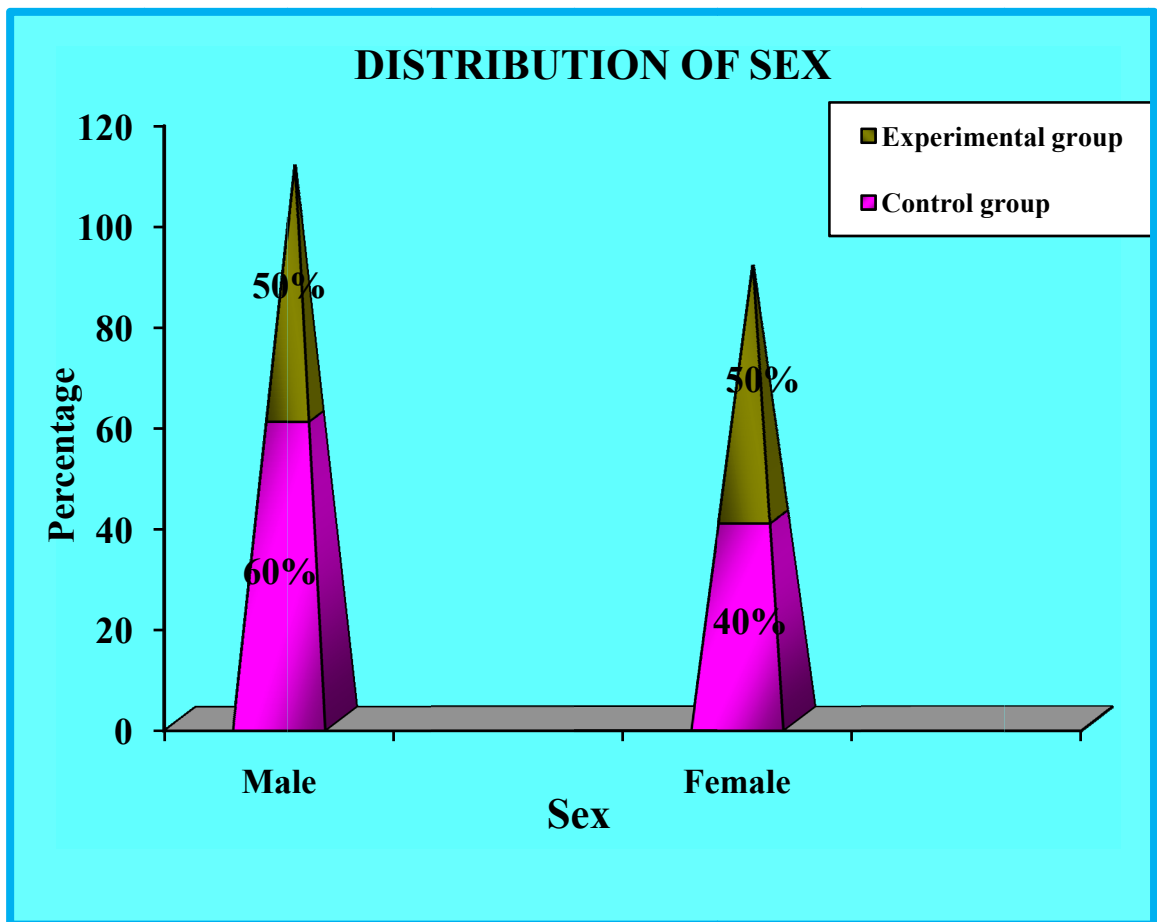


Fig.3. Percentage distribution of Samples according to their sex among experimental and control group

In experimental group half of them 15(50%) were males, and 15(50%) were females. In control group 18(60%) were males and 12(40%) were females.

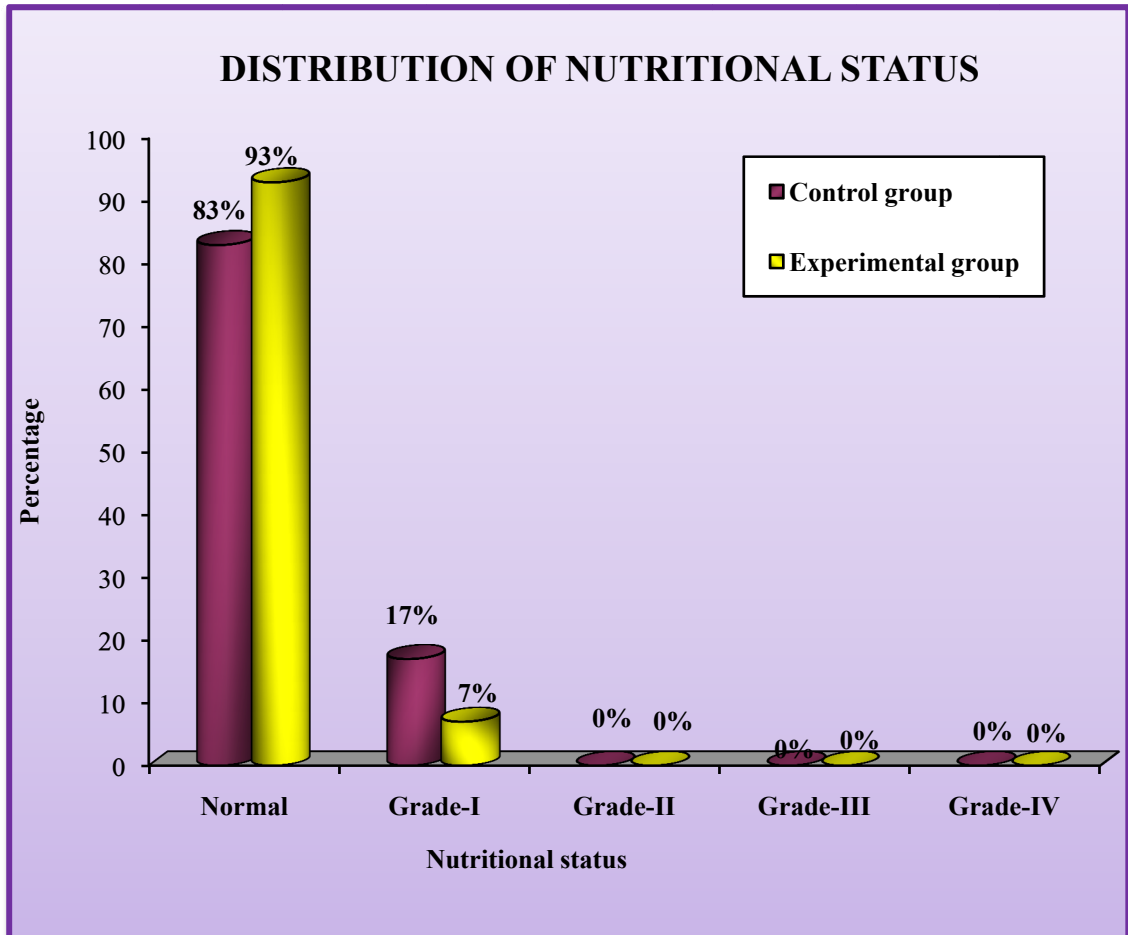


Fig. 4 .Percentage distribution of Samples according to their Nutritional status.

With the aspect of nutritional status, majority in experimental group 28(93%) were in normal nutritional status where in control group 25(83%) were in normal nutritional status.

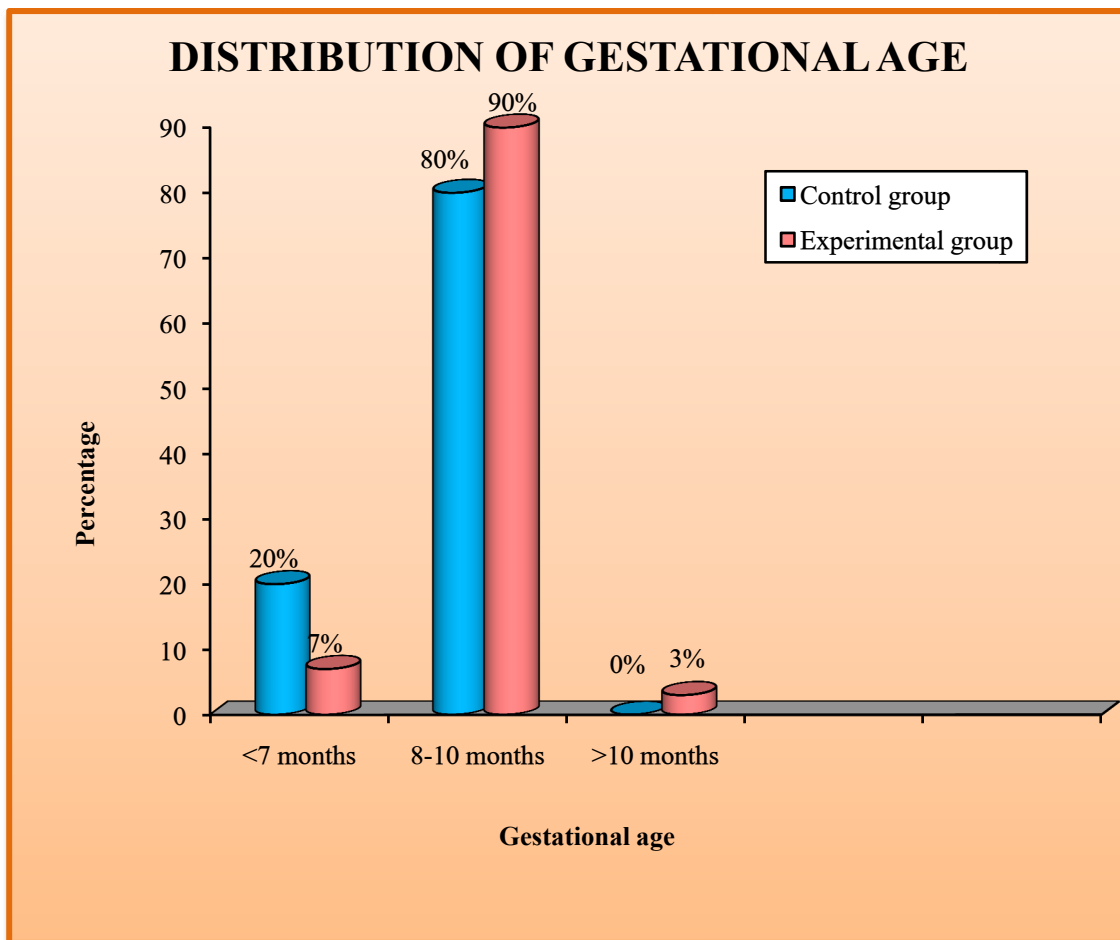


Fig.5. Percentage distribution of Samples according to their Gestational Age.

Majority, in the experimental group 27(90%) infants in full term (8-10 months) and In the control group 24(80%) were in full term (8-10 months) and none of them in post term(more than 10 months) both in control and in experimental group.

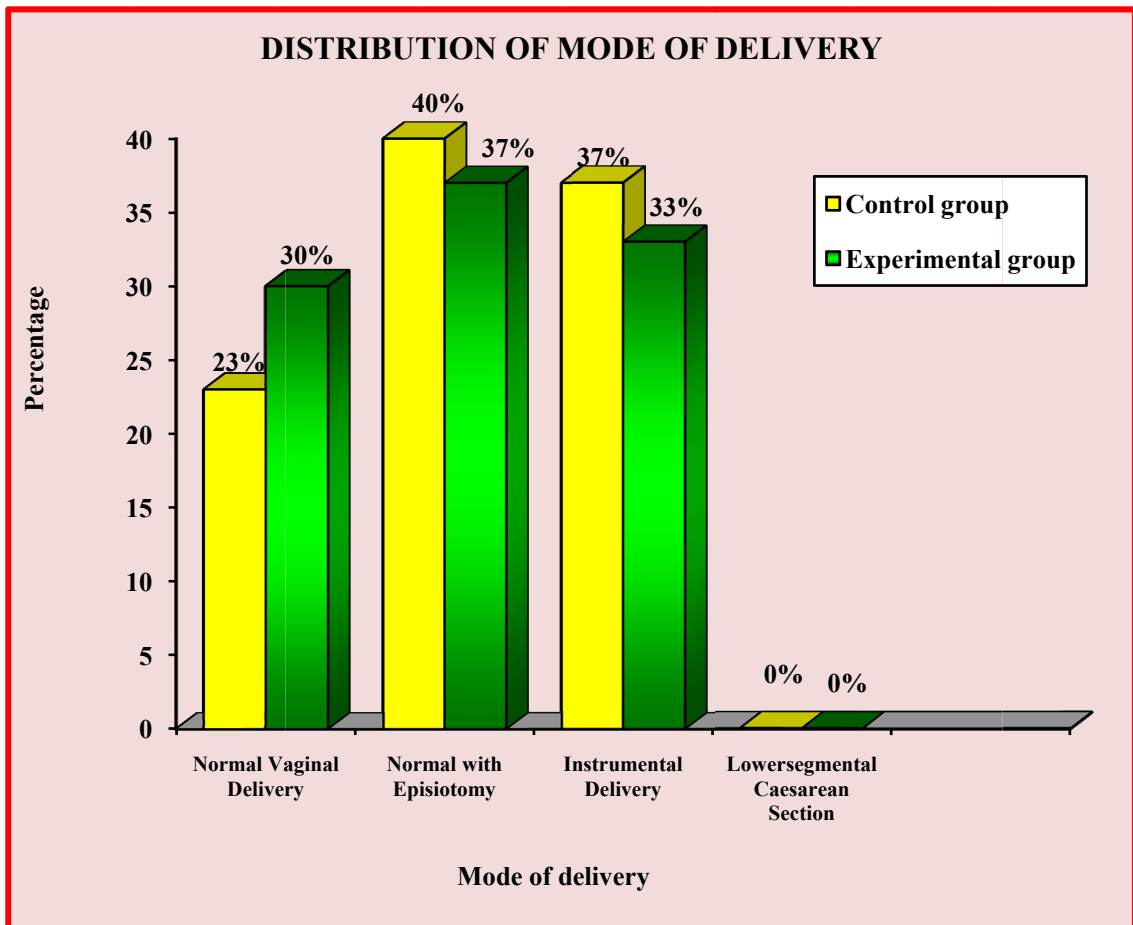


Fig.6. Percentage distribution of Samples according to their mode of delivery.

With regard to mode of delivery, in experimental group majority 11(37%) were born by normal vaginal delivery with episiotomy and In control group higher percentage 12(40%) were by normal vaginal delivery with episiotomy.

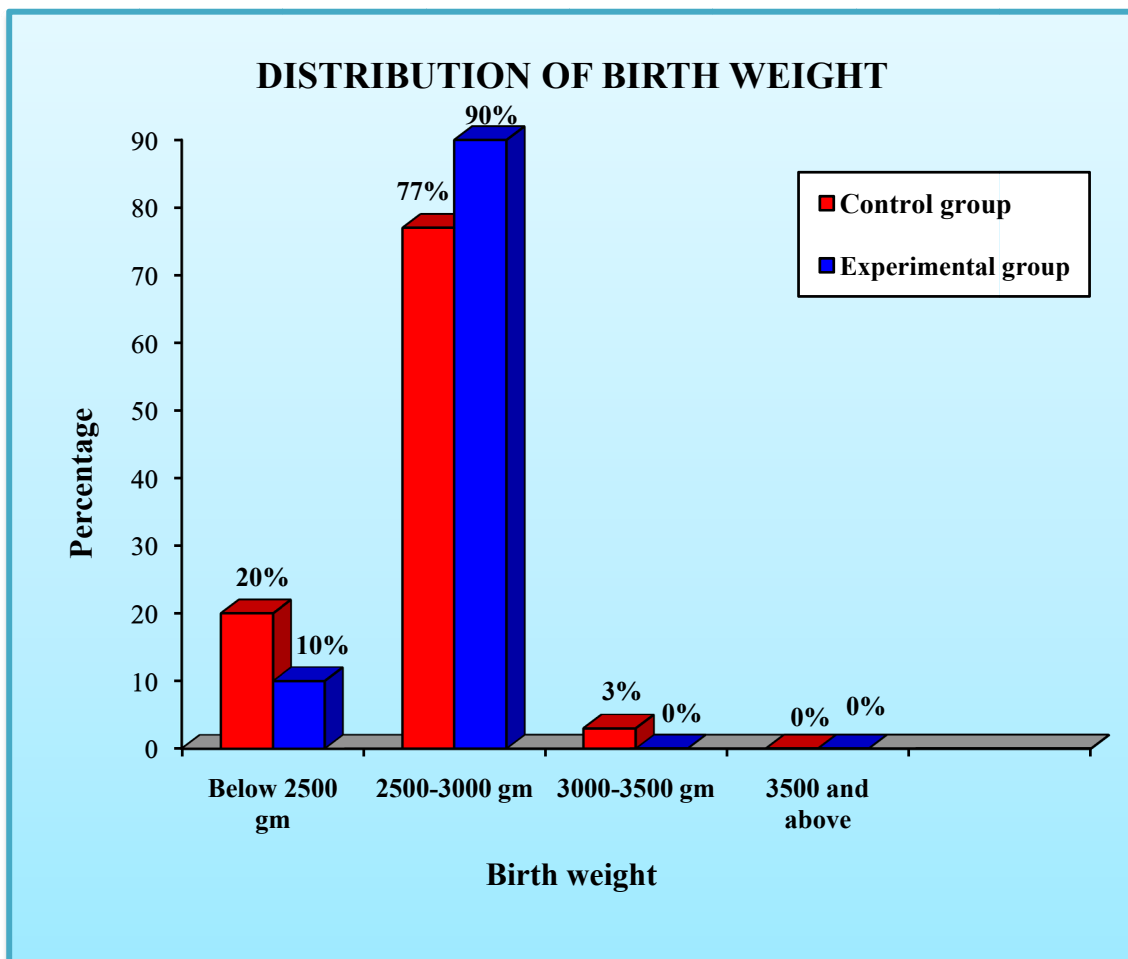


Fig.7. Percentage distribution of Samples according to their birth weight.

In experimental group and in control group majority were in the normal birth weight (2500-3000 grams) 27(90%) and 23 (77%) respectively.

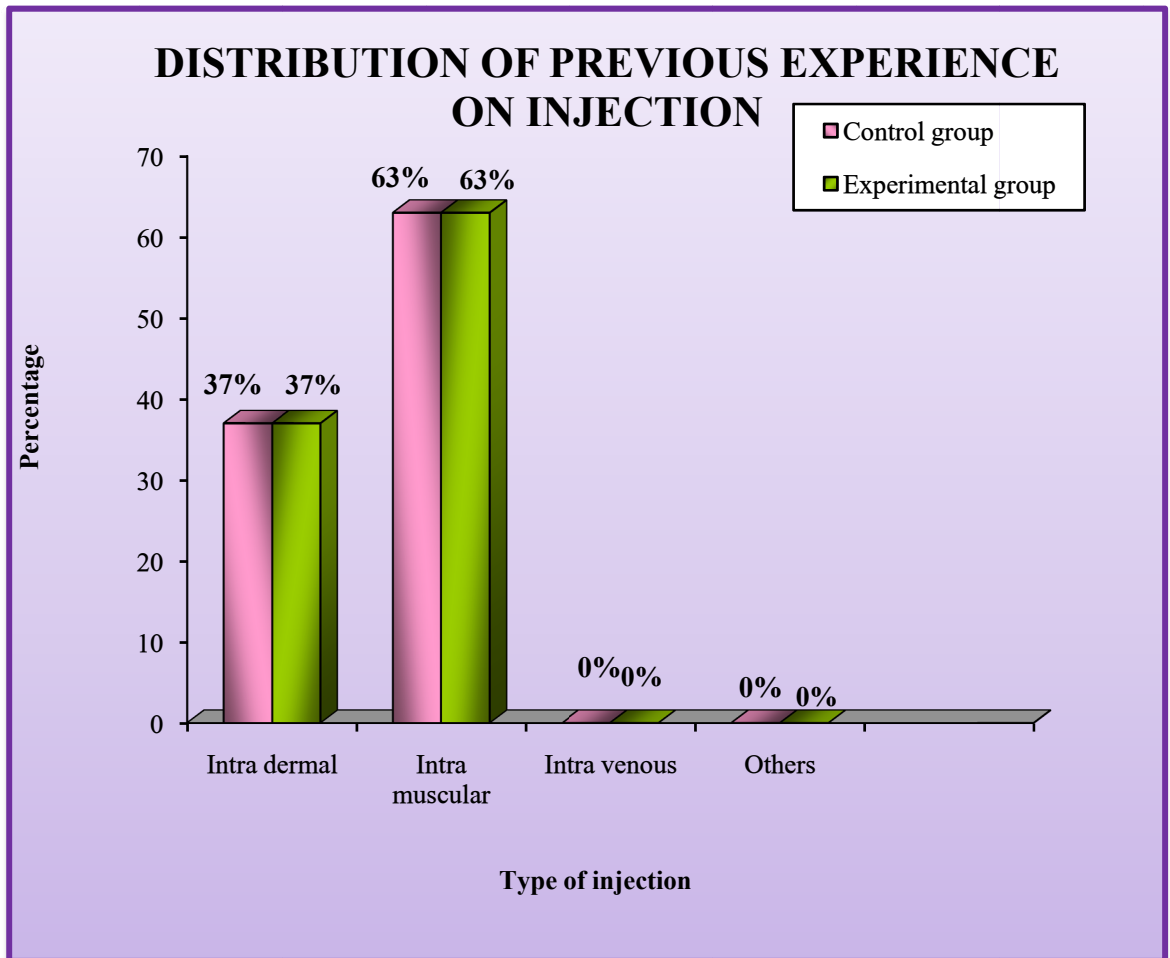


Fig.8. Percentage distribution of Samples according to their previous experience of injection

Most of them in control and experimental group 11(37%) were previously received intra dermal injection and 19(63%) infants were previously received intra muscular injection.

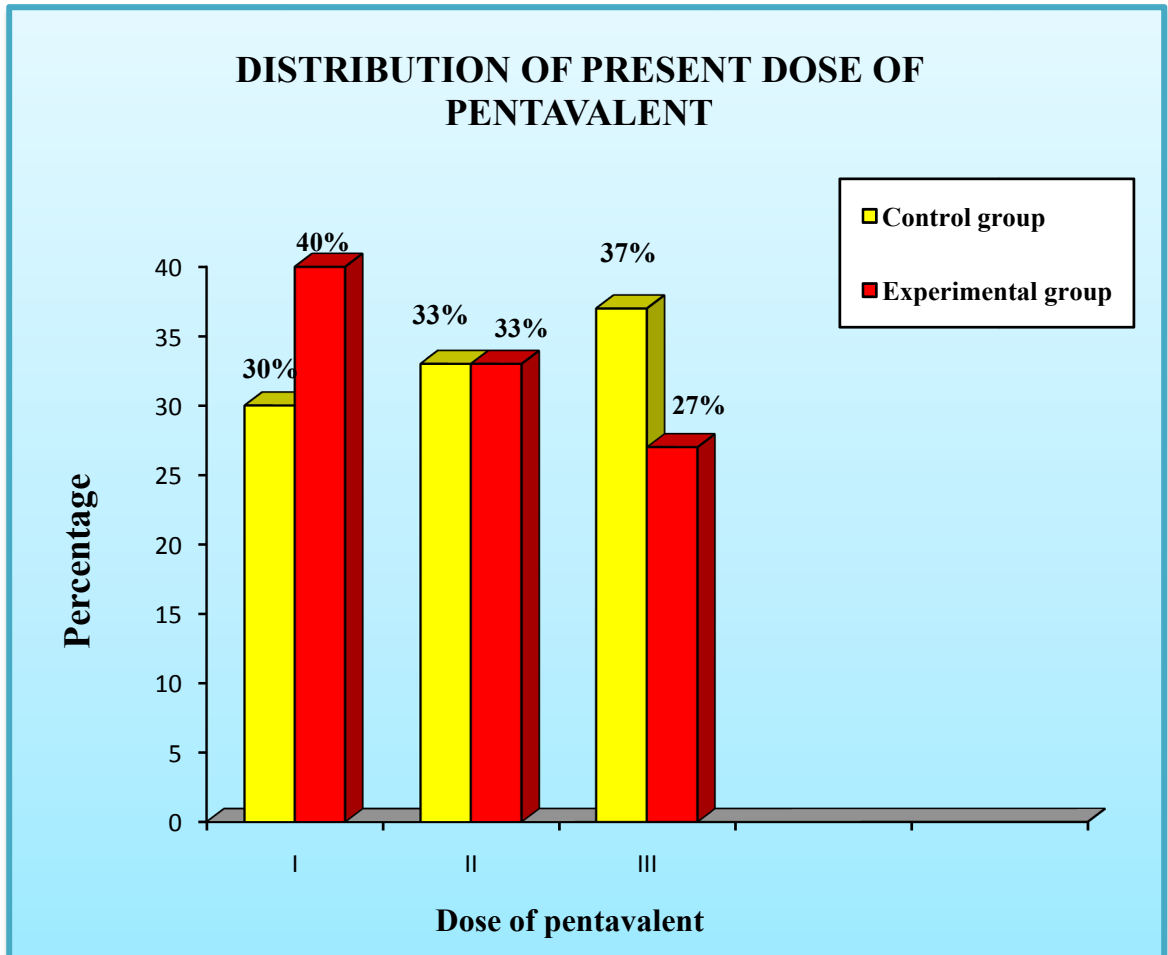


Fig.9. Percentage distribution of Samples according to their present dose of Pentavalent

In experimental group 12(40%) were received I dose of Pentavalent, 10(33%) were received II dose of Pentavalent, and 8(27%) were received III dose of Pentavalent. In control group 9(30%) were received I dose of Pentavalent, 10(33%) were received II dose of Pentavalent, and 11(37%) were received III dose of Pentavalent.

SECTION: B
PAIN LEVEL OF INFANTS DURING INTRAMUSCULAR
INJECTION AMONG EXPERIMENTAL AND CONTROL
GROUP

TABLE – 2

**Frequency and percentage data of infants receiving intramuscular
injection among experimental and control group**

n=60

LEVEL OF PAIN	EXPERIMENTAL GROUP n=30		CONTROL GROUP n=30	
	f	%	f	%
No pain (0)	-	-	-	-
Mild pain (1-3)	5	17	-	-
Moderate pain (4-6)	25	83	5	17
Severe pain (7-10)	-	-	25	83

This table represents majority of the infants 83% (25) had moderate pain, 17% (5) had mild pain during immunisation in experimental group. And 83% (25) of the infants had severe pain while receiving immunisation, 17% (5) of infants had moderate pain in control group.

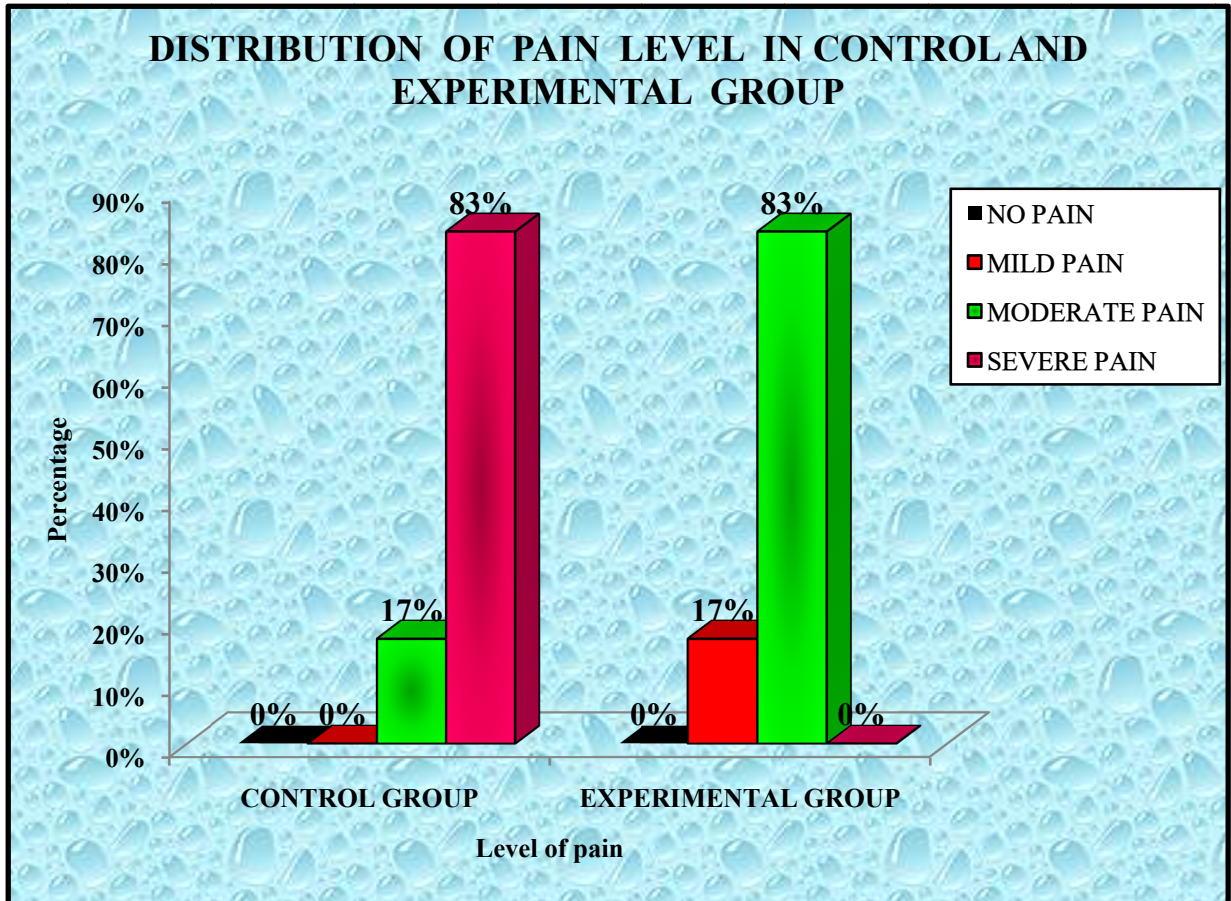


Fig:10 Percentage distribution of pain level of infants receiving intramuscular injection among control and experimental group

Majority 83% were severe pain and 17 % were moderate pain among control group. Whereas in experimental group majority 83% were moderate pain and 17% of infants had mild pain.

TABLE - 3
MEAN PAIN SCORE AND STANDARD DEVIATION OF
INFANTS RECEIVING INTRAMUSCULAR INJECTION
AMONG EXPERIMENTAL AND CONTROL GROUP

n=60

S. No	GROUP	Total score			Effectiveness of mean%
		Mean	SD	Mean%	
1.	Experimental group	4.43	1.07	44	30
2.	Control group	7.36	0.85	74	

The above table shows that mean and standard deviation score of infants with pain level. The mean score of pain level among the experimental group is 4.43 and in the control group is 7.36 whereas the standard deviation among the experimental group is 1.07, in the control group is 0.85, the mean percentage level were in control group 74% was higher than the mean percentage 44% in experimental group.

SECTION: C
COMPARISON OF PAIN LEVEL IN EXPERIMENTAL AND CONTROL GROUP.

TABLE - 4

Unpaired “t”-test to assess the effectiveness of Helfer skintap technique

n=60

PAIN SCORE	EXPERIMENTAL GROUP		CONTROL GROUP		‘t’-value	‘p’-value
	Mean	SD	Mean	SD		
Overall score	4.43	1.07	7.36	0.85	11.78	0.000***

***-P<0.001, Highly significant

The above table represents that overall mean score of experimental and control group during intramuscular injection. The control group mean (7.36) is higher than the experimental group mean (4.43) of the infants. The obtained ‘t’ value is 11.78, significant at p<0.001 level. This concludes that experimental group experienced less pain than control group. Hence, the Helfer skin tap technique had effect on reducing the pain during intramuscular injection.

SECTION: D
ASSOCIATION BETWEEN PAIN LEVEL OF INFANTS AMONG
EXPERIMENTAL GROUP AND SELECTED BASE LINE
VARIABLES

TABLE – 5

n=30

BASELINE VARIABLES	MILD		MODERATE		χ^2	'p'-value
	f	%	f	%		
Age(in months):						
a) 1-2	0	0	11	36	4.69	0.196
b) 2-3	3	10	8	27		
c) 3-4	2	7	4	13		
d) above 4 months	0	0	2	7		
Sex:						
a) Male	3	10	12	40	0.24	0.624
b) Female	2	7	13	43		
Nutritional status:						
a) Normal(80%and above)	5	16	23	77	0.428	0.513
b) Grade I (71 - 80%)	0	0	2	7		
c) Grade II (61 -70%)	0	0	0	0		
d) Grade III (51 - 60%)	0	0	0	0		
e) Grade- IV(50%and below)	0	0	0	0		
Gestational age :						
a) <7 months	0	0	2	7	5.467	0.065
b) 8-10 months	4	13	23	77		
c) >10 months	1	3	0	0		
Mode of delivery:						
a) Normal vaginal delivery	1	3	8	26.5	0.298	0.861
b) Normal vaginal delivery with episiotomy	2	7	9	30		
c) Instrumental deliveries	2	7	8	26.5		
d) Lower segmental caesarean section	0	0	0	0		

BASELINE VARIABLES	MILD		MODERATE		χ^2	'p'-value
	f	%	f	%		
Birth weight:						
a) Below 2500 gm	0	0	3	10	0.67	0.414
b) 2500-3000 gm	5	17	22	73		
c) 3000-3500gm	0	0	0	0		
d) 3500 and above	0	0	0	0		
Birth order:						
a) 1	2	7	18	60	1.92	0.166
b) 2	3	10	7	23		
c) 3	0	0	0	0		
d) 4 and so on	0	0	0	0		
Feeding status:						
a) Breast feeding	4	13	21	70	1.01	0.604
b) Weaning	1	3	2	7		
c) Breast feeding with weaning	0	0	2	7		
d) Supplementary feeding	0	0	0	0		
Received any injections after birth:						
a) Yes	5	17	25	83	0	1
b) No	0	0	0	0		
If yes, type of injection:						
a) Intra dermal	0	0	11	36	3.47	0.062
b) Intra muscular	5	17	14	47		
c) Intravenous	0	0	0	0		
d) Others	0	0	0	0		
Dose of present Pentavalent						
a) I	0	0	12	40	4.08	0.13
b) II	3	10	7	24		
c) III	4	13	4	13		

This table depicts that there is no significant association between the pain level infants and demographic variables such as Age, Sex, Nutritional status, Gestational weeks, Mode of delivery, Birth weight, Birth order, feeding status, and previous experience on immunization with dose of Pentavalent among experimental group.

Discussion

CHAPTER - V

DISCUSSION

Each infant supposed to have 8 shots of BCG, Pentavalent, Hepatitis B, and measles. All these are undoubtedly very painful for the baby and the problem should no longer be set aside since more and more vaccinations are being added to the schedule, effectively turning our children to human pin cushions.

The pain perception is an inherent quality of life that occurs early in development. Since many researchers believe that pain in early infancy actually have profound. There are several available options to accomplish the objective of minimizing pain during vaccination of infants which needs serious consideration of all concerned. Of them Helfer skin tap technique during vaccination have been shown to provide comfort to children and reduce pain. The skin tapping stimulate the large muscle fibres thereby reduce the pain.

The focus of this study is to evaluate the effectiveness of Helfer skin tap technique on pain during intramuscular injection among the infants attending immunization clinic, Sellur. 60 samples were selected for this study. FLACC (Face, Leg Movement, Activity, Cry, Consolability) pain scale was used to assess the pain level.

BASELINE CHARACTERISTIC OF EXPERIMENTAL AND CONTROL GROUP

Majority of the infants in the experimental group (37%) were in the age group of 1-2 months and 2-3 months, and in the control group (33%) were in the age group of 3-4 months. Regarding the sex of the infants, highest numbers of infants were (60%) males in control group, and in experimental group about (50%) were males, (50%) were females. With regard to nutritional status (93%) were normal in experimental group, (83%) were normal in control group, about the gestational age (90%) were in 8-10 months of gestation in experimental group, (80%) were in 8-10 months of gestation in control group. Regarding the mode of delivery (37%) were normal vaginal delivery with episiotomy in experimental group, (40%) were in control group. About the birth weight majority (90%) were in the experimental group

and (77%) were in the control group belongs to normal birth weight (2500-3000 gm). Regarding the feeding status majority of about (83%) in experimental group, and (97%) in control group were breast fed. With regard to previous experience of injection, most of them (63%) were received intramuscular injection in experimental and control group. Regarding the present dose of Pentavalent (33%) were received II dose of Pentavalent in both experimental and control group.

The baseline variable of age in this study is consistent with the study done by Anna Taddio et al.,(2009) conducted a systemic review on inadequate pain management during routine childhood immunization. Result showed that on average younger children exhibit more distress and pain than do older children. More than 90% of infants and 50% of primary school children exhibit severe distress during immunization.

FINDINGS BASED ON THE OBJECTIVES

THE FIRST OBJECTIVE WAS TO ASSESS THE PAIN LEVEL OF INFANTS DURING INTRAMUSCULAR INJECTION IN IMMUNIZATION CLINIC WITH HELPER SKIN TAP TECHNIQUE AMONG EXPERIMENTAL GROUP.

The pain level of infants during intramuscular injection with Helfer skin tap technique was assessed by FLACC (Face, Legs, Activity, Cry, Consolability) pain scale. With the use of this technique majority of the infants 83% (25) had moderate pain, 17% (5) had mild pain during immunization in experimental group. During Helfer skin tap technique most of the infants crying time was reduced. Infants were stopped crying when they are consoled by their mother. But, lack of knowledge among the Primi Para mothers on new born care the infant was consoled by their grandmother/ their aunty.

This study was consistent with the study done by Sr.Serena (2010) conducted a one group pre test post test study on rhythmic skin tapping: An effective measure to reduce procedural pain during Intra Muscular injection. 60 adult patients were selected by purposive sampling technique. Each sample was given 4 injections in

which two injections were given with usual standard technique and remaining with skin tap technique. The result suggests that the overall mean pain intensity by using skin tap technique (1.5 ± 1.1) was much lower than the pain with usual standard technique.

THE SECOND OBJECTIVE WAS TO ASSESS THE PAIN LEVEL OF INFANTS DURING INTRAMUSCULAR INJECTION IN IMMUNIZATION CLINIC WITH USUAL STANDARD TECHNIQUE AMONG CONTROL GROUP.

In this study the pain level of infants receiving intramuscular injection with usual standard technique assessed by FLACC (Face, Legs, Activity, Cry, Consolability) pain scale.

The present study reveals that 83% (25) of the infants had severe pain while receiving intramuscular immunization, 17% (5) of infants had moderate pain in control group.

The present study findings was consistent with the study done by Elizabeth A. Stanford et al.,(2005)conducts a study on “Ow!”: Spontaneous Verbal Pain Expression among Young Children during Immunization. Fifty-eight children between the ages of 4 years 8 months and 6 years 3 months (67% female) were videotaped while receiving their routine preschool immunization. Children provided self-report of pain using a 7-point faces pain scale. Fifty-three percent of children used verbalizations spontaneously to express their pain. The modal verbalization was the interjection “Ow!” which expressed negative affect and was specific to the experience of pain.

This study also consistent with the study done by Barnhill.BJ.et al, (2010) conducted a study on using pressure to decrease the pain of intramuscular injections. The subjects were 93 patients who had dorsogluteal intramuscular injections of immune globulin at a county health department. Forty-eight received the pressure treatment and 45 received a standard injection in which no pressure was applied. Mean pain intensity on a 100-mm visual analogue scale, adjusted for differences in injection volume, was 13.6 mm for the experimental group and 21.5 mm for the control group ($P=0.03$). The findings suggest that simple manual pressure applied for 10 sec. prior to the injection site is a useful technique to decrease injection pain.

THE THIRD OBJECTIVE OF THE STUDY WAS TO COMPARE THE PAIN LEVEL OF INFANTS DURING INTRAMUSCULAR INJECTION IN EXPERIMENTAL AND CONTROL GROUP.

Experimental group pain scores were 83% (25) had moderate pain, 17% (5) had mild pain, where as in control group 83% (25) of the infants had severe pain during immunization, 17% (5) of infants had moderate pain.

The control group mean (7.36) is higher than the experimental group mean (4.43) of the infants. The obtained 't' value is 11.78, at $p < 0.001$ level of significance. The study concludes that experimental group experienced less pain than control group. So, the Helfer skin tap technique had effect on reducing the pain.

These findings were consistent with the study done by Jose Rose Mary (2011) conducted a true experimental study on Effectiveness of skin tap technique in reducing pain during vaccination. The study results revealed that majority, 24 (80%) of the infants in experimental group had mild pain whereas only 5(16.66%) of the infants in control group experienced mild pain. Independent t test was done to establish the effectiveness of skin tap technique. The 't' value was found to be 7.401 at $p < 0.001$. The study concluded that the pain response was less in experimental group.

This study also consistent with the study done by Vijila V.L,(2011) conducted a quasi experimental study on to assess the effectiveness of Helfer skin tap technique on pain during intramuscular injection among the children attending immunization clinic. The sample comprised of 100 children aged 2-6 years. The sample was selected using purposive sampling technique. Modified FLACC pain scale was used. The result of the study showed that the mean pain score of children in the control group (6.76 ± 0.847) was greater than that of the Experimental group (5.36 ± 2.008) and the obtained 't' value (4.54) is greater than the table value at 0.001 level. There was no significant association between pain score and selected baseline variables in experimental and control group.

Thus the H_1 : There will be a significant difference in the pain level between Helfer skin tap technique and usual standard technique during intramuscular injection was proved.

THE FOURTH OBJECTIVE OF WAS TO ASSOCIATE THE PAIN LEVEL OF INFANTS AMONG EXPERIMENTAL GROUP WITH SELECTED BASELINE VARIABLES.

There is no significant association between the pain level infants in experimental group and Baseline variables such as Age, Sex, Nutritional status, Gestational weeks, Mode of delivery, Birth weight, Birth order, feeding status, and previous experience on immunization with dose of Pentavalent.

This result was consistent with the study done by Moshe Ipp (2004) conducted a study on effects of age, gender and holding on pain response during infant immunization. 106 infants aged 2 to 6 months were positioned either supine (SUP) on the examination table or held (HLD) by a parent during routine immunization. There was no difference between the supine on the examination table and held by parent infants in duration of crying, facial grimacing or visual analogue scale (VAS) pain scores. Similarly age and gender did not affect pain response.

This findings was also consistent with the study done by Ronald L Blunt (2008) conducted a prospective, randomized controlled study on Effect of pragmatic technique of vitamin k intramuscular injection on newborn pain response. The study result suggest that there is no significant association between pain level of neonates and gestational ages (p value = 0.582), birth weights (p value = 0.432).

Thus the H₂: There will be significant association between pain level of infants among experimental group during intramuscular injection with selected base line variables was detained in this study.

*Summary,
Conclusion &
Recommendations*

CHAPTER- VI

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter dealt about the summary of the study findings, conclusion, Implication, and Recommendation.

6.1 SUMMARY OF THE STUDY

Pain associated with vaccine injections is a source of distress for individuals of any age as well as for the immunization provider. If not addressed, the pain and anxiety associated with immunizations can be related to fear of future procedures, medical fears, and avoidance behaviours including non-adherence with immunization schedules. Pain is subjective; each person feels and expresses pain differently. Every individual learns the meaning of pain through experiences early in life. For children, being distressed during a procedure may have a negative impact on the memory of pain. Research indicates that infants who are exposed to painful experiences develop a sensitization to future pain and may develop altered responses to future pain.

The investigator conducted a study to evaluate the effectiveness of Helfer skin tap technique on pain during intramuscular injection among Infants attending immunization clinic at Urban health post, Sellur, Madurai.

The objectives of the study were,

- To assess the pain level of Infants during intramuscular injection in immunization clinic with Helfer skin tap technique among experimental group.
- To assess the pain level of Infants during intramuscular injection in immunization clinic with usual standard technique among control group.
- To compare the pain level of infants during intramuscular injection in experimental and control group.
- To associate the pain level of infants among experimental group with selected baseline variables.

The following hypothesis were tested:

- H₁:** There will be a significant difference in the pain level between Helfer skin tap technique and usual standard technique during intramuscular injection.
- H₂:** There will be significant association between pain level of infants among experimental group with selected Baseline variables.

The setting of the study was Urban health Post, Sellur. The research approach used in the study was a quantitative approach and design was True experimental - Post test only control design. The sampling technique was Simple random sampling technique. The total sample size was 60; among that 30 were in experimental group, 30 were in control group. Standardized FLACC (Face, Legs, Activity, Cry, and Consolability) pain scale used for measurement of pain. The content validity and reliability was obtained prior from the study. Subsequently, a pilot study was conducted and it found that, the tool was feasible and practicable. A modified Widenbach's prescriptive theory (1969) was formulated which provided a useful means in assessing the reduction of pain experience during immunization among infants. The data collection was done for a period of four weeks from 16.08.2012 to 15.09.12. Helfer skin tap technique was given to experimental group. First selected the injection site. Helfer skin tapping were given to the injection site for 5 seconds before administration of injection. Then, while administering injection, 3 taps were given over the skin. After administering the injection tapping were given for 5 seconds. Then pain score was assessed by FLACC pain scale (Face, Legs, Activity, Cry, Consolability) for the experimental group. The total time duration of Helfer skin tap technique for each sample is 15 seconds. For the control group usual standard technique was given. Then the pain score was assessed by FLACC pain scale (Face, Legs, Activity, Cry, Consolability). The data were analyzed by descriptive and inferential statistics.

MAJOR FINDINGS OF THE STUDY

- In experimental group majority of them 37% were in the age group of 1-2 months, and 2- 3months, in control group majority of them 33% were in the age group of 3-4 months.
- With regard to, sex in experimental group half of them 50% were males and 50% were females. Where as in control group majority of them 60%were males.
- In both groups majority of the infants were (93% - experimental group; 83% - control group) in normal nutritional status.
- Majority of the infants were born in full term in experimental group 90%, in the control group 80%.
- Most of the infants in the experimental group 37% and in control group 40% were born by normal vaginal delivery with episiotomy.
- Majority of the infants were first child 67% in experimental group and 63% in control group.
- With the aspect of feeding, in the experimental group majority of the infants 97% were in breast feeding, in control group 83% had breast feeding.
- Majority 63% of the infants were had previous experience on intramuscular injection in both group.
- With the view of Present dose of Pentavalent, in experimental group majority of the infants 40% were received I dose of Pentavalent, and in control group 37% were received III dose of Pentavalent.
- Regarding the pain level, in the experimental group majority of the infants 83% had moderate pain, 17% had mild pain during immunisation. In control group 83% of the infants had severe pain while receiving immunisation, 17% of infants had moderate pain.
- The control group mean (7.36) is higher than the experimental group mean (4.43) of the infants. The obtained 't' value is 11.78, at $p < 0.001$ level of significance. This study concludes that experimental group experienced less pain than control group. So, the Helfer skin tap technique had effect on reducing the pain during intramuscular injection.
- Statistically there was no significant association was found between the level of pain during intramuscular injection among experimental group and selected baseline variables.

6.2 CONCLUSION

Untreated pain has consequences for infants. In the short term, untreated pain causes behavioural changes like crying, facial grimacing, mourning or withdrawing limbs. In the long term, it can lead to the development of pre-procedural anxiety due to conditioning, and needle fears, including phobia. Needle fears lead to avoidance of medical treatment later in life. Therefore, it is important to effectively manage pain in infants. Based on this study, Helfer skin tap technique helped to reduce the intramuscular injection pain effectively for infants. Because, Helfer skin tap technique needs no additional cost, equipment, free from side effects, less time consuming, and it was easily taught to the health personnel. Hence, the researcher concludes that Helfer skin tap technique is an effective intervention to reduce pain during intramuscular injection compared with usual standard technique.

6.3 IMPLICATIONS OF THE STUDY

The study has implications in nursing practice, nursing education, nursing research and nursing administration.

6.3.1 NURSING PRACTICE

- Pain assessment is a basis to pain reduction. The nurses must be trained to assess the pain level of children according to their age.
- Nurses should practice the non pharmacological measures to reduce the pain level during intramuscular injection.
- Nurses can utilize the evidence based practice in improving the quality and standard of care.
- Nurses must be trained in the aspect of Helfer skin tap technique and the technique to be implemented in day to day practice.
- Physical interventions and injection techniques that minimize pain during vaccine injection offer an advantage over other techniques because they can be easily incorporated into clinical practice without added cost or time.

6.3.2 NURSING EDUCATION

- Pain is the fifth vital sign. So pain assessment scales and non pharmacological measures for the reduction of pain should be included in the nursing curriculum.
- Nurse educators should formulate procedures regarding non pharmacologic measures on pain.
- Orientation programmes for the nurses as regards the importance of non pharmacological measures on pain reduction.
- Updating the knowledge of the staff by proper and relevant in-service education programs to emphasize Helfer skin tapping as a intervention during intramuscular injection.

6.3.3 NURSING ADMINISTRATION

- Nursing administrators can develop nursing practice standards, protocols and manuals of pain assessment and pain management in children of various age, in which Helfer skin tap technique can be included as an important strategy to relieve the pain for children.
- The nurse administrator should plan for continuing service education regarding non pharmacologic strategies for pain relief during injection procedure.
- Village health nurses play a major role in immunization. So, Efforts to be made to enhance the capabilities of village health nurses through the in- service education programme on the new paradigm of Helfer skin tap technique and other non pharmacologic strategy on pain

6.3.4 NURSING RESEARCH

- Immunization is an important and universal experience for children and Helfer skin tap technique is an effective means for reducing pain in children associated with immunization pain. Further research in this area will help the nurse to find out other non pharmacological intervention to reduce immunization pain.
- The nurse researcher should motivate the clinical nurses to apply the research findings in practice. And follow the evidence based practice in order to bring a quality nursing care.

6.4 RECOMMENDATIONS

- ✓ The study can be replicated with large samples in different settings to validate and generalise the findings.
- ✓ The study can be conducted on the other age groups and can compare with other interventions such as application of manual pressure over the injection site, pragmatic technique.
- ✓ Studies can be conducted regarding the knowledge and practice of Helfer skin tap technique among health team members.
- ✓ Studies can be conducted to assess the parental emotional response during children's painful procedures
- ✓ Similar studies can be conducted with adult and old age people.

Bibliography

BIBLIOGRAPHY

BOOK REFERENCE

1. Anna Sidey, David Widds. (2005). *Text book of Community Children's Nursing*. (2nd ed.). London : Elsevier publications.
2. Basavanthappa, BT. (2006). *Community health nursing*. (2nd ed.). New Delhi: Jaypee publications .
3. Basavanthappa, B.T. (1998). *Nursing research* (3rd ed.). New Delhi: Jaypee Brothers.
4. Denise F. Polit, & Cheryl Tetano Beck. (2004). *Nursing Research Principles and Methods*. (7th ed.). Philadelphia: Lippincott.
5. Dianne Watkins. (2003). *Community health nursing*. (2nd ed.). Philadelphia: Bailliere Tindall.
6. Dorothy R. Marlow.,& Barbara C. Redding. (1998). *Textbook of pediatric Nursing*, (6th ed.). Philadelphia: Saunders.
7. Elizabeth Diem. (2006). *Community health nursing projects*. (1st ed.). Philadelphia: Lippincott Williams and Wilkins.
8. Fawcett Jacqueline. (1989). *Analysis and evaluation of conceptual Model of Nursing*. Philadelphia: F.A. Davis.
9. Geri Lobiondo-Wood., & Judith Haber. (2006). *Nursing Research*. (6th ed.). St. Louis: Mosby Publications.
10. Ghai, O.P. (2004). *Essential pediatrics*. (6th ed.). New Delhi: CBS publisher.
11. Gupta, S.P. (1991). *Statistical Methods*. (3rd ed.). New Delhi: Sultán Chand.
12. Henry M.Seiddel. (2009). *Primary care of the New born*. (4th ed.). Elsevier: Philladelphia.
13. Jeanne M. Sorrell. (2005). *Community based nursing practice*. (1st ed.). Philadelphia: F.A David's company .
14. Kamalam, S. (2004). *Community health nursing*. (1st ed.). New Delhi: Jaypee publication.
15. Kasturi Sundar Rao. (2007). *Community Health nursing*. (4th ed.). Chennai: BI Publications.
16. Kothari, C.R. (1988). *Research Methodology Methods and Techniques*. New Delhi: Whiey Eastern Ltd.

17. Marcia Stanhope. (2000). *Community health and public health nursing*. (6th ed.). Missouri: Mosby publications .
18. Mary A.Nies. (2001). *Community Health nursing*. (3rd ed.). Philadelphia: W.B.Saunders Publication.
19. McMillan, J.H., & Schumacher. (1989). *Research in education conceptual introduction*. (1st ed.). New York: Harper collies.
20. Nancy Burns., & Susan K Grove. (2007). *Understanding Nursing Research*. (4th ed.). St.Louis: Saunders Publications.
21. Nicki L.Potts. (2009). *Text book of Paediatrics*. (11th ed.). New Delhi: Jaypee publications.
22. Park K. (2010). *Preventive and social medicine*. (21st ed.). New Delhi: Banarsidas publication.
23. Parul Datta. (2009). *Paediatric Nursing*. (2nd ed.). New Delhi: Jaypee publications.
24. Piyush Gupta. (2010). *Text book of community medicine*. (3rd ed.). New Delhi: CBS publications.
25. Polit., Beck., & Hungler, P. (2001). *Essentials of Nursing Research*. (4th ed.). Philadelphia: Lippincott Raven Publishers.
26. Rose Marie Linda. (2008). *Foundations of Nursing Research*. (5th ed.). New Delhi: Pearson Prentice Hall.
27. Sally Huband, Ethel Trigg. (2000). *Practices in children's nursing*. (1st ed.). Edinburgh: Churchill Livingstone.
28. Seshu Babu V.V.R. (2001). *Review in community medicine*. (2nd ed.). Hyderabad: Paras publications.
29. Sodashy., & Yalfe, B.J. (1993). *Nursing theory analysis application and evaluation*, (2nd ed.). Boston: Little Brown.
30. Sunder lal, Adarsh. (2011). *Text book of community medicine*. (3rd ed.) New Delhi: CBS publications.
31. Suraj Gupte. (2009). *Text book of Paediatrics*. (11th ed.). New Delhi: Jaypee publications.
32. Suryakantha, AH. (2010). *Community medicine*. (2nd ed.). New Delhi: Jaypee publication.
33. Val Hyde. (2002). *Community nursing and health care*. (1st ed.). New Delhi: Jaypee publications.

34. Vidya Ratan. (2002). *Preventive and social medicine*. (9th ed.). New Delhi: Jaypee Publications.
35. Viswanathan .J. Desai. (2006). *Achar's Text book of Paediatrics*. (3rd ed.). New Delhi: Orient longman publications.

JOURNAL REFERENCE

1. Achema, G., Oyeleye, B. A. (2011). Pain relief strategies for infants taking DPT immunization in health centres. *African Journal of Midwifery & Women's Health*, 5(3), 193-195
2. Abdel Razek, A., Az El-Dein, N. (2009). Effect of breast-feeding on pain relief during infant immunization injections. *International Journal Nursing Practice*, 15, 99–104.
3. Barnhill, BJ., Holbert ,MD., Jackson, NM. (2010) Using pressure to decrease the pain of intramuscular injections. *Journal of Pain Symptom Management*, 12(1), 52–58.
4. Canadian Task Force on Preventive Health Care New grades for recommendations from the Canadian Task Force on Preventive Health Care. (2003) *CMAJ* . Vol 169. 207–8.
5. Cassidy, KL., McGrath, PJ. (2001). A randomized double-blind, placebo-controlled trial of the EMLA patch for the reduction of pain associated with intramuscular injection in four to six-year-old children. *Paediatrics*, 90, 1329–36.
6. Cassidy, KL., Reid, GJ., McGrath, PJ. (2002). Watch needle, watch TV: audiovisual distraction in preschool immunization. *Pain Medicine*, 3,108–18.
7. Chambers, CT., Taddio, A., Uman, LS., HELPinKIDS Team. (2009). Psychological interventions for reducing pain and distress during routine childhood immunizations: a systematic review. *Clinical Therapy* ,31(2), 77–103.
8. Chung, JW., Ng ,WM., Wong ,TK. An experimental study on the use of manual pressure to reduce pain in intramuscular injections. *Journal of Clinical Nursing*,11, 457–461.
9. Cohen, LL., MacLaren, JE., Fortson, BL. (2006). Randomized clinical trial of distraction for infant immunization pain. *Pain* ,125,165–171.

10. Cramer-Berness, L.J., Friedman, AG.(2005). Behavioral interventions for infant immunizations. *Child Health Care* ,34, 95–111.
11. Dilli, D., Küçük, IG., Dallar, Y. (2009). Interventions to reduce pain during vaccination in infancy. *Journal of Pediatrics*, 154(3), 385–390.
12. Dustin P., Keith D. (2010).The “Cough Trick:” A Brief strategy to Manage Pediatric Pain From Immunization Injections.*Pediatrics: The journal of American academy of paediatrics*,125, 367-373.
13. Efe E, Ozer ZC. (2007). The use of breast-feeding for pain relief during neonatal immunization injections. *Applied Nursing Research*, 20(1), 10–12
14. Evelyn Cohen, MD., Ericka krauss roth. (2003). Effective pain reduction for multiple immunization injections in Young infants. *Archives of paediatric adolescent Journal*, 157, 1115-1120.
15. French,GM., Painter EC, Coury DL.(1994). Blowing away shot pain: a technique for pain management during immunization. *Pediatrics*,93, 384–388.
16. Hatfield, LA. (2008). Analgesic properties of oral sucrose during routine immunizations at 2 and 4 months of age. *Pediatrics*,121, 327–34.
17. Hagan, JF., Jr., Coleman.WL., Foy JM. et al. (2011).The assessment and management of acute pain in infants, children, and adolescents. *Pediatrics*,108(3),793–797.
18. Helfer, Joanne Kieffer. (2000). Painless Injections: Helfer Skin Tap Technique . *Nurse Educator*, 25 (6), 272-273
19. Ipp, M., Taddio, A., & Goldbach, M. (2004). Effects of age, gender and holding on pain response during infant immunization. *Canadian Journal of Clinical Pharmacology*,11, 2–7.
20. Ipp M, Cohen E, & Goldbach M, et al.(2007). Effect of choice of measles–mumps–rubella vaccine on immediate vaccination pain in infants. *Archives Pediatric Adolescent*,98 (12),1153-1158.
21. Ipp, M. Taddio, A. and Sam, J.(2007). Vaccine-related pain: randomized controlled trial of two injection techniques. *Archives Diseases in Children*, 92, 1105–8.
22. Ipp, M. Parkin, PC. and Lear, N. (2009). Order of vaccine injection determines infant pain response. *Archives Diseases in Children*, 163,469–72

23. Jose Rose Mary, Sulochana. (2011). Effectiveness of skintap on pain during immunization response. *International journal of nursing education*. 4(1). 56-57.
24. Lacey,CM., Finkelstein,M.,&Thygeson,MV. (2008). The impact of positioning on fear during immunizations: supine versus sitting up. *Journal of Pediatric Nurse*, 23, 195–200.
25. Love preet kaur, Shukwinder kaur. (2009). Analgesic effect of Breast feeding in infants during immunization: a randomized controlled trial. *Nursing and midwifery Journal*, 5(4). 142-154.
26. Merkel ,SI., Voepel-Lewis, T., Shayevitz ,JR. (1997). The FLACC: a behavioral scale for scoring postoperative pain in young children. *Pediatric Nursing*,23, 293–297.
27. Meyerhoff, AS., Weniger, BG., & Jacobs, RJ. (2001). Economic value to parents of reducing pain and emotional distress of childhood vaccine injections. *Pediatric Infectious Disease Journal*, 20,57–62.
28. Parvez, E., Stinson, J., Boon, H. (2010). Mothers’ beliefs about analgesia during childhood immunization. *Paediatric Child Health* ,15,289–293.
29. Rasha Srouji, Savithri Ratnabalan. (2011). Pain in children: Assessment and management of non pharmacological measures in children and infants. *International journal of paediatrics*,5, 213- 225.
30. Riddell ,RR., Stevens, BJ., Cohen ,LL. (2007). Predicting maternal and behavioral measures of infant pain: the relative contribution of maternal factors. *Pain*, 133, 138–149.
31. Rosen bloom,MD., Goldman Michael. (2011). Parental sex and age: the effect of pain assessment in young infans. *Paediatric emergency care*,27(4). 266-269.
32. Schechter,NL., Zempsky, WT., &Cohen, LL. (2007). Pain reduction during paediatric immunizations: evidence-based review and recommendations. *Pediatrics*,119, 1184–1198
33. Shah V, Taddio A, Rieder MJ. HELPinKIDS Team. (2009). Effectiveness and tolerability of pharmacologic and combined interventions for reducing injection pain during routine childhood immunizations: systematic review and meta-analyses. *Clinical Therapy* ,31(2). 104– 147.
34. Sparks, L. Taking the “ouch” out of injections for children. Using distraction to decrease pain. *MCN American Journal of Maternal Child Nursing*, 26, 72–8.

35. Sr. Serena. (2009). Rhythmic sin tapping: An effective measure to reduce pain during intramuscular injection. *Indian nursing Journal*, 5,12-15.
36. Taddio A, Manley J. (2007). Routine immunization practices: use of topical anesthetics and oral analgesics. *Pediatrics*,120,637–643.
37. Taddio A, Chambers CT. (2009). Inadequate pain management during childhood immunizations. *Clinical Therapy*,31(2), 152–167.
38. Taddio,A., Ilersich,AL., Ipp,M.,& HELPin KIDS Team. (2009). Physical interventions and injection techniques for reducing injection pain during routine childhood immunizations: systematic review of randomized controlled trials and quasi-randomized controlled trials. *Clinical Therapy* . 31(2). 48–76.
39. Tivsy Thomas, Shetty,P. (2011). Role of Breast feeding in pain response during injectable immunization among infants. *The Nursing Journal of India*,3(2). 14-21.
40. Uman,LS., Chambers,CT., McGrath P. (2008) A systematic review of randomized controlled trials examining psychological interventions for needle-related procedural pain and distress in children and adolescents: an abbreviated Cochrane review. *Journal of Paediatric Psychology*,33, 842–854.

NET REFERENCES

Retrieved from

1. <http://tnhealth.org/dph>
2. <http://mohfw.org/nhp>
3. <http://who.int/wer>
4. <http://tnhsp.org>
5. <http://childinfo.org/immunization/html>
6. <http://www.journals.nurseeducatoronline/painless-helper-skintap.10>
7. <http://www.who.int/immunization-monitoring/data/en>
8. <http://www.who.int/sea/rc65>
9. <http://bccentrefordisesecontrol.org>
10. http://www.toronto.ca/health/immunization_children/pdf/howtoreducepain.pdf
11. <http://www.who.int.epi/303>
12. <http://www.whoindia.org>
13. <http://www.whovaccine/doc>

14. <http://jpo/sagepub.com>
15. <http://www.iapimmunization.com>
16. <http://www.abmprotocol.com>
17. <http://www.SciRP.org/journal/wjv>
18. <http://www.archpaediatrics.com>

Appendices

APPENDIX – I (A)
RESEARCH TOOL

SECTION: I

BASE LINE VARIABLES:

SAMPLE NO:

Kindly read the following and please choose the correct answer

1. Age

- a. 1-2 months
- b. 2-3 months
- c. 3-4 months
- d. Above 4 months

2. Sex

- a. Male
- b. Female

Weight of the child -----

3. Nutritional status

- a. Normal (80% and above)
- b. Grade I (71 - 80%)
- c. Grade II(61 -70%)
- d. Grade III(51 - 60%)
- e. Grade IV (50% and below)

4. What was the completed months of gestation during the delivery of the baby

- a. Below 7 months (Preterm)
- b. 8 months to 10 months (Full term)
- c. More than 10 months (Post term)

5. Mode of delivery of the baby

- a. Normal vaginal delivery
- b. Normal vaginal delivery with episiotomy
- c. Instrumental deliveries
- d. Lower segmental caesarean section

6. Birth weight

- a. Below 2500 gm
- b. 2500 – 3000 gm
- c. 3000 – 3500 gm
- d. 3500 gm and above

7. Birth order

- a. 1
- b. 2
- c. 3
- d. 4 and so on

8. Feeding status of the child

- a. Breast feeding
- b. Weaning
- c. Breast feeding with weaning
- d. Supplementary feeding

9. Whether the child had received any injections after birth

- i. Yes
- ii. No

i) If yes, what type of injection was given previously

- a. Intra dermal
- b. Intramuscular
- c. Intravenous
- d. Others

10. Which dose of Pentavalent does the child receive at present?

- a. I dose
- b. II dose
- c. III dose

SECTION – II

STANDARDIZED FLACC PAIN SCALE

Put a tick (✓) mark on suitable

S.No	CATEGORY	SCORE	CHILD SCORE
I	FACE		
	No particular expression or smile	0	
	Occasional grimace or frown, withdrawn, disinterested	1	
	Frequent to constant quivering chin, clenched jaw	2	
II	LEGS		
	Normal position or relaxed	0	
	Uneasy, restless, tense	1	
	Kicking, or legs drawn up	2	
III	ACTIVITY		
	Lying quietly, normal position, moves easily	0	
	Squirming, shifting back and forth, tense	1	
	Arched, rigid or jerking	2	
IV	CRY		
	No cry(awake or asleep)	0	
	Moans or whimpers; occasional complaint	1	
	Crying steadily, screams or sobs, frequent complaints	2	
V	CONSOLABILITY		
	Content, relaxed	0	
	Reassured by occasional touching, hugging or being talked to, distractible	1	
	Difficult to console or comfort	2	

APPENDIX – I (B)

SECTION II

SCORING PROCEDURE

The minimum obtainable score for each category of pain response was zero and maximum score 2. The total of maximum pain score was 10.

SCORE INTERPRETATION

Based on the score the pain response is graded as follows:

Score Categories

SCORE	INTERPRETATION
0	NO PAIN
1-3	MILD PAIN
4-6	MODERATE PAIN
7-10	SEVERE PAIN

பகுதி - அ
தன் விபரக்குறிப்பு

1. வயது

- அ. 1-2 மாதங்கள்
- ஆ. 2 - 3 மாதங்கள்
- இ. 3 - 4 மாதங்கள்

2. பாலினம்

- அ. ஆண்
- ஆ. பெண்

3. குழந்தையின் எடை _____

4. குழந்தையின் ஊட்டச்சத்து நிலை

- அ. சாதாரண நிலை (80% மேல்)
- ஆ. தரநிலை 1 (71% — 80%)
- இ. தரநிலை 2 (61% — 70%)
- ஈ. தரநிலை 3 (51% — 60%)
- உ. தரநிலை 4 (50% மற்றும் அதற்கு மேல்)

5. குழந்தை பிறக்கும் போது குழந்தையின் கருவளர் காலம் என்ன?

- அ. 7 மாதத்திற்கு கீழ்
- ஆ. 8 மாதம் முதல் 10 மாதம் வரை
- இ. 10 மாதத்திற்கு மேல்

6. பிரசவத்தின் தன்மை

- அ. சுகப்பிரசவம்
- ஆ. விடபக்கிழிவுடன் சுகப்பிரசவம்
- இ. ஆயுதப்பிரசவம்
- ஈ. அறுவை சிகிச்சையின் மூலம்

7. பிறந்த போது குழந்தையின் எடை

- அ. 2500 கி.கி.க்கு கீழ்
- ஆ. 2500கி.கி முதல் 3500 கி.கி வரை
- இ. 3500 கி.கி மற்றும் அதற்கு மேல்

8. பிறப்பு வரிசை

- அ. 1
- ஆ. 2
- இ. 3
- ஈ. 4 மற்றும் அதற்கு மேல்

9. குழந்தையின் உணவு முறை

- அ. தாய்ப்பால்
- ஆ. இணை உணவு
- இ. தாய்ப்பாலுடன் இணை உணவு
- ஈ. நிறை உணவு

10. குழந்தை பிறந்த பிறகு ஏதேனும் ஊசி போட்டுள்ளீர்களா?

- அ. ஆம்
- ஆ. இல்லை

10 (i). ஆம் எனில் எந்த வகை ஊசி இதற்கு முன்னால் போடப்பட்டது?

- அ. தோல் ஊசி
- ஆ. தசை வழி ஊசி
- இ. இரத்தக்குழாய் வழி ஊசி
- ஈ. மற்றவை

11. தற்போது எடுக்கும் "ஐந்து நோய் தடுப்பு ஊசி" எத்தனையாவது தவணை?

- அ. முதல் தவணை
- ஆ. இரண்டாவது தவணை
- இ. மூன்றாவது தவணை

பகுதி - ஆ

தரநிலையான FLACC வலி (முகம், கால்கள், நடவடிக்கை, அழுக்கை, மற்றும் தேற்றக்கூடிய செயல்) அளவுகோல்.

வ. எண்.	பிரிவு	மதிப்பெண்	குழந்தையின் மதிப்பெண்
1.	முகம்		
	தெளிவான முகத்தோற்றம் அல்லது சிரிப்பு இன்மை	0	
	எப்பொழுதாவது முகநெளிப்பு, திரும்ப மீள்தல்	1	
	தாடை அடிக்கடி உதறுதல், தாடை இறுக மூடியிருத்தல்	2	
2.	கால்கள்		
	வழக்கமான நிலையிலிருத்தல் அல்லது தளர்ந்த நிலையிலுத்தல்	0	
	அதையில்லாத, கஷ்டமான, இறுக்கப் பட்ட நிலையிலிருத்தல்	1	
	உதைத்தல் அல்லது கால்களை இழுத்துக் கொள்ளுதல்	2	
3.	நடவடிக்கை		
	அமைதியாக படுத்துக்கொண்டிருத்தல், வழக்கமான நிலையிலிருத்தல்	0	
	நெளிதல், இறுக்கப்பட்ட நிலையில் முன்னும், பின்னுமாக நகர்தல்	1	
	வளைந்து காணப்படுதல், இறுக்கமான அல்லது திடீரென உதறுதல்	2	
4.	அழுக்கை		
	அழாமல் இருத்தல்	0	
	எப்பொழுதாவது முணகுதல்	1	
	கீச்சென்று சப்தமிட்டு அழுதல், தேம்பி அழுதல்	2	
5.	தேற்றக்கூடிய செயல்		
	தளர்ந்திருத்தல், தேற்றக்கூடிய நிலையிலிருத்தல்	0	
	தொடுதலினாலும், அணைத்தலினாலும் அல்லது பேசி விளையாடுவதினாலும் திரும்ப உறுதிபடுத்துதல்	1	
	தேற்றக்கூடியது கடினமான செயல்	2	

APPENDIX – II

Ref. No. 5336 /E4/3/2012

Govt. Rajaji Hospital,
Madurai.20. Dated: .08.2012

Institutional Review Board / Independent Ethics Committee.

Dr. N. Mohan, M.S., F.I.C.S., F.A.I.S.,
Dean, Madurai Medical College & 2521021 (Secy)
Govt Rajaji Hospital, Madurai 625020.

Convenor
grhethicssecy @gmail.com.

**Sub: Establishment-Govt. Rajaji Hospital, aMadurai-20-
Ethics committee-Meeting Agenda-communicated-regarding.**

The Ethics Committee meeting of the Govt. Rajaji Hospital, Madurai was held at 11.00 Am to 1.00Pm on 28.06.2012 at the Dean Chamber, Govt. Rajaji Hospital, Madurai. The following members of the committee have been attended the meeting.

1. Dr.N.Vijayasankaran,M.ch(Uro.) 094-430-58793 0452-2584397	Sr.Consultant Urologist Madurai Kidney Centre, Sivagangai Road,Madurai	Chairman
2. Dr.P.K. Muthu Kumarasamy, M.D., 9843050911	Professor & H.O.D of Medical, Oncology(Retired)	Member Secretary
3. Dr.T.Meena,MD 094-437-74875	Professor of Physiology, Madurai Medical College	Member
4. Dr. S. Thamilarasi, M.D (Pharmacol)	Professor of pharmacology	
5.Dr.Moses K.Daniel MD(Gen.Medicine) 098-421-56066	Professor of Medicine Madurai Medical College	Member
6.Dr.M.Gobinath,MS(Gen.Surgery)	Professor of Surgery Madurai Medical College	Member
7.Dr.S. Dilshadh, MD(O&G) 9894053516	Professor of OP&Gyn Madurai Medical College	Member
8.Dr.S.Vadivel Murugan., M.D, 097-871-50040	Professor of Medicine Madurai Medical College	Member
9.Shri.M.Sridher,B.sc.B.L. 099-949-07400	Advocate, 2, Deputy collectors colony 4 th street KK Nagar, Madurai-20.	Member
10.Shri.O.B.D.Bharat,B.sc., 094-437-14162	Businessman Plot No.588, K.K.Nagar,Madurai.20.	Member
11.Shri. S.sivakumar,M.A(Social) Mphil 093-444-84990	Sociologist, Plot No.51 F.F, K.K Nagar, Madurai.	Member

Following Projects were approved by the committee

Sl.no	Name of P.G	Course	Name of the project	Remarks
1.	Manju.R	M.Sc Nursing	Pain perception with Helfer skin-tap technique in infants undergoing in vaccination.	Approved

Please note that the investigator should adhere the following: She/he should get a detailed informed consent from the patients/participants and maintain confidentially.

1. She/he should carry out the work without detrimental to regular activities as well as without extra expenditure to the institution to Government.
2. She/he should inform the institution Ethical Committee in case of any change of study procedure site and investigation or guide.
3. She/he should not deviate for the area of the work for which applied for Ethical clearance. She/he should inform the IEC immediately, in case of any adverse events pr Serious adverse reactions.
4. She/he should abide to the rules and regulations of the institution.
5. She/he should complete the work within the specific period and apply for if any Extension of time is required She should apply for permission again and do the work.
6. She/he should submit the summary of the work to the Ethical Committee on Completion of the work.
7. She/he should not claim any funds from the institution while doing the word or on completion.
8. She/he should understand that the members of IEC have the right to monitor the work with prior intimation.

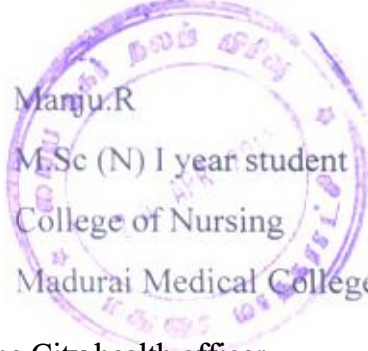

 DEAN 11/12.8.12

To
All the above members and Head of the Departments concerned.
All the Applicants.

APPENDIX – III

LETTER SEEKING PERMISSION FOR CONDUCTING THE STUDY

From



To

Madurai Medical College, Madurai - 20

The City health officer
Madurai Corporation,
Madurai.

HI
G219
26/4/12

Through: The proper Channel / -

Respected Sir,

Sub: College of Nursing, Madurai Medical College, Madurai M.Sc., (N) I year community health Nursing Student-- Permission for conducting study in **Urban health post, Sellur-** request regarding.

I, Ms.Manju.R M.Sc (N) I year student, College of Nursing, Madurai Medical College, Madurai in fulfillment of M.Sc., Nursing course, have a plan to conduct a study on topic mentioned below in Urban health post, Sellur, Madurai . I assure that not interfere with the routine activity of the center.

The topic is **“Effectiveness of Helfer skintap technique on pain during intramuscular injection among infants attending immunization clinic at health post, Sellur.**

Kindly consider my request and permit me to conduct the study.

Thanking you,

Manju.R
26.4.12

மருத்துவ அறிவுரை
நல வாழ்வு அமைப்பு: 2
செல்சூர்
மதுரை மாநகராட்சி, மதுரை-20
Dr.K.P.Benda 200 M.B.A.S.

Yours Sincerely,

R.Manji

DATE:

(MANJU.R)

APPENDIX – IV
CERTIFICATE OF VALIDATION

This is to certify that

SECTION A - Baseline Profile

SECTION B - Standardized FLAAC Pain Scale

Prepared for data collection by **MANJU.R** II year M.Sc (N) student, college of Nursing, Madurai Medical College, Madurai, who has undertaken the study field on Dissertation entitled **“EFFECTIVENESS OF HELPER SKIN TAP TECHNIQUE ON PAIN DURING INTRAMUSCULAR INJECTION AMONG THE INFANTS ATTENDING IMMUNIZATION CLINIC AT URBAN HEALTH POST SELLUR, MADURAL”** has been validated by me.



SIGNATURE OF THE EXPERT

NAME: *Dr. C. Selvakumari*

DESIGNATION: *Director*

DATE: *2.8.12*

DIRECTOR
INSTITUTE OF COMMUNITY MEDICINE
MADURAI MEDICAL COLLEGE
MADURAI.

CERTIFICATE OF VALIDATION

This is to certify that

SECTION A - Baseline Profile

SECTION B - Standardized FLAAC Pain Scale

Prepared for data collection by **MANJU.R** II year M.Sc (N) student, college of Nursing, Madurai Medical College, Madurai, who has undertaken the study field on Dissertation entitled **“EFFECTIVENESS OF HELPER SKIN TAP TECHNIQUE ON PAIN DURING INTRAMUSCULAR INJECTION AMONG THE INFANTS ATTENDING IMMUNIZATION CLINIC AT URBAN HEALTH POST SELLUR, MADURAI.”** has been validated by me.



SIGNATURE OF THE EXPERT

NAME: *Dr. P. Manimekavathi, MNS, DNB*

DESIGNATION: *CHO, EMU Dispensary / UHPT
Madurai Corporation. 2/L*

DATE: *Madurai*

**MEDICAL OFFICER
U. H. POST NO: 7
MUNICIPAL
MADURAI CORPORATION**

CERTIFICATE OF VALIDATION

This is to certify that

SECTION A - Baseline Profile

SECTION B - Standardized FLAAC Pain Scale

Prepared for data collection by **MANJU.R** II year M.Sc (N) student, college of Nursing, Madurai Medical College, Madurai, who has undertaken the study field on Dissertation entitled **“EFFECTIVENESS OF HELPER SKIN TAP TECHNIQUE ON PAIN DURING INTRAMUSCULAR INJECTION AMONG THE INFANTS ATTENDING IMMUNIZATION CLINIC AT URBAN HEALTH POST SELLUR, MADURAL”** has been validated by me.

SIGNATURE OF THE EXPERT

NAME:

J.P. V. John Sam Arun Drabu,
M.Sc.,(N)M.Sc.,(Psy),PGDHM

DESIGNATION:

HOD, Community Health Nursing
CSI Jeyaraj Annapackiam
College of Nursing
Pasumalai, Madurai-625 004

DATE:

CERTIFICATE OF VALIDATION

This is to certify that

SECTION A - Baseline Profile

SECTION B - Standardized FLAAC Pain Scale

Prepared for data collection by **MANJU.R** II year M.Sc (N) student, college of Nursing, Madurai Medical College, Madurai, who has undertaken the study field on Dissertation entitled **“EFFECTIVENESS OF HELPER SKIN TAP TECHNIQUE ON PAIN DURING INTRAMUSCULAR INJECTION AMONG THE INFANTS ATTENDING IMMUNIZATION CLINIC AT URBAN HEALTH POST SELLUR, MADURAL”** has been validated by me.


SIGNATURE OF THE EXPERT

NAME: MRS. BHARATHI SORUSA

DESIGNATION:

DATE:

RANI.S.
Asst. Professor.
17/10/12

CERTIFICATE OF ENGLISH EDITING

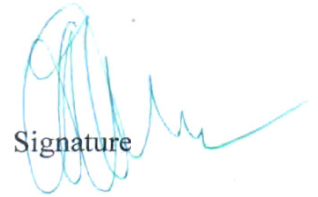
TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation by MANJU.R II year M.Sc(N) student, college of Nursing, Madurai Medical College, Madurai, who has undertaken the study field on Dissertation entitled “EFFECTIVENESS OF HELPER SKIN TAP TECHNIQUE ON PAIN DURING INTRAMUSCULAR INJECTION AMONG THE INFANTS ATTENDING IMMUNIZATION CLINIC AT URBAN HEALTH POST SELLUR, MADURAL” has been edited for English language appropriateness.

Name: Dr. C. RAJU

Designation: ASSOCIATE PROFESSOR IN ENGLISH

Institution: YADAVA COLLEGE, Madurai-14


Signature

Dr. C. Raju
Associate Professor and Head
Department of English
Yadava College (Autonomous)
Govindarajan Campus, Thiruppalai
Madurai-625 014.

CERTIFICATE OF TAMIL EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation by MANJU.R II year M.Sc(N) student, college of Nursing, Madurai Medical College, Madurai, who has undertaken the study field on Dissertation entitled “EFFECTIVENESS OF HELPER SKIN TAP TECHNIQUE ON PAIN DURING INTRAMUSCULAR INJECTION AMONG THE INFANTS ATTENDING IMMUNIZATION CLINIC AT URBAN HEALTH POST SELLUR, MADURAL” has been edited for Tamil language appropriateness.

Name: V. MOHAN

Designation: Associate Prof & Head

Institution: Centre for Advanced Tamil Research
Yadava College
Madurai - 625014.


Signature

Dr. V. MOHAN, M.A., M.A., M.Phil., Ph.D.,
ASSOCIATE PROFESSOR & HEAD
CENTRE FOR ADVANCED TAMIL RESEARCH
YADAVA COLLEGE (AUTONOMOUS)
(ACCREDITED WITH 'A' GRADE BY NAAC)
MADURAI - 625 014

APPENDIX – V

ஒப்புதல் அறிக்கை

என் குழந்தைக்கு தசை ஊசிபோடும்போது தோலின் மேல் இலேசான தட்டுதல் என்னும் செய்முறையைப் பற்றியும், அதன் நன்மைகள் மற்றும் விளைவுகள் பற்றியும் நான் புரிந்துகொண்டேன். நான் இந்த செவிலிய ஆய்வில் தானாகவே முன்வந்து பங்கு பெறுகிறேன். மேலும் எனக்கு இந்த ஆய்வில் இருந்து எந்த நேரமும் விலகிக்கொள்ள முழு அனுமதி வழங்கப்பட்டுள்ளது. என் குழந்தையின் சிகிச்சை ஆவணங்களைப் பார்வையிட்டு அதில் உள்ள விவரங்களை ஆய்வில் பயன்படுத்திக்கொள்ள அனுமதி அளிக்கின்றேன். குழந்தையின் பெயர் மற்றும் அடையாளங்கள் ரகசியமாக வைத்துக் கொள்ளப்படும் என்றும் எனக்கு உறுதியளிக்கப்பட்டுள்ளது.

இப்படிக்கு

APPENDIX – VI

HELPER SKIN TAP TECHNIQUE

Helper skin tap technique was developed in 1998, by Ms. Joanne Keiffer Helfer BSN, RN, MICN, Sonoma State University, Modesto, California.

The step of Helper skin tap technique is as follows:

- Have the child assume the comfortable position in mother's lap.
- Identified the injection site and tapped the skin approximately 5 seconds with the palmar aspect of the dominant hand to relax the muscle.
- Prepared the skin with alcohol uncap the syringe in the dominant hand and made a "V" with the thumb and taped the skin again for 3 times. The entire hand is used to tap the muscle three times. The tap (not slap) must be firm, using the entire hand, to ensure stimulation of the large fibers.
- Inserted the needle into the antero-lateral aspect of thigh. After aspirating to prevent injection into a vessel as per normal routine, inject the medication slowly while continuing to tap the muscle gently for 3 times, to keep it relaxed with the palmar aspect of the fingers of the non-dominant hand.
- Remove the needle while simultaneously tapping the skin again using the "V" tap (spreading the thumb and index finger) of the non dominant hand.
- The wide span of the hand promotes broad stimulation of the large muscle fibers around the injection site. To avoid a needle stick, the wide "V" with the thumb and index finger allows sufficient space for the needle to be inserted and removed safely.
- A light tap will not have the same effect, and a slap may sting the skin. Tapping several times helps relax the muscle more, and counting to three helps the nurse synchronize the muscle tap with the needle insertion and helps standardize the technique.
- Pain was measured by FLACC (Face, Legs, Activity, Cry, Conslability) pain scale.

USUAL STANDARD TECHNIQUE

- Prepared correct vaccine and air is expelled.
- Selected appropriate site – antero lateral aspect of thigh and provided comfortable position.
- Cleaned the Injection site with antiseptic swab.
- The needle was inserted at 90 degrees angle into the muscle.
- In order to ensure the needle is not in the blood vessel, aspirate it.
- Injected medication slowly and withdraw the needle.
- Pain score was measured by FLACC (Face, Legs, Activity, Cry, Consolability) pain scale.

APPENDIX – VII

PHOTOGRAPHS

The researcher interviewing the Infant's mother



The researcher preparing the injection



The researcher providing Helfer skin tap technique – Experimental group

Before administering Injection



During the time of administration



After administering the injection



The researcher providing Usual standard technique – Control group

