DISSERTATION ON

"A STUDY TO COMPARE THE EFFECTIVENESS OF CARTOON VIDEO DISTRACTION TECHNIQUE VERSUS MUSIC THERAPY IN ALTERING BEHAVIOR RESPONSE TO PAIN AMONG TODDLER RECEIVING IMMUNIZATION AT PEDIATRIC OUTPATIENT DEPARTMENT, INSTITUTE OF CHILD HEALTH AND HOSPITAL FOR CHILDREN, EGMORE,CHENNAI-8."

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In partial fulfillment of the requirement for award of the degree of

MASTER OF SCIENCE IN NURSING

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CERTIFICATE

This is to certify that this dissertation titled**, "A study to compare the effectiveness of cartoon video distraction technique versus music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, Institute of child health and hospital, for children, Egmore, chennai-8."** is the bonafide work done by **Mr**. **R.GANESAN,** College Of Nursing, Madras Medical College, Chennai-03 submitted to THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI-32 towards the partial fulfillment of the requirements for the award of the Degree of MASTER OF SCIENCE IN NURSING, Branch-II, CHILD HEALTH NURSING , under our guidance and supervision during the academic period from 2013-2015.

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“Cartoon video is an harmony for the honor of God and the permissible delights of the soul”

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ABSTRACT

TITLE: A study to compare the effectiveness of cartoon video distraction technique versus music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, Institute of child health and hospital for children, Egmore, chennai-8. METHODS: Quasi Experimental post test only control group design was utilized and data collected by purposive sampling technique. The tool used for the study consists of demographic data, MODIFIED BEHAVIOURAL ASSESSMENT SCALE and physiological parameters. The populations of this study were 60 children of both sexes in the age group of 1 – 3 years. Conceptual framework used for the study was ROY'S ADAPTATION THEORY. **RESULTS:** The findings of the study revealed that the comparison of pain score Considering Group A toddlers, they are having 13.37 pain score and in group B toddlers they are having 20.03 score. Difference is 6.67 pain score. The difference between Group A and Group B pain score is large and it is statistically significant. It was analyzed by using student independent t-test. And the pain reduction was evidenced by the behavioral modified assessment scale. The association between level of pain reduction score and toddlers' demographic variables are 25 – 30 months of age, male children, previous experience and mother accompanying with children during immunization where more reduced pain during immunization than others. **CONCLUSION:** Cartoon video therapy is very effective than music therapy in reduction of pain during immunization in toddlers.

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LIST OF ABBREVIATIONS

S.NO	ABBREVIATIONS	EXPANSION
1.	Fig	Figure
2.	H1 & H2	Research Hypothesis
3.	SD	Standard Deviation
4.	M.Sc (N)	Master of Science in Nursing
5.	X^2	Chi-square test
6.	No.	Number
7.	ICH & HC	Institute of Child Health & Hospital for Children

CHAPTER - I

INTRODUCTION

"A child is precious and beautiful,
A source of joy and happiness,
A focus of love and care,
A subject of dreams for the future"

- (Child care. 2010)

"Children are the wealth of tomorrow; take care of them if you wish to have a strong India, ever ready to meet various challenges"

- Jawaharlal Nehru

Immunization is an important part of health promotion and disease prevention strategy for all children. One of the most dramatic advances in pediatrics has been the decline of infectious diseases during the twentieth century because of the widespread use of immunization for preventable diseases. Despite recent advances in the assessment and management of acute pediatric pain, outlined in the outpatient departmental practice guidelines of the Agency for Healthcare Policy and Research (AHCPR), children continue to be subjected to pain and distress during immunization.

Reports from children, parents and nurses consistently indicate that many children do indeed fear the "shot." This finding is also supported by research indicating that a minority of the adult population also suffer from fear involving needles. A child's anxiety and fear of a procedure and actual pain experience during the procedure often are manifested by the child's distress behavior such as crying, flailing and refusal to cooperate. The child's distress is upsetting not only

for the child but also for the adults involved, both parents and professionals, and it often makes it more difficult to complete the needed procedure.

Although hospitals are committed to provide health and wellness, children are frightened to come to the hospital and start crying at the sight of health personnel like nurses, as it makes their young mind to associate the hospital with the pain they had experienced during their precious visit of hospitalization.

Immunization is a global health priority for every child. It is regarded as one of the significant medical achievements of all time.

According to Taddle, A.et al (2009) relieving pain during child hood immunization has reduced distress during the procedure and greatly improves satisfaction with the immunization experience to children and their families. The pain management should be included as a routine aspect of the delivery of vaccine injections

In India as per Coverage Evaluation Survey, 2009, at national level, 61% of the children aged 12-23 months have received full immunization. The coverage of immunization was higher in urban areas (67.4%) compared to that in the rural areas (58.5%).

- BCG –measles drop - out rate is found to be 14.7% and
- 17.7% children dropped out between BCG and DPT3,
- 10.3% between DPT1 and Measles and
- 13.3% between DPT1 and DPT3.

Further the data reveals that, drop-out rate increases with birth order, and decreases with mother's better education and better economic conditions of the family. Drop –out rate is more among rural children (15.8%) than among urban children (12.2%).

- Immunization against measles: Status of achieving Millennium Development Goals in India (MDG) Goal 4: "Reduce child mortality" has an indicator 'Proportion of one year old children immunized against measles' to track the progress of immunization.

- The national level measure of the proportion of one-year old (12-23 months) children immunized against measles has registered an increase from 42.2% in 1992-93 to 74.1% in 2009 (UNICEF - United Nation International Child Emergency Fund & GOI - Government of India: Coverage Evaluation Survey 2009).

At the historical rate of increase, India is expected cover about 89% children in the age group 12-23 months for immunization against measles by 2015. Thus India is likely to fall short of universal immunization of one-year old against measles by about 11 percentage points in 2015.

- In 2009, nearly 8% children of aged 12-23 months did not receive even a single vaccine.
- Nearly 62% of the male children aged 12-23 months have received full immunization, while among the females it was nearly 60%.
- While 67.4% of first birth order children are fortunate enough to receive full immunization, only 40.4% were so in the category of birth order 4 and above are covered under full immunization.
- The full immunization coverage of children age 12- 23 months of mother's education with 12 or more years is 76.6% whereas for mothers who had no education only 45.3% of children got full immunization.
- The full immunization coverage of children age 12-23 months is highest in Goa (87.9%), followed by Sikkim (85.3%), Punjab (83.6%), and Kerala (81.5%). The full immunization coverage is lowest in Arunachal Pradesh (24.8%).

Hence this research study will help us to imply the status of immunization and the importance of immunization to the children especially during the toddler'

period, even though multifocal factor for determining the mortality rate for children. The encouragement of immunization will promote the child health status in effective and might be decline the children mortality rate. That's why I have choose this research study.

For young children, explaining the procedures with age appropriate information is useful, in addition to providing them with the opportunities to ask questions. Examples for active distraction used with this age group include, allowing them to blow bubbles, providing toys with lots of colour or toys that light up. Initiating distracting conservations (e.g., how many brothers and sisters do you have? What did you do at your birthday party? And deep breathing methods are also helpful for older children. Passive distraction techniques include: having the parents or child life specialist read age appropriate books, sing songs, and practicing "blowing out birthday candles" with the child.

In toddlers' verbal skills remain limited and quite inconsistent. Pain-related behaviours are still the main indicator for assessments in this age group. Nonverbal behaviours, such as facial expression, limb movement, grasping, holding, and crying, are considered more reliable and objective, measures of pain than self-reports. Most children of this age however are capable of voluntarily producing displays of distress, with older children displaying fewer pain behaviours (e.g., they cry, moan, and groan less often). Most two-year-old children can report the incidence and location of pain, but do not have the adequate cognitive skills to describe its severity. Three-year-old children, however, can start to differentiate the severity of pain, and are able to use a three-level pain intensity scale with simple terms like "no pain, little pain or a lot". Children in this age group are usually able to participate in simple dialogue and state whether they feel pain and "how bad it is".

To ensure adequate pain relief, or to make pain more tolerable and to give the children a sense of control over the situation, non-pharmacological methods are widely accepted as additional strategies that may be used independently during painful procedures.

Distraction is a non-pharmacological intervention that diverts attention from a noxious stimulus through passively redirecting the subject's attention or by actively involving the subject in the performance of diversion task distraction involves capturing child's attention and focusing away from the stressful situation and to something more pleasant. It takes little training to learn, is easy to administer requires few materials and something familiar to most individuals. It is particularly useful for younger children. Examples of distracters used with children are picture books, talking with the child, music, party blowers, kaleidoscope, prop up book, blowing bubbles, moving toys, cartoon video, looking for hidden objects in the room, counting out loud, hand-held computers games, imaging fun and exciting things are quiet and relaxing senses.

In addition to undue pain and distress lack of pain control for injection is a barrier to immunization. Distraction was chosen as the primary intervention because it provides a simple approach in reducing pain and anxiety that has been shown to be effective in a number of settings, requires little training, and has a number of theoretical sound reasons for why it should work.

Pediatric nurses are entrusted with a practical challenge with specific strategies such as play, preparation for hospitalization and preparation of procedure to make hospitalization and procedures as less stressful situation.

BACK GROUND OF THE STUDY

Immunization is painful and children show behavioral distress to pain while receiving immunization. A comparative study was conducted at the University of Georgia to isolate and compare children's procedural anxiety and pain. Results suggested that anxiety and pain are highly correlated. Another study was conducted at the department of psychology, West Virginia University, Morgantown, USA to examine the nurse – directed distraction for reducing infant immunization distress. Results indicated that infants engaged in distraction and that distraction reduced their behavioral distress. These studies show that children experience behavioral distress to pain while receiving immunization.

Children are precious to their family. The term “terrible twos” has been often used to describe the toddler’ years; the period from 12 to 36 months of age is the time for intense exploration of the environment as children attempt to find out how things work power of temper tantrums, negativism and abstinence.

Pain is common among children. Pain is the most important. Parents want their child to be safe from diseases. For this reason, they selected immunization as a preventive measure; routine immunization is an almost universal experience for children. Although it is a relatively minor painful procedure, the fear of the “shot” is widespread, fear of injection is most frequent in children and persists in 140/1000 people at age 20. Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert 2 million deaths each year.

1.1. NEED FOR STUDY

"Pain is such an uncomfortable feeling that even a tiny amount of it is enough to ruin every enjoyment."

- Will Rogers

Routine immunization bumps and bruises, and childhood illnesses mean that pain is a part of the everyday experiences of all infants and children. Younger children are particularly in need of interventions because they report more pain and display more behavioral distress during medical process.

An experimental study was conducted at the College of Nursing, University of Nebraska Medical Centre, to investigate the effect of audio-taped lullabies on physiological and behavioral distress and perceived pain among children during routine immunization. An experimental design was used to study 99 healthy children aged 3-6 years. Half of the children received musical intervention during the immunizations, while the other half did not. Total distress scores were significantly lower for the experimental group. These results indicated that immunization is a stressful experience for children.

Duff (2003) explained that, fears is a normal response to threatening stimuli, and involves three response systems.

- Physiological arousal
- Convert feelings and thoughts
- Overt behavior reactions

Humphrey and Boon (2003) argue that injection pain is not a benign stimulus for children, but it is an unpleasant sensory and emotional experience that threatens loss of control, so the child's response not a fear or phobia of needles but a normal anticipatory fear which involves the behavior in children.

Above mentioned studies show that immunization is a distressful experience for children. Because mostly it is given by the nurses working in primary care settings, it is necessary for them to reduce child distress during immunization. Nurses who perform painful procedures and support infants and children during and after these procedures have long been concerned about how children respond to pain.

In addition to managing the pain with pharmacological techniques, Texas children's pediatric pain service recommends the following ways to comfort the child.

- ★ Distraction helps the child's attention away from pain by blowing bubbles, listening to a story or playing video games.
- ★ Provide soothing senses such as sucking a pacifier, having a back rub or listening to music.
- ★ Control anxiety by preparing the child for what is to come, or by offering choices, such as what color bandages to apply.

Carroll and seers (1998) reported the degree to which a client focuses attention on pain can influence pain perception. Increased attention has been associated with increased pain, where as distraction has been associated with a diminished pain response. This concept is one that pediatric nurses apply in

various pain reliefs' interventions such as relaxation, guided imagery and massage, audio-visual distraction.

However, although numerous studies have reported assessment and management of infant's and children's pain, the application of the findings to the practice setting has not been systematic. This has been a serious barrier to innovative care practice. Pain is an unpleasant, subjective sensory and emotional experience associated with actual (or) potential tissue damage (or) described in terms of such damage.

Pain is universal experiences through there are many non-pharmacological methods for diverting the children from perceiving pain during painful procedure. But Diversion therapy has the power of diverting the children's attention away from the sensation of pain towards other thoughts.

Carroll and Seers (1998) reported the degree to which a client focuses attention on pain can influence pain perception. Increased attention has been associated with increased pain, where as distraction has been associated with a diminished pain response. This concept is one that nurses apply in various pain relief interventions such as relaxation, guided imagery and massage.

Pain occurs in all outpatient departmental settings and among many different groups of patients. Nurses have a central role in pain assessment and management .Pain is one of the most common widely under-treated health problems. As a basic scientific definition, pain is a sensation caused by some type of noxious stimulus.

Above mentioned studies show that immunization is a distressful experience for children. Because mostly it is given by the paediatric nurses working in primary care settings, it is necessary for them to reduce child distress during immunization. However, although numerous studies have reported assessment and management of infant's and children's pain, the application of the findings to the practice setting has not been systematic. This has been a serious barrier to innovative care practice.

Distractive is effective, especially with native participants. First, children in the pre-operational period of cognitive development should be more responsive in seeing the toy and enjoying sound. Second, playing with a toy in the outpatient departmental setting is incompatible with distress behaviour; thus decreasing the anticipating distress reaction, and third, previous studies have shown that when a paediatric nurse encourages a child to play with a toy, this generalizes to parents, thus reducing parental distress and subsequently the child's distress. Finally, the duration of injection pain is relatively brief; naïve children who are engaged in playful behaviour with the toy may not notice the shot pain.

The investigator, during his outpatient departmental posting, observed that children who attended the immunization outpatient departments showed behavioural responses to pain during immunization. Many children receive immunizations with little or no formal attempt at reducing the fear and pain associated with the procedure. The reasons given for this range from a belief by health care professionals that the immunizations are not painful enough to warrant intervention to a belief that although shots are painful, any effective intervention would be too time consuming to be practical in busy settings. So the investigator felt the need that the distracter should be cheap, easily available, easily usable without any additional training, and less time consuming so that it can be used easily in busy settings as well. So in the present study the investigator compares two cheap and easily available distracters – cartoon video and music – in altering the behavioural responses to pain in children (1-3 years) receiving immunization.

The International Association for the Study of Pain (IASP) defines pain as "an unpleasant, subjective sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage". Untreated and inadequately treated pain causes suffering.

Various methods have been used in as distraction techniques for pain relief among children. So therefore I have been taken up this study to compare the effectiveness of cartoon video distraction technique Vs. music therapy in altering

behaviour response to pain among toddler' receiving immunization at immunization outpatient department, outpatient department, Institute of child health and hospital for children, Chennai-8.

1.2 STATEMENT OF THE PROBLEM:

"A STUDY TO COMPARE THE EFFECTIVENESS OF CARTOON VIDEO DISTRACTION TECHNIQUE VERSUS MUSIC THERAPY IN ALTERING BEHAVIOR RESPONSE TO PAIN AMONG TODDLER RECEIVING IMMUNIZATION AT PAEDIATRIC OUTPATIENT DEPARTMENT, INSTITUTE OF CHILD HEALTH AND HOSPITAL FOR CHILDREN, EGMORE,CHENNAI-8."

1.3 OBJECTIVES OF THE STUDY:

1. To determine the behavioral responses to pain among toddlers' who are given a Cartoon video (Group A) as distraction while receiving Immunization.
2. To determine the behavioral responses to pain among toddler' who are given Music (Group B) as a distraction while receiving immunization
3. To compare the behavioral responses to pain in Group A and Group B.
4. To associate the effectiveness of Group A with selected Demographic Variables
5. To associate the effectiveness of Group B with selected Demographic Variables

1.4 OPERATIONAL DEFINITIONS:

1. ***Effectiveness:***

In this study effectiveness refers to the extent of alteration in Behavioral distress due to immunization pain with the use of Distractions

2. ***Cartoon video Distraction technique:***

In the present study distraction involves introducing cartoon videos to the Toddler' to help them focus their attention on something other than pain and anxiety associated with the immunization.

3. ***Music distraction technique:***

In the present study distraction involves introducing music to the toddler' to help them focus their attention on something other than pain and anxiety associated with the immunization.

4. ***Altering Behavioral responses:***

In this study behavioral responses are the responses shown by the child due to immunization pain as observed by behavioral observation scale. The alteration parameters observed by look, cooperation cry, face, eye, nose, extremity movement, respiration and posture.

5. ***Pain:***

It is an unpleasant, sensory and emotional experience associated with actual (or) potential tissue damage.

6. ***Toddler:***

Children between the ages of 1-3 years who were attended in Pediatric out Patients' department for Immunization.

7. ***Behavioral responses:***

Behavioral responses are the responses shown by the child due to immunization pain as observed by behavioral observation scale in which the parameters observed are look, cooperation cry, face, eye, nose, extremity, movement respiration and posture.

8. Immunization:

A process of protecting individual from the disease through introduction of live and killed or partial component of the invading organism into the Individuals' system.

1.5 ASSUMPTIONS

1. Pain is multi factorial.
2. Behavioral responses to pain are most common during the immunization.
3. Children exhibit a wide range of behavioral responses to painful stimuli.
4. Children's behavioral responses can be minimized by Non-Pharmacological measures.
5. Children may get diversion from play therapy
6. Distraction therapy may help to cooperate the child in invasive Procedure

1.6 HYPOTHESIS

H_1: There will be significant difference in the severity of Behavioral Response score of Group A and Group B.

H_2: There will be a significant association between the Behavioral Responses to pain among children at selected Demographic variables.

1.7 DELIMITATION

The study period is limited period of four weeks

CHAPTER – II

REVIEW OF LITERATURE

The task of reviewing literature involves the identification, selection, critical analysis and reporting for existing information on the topic of interest.

Review of literature provides basis for future investigation, an insight into the problem and relates findings of the study to another. The extensive review of literature done by the investigator laid a broad foundation for the study and the chapter is divided in to two parts,

2.1. Review of related studies

2.2. Conceptual frame work

2.1 REVIEW OF RELATED STUDIES

The literature review for the present study has been organized under the following heading

1. The pain experience of children undergoing immunization.
2. Management of injection pain in children.

Review of literature related to the topic was done for to gain into the problem under study and collect more information for the foundation of the study.

Review of literature refers to an expensive exhausting and systematic examination of publication relevant to the study. It is an essential part of every research, which helps to support the hypothesis under the study and to critically analyze the structure and content of the research report.

Polit (1999), literature review refers to the activities involved in identifying and researching for information on a topic and developing and an understanding of the state of knowledge on that topic.

The present study attempted "to compare the effectiveness of cartoon video distraction technique vs. music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, Institute of child health and hospital for children, Egmore, chennai-8."

The review of literature enabled the investigator to gain insight into the area of research and to develop conceptual frame work, formulate questionnaire and make decision regarding methodology

1. *Review related to the pain experience of children undergoing immunization*

Biermeier (2013) was done a observational study in Australia to determine infant pain response during immunization injection and the proximal influences of parental and nurse coping-promoting statements within the treatment. Pain responses in 93 infants receiving an immunization injection were videoed and coded using the Neonatal Facial Coding System (NFCS) and duration of crying was recorded. Parent and nurse vocalizations were coded using the Child–Adult Medical Procedure Interaction Scale-Revised. A multiple regression analysis evaluated the influence of the 5 distal and 2 proximal factors on NFCS scores, and found parental coping-promoting statements in the period before the injection to have the strongest effect on facial pain response ($p < 0.01$). The findings suggest that parental behavior in the treatment room has a key role in influencing how infants respond to painful procedures.

Srouji R, et al., (2012) conducted a study on pain assessment and non pharmacological management. He concluded that pain perception in children is complex, and is often difficult to assess. The distraction techniques are provided by nurses to manage pain in children is most effective when adapted to the developmental level of the child.

Stinson J, et al., (2011) had done the systematic reviews on the effectiveness of pharmacological and non pharmacological management of acute procedure-related pain in children (n=1469) of one to 18 years. The reviewed

findings suggested that distraction and hypnosis were effective for management of acute procedure-related pain in hospitalized children.

Wong's (2010) stated that pain is often associated with fears, anxiety, and stress and non-pharmacological techniques, such as distraction, relaxation, guided imagery, and Cutaneous stimulation provide coping strategies that may help reduce pain perception, make pain more tolerable, decrease anxiety, and enhance the effectiveness of analgesics. The strategies are safe, non invasive, and inexpensive, and most are independent nursing functions. The strategies that are appropriate for the child's age, pain intensity, interest, and abilities is often necessary to determine the most effective approach.

Hockenberry and wilon et al., (2009) reported that brain perceives pain; there is a release of inhibitory neurotransmitters to hinder the transmission of pain and helps to produce on analgesic effect. This inhibition of the pain impulse is the fourth phase of the nociceptive process known as modulation. A protective reflex response also occurs with pain receptions. So while assessing pain intensity in children requires special techniques, therefore assessment require using word such as wove, boo-boo, there are some unique tools available to measure pain intensity in children.

Cohen LL.et.al (2008), conducted a randomized controlled trial to investigate the effectiveness of movie distraction in reducing infants' immunization distress. Results indicated that parents in the distraction group engaged in higher rates of distraction than those in the typical case group. In addition, infants in the distraction group displayed fewer distress behaviors than in the typical case group, both prior to and during recovery from the injection. Findings suggested that a simple and practical distraction intervention can provide some distress relief to infants during routine injections.

Willis WHM. et.al (2007), conducted a descriptive observational study to test the validity of the face, legs, activity, cry and consol ability (FLACC) behavioral pain assessment scale for use with children and found that there was

significant and positive correlation between the FLACC scores for the entire sample children (r(30)=0.5, p=0. 001).

French M G. et.al. (2006), conducted an evaluative study to find the effect of an active distraction technique on pain in preschool children receiving diphtheria; pertusis and tetanus immunization outpatient departments aged 4-7 years and found that there was an experimental group pain behavior (5.24±0.56) was lesser than the control group (5.26±0.64).

Lara J. Spagrud. Et al., (2005) conducted a study suggested that the face pain scale revise, is a useful self report tool for assessing pain intensity in preschool and school age children who may not be able to use other pediatric self report pain measurement tools such as visual analog or numeric rating scales.

Kleiber. C. et.al (2004), conducted an evaluative study to find out effect of distraction on children's pain and distress during medical procedures and found that there is positive correlation between the distraction technique and children's pain and distress.

Cohen LL.et.al (2003) conducted a comparative study to isolate and compare children's procedural anxiety and pain. Results suggested that anxiety and pain are highly correlated.

Joseph & Zelter, (2002) they state that there are three factors to assess pediatric pain; pain sensitivity, coping skills, and cognitive ability. Pain sensitivity ascertained that pain sensitivity highly depends on children's temperaments. Studies have shown that children with more pain-sensitive temperaments demonstrate increased reports of pain and anxiety during painful medical procedures. Significant differences in pediatric distress were found when those children received psychological interventions prior to the medical procedure. Their distress levels were significantly lower with the psychological intervention, which suggests that the interventions may benefit most children who are pain sensitive.

2. *Review related to management of injection pain in children*

Salantera. S, & et al (2013) had done a quasi experimental study in Canada to determine the effectiveness of physical interventions in reducing pain during intramuscular injection in children. There were 66 children (1-3 yrs age) participated in this study. The method used was stroking the skin close to the injection site before and during the injection The result revealed that there is a significant reduction of pain during vaccine administration (SMD = 0.53, P=0.03). The findings of the study suggest that the relaxation of the muscle will help in reducing the injection pain.

Rice L.J., (2012) an experimental study was conducted in Iran to determine the effectiveness of two non pharmacologic pain management methods for intramuscular injection in children. In this 90 children with age from 5-12 yrs who had penicillin injection intramuscularly in a health centre were studied. The sample were chosen randomly and divided into three groups. The first group received local cold therapy, the second group received distraction, and third group received routine care. The data were collected through interview and questionnaire. OUCHER scale was used to measure intensity of pain. Average pain intensity in local cold therapy, distraction and control group was 26.3, 34.3, and 89.3 respectively. The findings indicate that pain intensity was significantly higher in the control group than the experimental group.

Carroll et al., (2011) a quasi experimental study was conducted in St. John's medical college, Bangalore to determine the effectiveness of Heifer skin tap technique on pain during intramuscular injection among adult patients. There were 60 subjects received four injections in which two injections with standard technique and two injections with heifer skin tap technique. Pain assessment was done by 6-10 numerical intensity pain scale. The mean pain score using Heifer skin tap technique (15+/- 1.1) was less than the pain scored by standard technique (2.9 +/- 1.9). The pain level was significantly reduced in treatment group($p<0.001$).

Dahlquist LM., et al., (2010) conducted a descriptive study on the effects of interactive and passive distraction on cold presser pain in preschool aged children (N=60). Participants showed significantly higher pain tolerance during both interactive and passive video distraction relative to baseline. They concluded that interactive and passive video game distraction appears to be effective for pre-school aged children during laboratory pain exposure.

Uman LS, Mc Murtry CM, (2009) had done the randomized control trial. (n=1380) to examined the efficacy of seven psychological intervention like suggestion, breathing exercises, child directed distractions, parent-lead distraction, nurse-lead distraction on infants and children (one month-eleven years) for reducing pain and distress during routine childhood immunization. The result showed that nurse-lead distraction was effective in reducing stress. (Standard Mean Deviation- SMD, - 0.40; 95% CI -0.68 to – 0.12; p= 0.005). The study findings suggested that combined cognitive – behavioral interventions, breathing exercises, child-directed distraction, nurse-led distraction, are effective in reducing the pain and distress associated immunizations.

Balan R, (2009) had done the comparative study on Indian classical instrumental music and local anesthetic cream on children aged 5-12 yrs in terms of in reducing pain during venipuncture was conducted at a tertiary care centre. They were randomly assigned to 3 groups: local anesthetic (LA), music or placebo (control) group. The study findings showed that, using Indian classical instrumental music can be significantly reduced pain children. The difference between VAS (Visual Analogue Scale) scores with LA and music is not always significant.

Miller K, et al., (2009) conducted a study on multi model distraction to relieve pain in children undergoing acute medical procedures. They used hand held multi model distraction device (MMD). Pain and anxiety scores, faces pain scale. Revised visual analogue scale and Wong-Baker faces pain rating scale. The

study findings show MMD is more effective in reducing the pain and anxiety experienced by children in acute medical procedures. MMD is continuing to be trialed and is continuing to show positive outpatient departmental outcomes.

Murphy G. (2009) had done a study on the effectiveness of distraction techniques for venipuncture. . The findings show that distraction has been shown to reduce procedural distress in children. Further the study revealed that passive distraction is more effective than active distraction during venipuncture. And that the effectiveness of a particular technique depends on the attention capacity of the child and their engagement in the distraction activity.

Evans S (2008) conducted a study complementary and alternative medicine for acute procedural pain in children. He suggested that music therapy also has gained some attention and for the most part shows promise in the pediatric acute pain setting.

Flowler KS.et.al (2007) conducted an experimental study to assess the value of two cognitive strategies (suggestion and music distraction) in reducing pain in children were Determinant of the success of distraction. The result supported the use of music distraction in the reduction of injection pain in children.

Mukesh CS. (2007) conducted a study to compare the effectiveness of two distraction techniques in altering behavior responses to pain among children (1-3 yrs) receiving immunization at selected immunization outpatient departments and found that the study supported the effectiveness of toy as a distracter compared to music.

Noguchi LK (2006) had done the study on the effect of music versus non music on behavioral signs of distress and self-reports of pain in pediatric injection patients. Music has been examined as a potential distraction during pediatric

medical procedures, but research findings have been mixed, due in part, to the fact that children 4 to 6 years receiving routine immunizations were randomly assigned to one of three conditions: musical story, spoken story, or standard care/ control. Participants in the musical story condition tended to be less distressed and report less pain than participant in the other two conditions, although these differences were not statistically significant. Subsequent analysis indicated that children who receive more injections tended to benefit more from the music intervention, in terms of their perceived pain.

Loewy, J.V (2006) states that music distraction using live and familiar music with unusual instruments can be effective in capturing and holding the child's attention during painful procedures, such as needle punctures.

Cohen LL.et.al (2005), conducted a study to assess the effectiveness of nurses coaching and cartoon distraction to reduce child, parent and nurse distress during immunizations and the results revealed that in the two interventions conditions, children coped more and were less distressed, nurses and parents exhibited more coping and promoting behavior and were less distressed than in the control condition.

Reis S.et.al (2004), conducted a comparative study to compare the efficiencies of two pain management methods in reducing immediate immunization injection pain and distress in school aged children (4-6 years) scheduled to receive diphtheria and tetanus toxoid and a cellular pertussis vaccine (DTP) during health supervision visits and was concluded that when combined with distraction, vapocoolant spray significantly reduces immediate injection pain compared with distraction and is equally effective as well as less expensive and faster acting.

Preetha S. (2003), conducted a study to evaluate the effectiveness of kaleidoscope as a distraction technique among hospitalized children during their

acute pain experience and the result revealed that there was the significant difference in the behavior response and intensity of pain between group I and group II.

Megal M.E. et.al (2002), conducted an experimental study to investigate the effect of audio-taped lullabies on physiological and behavioral distress and perceived pain among children during routine immunization. Half of the children received musical intervention during the immunizations, while the other half did not. Total distress scores were significantly lower for the experimental group. These results indicated that immunization is a stressful experience for children.

Horn MI.et.al (2001) conducted a comparative study to compare the distress behaviors and perception of distress in 4-6 year old children who received their immunization sequentially and the result revealed that there was no significant difference between the distress behavior and perception of distress among the children.

Fowler – Kerry S, (2000) conducted the study to assess the value of two cognitive strategies (suggestion and music distraction) in reducing pain in children. Two hundred children, aged 4.5 – 6.5 years, receiving routine immunization injections were randomly assigned to one of the intervention groups in this factorial study. The groups were designed as: distraction with suggestion, suggestion and control. Subjects reported their pain using a 4 point scale. Distraction was found to significantly decrease pain whereas suggestion did not. The results of this study support the use of music distraction in the reduction of injection pain in children.

2.2 CONCEPTUAL FRAME WORK

Conceptual frame work is an organized phenomenon which deals with concepts that are assembled by virtue of their relevance to a common theme.

The conceptual frame work of this study is based on Roy's adaptation theory in a nursing career in 1963. The model contains five essential elements. Patient the person receiving nursing care, goal of nursing (adopting to change)

health direction of nursing activities the recipient of care to be open adaptive system. It reacts as a whole dysfunction in one component affects the entire system. General system theory is useful in breaking the whole process into sequential tasks to ensure goal realization. Roy explained that the system has 3 major aspects:

- ► Input
- ► Throughput
- ► Output

INPUT

Input is identified as stimuli which can come from the environment or from within a person. Stimuli are classified as focal (immediately confronting the person) contextual (all other stimuli that are present) or residual (non specific). In this study it consist of internal painful stimuli (IM injection) is administered to experimental and control group of children, which includes demographic variables such as age, sex, weight, past experience, position during immunization.

THROUGHPUT

It denotes that the different operational procedures applied in the experimental group. In this study, procedural intervention for experimental group-A and group-B for assess the observational response. The behavioral response is assessed by MODIFIED BEHAVIOURAL RESPONSE ASSESSMENT SCALE. The behavioral response assessment tool includes look (cheerful, anxious, fearful), cooperation (cooperative, partially cooperative, uncooperative), cry (no cry, moans or whimpers, crying loudly , creaming), face (relaxed facial muscles, smile, no tightened of facial muscles, tight facial muscles), Eyes (normal staring, open eyes widely with fear, closes eyes with fear), Nose (no broadening, slight broadening, broadened with nasal secretions) Arms and fingers (normal position or relaxed, withdraws hands/clenches the fist, beats/pushes away the health personnel/ care giver), legs (normal position or relaxed, restless and unusual movements of legs, kicks vigorously), Respiration (relaxed and

regular, irregular and rapid, holding breath), posture (remains quiet with an instructed position, squirms, shifts back and forth tense in an instructed position, rigid and vigorous throwing of limbs with full shaking of body and trying to get up. Instructed position not maintained). The modified behavioral response assessment scale consist of three grades ranging from mild (0-20), moderate (21-40), severe (41-60)

OUTPUT

Output is any information that leaves the system and enters the environment through the system boundaries. Output is the outcome of the system. In Roy's system, output is categorized as an adaptive response (or) ineffective responses adaptive responses are used when a person demonstrate behaviors, that achieve the goals. These response or output provides feedback for the system. In this study, the behavioral responses of children are evaluated by standardized tools for group-A and group-B. There were mild behavioral responses in group-A and severe behavioral responses in group-B.

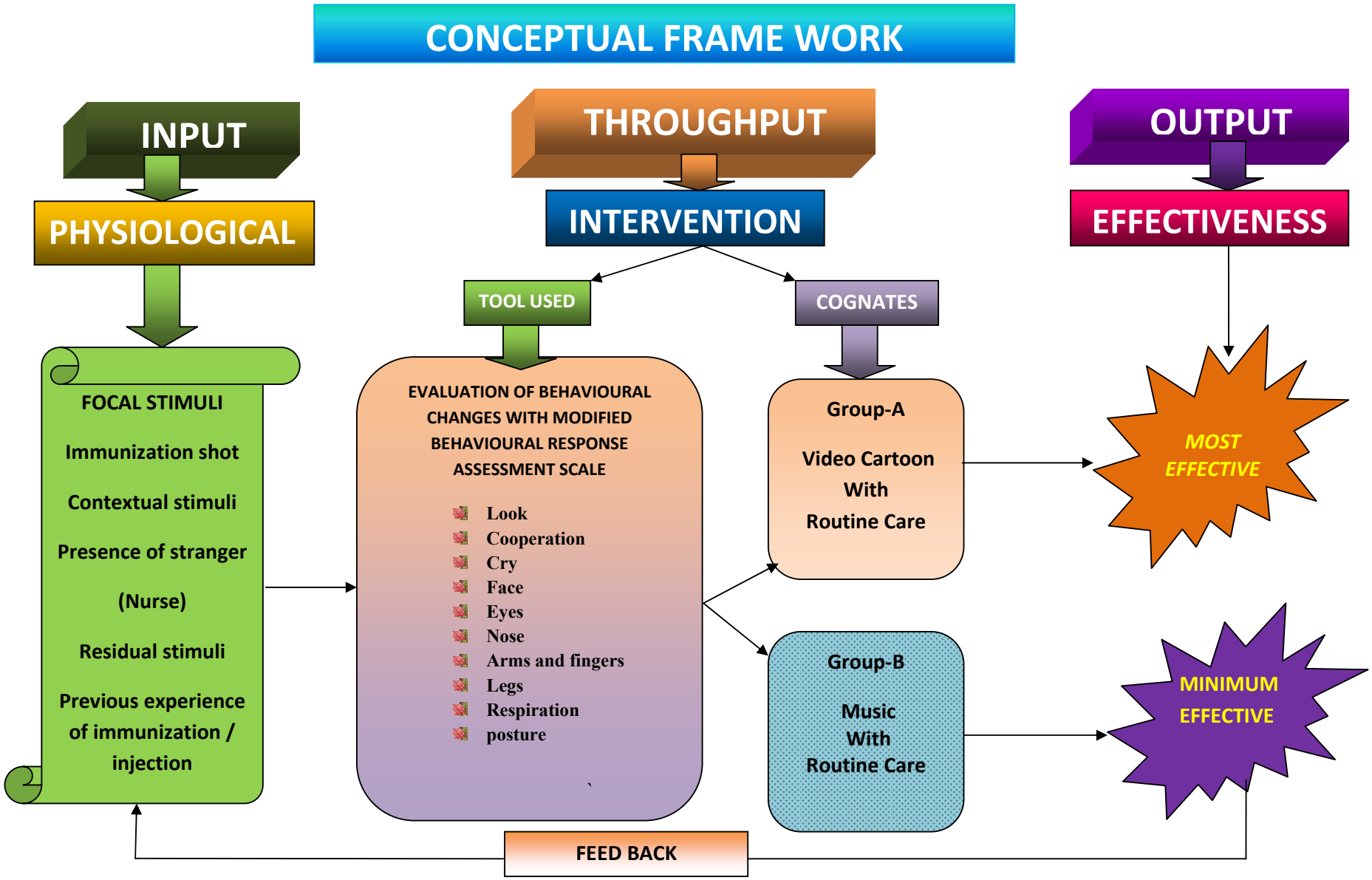


FIG. 1: CONCEPTUAL FRAMEWORK FOR SEEING THE EFFECTIVENESS OF DISTRACTION IN RELIEVING PAIN AMONG CHILDREN BASED ON ROY'S ADAPTATION MODEL

CHAPTER – III

RESEARCH METHODOLOGY

Research methodology is a pathway by which the researcher intended to solve the research problems systematically. It involves the series of procedures in which the investigator starts from initial identification of the problem to its final conclusion. This chapter deals with research approach, research design, setting of the study, study population, sample size, sampling technique and criteria for sample selection. It also deals with development of tool, description of tool, validity, pilot study, reliability, procedure for data collection, and analysis of data including the protection of human subjects.

3.1 RESEARCH APPROACH

An experimental research approach was adopted by the researcher to compare the effectiveness of cartoon video distraction technique vs. music therapy in altering behavior response to pain. In view of the nature of the problem, to accomplish the objectives and to test hypotheses of the study, an experimental approach was used.

3.2 RESEARCH DESIGN:

According to **Hungler** (2001), a research design is an overall plan for obtaining answers to the research questions or for testing the research hypothesis.

The research design was adopted for the study was quasi experimental post-test only group design to compare the effectiveness of two distraction techniques on children pain. It is composed of two randomly assigned groups but no pre-test was done. The independent variable is introduced into the experimental groups. This design can be useful in situations where it is not possible to pre-test the subjects or pre-test is not essential.

Research Design Notation

Group	intervention	observation
E_1	**X**	**O_1**
E_2	**X**	**O_2**

E1= Group A: Children receiving immunization where a cartoon video is used as a distraction

E2= Group B: Children receiving immunization where music is used as a distraction

X = Intervention

O_1= Observation in Group A by modified behavioral observation scale

O_2= Observation in Group B by modified behavioral observation scale

3.3 SETTING OF THE STUDY:

The study is planned to conduct in pediatric immunization outpatient department, Institute of Child Health and Hospital for Children, Egmore, Chennai-8.

3.4 RESEARCH VARIABLES:

1. ***Independent variable:***

   The independent variable is the distraction technique and the objects of Distractions are cartoon video and musical player.

2. ***Dependent Variable:***

   Behavioral responses and intensity of pain are the dependent variables.

3. ***Demographic variables***

- Age of child
- Sex of the child
- Religion
- Type of vaccine
- Previous experience
- Reaction towards health personnel
- Presence of caregiver

3.5 STUDY POPULATION:

Constitutes the children (1-3 years) who were attended immunization outpatient department, Institute of Child Health and Hospital for Children, Egmore, Chennai-8.

1. ***Accessible Population:***

The study population comprised of children in the age group of 1-3 years who were undergoing immunization.

2. ***Target Population:***

The children those who are attend the pediatric immunization outpatient department.

3.6 SAMPLE

Sample constitutes children (1-3 years) who are attended immunization outpatient department, Institute of Child Health and Hospital for Children, Egmore, Chennai-8.

3.7 SAMPLE SIZE:

The sample size was determined by the type of the study, variables being studied, feasibility of time, men, money and material.

In this study the sample consisted of 60 children, 30 each in Experimental Group A(cartoon video distraction), Experimental Group B (music distraction) aged 1-3 years who were undergoing intra muscular immunization.

3.8 SAMPLING TECHNIQUE:

Sampling is the process of selecting a portion to represent the entire population. In this study the investigator selected Purposive sampling technique for sample selection and the samples were randomly assigned to Group A and Group B.

3.9 CRITERIA FOR SAMPLE SELECTION.

The study samples were selected using following criteria:

1. *Inclusion criteria:*

1. Children who are attending the immunization outpatient department.
2. Children between 1 and 3 years of age.
3. Children undergoing invasive immunization.
4. Mothers who are willing to cooperate.

2. Exclusive criteria:

1. Children who are not attending the immunization Outpatient department
2. Children not between 1 and 3 years of age.
3. Children not undergoing invasive immunization.
4. Mothers who are not willing to cooperate
5. Children who are ill.
6. Children with auditory and Visually handicapped
7. Mentally retarded children
8. Congenital anomalies

The study was undertaken after approval from Institute of ethical committee. Children in immunization outpatient department were explained about the study purpose and procedure.

Those who are willing to participate were enrolled and informed consent was obtained from parents.

For this study 60 samples are have been divided into two groups one group 30 samples of experiment group for cartoon video distraction and another group 30 samples for music therapy.

3.10 SELECTION AND DEVELOPMENT OF RESEARCH TOOL:

The research tool is a written device that a researcher uses to collect the data. After a careful review of literature, consultation with experts, the investigator identified standardized tool to assess the behavior response with MODIFIED BEHAVIOURAL RESPONSE OBSERVATION SCALE. However the demographic data were collected by a developed one.

3.11 DESCRIPTION OF TOOL:

The study tool consists of two parts.

Tool I: Baseline Proforma –Demographic variables

Tool II: Modified Behavioral Observation Scale.

Tool – I: ***Baseline proforma – Demographic variables***

Section A - The baseline proforma consisted 7 items like age, sex, religion, name of the immunization for the child, child's response to previous immunization, child's reaction towards health personnel in general, and relationship of the child with the caregiver present during immunization.

Tool 2: ***Modified Behavior observation scale***

Section B – Consist of behavioral assessment scale consisting of 10 parameter of with total score of 30. In this 1-10 score under mild behavior response, 11-20 score under moderate behavior response and 21-30 under severe behavior response.

3.12 SCORING PROCEDURE:

The findings were observed and graded correspondingly. The maximum score was 30 and minimum was 1

Score key:

Level of behavioral Response to pain	**Overall score**
Mild	less than 10 (1-10)
Moderate	less than 20 (11-20)
Severe	more than 20 (21-30)

3.13 ETHICAL CONSIDERATION

All respondents were carefully informed about the purpose of the study and their part during the study and how the privacy was guarded. The confidentiality of the study result was ensured. Thus the investigator followed the ethical guidelines which were issued by the research committee.

3.14 TESTING OF TOOL: CONTENT VALIDITY

After construction of questionnaire for "A study to compare the effectiveness of cartoon video distraction technique versus music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, Institute of child health and hospital for children, Egmore, Chennai-8" It was tested for its validity and reliability.

Polit (1999) says that validity refers to the degree to which an instrument measures what it is supposed to be measuring.

Since the tool adopted for this study is a standardized tool (MODIFIED BEHAVIOURAL OBSERVATIONAL SCALE).

Validity

Validity of the tool was assessed using content validity. Content validity was determined by experts form Nursing and Medical. They suggested certain modifications in tool. After the modifications they agreed this tool for compare the effectiveness of cartoon video distraction technique versus music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, Institute of child health and hospital for children, Egmore, Chennai-8.

3.15. PILOT STUDY:

In order to test the feasibility, relevance and practicability of the study, a pilot study was conducted in the same setting with small sample size of 6 children who fill the sample criteria for sample selection and those children were excluded from the main study. Data analyzed to found suitability of statistics. The pilot study revealed that the study was feasible.

Reliability

After pilot study, reliability of the tool was assessed by using interpreter method and its correlation coefficient 'r' – value is 0.85. This correlation coefficient is very high and it is good tool for compare the effectiveness of cartoon video distraction technique versus music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, Institute of child health and hospital for children, Egmore, Chennai-8.

3.16 DATA COLLECTION PROCEDURE:

The formal permission was obtained from the Director and the Head of the department, pediatric immunization outpatient department, Out Patient Department Institute of Child Health and Hospital for Children, Egmore, Chennai-8. The study samples were selected by purposive sampling method based on sample selection criteria. The study purpose and explained to the parent of selected children. Informed

consent was obtained from the study participant's parent for anticipating in the study. All the children received their routine hospital care.

The main study was conducted for 4 weeks. Every week from Monday to Saturday the data were collected. The data was collected from 7 am to 1 pm. Every day average of two to three subjects who were satisfying the inclusion criteria was selected.

Totally 60 samples were selected by purposive sampling who fulfilled inclusion criteria among 30 samples for experimental group-A, and 30 samples for experimental group B. The time was taken to collect the data of each sample in experimental group is approximately 10 minutes.

The data collection includes collecting demographic data followed by the investigator made the parent to sit on the chair comfortably with the child on the lap or lying on the bed. The care giver was holding the child.

The children in the experimental group A were distracted by applying cartoon video 2 minutes before giving the immunization, continued during the procedure and for 2 minutes after completing the procedure by the researcher. The child was encouraged to watch the cartoon video during procedure and routine care was given.

In the experimental group B the children were distracted by playing familiar music 2 minutes prior to, throughout the procedure (1 minute) and for 2 minutes after the vaccination. The overall time duration 5 minutes which is administer by the researcher 3 minutes prior to throughout and after the vaccination. The overall time duration 3 to 5 minutes which is administered by the researcher and routine care was given.

The investigator observed and scored the child's behavioral response to pain by using Modified Behavioral Response Observational Scale during Immunization.

The data collection procedure was terminated by thanking the respondents.

3.17 PLAN FOR DATA ANALYSIS:

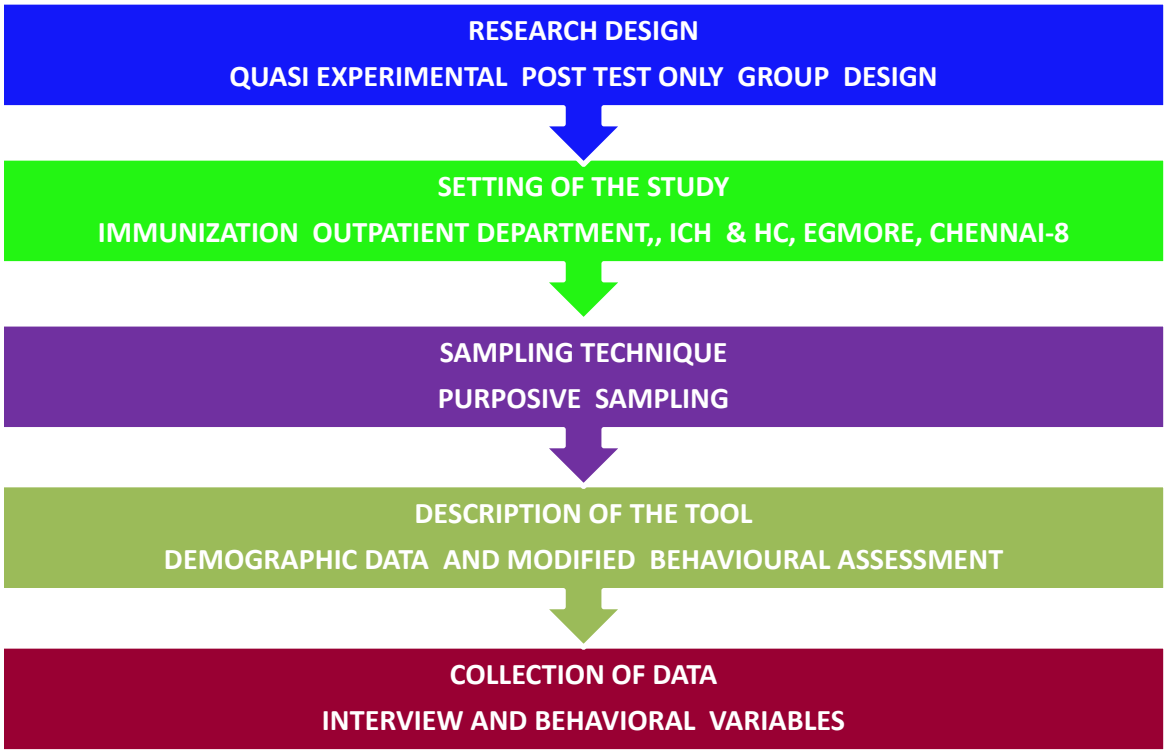
The data collected to be subjected to statistical analysis using descriptive and inferential statistics methods of mean, frequency distribution, standard deviation, chi-square test and independents' test.

- Demographic variables in categorical/dichotomous were given in Frequencies with their percentages.
- Pain score was given in mean and standard deviation.
- Difference between group A and group B was analyzed using student Independent t-test
- Association between level of pain and demographic variables were Analyzed using Pearson chi-square test.
- Effectiveness of study was analyzed using mean pain difference with 95% CI and proportion with 95% CI
- Multiple bar diagram, Box plot were used to represent the data
- $P<0.05$ was considered statistically significant.

3.18 PROTECTION OF HUMAN RIGHTS:

The proposed study was conducted after the approval of dissertation committee of the college of nursing. Permission was obtained from the Director, Institute of Child Health and Hospital for Children, Egmore, Chennai-8. Written consent of each subject is obtained before starting data collection. Assurance was given to them that anonymity of each individual would be maintained.

SCHEMATIC REPRESENTATION OF THE RESEARCH PLAN



GROUP A

- ***Consent for participating in the study***
- ***Cartoon video distraction with routine care***
- ***Pain assessment by using modified behavioral assessment pain scale***

GROUP B

- ***Consent for participating in the study***
- ***Music distraction with routine care***
- ***Pain assessment by using modified behavioral assessment pain scale***

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the statistical analysis of data collected from 60 children in the age group of 1–3 years selected in the pediatric outpatient department, Institute of child health and hospital for children, Egmore, Chennai-3. The data findings have been tabulated according to the plan for data analysis. Statistical procedure enables the researcher to organize, analyze, evaluate, interpret and communicate numerical information meaningfully.

PRESENTATION OF DATA

The collected data were organized, tabulated, analyzed and presented fewer than five headings.

SECTION – I : Frequency and percentage distribution of demographic Variables of Group -A (cartoon video distraction) and Group B (music distraction).

SECTION –II : Distribution of samples according to the level of pain among children receiving immunization in Group A (Cartoon video distraction) and Group –B (Music distraction)

SECTION – III : Comparison of the effectiveness of distraction techniques on pain among children receiving immunization in Group– A (Cartoon video distraction) and Group –B (Music distraction)

SECTION – IV : Evaluate the effectiveness of distraction techniques among Children receiving immunization in Group A and Group B

SECTION – V : Association of the pain level among children receiving Immunization in Group A (Cartoon video distraction), Group B (Music distraction) and their demographic Variables.

STATEMENT OF THE PROBLEM:

"A STUDY TO COMPARE THE EFFECTIVENESS OF CARTOON VIDEO DISTRACTION TECHNIQUE VERSUS MUSIC THERAPY IN ALTERING BEHAVIOR RESPONSE TO PAIN AMONG TODDLER' RECEIVING IMMUNIZATION AT PEDIATRIC OUTPATIENT DEPARTMENT, INSTITUTE OF CHILD HEALTH AND HOSPITAL FOR CHILDREN, EGMORE,CHENNAI-8."

AIMS AND OBJECTIVES OF THE STUDY:

1. To determine the behavioral responses to pain among toddler who are given a cartoon video (Group A) as distraction while receiving Immunization.

2. To determine the behavioral responses to pain among toddler' who are given music (Group B) as a distraction while receiving immunization

3. To compare the behavioral responses to pain in Group A and Group B.

4. To associate the effectiveness of Group – A with selected Demographical Variables

5. To associate the effectiveness of Group – B with selected Demographical variable

BEHAVIORAL RESPONSE

Mild = 1 - 10

Moderate = 11 – 20

Severe = 21 – 30

SECTION – I

Frequency and Percentage Distribution of Demographic Variables of Group A (Cartoon Video Distraction) and Group B (Music Distraction).

Table: 4.1. Demographic Profile

Demographic variables		Group				Chi square test
		Group A		Group B		
		n	%	N	%	
Age in months	12 - 18 months	10	33.3%	10	33.3%	χ^2=0.00 p=1.00
	19 - 24 months	15	50.0%	15	50.0%	
	25 - 30 months	5	16.7%	5	16.7%	
Sex	Male	13	43.3%	16	53.3%	χ^2=0.60 p=0.43
	Female	17	56.7%	14	46.7%	
Religion	Hindu	18	60.0%	22	73.3%	χ^2=1.20 p=0.54
	Christian	9	30.0%	6	20.0%	
	Muslim	3	10.0%	2	6.7%	
Name of vaccine	DPT Booster	24	80.0%	20	66.7%	χ^2=1.36 p=0.24
	Others	6	20.0%	10	33.3%	
Past experience	Calm and quiet	8	26.7%	6	20.0%	χ^2=1.24 p=0.53
	Minimal resistance	14	46.6%	12	40.0%	
	Rebellious and high resistance	8	26.7%	12	40.0%	
Child reaction on nurses	Accept early	6	20.0%	9	30.0%	χ^2=2.41 p=0.30
	Withdrawal with minimal resistance	17	56.7%	11	36.7%	
	Totally reluctant to accept them	7	23.3%	10	33.3%	
Person accompanying the child	Father	2	6.7%	1	3.3%	χ^2=0.35 p=0.83
	Mother	27	90.0%	28	93.3%	
	Others	1	3.3%	1	3.3%	

Note: Group A = Cartoon Video Distraction, Group B = Music Distraction

Table: 1 showed that the demographic information of children those who are participated for the following study "A study to compare the effectiveness of cartoon video distraction technique versus music therapy in altering behavior response to pain among toddlers, receiving immunization at pediatric outpatient department, Institute of child health and hospital for children, Egmore, Chennai-8."

According to the age of the children in months, 10 (33.3%) children were 12 – 18 months and 15 (50.0%) were 19 – 24 months and 5 (16.7%) were 25 – 30 months in Group A.

And 10 (33.3%) children were 12 – 18 months and 15 (50.0%) were 19 – 24 months and 5 (16.7%) were 25 – 30 months in Group B.

In Considering The Gender, 13 (43.3%) children belong to male, whereas 17 (56.7%) children were female in Group A and 16 (53.3%) children belong to male, whereas 14 (46.7%) children were female in Group B.

The children were belongs to majority of 18 (60.0%) were Hindu children, 9 (30.0%) were Christian and 3 (10.0%) were Muslim in Group A, and 22(73.3%) were Hindu children, 6 (20.0%) were Christian and 2 (6.7%) were Muslim in Group B.

The majority of 24 (80.0%) children were received DPT vaccine and 6 (20.0%) in Group A and 20 (66.7%) children were received DPT vaccine and 10 (33.3%) in Group B.

In considering the relationship of the care giver accompanying with the children during immunization were mothers 27 (90.0%), fathers were 2 (6.7%) and others were 1 (3.3%) in Group A

In Group B, the relationship of the care giver accompanying with the children during immunization were mothers 28 (93.3%), fathers were 1 (3.3%) and others were 1 (3.3%).

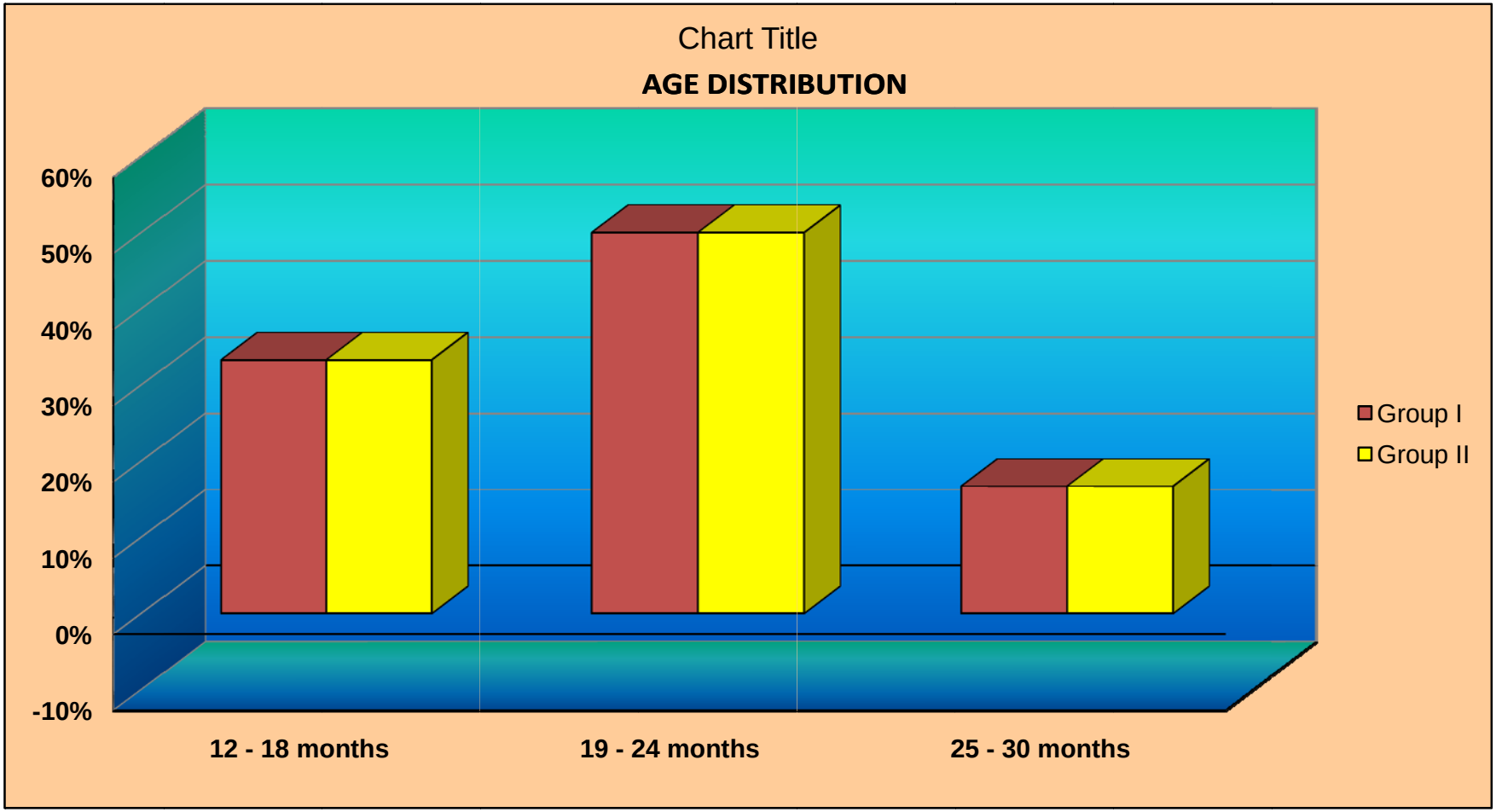
Considering the child's past experiences to immunization / injection, majority of 14 (46.6%) children showed minimal resistant to previous immunization / injection whereas 8 (26.7%) children showed Rebellious and high resistance and calm and quiet were 8 (26.7%) in Group A.

In Group B, 12 (40.0%) children showed minimal resistant to previous immunization / injection whereas 12(40.0%) children showed Rebellious and high resistance and calm and quiet were 6 (20.0%) in Group B.

Considering the children reaction on nurses those who injecting vaccine 6 (20.0%) children were accept early, 17 (56.7%) children were withdrawal with minimal resistance and 7 (23.3%) children were totally reluctant to accept them in Group-A.

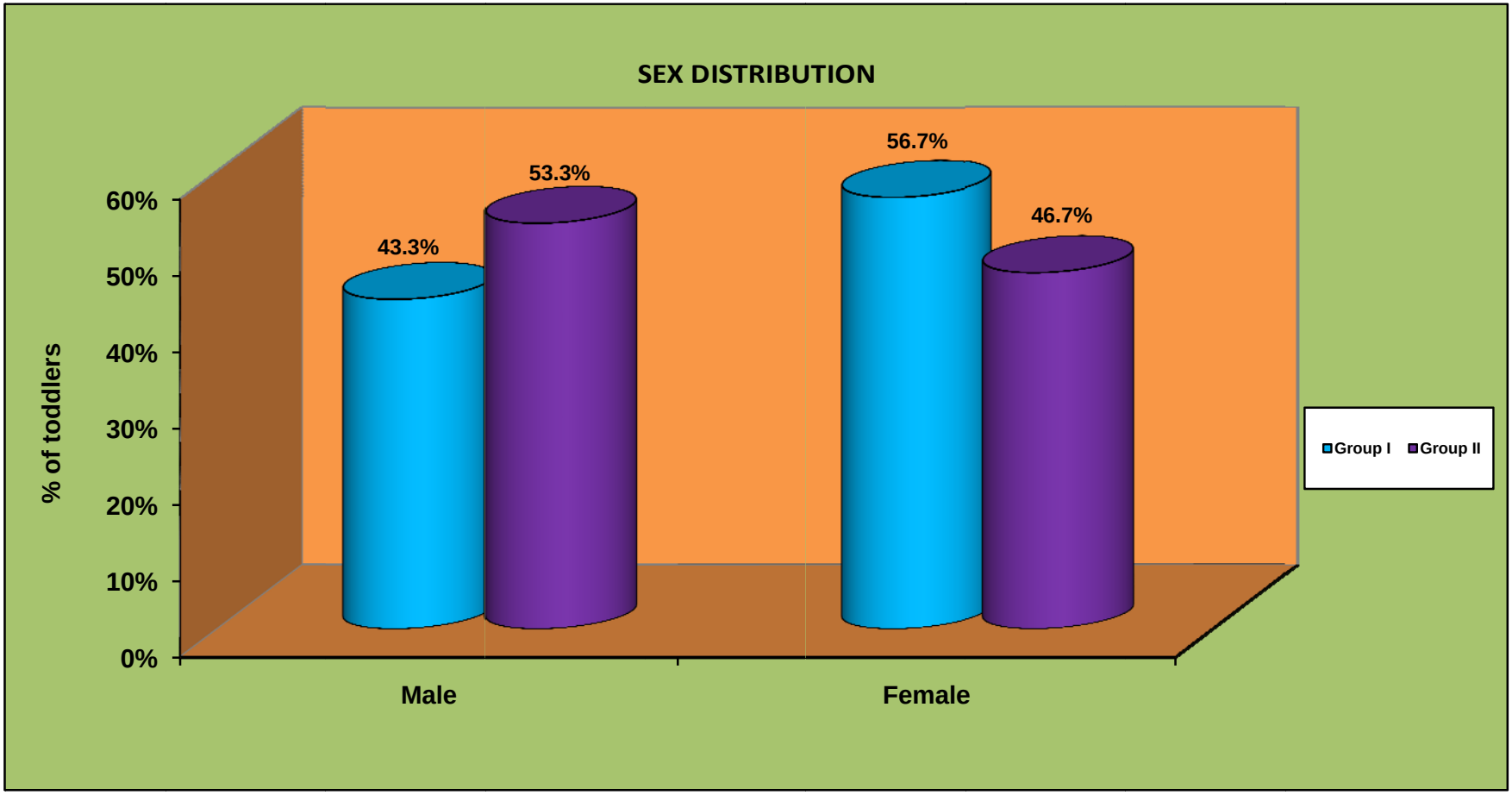
In Group B, 9 (30.0%) children were accepting early, 11 (36.7%) children were withdrawal with minimal resistance and 10 (33.3%) children were totally reluctant to accept them.

Fig: 4.1. Distribution of sample percentage according to the age



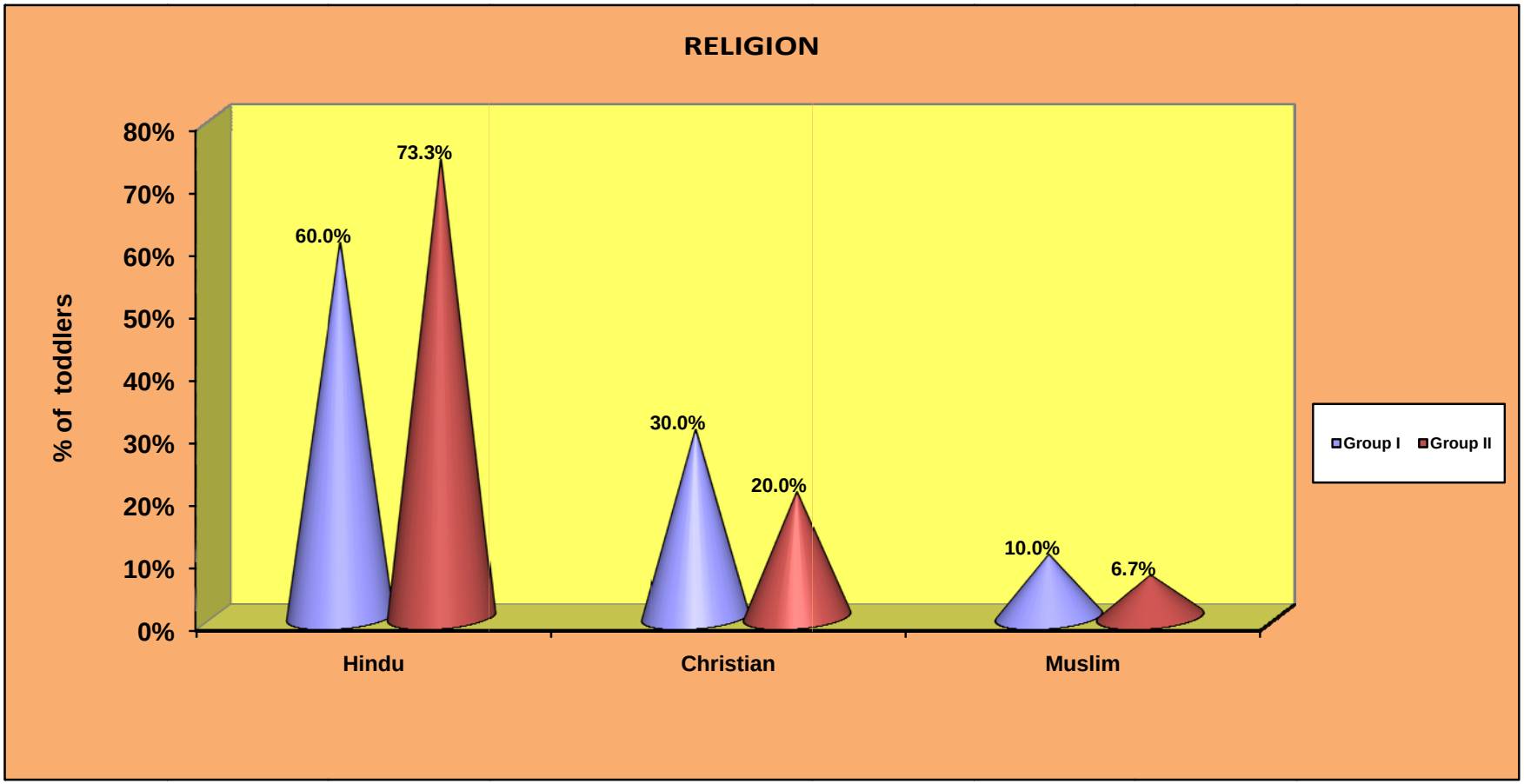
Majority of the children were 19-24 months of age group [50%] both group A & group B

Fig: 4.2. Distribution of sample percentage according to sex



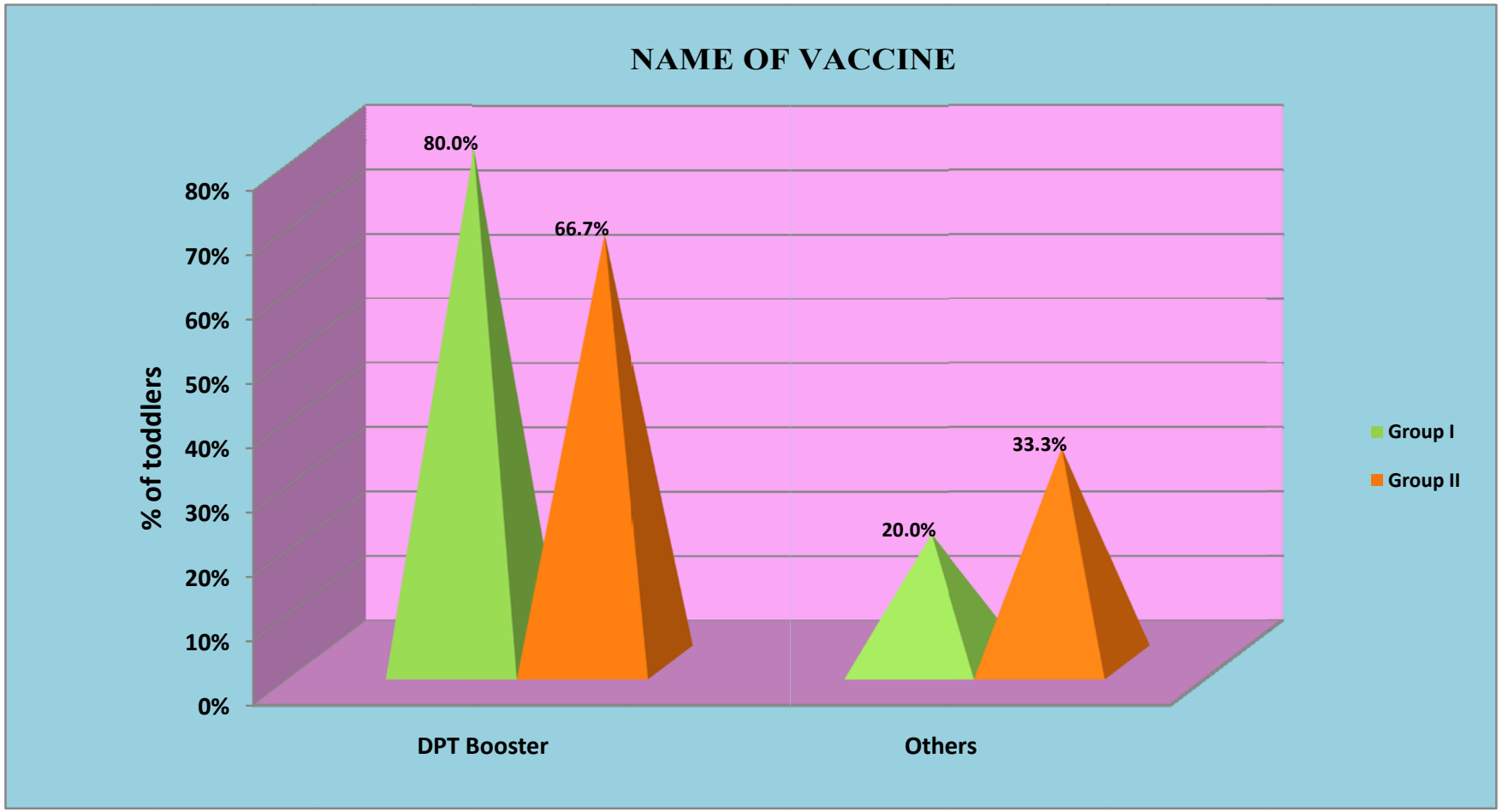
Majority of female children 17 (56.7%) in Group A and majority of male children 16 (53.3%) in Group B.

Fig: 4.3. Distribution of sample percentage according to Religion



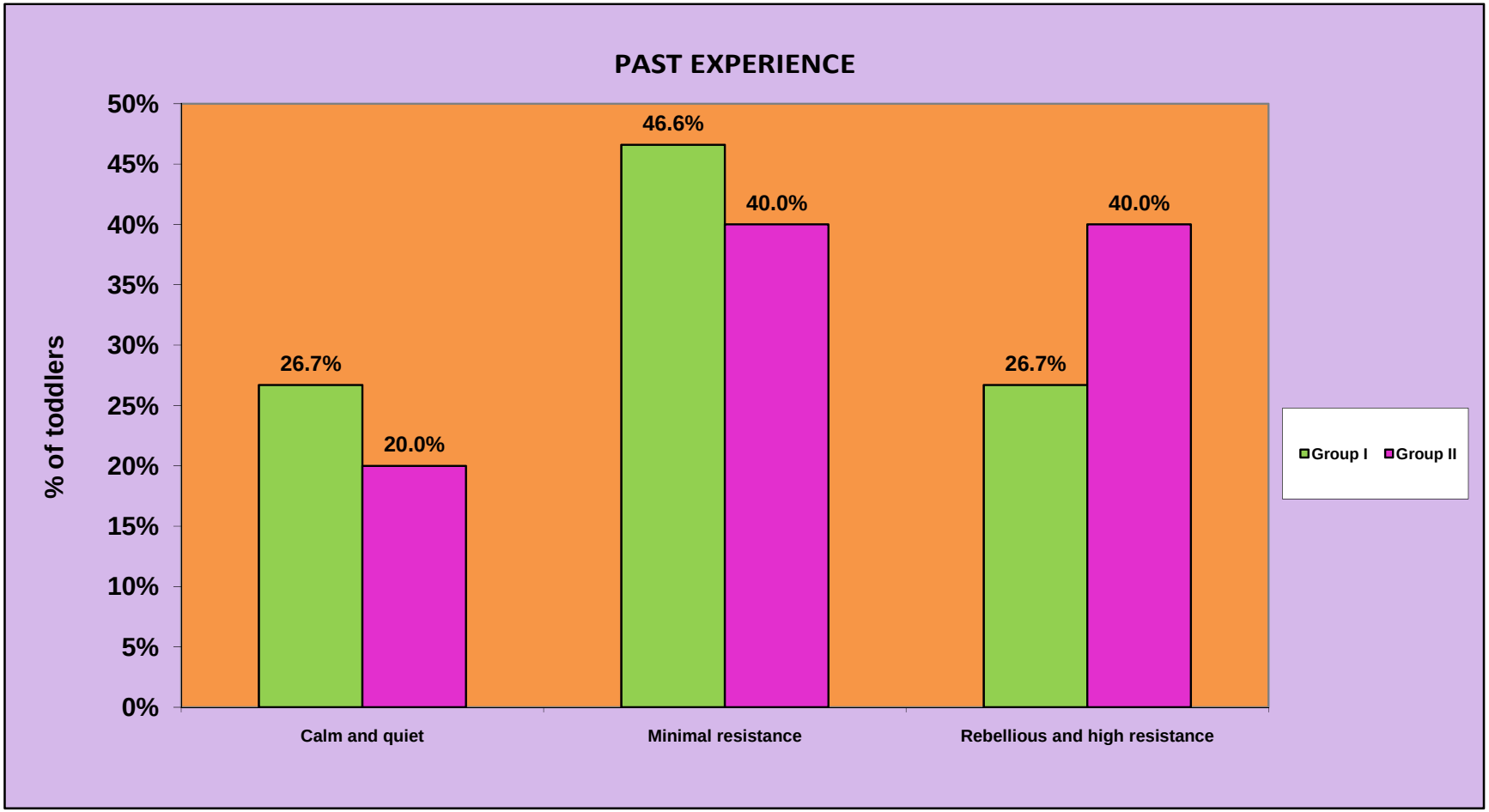
Majority of the children belongs to Hindu religion 18 (60.0%) were in group A and 22(73.3%) were Hindu religion in Group B.

Fig.4.4: Distribution of sample percentage according to name of vaccine



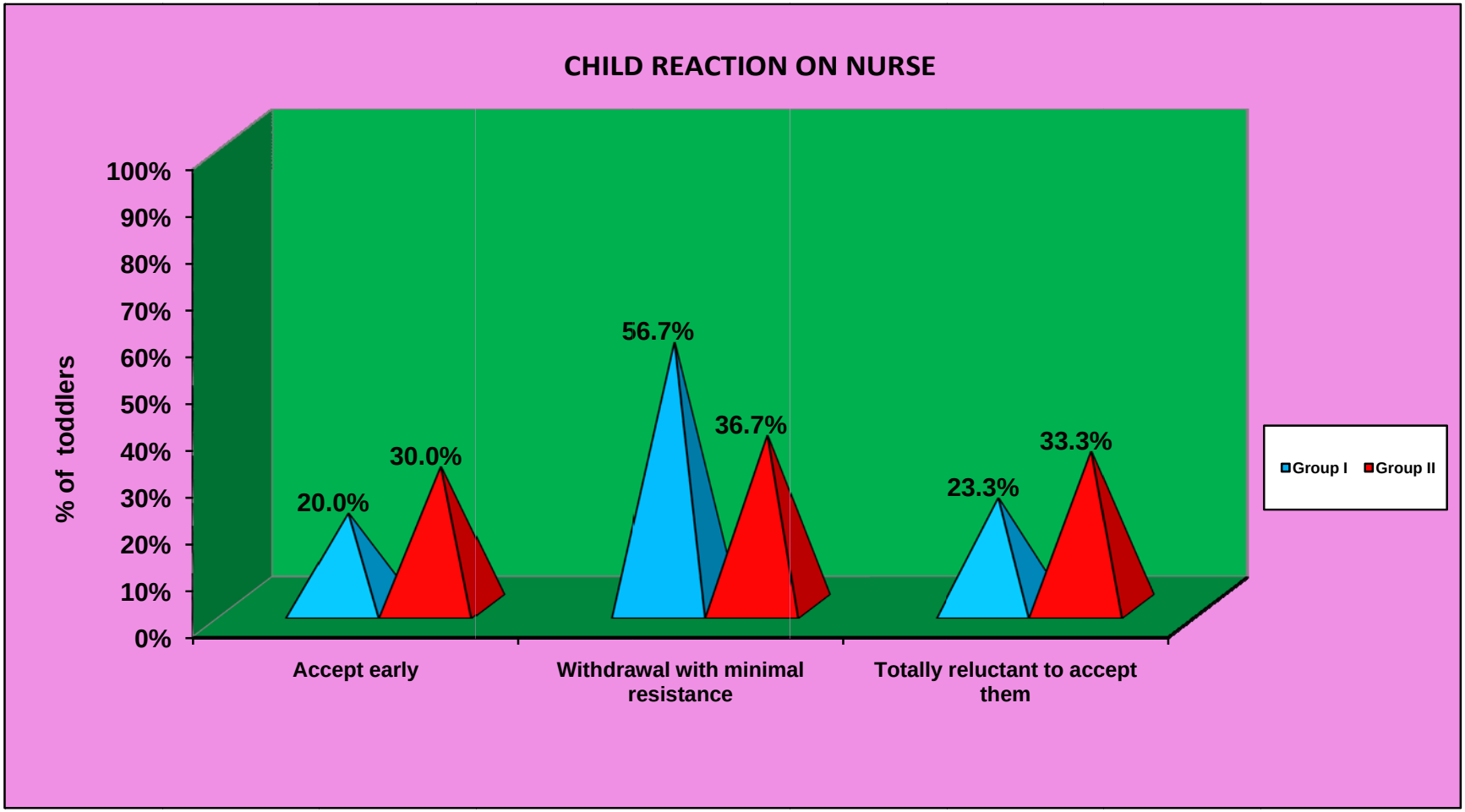
The majority of 24 (80.0%) children were received DPT vaccine in Group A and 20 (66.7%) children were received DPT vaccine in Group B.

Fig.4.5: Distribution of sample percentage according to past experience



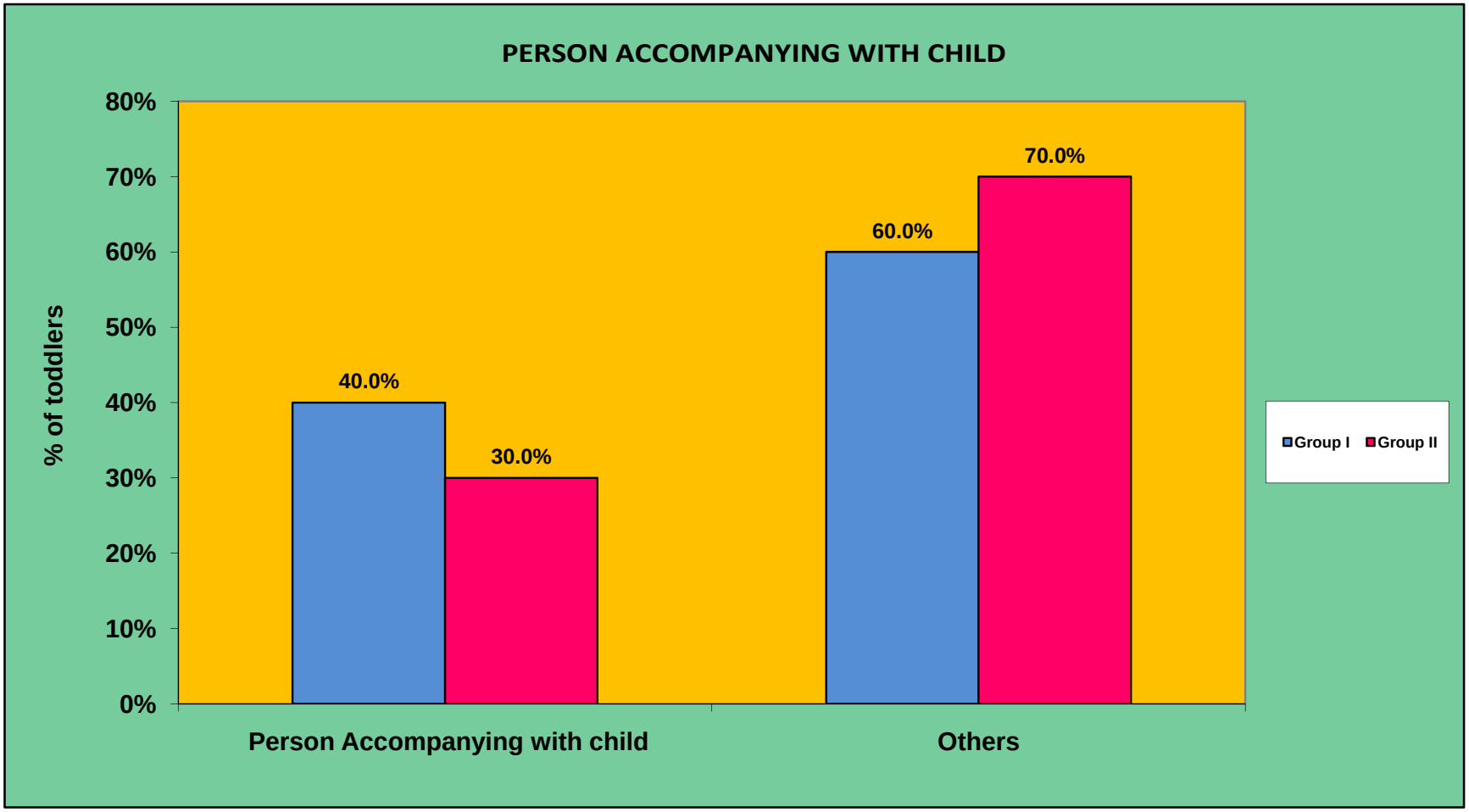
Majority of 14 (46.6%) children showed minimal resistant to previous immunization / injection

Fig.4.6: Distribution of sample percentage according to child reaction on nurse



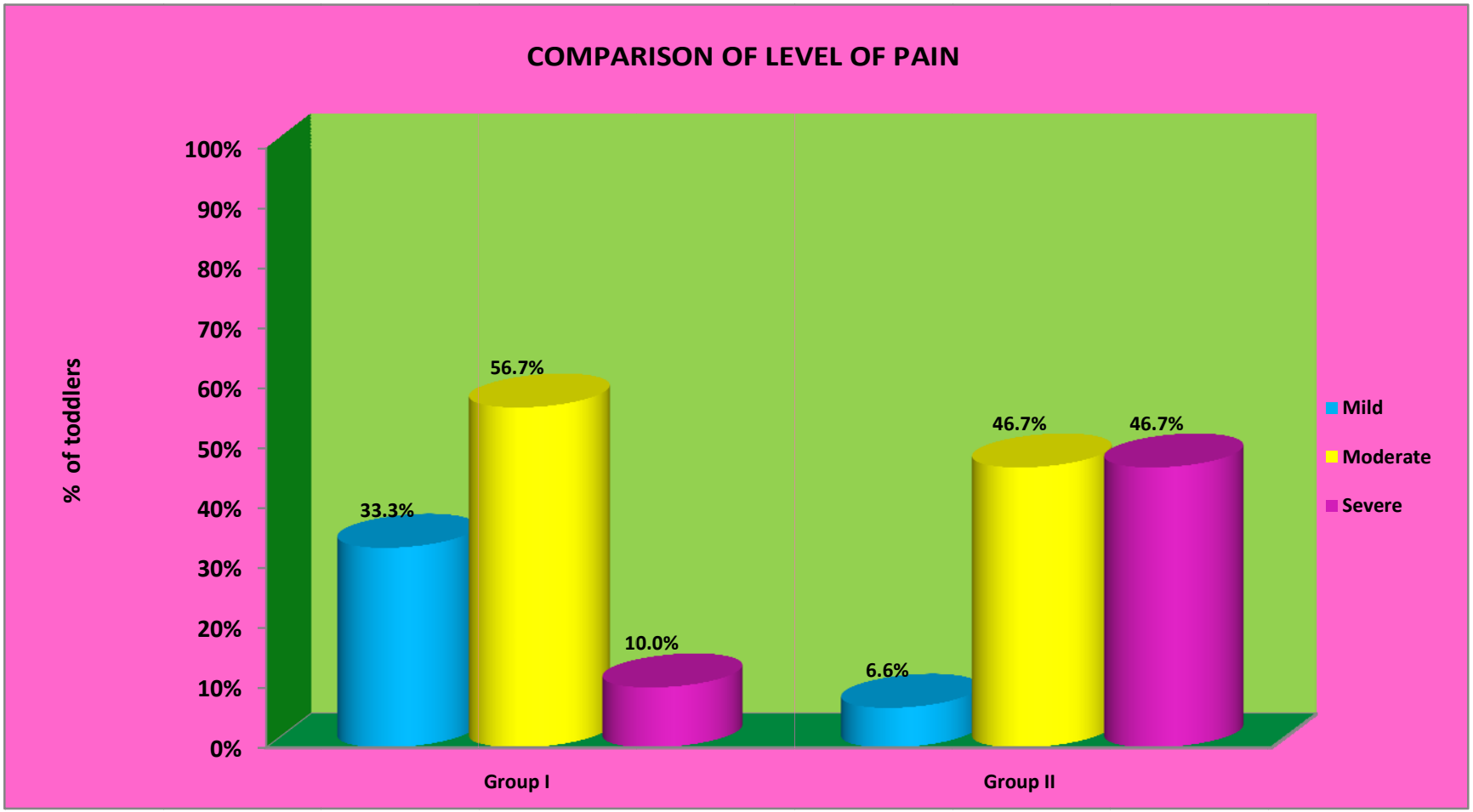
Majority of the children reaction on nurses those who injecting 17 (56.7%) were withdrawal with minimal resistance in Group-A and 11 (36.7%) children were withdrawal with minimal resistance In Group B

Fig.4.7. Distribution of sample percentage according to person accompanying the child



Higher proportions of the care giver accompanying with the children during immunization were mothers 27 (90.0%) in Group A and 28 (93.3%) mothers were in Group B

Fig.4.8. Distribution of sample percentage according to comparison of level of pain



Majority of the toddlers had less severe pain in Group A than in Group B

Objective 1: To determine the behavioral responses to pain among toddler' who are given a cartoon video (Group A) as distraction while receiving Immunization

Table 2: Behavioral Response to Pain among Cartoon Video Group - A

		Group A	
		n	%
look	Cheerful	8	26.7%
	Anxious	20	66.7%
	Fearful	2	6.7%
cooperation	Cooperative	20	66.7%
	Partially Cooperative	10	33.3%
	Uncooperative		
cry	No cry	24	80.0%
	Moans or whimpers	5	16.7%
	Crying loudly	1	3.3%
facial experience	Relaxed	21	70.0%
	No tightening	8	26.7%
	Tightening	1	3.3%
eyes	Normal staring	23	76.7%
	Opens eyes	7	23.3%
	Closes eyes with fear		
nose	No broadening	24	80.0%
	Slight broadening	6	20.0%
	Broadened with nasal secretions		
hands and fingers	Normal position	20	66.7%
	Withdraws hands	10	33.3%
	Beats/pushes		
legs	Normal position	25	83.3%
	Restless	5	16.7%
	Kicks vigorously		
respiration	Relaxed and regular	25	83.3%
	Irregular and rapid	5	16.7%
	Holding breath		
position	Remains quiet	18	60.0%
	Squirms	11	36.7%
	Rigid and vigorous	1	3.3%

Table 2 assess the behavioral responses to pain among toddler' who are given a cartoon video (Group A) as distraction while receiving Immunization

SECTION –II

Distribution of Samples According To the Level of Pain among Children Receiving Immunization in Group A (Cartoon Video Distraction), Group B (Music Distraction)

Table 3: Level of Behavioral Responses to Pain among Cartoon Video Group

Level of pain	cartoon video distraction technique	
	n	**%**
Mild	10	33.3%
Moderate	17	56.7%
Severe	3	10.0%
Total	30	100.0%

Table 3 assess the behavioral responses to pain among toddlers who are given a cartoon video (Group A) as distraction while receiving Immunization.

33.3% of the toddlers were ***having mild pain,***

56.7% of them were having ***moderate pain*** *and*

10.0% of them were having ***severe pain****.*

Table: 3 represented the pain score in response to modified behavioral response assessment scale in Group - A (cartoon video distraction) and Group B (Music distraction) during the procedure.

Regarding look, children showed cheerful 8 (26.7%), 20 (66.7%) children were anxious and 2 (6.7%) children were fearful in Group A,

In Group B, children showed cheerful 2 (6.7%), 17 (56.7%) children were anxious and 11 (36.7%) children were fearful.

Regarding cooperation, 20 (66.7%) children were cooperated, 10 (33.3%) children were partially cooperated in Group - A

In Group B, 7 (23.3%) children were cooperated, 12 (40.0%) children were partially cooperated and 11 (36.7%) children were uncooperative.

Regarding cry of the children 24 (80.0%) were not cried, 5 (16.7%) children were moans & whimpers and 1 (3.3%) children were cried loudly in Group A

In Group B, 8 (26.7%) were not cried, 9 (30.0%) children were moans & whimpers and 13 (43.3%) children were cried loudly in Group A

Regarding Facial Experience, 21 (70.0%) children were relaxed, 8 (26.7%) children were shows no tightening, and 1 (3.3%) children were shows tightening in Group - A

In Group B, 4(13.3%) children shows relaxed, 8 (26.7%) children were shows no tightening and 18 (360.0%) children were shows tightening.

Regarding eyes of the children, 23 (76.7%) had normal starring look, 7 (23.3%) were open eyes in Group A

In Group B, 4 (13.3%) had normal starring look, 11 (36 .7%) were opened eyes and 15 (50.0%) children were closed eyes with fear

Regarding nose, majority of, 24 (80.0%) children were not broadened, 6 (20.0%) children were slightly broadened

In Group B, majority of 17 (56.7%) children were slightly broadened, 7 (23.3%) children were broadened with nasal secretions and 6 (20.0%) children were not broadened.

Regarding Hands and Fingers, 20 (66.7%) children were in normal position, 10 (33.3%) children were withdraws hands in Group- A.

In Group B, 5 (16.7%) children were in normal position, 24 (80.0%) children were withdraws hands and 1 (3.3%) child was pushed.

Regarding legs, 25 (83.3%) children were in normal position, 5 (16.7%) children were in restless in Group A.

In Group B, 7 (23.3%) children were in normal position, (30.0%) children were in restless and 14 (46.7%) kicks vigorously.

Regarding respiration, 25 (83.3%) children were relaxed and regular, 5 (16.7%) children were irregular and rapid in Group A.

In Group B, 14 (46.7%) children were relaxed and regular, 14 (46.7%) children were irregular and rapid, and 2 (6.7%) children were hold breath.

Regarding position, 18 (60.0%) children were remains quiet, 11 (36.7%) children were squirms and 1 (3.3%) child was rigid and vigorous in Group A

In Group B, 7 (23.3%) children were remains quiet, 15 (50.0%) children were squirms and 8 (26.7%) children were rigid and vigorous.

Objective 2: To determine the behavioral responses to pain among toddlers who are given music (Group B) as a distraction while receiving immunization

Table 4: Behavioral Responses to Pain among Music Therapy (Group B)

Behavioural Responses		Group B	
		n	%
look	Cheerful	2	6.7%
	Anxious	17	56.7%
	Fearful	11	36.7%
cooperation	Cooperative	7	23.3%
	Partially Cooperative	12	40.0%
	Uncooperative	11	36.7%
cry	No cry	8	26.7%
	Moans or whimpers	9	30.0%
	Crying loudly	13	43.3%
facial experience	Relaxed	4	13.3%
	No tightening	8	26.7%
	Tightening	18	60.0%
eyes	Normal staring	4	13.3%
	Opens eyes	11	36.7%
	Closes eyes with fear	15	50.0%
nose	No broadening	6	20.0%
	Slight broadening	17	56.7%
	Broadened with nasal secretions	7	23.3%
hands and fingers	Normal position	5	16.7%
	Withdraws hands	24	80.0%
	Beats/pushes	1	3.3%
legs	Normal position	7	23.3%
	Restless	9	30.0%
	Kicks vigorously	14	46.7%
respiration	Relaxed and regular	14	46.7%
	Irregular and rapid	14	46.7%
	Holding breath	2	6.7%
position	Remains quiet	7	23.3%
	Squirms	15	50.0%
	Rigid and vigorous	8	26.7%

Table 4 assesses the behavioral responses to pain among toddler who are given music (Group B) as a distraction while receiving immunization

Table 5: Level of Behavioral Responses to Pain among Music Therapy Group

Level of pain	Music therapy	
	n	%
Mild	2	6.6%
Moderate	14	46.7%
Severe	14	46.7%
Total	30	100.0%

Table 5 assesses the behavioral responses to pain among toddlers' who were given music (Group B) as a distraction while receiving immunization.

6.6% of the toddlers' were having mild pain,

46.7% of them were having moderate pain and

46.7% of them were having severe pain.

SECTION – III

Comparison of the Effectiveness of Distraction Techniques on Pain among Children Receiving Immunization in Group A (Cartoon Video Distraction) and Group B (Music Distraction)

Objective 3: To compare the behavioral responses to pain in Group A and Group B.

Table 6: Comparison of Behavioral Responses to Pain in Group A and Group B.
(N=30/Group)

Behavioural Responses		Group				Chi square test
		Group A		Group B		
		n	%	n	%	
Look	Cheerful	8	26.7%	2	6.7%	$\chi 2=10.07$ p=0.01**
	Anxious	20	66.7%	17	56.7%	
	Fearful	2	6.7%	11	36.7%	
cooperation	Cooperative	20	66.7%	7	23.3%	$\chi 2=17.44$p=0.001***
	Partially Cooperative	10	33.3%	12	40.0%	
	Uncooperative			11	36.7%	
Cry	No cry	24	80.0%	8	26.7%	$\chi 2=19.42$p=0.001***
	Moans or whimpers	5	16.7%	9	30.0%	
	Crying loudly	1	3.3%	13	43.3%	
facial experience	Relaxed	21	70.0%	4	13.3%	$\chi 2=26.77$p=0.001***
	No tightening	8	26.7%	8	26.7%	
	tightening	1	3.3%	18	60.0%	
Eyes	Normal staring	23	76.7%	4	13.3%	$\chi 2=29.29$p=0.001***
	Opens eyes	7	23.3%	11	36.7%	
	Closes eyes with fear			15	50.0%	
Nose	No broadening	24	80.0%	6	20.0%	$\chi 2=23.06$p=0.001***
	Slight broadening	6	20.0%	17	56.7%	
	Broadened with nasal secretions			7	23.3%	

Behavioural Responses		Groups				Chi-Square Test
		Group - A		Group -B		
		n	%	n	%	
hands and fingers	Normal position	20	66.7%	5	16.7%	$\chi 2$=15.76p=0.001***
	Withdraws hands	10	33.3%	24	80.0%	
	Beats/pushes			1	3.3%	
Legs	Normal position	25	83.3%	7	23.3%	$\chi 2$=25.26p=0.001***
	Restless	5	16.7%	9	30.0%	
	Kicks vigorously			14	46.7%	
respiration	Relaxed and regular	25	83.3%	14	46.7%	$\chi 2$=9.36p=0.01**
	Irregular and rapid	5	16.7%	14	46.7%	
	Holding breath			2	6.7%	
position	Remains quiet	18	60.0%	7	23.3%	$\chi 2$=10.90p=0.01***
	Squirms	11	36.7%	15	50.0%	
	Rigid and vigorous	1	3.3%	8	26.7%	

Table 6 compare the behavioral responses to pain in Group A and Group B. Statistically there is a significant difference between Group A and Group B. Group A had less pain than group B. It was confirmed by using chi square test.

Regarding look, children 8 (26.7%), showed cheerful, children 20 (66.7%) were anxious and children 2 (6.7%) were fearful in Group A, Children 2 (6.7%), showed cheerful, Children 17 (56.7%) were anxious and Children 11 (36, 7%) were fearful in Group B.

Regarding cooperation, children 20 (66.7%) were cooperated, children 10 (33.3%) were partially cooperated in Group A. children 7 (23.3%) were cooperated,

children 12 (40.0%) were partially cooperated and children 11 (36.7%) were uncooperative in Group B,

Regarding cry of the children 24 (80.0%) were not cried, children 5 (16.7%) were moans & whimpers and children 1 (3.3%) were cried loudly in Group I. children 8 (26.7%) were not cried, children 9 (30.0%) were moans & whimpers and children 13 (43.3%) were cried loudly in Group B

Regarding Facial Experience of the children 21 (70.0%) were relaxed, children 8 (26.7%) were shows no tightening, and children 1 (3.3%) were shows tightening in Group A. Children 4(13.3%) shows relaxed, children 8 (26.7%) were shows no tightening, and children 18 (360.0%) were shows tightening in Group B

Regarding eyes of the children, 23 (76.7%) had normal starring look, Children 7 (23.3%) were open eyes in Group A. Children 4 (13.3%) had normal starring look, Children 11 (36 .7%) were opened eyes and children 15 (50.0%) were closed eyes with fear in Group B,

Regarding nose, majority of children 24 (80.0%) were not broadened, Children 6 (20.0%) were slightly broadened in Group I. Majority of children 17 (56.7%) were slightly broadened, children 7 (23.3%) were broadened with nasal secretions and children 6 (20.0%) were not broadened in Group B,

Regarding Hands And Fingers, children 20 (66.7%) were in normal position, children 10 (33.3%) were withdraws hands in Group A. Children 5 (16.7%) were in normal position, children 24 (80.0%) were withdraws hands and child 1 (3.3%) was pushed during immunization in Group B,

Regarding legs, 25 (83.3%) children were in normal position, children 5 (16.7%) were in restless in Group A. Children 7 (23.3%) were in normal position, children 9 (30.0%) were in restless and Children 14 (46.7%) kicks vigorously in Group B,

Regarding respiration, children 25 (83.3%) were relaxed and regular, children 5 (16.7%) were irregular and rapid in Group A. Children 14 (46.7.%) were relaxed and regular, children 14 (46.7%) were irregular and rapid , children 2 (6.7%) were hold breath in Group B

Regarding position, children 18 (60.0%) were remains quiet, children 11 (36.7%) were squirms and child 1 (3.3%) was rigid and vigorous in Group A. Children 7 (23.3%) were remains quiet, children 15 (50.0%) were squirms and children 8 (26.7%) were rigid and vigorous in Group B,

Table 7: COMPARISON OF LEVEL OF PAIN

	Group				Chi square test
	Group A		Group BS		
	n	%	n	%	
Mild	10	33.3%	2	6.6%	χ^2=30.46 p=0.001***
Moderate	17	56.7%	14	46.7%	
Severe	3	10.0%	14	46.7%	
Total	30	100.0%	30	100.0%	

Table 7 compares level of pain

Among Group A,

- *33.3% of the toddlers are having mild pain, 56.7% of them are having moderate pain and 10.0% of them are having severe pain among GroupA,*

Among GroupB

- *6.6% of the toddlers are having mild pain, 46.7% of them are having moderate pain and 46.7% of them are having severe pain among Group B*

- *Statistical significance was analyzed* by using chi square test

Table 8: COMPARISON OF PAIN SCORE

	No. of toddlers	Pain score Mean ± SD	Mean difference	Student's independent t-test
Group A	30	13.37±3.70	6.67	**t=5.03 P≤0.001 significant**
Group B	30	20.03±6.23		

* Significant at P≤0.05

** highly significant at P≤0.01

*** very high significant at P≤0.001

Table no.8 shows the comparison of pain score

Considering Group A *toddlers they are having **13**.37pain score and in group B toddlers they are having 20.03 score. Difference is 6.67 pain score. The difference between* Group A *and* Group B *pain score is large and it is statistically significant. It was analyzed using student independent t-test.*

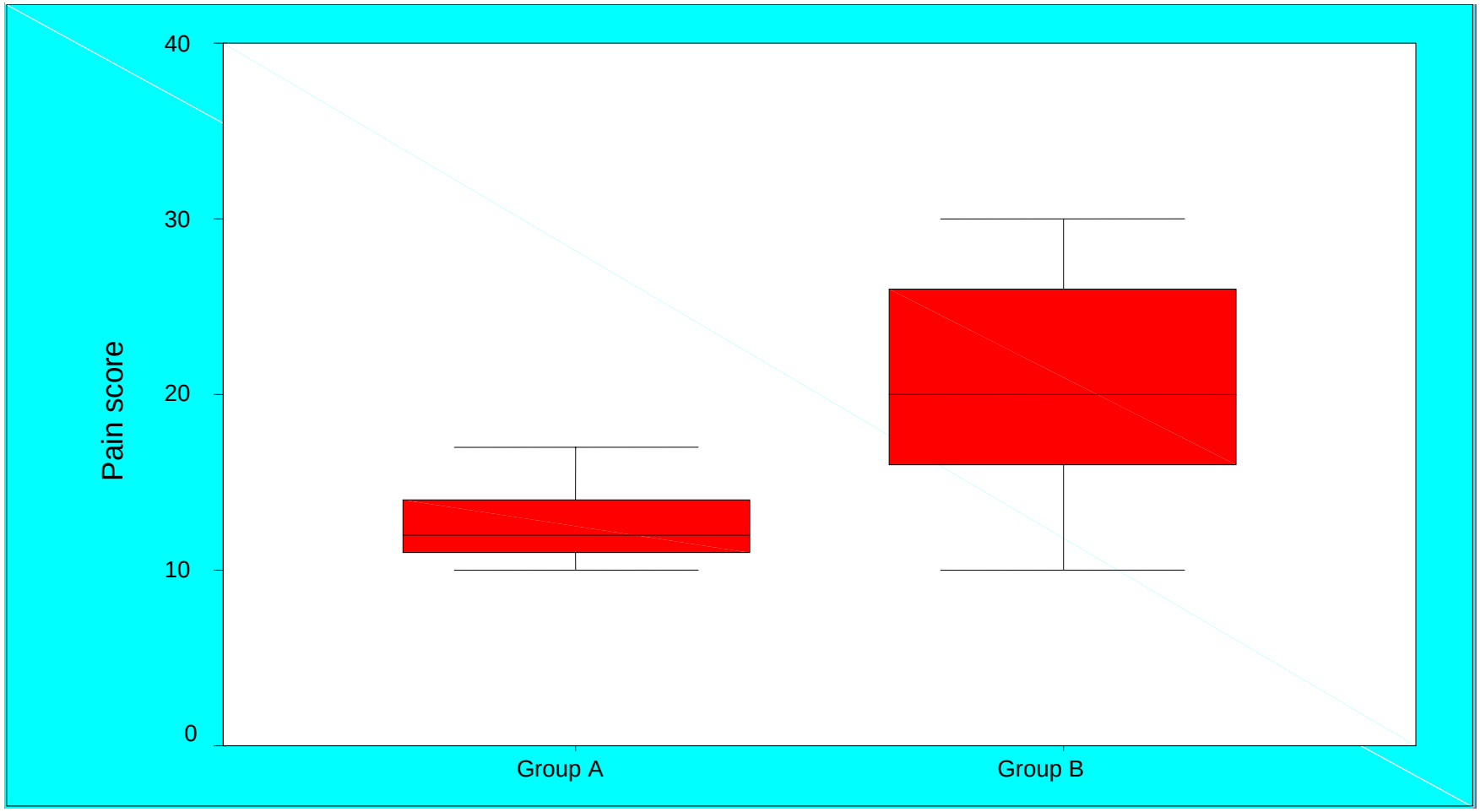


Fig: 4.9. Box plot compares the behavioral responses to pain score between Group A and Group B

SECTION – IV

Evaluate the effectiveness of distraction techniques among Children receiving immunization in Group A and Group B

TABLE 9: EFFECTIVENESS OF STUDY

Cognates	*Max score*	*Mean pain score*	Mean pain difference with 95% Confidence interval	Percentage of pain difference with 95% Confidence interval
Group A	30	13.37	6.67(4.01– 9.32)	22.2 % (13.3% –31.1%)
Group B	30	20.03		

Table no 9shows the effectiveness of the study.

Group A toddlers are having reduced 22.2% more pain than group B

Differences between **Group A and Group B** *was analyzed using mean difference with 95% CI and percentage difference of pain with 95%CI.*

SECTION – V

Table10:Association between the level of pain score demographic variables (Group A)

Demographic variables		Level of pain						Total	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Age in months	12 - 18 months	1	10.0%	6	60.0%	3	30.0%	10	**χ2=12.37p=0.01 ** **
	19 - 24 months	5	33.3%	10	66.7%	0	0.0%	15	
	25 - 30 months	4	80.0%	1	20.0%	0	0.0%	5	
Sex	Male	6	46.2%	7	53.8%			13	χ2=3.45 p=0.17
	Female	4	23.5%	10	58.8%	3	17.6%	17	
Religion	Hindu	5	27.8%	1	61.1%	2	11.1%	18	χ2=3.40 p=0.49
	Christian	4	44.4%	5	55.6%			9	
	Muslim	1	33.3%	1	33.3%	1	33.3%	3	
Name of vaccine	DPT Booster	6	25.0%	15	62.5%	3	12.5%	24	χ2=3.97p=0.14
	Others	4	66.7%	2	33.3%	0	0.0%	6	
Past experience	Calm and quiet	4	50.0%	3	37.5%	1	12.5%	8	χ2=2.63 p=0.62
	Minimal resistance	3	21.4%	10	71.4%	1	7.1%	14	
	Rebellious and high resistance	3	37.5%	4	50.0%	1	12.5%	8	
Child reaction on nurses	Accept early	4	66.7%	2	33.3%	0	0.0%	6	**χ2=14.09 p=0.01** **
	Withdrawal with minimal resistance	5	29.4%	12	70.6%	0	0.0%	17	
	Totally reluctant to accept them	1	14.2%	3	42.8%	3	42.8%	7	
Person accompanying the child	Father			2	100.0%			2	χ2=2.54p=0.64
	Mother	10	37.0%	14	51.9%	3	11.1%	27	
	Others			1	100.0%			1	

Associate of the pain level among children receiving Immunization in Group A (Cartoon video distraction)

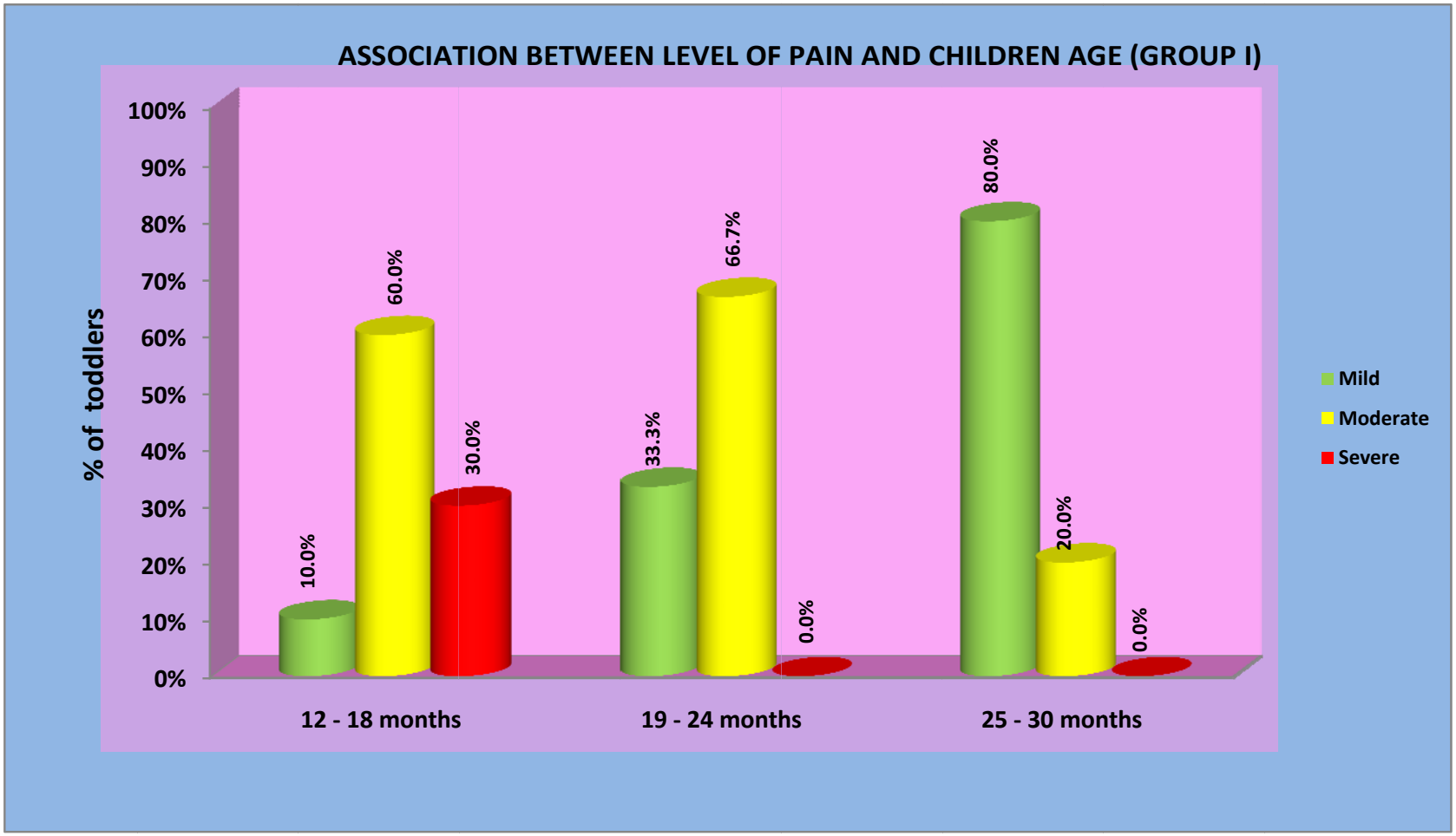
Objective 4: To associate the effectiveness of Group –A with selected Demographical variables

Table 10 shows the association between the levels of pain with group A toddler's demographic variables. Elder and accept early reaction children are having more reduced pain than others. It was analyzed using chi square test.

Associations between the levels of pain with group A toddler's demographic variables. Elder and accept early reaction children are having more reduced pain than others. It was analyzed using chi square test.

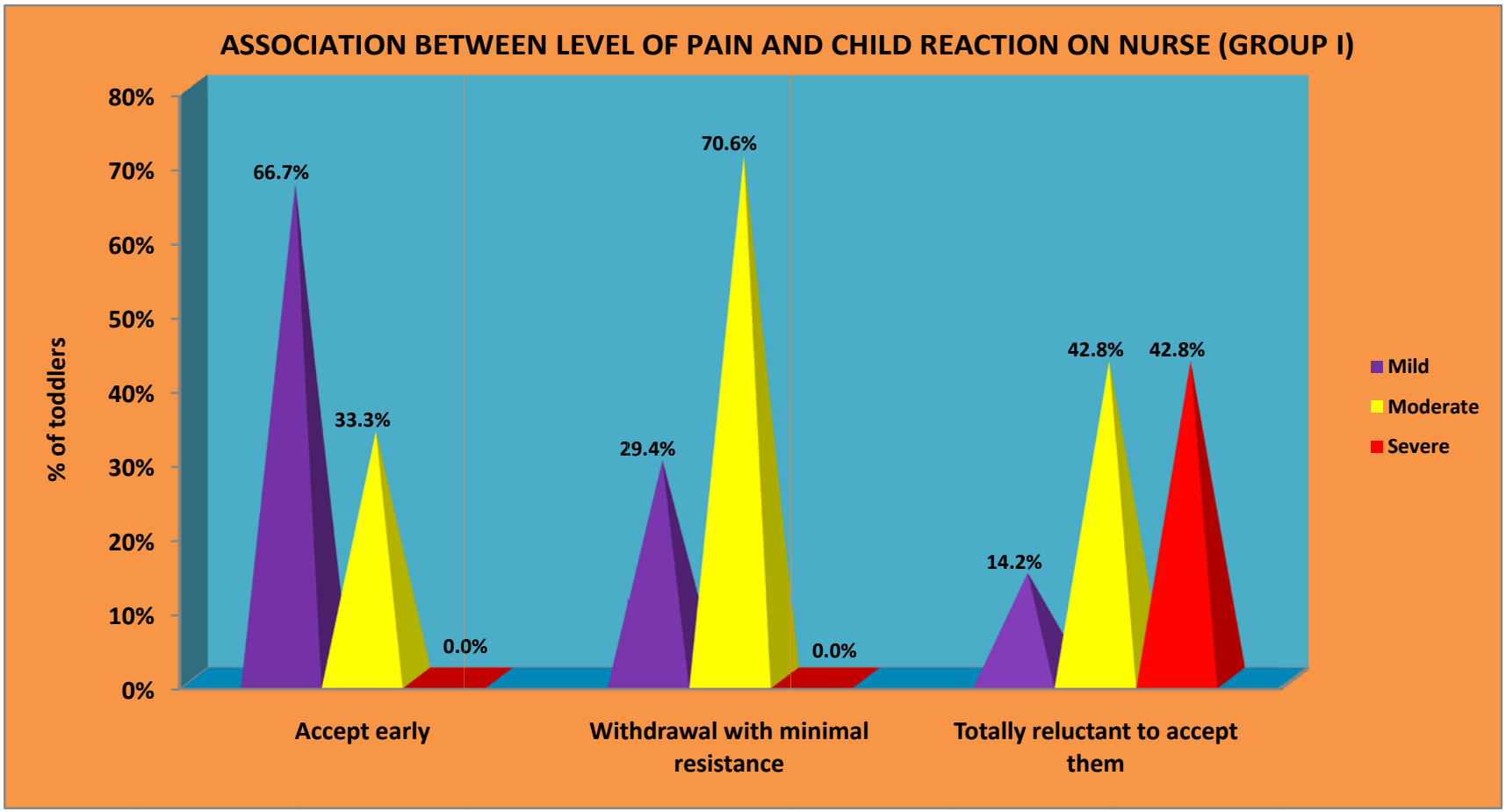
Children's age (**χ2=12.37p=0.01****), Children's sex (χ2=3.45 p=0.17), the religion of the children (χ2=3.40 p=0.49), child's past experiences to immunization/injection (χ2=2.63 p=0.62), child reaction on nurses (**χ2=14.09 p=0.01****), person accompanying the child (χ2=2.54p=0.64)

Fig.4.10: Association between level of pain and children age (Group A)



Among the children 25-30 months (80%) of toddlers had mild pain in Group A

Fig.4.11: Association between level of pain and child reaction on nurse (Group A)



Overall 70.6% of toddlers were withdrawal with minimal resistance in Group A

Table 11: Association between the level of pain and demographic variables (Group B)

Demographic variables		Level of pain						Total	Chi square test
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Age in months	12 - 18 months	1	10.0%	1	10.0%	8	80.0%	10	$\chi2=8.85$ p =0.07
	19 - 24 months	1	6.7%	9	60.0%	5	33.3%	15	
	25 - 30 months	0	0.0%	4	80.0%	1	20.0%	5	
Sex	Male	2	12.5%	8	50.0%	6	37.5%	16	$\chi2=2.44$ p=0.29
	Female	0	0.0%	6	42.9%	8	57.1%	14	
Religion	Hindu	1	4.5%	10	45.5%	11	50.0%	22	$\chi2=7.92$ p=0.10
	Christian	0	0.0%	4	66.7%	2	33.3%	6	
	Muslim	1	50.0%	0	0.0%	1	50.0%	2	
Name of vaccine	DPT Booster	1	5.0%	11	55.0%	8	40.0%	20	$\chi2=1.71$ p =0.42
	Others	1	10.0%	3	30.0%	6	60.0%	10	
Past experience	Calm and quiet	2	33.3%	4	66.7%	0	0.0%	6	**$\chi2=23.57$ p=0.01****
	Minimal resistance	0	0.0%	9	75.0%	3	25.0%	12	
	Rebellious and high resistance	0	0.0%	1	8.3%	11	91.7%	12	
Child reaction on nurses	Accept early Withdrawal	2	22.2%	5	55.6%	2	22.2%	9	**$\chi2=15.36$ p=0.01****
	with minimal resistance	0	0.0%	8	72.7%	3	27.3%	11	
	Totally reluctant to accept them	0	0.0%	1	10.0%	9	90.0%	10	
Person accompanying the child	Father	1	100.0 %	0	0.0%	0	0.0%	1	$\chi2=7.49$ p =0.11
	Mother	1	3.6%	13	46.4%	14	50.0%	28	
	Others			1	100.0%			1	

Table 11 shows the association between the levels of pain with group B toddler's demographic variables. Past experience calm children and accept early reaction children are having more reduced pain than others. It was analyzed using chi square test.

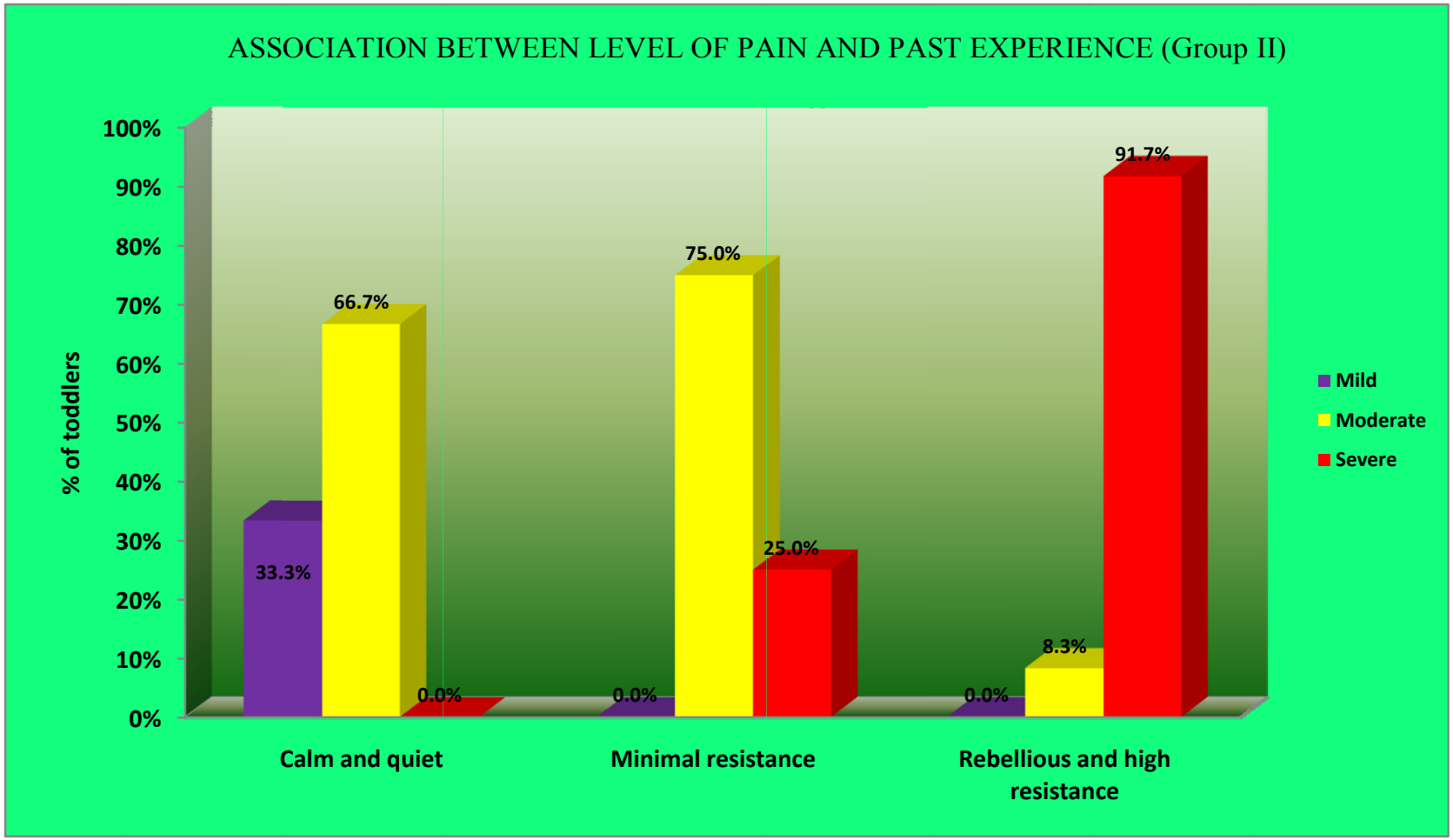
Objective 5: To associate the effectiveness of Group –B with selected Demographical Variables

Table 11: Association between the level of pain and demographic variables (Group B)

Associate between the levels of pain with group B toddler's demographic variables. Past experience calm children and accept early reaction children are having more reduced pain than others. It was analyzed using chi square test.

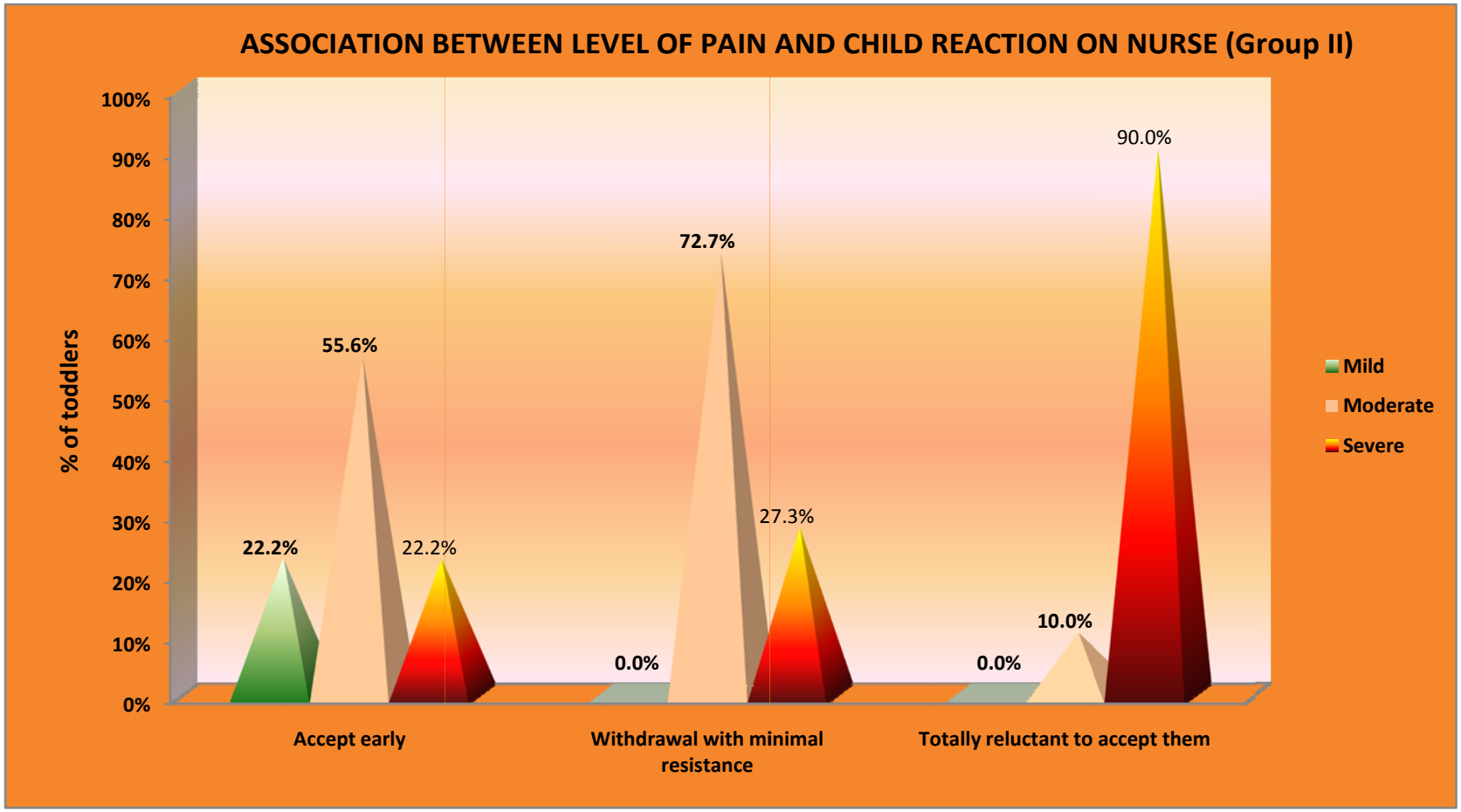
Children's age ($\chi 2=8.85 p=0.07$), children's sex ($\chi 2=2.44$ $p=0.29$), the religion of the children ($\chi 2=7.92$ $p=0.10$), child's past experiences to immunization/injection (**$\chi 2=23.57$ $p=0.01$****), child reaction on nurses (**$\chi 2=15.36$ $p=0.01$****), person accompanying the child ($\chi 2=7.49 p=0.11$)

Fig.4.12: Association between level of pain and past experience (Group B)



The figure showed that the toddlers (91.7%) were rebellious and high resistance in Group B

Fig.4.13: Association between level of pain and child reaction on nurse (Group B)



This figure showed that 90% of toddlers totally reluctant to accept the reaction on nurse in Group B

CHAPTER – V

DISCUSSION

In the discussion section, the researcher draws conclusions about the meaning and implications of the finding. This section tries to unravel what the results mean, why things turned out the way they did and how the results can be used in practice.

(F. Polit, 2004)

The study focused on assessing the effectiveness of distraction techniques on pain among children (1-3 yrs) receiving immunization. The subjects were selected as per the inclusion criteria. A quasi – experimental post test only control group design was used in this study. The setting of the study was pediatric immunization outpatient department, institute of child health and hospital for children, Egmore, Chennai-8. The sample size was 30 in each group respectively. A purposive sampling technique was used to select the samples. It is composed of two randomly assigned groups but no pre-test was done.

The data collection tools used were demographic variables, modified behavioral assessment scale `to assess the level of pain in Group-A and Group-B. The content validity and reliability was established for all the tools. The pilot study was done on 3 samples in each group who met the sampling criteria.

The findings of the study have been discussed in terms of objectives and hypothesis stated for the study.

Objectives of the study are to:

1. To determine the behavioral responses to pain among toddlers who are given a cartoon video (Group A) as distraction while receiving Immunization.

2. To determine the behavioral responses to pain among toddler' who are given music (Group B) as a distraction while receiving immunization

3. To compare the behavioral responses to pain in Group A and Group B.

4. To associate the effectiveness of Group A with selected Demographical Variables

5. To associate the effectiveness of Group B with selected Demographical variables

The study attempted to examine the following hypothesis:

H_1: There will be significant difference in the severity of behavioral response score of Group A and Group B.

H_2: There will be a significant association between the behavioral responses to pain Among children at selected demographic variables.

Demographic characteristics of the sample

According to the age of the children in months, 10 (33.3%) children were 12 – 18 months and 15 (50.0%) were 19 – 24 months and 5 (16.7%) were 25 – 30 months in Group A and 10 (33.3%) children were 12 – 18 months and 15 (50.0%) were 19 – 24 months and 5 (16.7%) were 25 – 30 months in Group B.

In Considering The Gender, 13 (43.3%) children belong to male, whereas 17 (56.7%) children were female in Group A and 16 (53.3%) children belong to male, whereas 14 (46.7%) children were female in Group B.

The children were belongs to majority of 18 (60.0%) were Hindu children, 9 (30.0%) were Christian and 3 (10.0%) were Muslim in Group A, and 22(73.3%) were Hindu children, 6 (20.0%) were Christian and 2 (6.7%) were Muslim in Group B.

The majority of 24 (80.0%) children were received DPT vaccine and 6 (20.0%) Children were received other vaccines in Group A and 20(66.7%) children were received DPT vaccine and 10 (33,3%) Children were received other vaccine in Group B.

In considering the relationship of the care giver accompanying with the children during immunization were mothers 27 (90.0%), fathers were 2 (6.7%) and others were 1 (3.3%) in Group A. In Group B, the relationship of the care giver accompanying with the children during immunization were mothers 28 (93.3%), fathers were 1 (3.3%) and others were 1 (3.3%).

Considering the child's past experiences to immunization / injection, majority of 14 (46.6%) children showed minimal resistant to previous immunization / injection whereas 8 (26.7%) children showed Rebellious and high resistance and calm and quiet were 8 (26.7%) in Group A. In Group- B, 12 (40.0%) children showed minimal resistant to previous immunization / injection whereas 12(40.0%) children showed Rebellious and high resistance and calm and quiet were 6 (20.0%).

Considering the children reaction on nurses those who injecting vaccine 6 (20.0%) children were accept early, 17 (56.7%) children were withdrawal with minimal resistance and 7 (23.3%) children were totally reluctant to accept them in Group A. In Group B, 9 (30.0%) children were accept early, 11 (36.7%) children were withdrawal with minimal resistance and 10 (33.3%) children were totally reluctant to accept them.

MAJOR FINDINGS:

The first and second objective of the study was to determine the behavioral responses to pain among toddler' who are given a cartoon video (Group A) as distraction and music (Group B) as distraction while receiving Immunization.

A Descriptive Statistics (Frequency & Percentage) was used to analyze the level of pain in experimental Group A and Group B

Table 2: the study results showed that,

- ★ *In Group A (cartoon video is used as distraction) majority (56.7%) of them are having moderate pain 33.3% of the toddlers were had mild pain, and 10.0% of them were had severe pain.*

- ★ *In Group B (Music was used as distraction) 6.6% of the toddlers were had mild pain, 46.7% of them were had moderate pain and 46.7% of them were had severe pain.*
- ★ *Mean pain score in Group A was 13.37, in Group B was 20.03 and mean difference between Group A and Group B was 6.67.*

The study was supported by:

Hockenberry and wilon et al., (2009) reported that brain perceives pain; there is a release of inhibitory neurotransmitters to hinder the transmission of pain and helps to produce on analgesic effect. This inhibition of the pain impulse is the fourth phase of the nociceptive process known as modulation. A protective reflex response also occurs with pain receptions. So while assessing pain intensity in children requires special techniques, therefore assessment require using word such as wove, boo-boo, there are some unique tools available to measure pain intensity in children.

The third objective of the study was to compare the behavioral responses to pain in Group A and Group B.

The hypothesis for this objective is ($\mathbf{H_1}$) there was significant difference in the severity of behavioral response score of Group A and Group B.

Table 6 compare the behavioral responses to pain in Group A and Group B. Statistically there is a significant difference between Group A and Group B. Group A having less pain than group B. It was confirmed using chi square test.

Regarding look, children 8 (26.7%), showed cheerful, children 20 (66.7%) were anxious and children 2 (6,7%) were fearful in Group A, Children 2 (6.7%), showed cheerful, Children 17 (56.7%) were anxious and Children 11 (36,7%) were fearful in Group B,

Regarding cooperation, children 20 (66.7%) were cooperated, children 10 (33.3%) were partially cooperated in Group A. children 7 (23.3%) were cooperated, children 12 (40.0%) were partially cooperated and children 11 (36.7%) were uncooperative in Group B,

Regarding cry of the children 24 (80.0%) were not cried, children 5 (16.7%) were moans & whimpers and children 1 (3.3%) were cried loudly in Group A. children 8 (26.7%) were not cried, children 9 (30.0%) were moans & whimpers and children 13 (43.3%)were cried loudly in Group B

Regarding Facial Experience, children 21 (70.0%) were relaxed, children 8 (26.7%) were shows no tightening, and children 1 (3.3%) were shows tightening in Group A. Children 4(13.3%) shows relaxed, children 8 (26.7%) were shows no tightening, and children 18 (360.0%) were shows tightening in Group B

Regarding eyes of the children, 23 (76.7%) had normal starring look, Children 7 (23.3%) were open eyes in Group A. Children 4 (13.3%) had normal starring look, Children 11 (36 .7%) were opened eyes and children 15 (50.0%) were closed eyes with fear in Group B,

Regarding nose, majority of children 24 (80.0%) were not broadened, Children 6 (20.0%) were slightly broadened in Group A. Majority of children 17 (56.7%) were slightly broadened, children 7 (23.3%) were broadened with nasal secretions and children 6 (20.0%) were not broadened in Group B,

Regarding Hands and Fingers, children 20 (66.7%) were in normal position, children 10 (33.3%) were withdraws hands in Group A. Children 5 (16.7%) were in normal position, children 24 (80.0%) were withdraws hands and child 1 (3.3%) was pushed during immunization in Group B,

Regarding legs, 25 (83.3%) children were in normal position, children 5 (16.7%) were in restless in Group A. Children 7 (23.3%) were in normal position, children 9 (30.0%) were in restless and Children 14 (46.7%) kicks vigorously in Group B,

Regarding respiration, children 25 (83.3%) were relaxed and regular, children 5 (16.7%) were irregular and rapid in Group A. Children 14 (46.7. %) were relaxed and regular, children 14 (46.7%) were irregular and rapid, children 2 (6.7%) were hold breath in Group B.

Regarding position, children 18 (60.0%) were remains quiet, children 11 (36.7%) were squirms and child 1 (3.3%) was rigid and vigorous in Group A. Children 7 (23.3%) were remains quiet, children 15 (50.0%) were squirms and children 8 (26.7%) were rigid and vigorous in Group B,

The study was supported by

Cohen LL.et.al (2003) conducted a comparative study to isolate and compare children's procedural anxiety and pain. Results suggested that anxiety and pain are highly correlated.

Balan R, (2009) had done the comparative study on Indian classical instrumental music and local anesthetic cream on children aged 5-12 yrs in terms of in reducing pain during venipuncture. was conducted at a tertiary care centre. They were randomly assigned to 3 groups: local anesthetic (LA), music or placebo (control) group. The study findings showed that, using Indian classical instrumental music can be significantly reduced pain children. The difference between VAS scores with LA and music is not always significant.

The fourth objective of the study was to associate the effectiveness behavioral response of Group I with selected Demographic Variables

Table 10 shows association between the levels of pain with group I toddlers' demographic variables. Elder and accept early reaction children are having more reduced pain than others. It was analyzed by using chi square test.

Children's age (**χ2=12.37p=0.01****), Children's sex (χ2=3.45 p=0.17), the religion of the children (χ2=3.40 p=0.49), child's past experiences to immunization/injection (χ2=2.63 p=0.62), child reaction on nurses (**χ2=14.09 p=0.01****), person accompanying the child (χ2=2.54p=0.64)

The study was supported by

Cohen LL.et.al (2005), conducted a study to assess the effectiveness of nurses coaching and cartoon distraction to reduce child, parent and nurse distress during **immunizations** and the results revealed that in the two interventions conditions, children coped more and were less distressed, nurses and parents exhibited more coping and promoting behavior and were less distressed than in the control condition.

The fifth objective of the study to associate the effectiveness of Group –B with selected Demographical variables

Table 11 shows association between the levels of pain with group B toddlers' demographic variables. Past experience calm children and accept early reaction children were having more reduced pain than others. It was analyzed by using chi square test.

Children's age ($\chi 2$=8.85p=0.07), children's sex ($\chi 2$=2.44 p=0.29), the religion of the children ($\chi 2$=7.92 p=0.10), child's past experiences to immunization/injection (**$\chi 2$=23.57 p=0.01****), child reaction on nurses (**$\chi 2$=15.36 p=0.01****), person accompanying the child ($\chi 2$=7.49p=0.11).

The study was supported by

Horn MI.et.al (2001) conducted a comparative study to compare the distress behaviors and perception of distress in 4-6 year old children who received their immunization sequentially and the result revealed that there was no significant difference between the distress behavior and perception of distress among the children.

In Group A toddlers they were had **13**.37mean pain score and in group II toddler's' they were had 20.03 score. Mean difference is 6.67 pain score. The difference between Group A and Group B pain score was large and it is statistically at **t=5.03 P≤0.001 significant** It was analyzed by using student independent t-test.

The hypothesis used for this study was strongly supported by the above findings i.e.the mean pain score of the children who received cartoon video (Group A) children 1-3 years were had reduced 22.2% more pain than (music distraction) Group B.

Differences between **Group A and Group B** *was analyzed using mean difference with 95% CI and percentage difference of pain with 95%CI.*

The Results Were Supported By:

Loewy, J.V (2006) state that music distraction using live and familiar music with unusual instruments can be effective in capturing and holding the children attention during painful procedures, such as needle punctures.

The hypothesis for this objective is (H_2) there was a significant association between the level of pain among children in group A and Group B and their demographic variables.

In order to find out the association between the selected demographic variables and level of pain score in group A and group B, chi-square was computed. There was no significant association between demographic variables like age (in months), gender, position of the children during immunization and religion.

In considering the relationship of the care giver accompanying with the children during immunization were mothers 27 (90.0%), fathers were 2 (6.7%) and others were 1 (3.3%) in Group A

In Group B, the relationship of the care giver accompanying with the children during immunization were mothers 28 (93.3%), fathers were 1 (3.3%) and others were 1 (3.3%).

Considering the child's past experiences to immunization / injection, majority of 14 (46.6%) children showed minimal resistant to previous immunization / injection whereas 8 (26.7%) children showed Rebellious and high resistance and calm and quiet were 8 (26.7%) in Group A.

In Group B, 12 (40.0%) children showed minimal resistant to previous immunization / injection whereas 12(40.0%) children showed Rebellious and high resistance and calm and quiet were 6 (20.0%) in Group B.

Considering the children reaction on nurses those who injecting vaccine 6 (20.0%) children were accept early, 17 (56.7%) children were withdrawal with minimal resistance and 7 (23.3%) children were totally reluctant to accept them in Group A.

In Group B, 9 (30.0%) children were accept early, 11 (36.7%) children were withdrawal with minimal resistance and 10 (33.3%) children were totally reluctant to accept them.

Statistical significance difference between group A and group B was analyzed by using student independent test.

CHAPTER – VI

SUMMARY, FINDINGS, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

INTRODUCTION

This chapter presents the summary, findings, conclusion, implications and recommendations for different areas with nursing practice, nursing education, nursing administration and nursing research.

6.1. SUMMARY

Pain is a traumatic experience of an individual especially to the infants and young children who cannot express it out specifically. Distraction is an effective means for reduction of behavioral response to pain. This intended me to compare the effectiveness of between two distraction techniques on pain among children age group (1-3 years) receiving immunization in pediatric outpatient department, Institute of child health and hospital for children, Egmore, Chennai-8.

The following objectives were set for the study:

1. To determine the behavioral responses to pain among toddler who are given a cartoon video (Group A) as distraction while receiving Immunization.
2. To determine the behavioral responses to pain among toddler who are given music (Group B) as a distraction while receiving immunization
3. To compare the behavioral responses to pain in Group A and Group B.
4. To associate the effectiveness of Group A with selected Demographical Variables
5. To associate the effectiveness of Group B with selected Demographical variables

The study attempted to examine the following hypothesis:

H_1: There was significant difference in the severity of behavioral response score of Group A and Group B.

H_2: There was a significant association between the behavioral responses to pain among children at selected demographic variables.

The purpose of undertaking this study was to evaluate the effectiveness of distraction technique in reducing pain during immunization. A review of literature enabled the investigator to develop the conceptual framework.

The conceptual frame work adopted for this study was based on Roy's adaptation theory. An experimental approach and post test only control group design was chosen for conducting the study. The population chosen for the study were children (1-3 years) receiving immunization at pediatric outpatient department. The subjects were selected by using the purposive sampling technique and randomly assigned to Group A and Group B.

The tool used for data collection was:

Tool-I: DEMOGRAPHIC VARIABLES

Tool-II: MODIFIED BEHAVIOURAL ASSESSMENT SCALE

The pilot was conducted to assess the feasibility of the study. Main study was conducted with 30 samples for group A (Cartoon video distraction) and 30 samples for group B (music distraction) for a period of 4 weeks. The data were analyzed using both descriptive and inferential statistics.

The data regarding demographic characteristics as well as distribution of samples were presented in terms of frequency and percentage, inferential statistics for identifying the significance of distraction techniques (independent's test). Chi-square was used to find out the significant association between pain score and selected demographic variables.

6.2 THE MAJOR FINDINGS OF THE STUDY

Demographic characteristics of the sample

- ★ According to the age of the children in months, 10 (33.3%) children were 12 – 18 months and 15 (50.0%) were 19 – 24 months and 5 (16.7%) were 25 – 30 months in Group A and 10 (33.3%) children were 12 – 18 months and 15 (50.0%) were 19–24 months and 5 (16.7%) were 25–30 months in Group B.

- ★ In Considering the gender, 13 (43.3%) children belong to male, whereas 17 (56.7%) children were female in Group A and 16 (53.3%) children belong to male, whereas 14 (46.7%) children were female in Group B.

- ★ The children were belongs to majority of 18 (60.0%) were Hindu children, 9 (30.0%) were Christian and 3 (10.0%) were Muslim in Group A, and 22(73.3%) were Hindu children, 6 (20.0%) were Christian and 2 (6.7%) were Muslim in Group B.

- ★ The majority of 24 (80.0%) children were received DPT vaccine and 6 (20.0%) in Group A and 20 (66.7%) children were received DPT vaccine and 10 (33,3%) in Group B.

- ★ In considering the relationship of the care giver accompanying with the children during immunization were mothers 27 (90.0%), fathers were 2 (6.7%) and others were 1 (3.3%) in Group A and In Group B, the relationship of the

care giver accompanying with the children during immunization were mothers 28 (93.3%), fathers were 1 (3.3%) and others were 1 (3.3%).

★ Considering the child's past experiences to immunization / injection, majority of 14 (46.6%) children showed minimal resistant to previous immunization / injection whereas 8 (26.7%) children showed Rebellious and high resistance and calm and quiet were 8 (26.7%) in Group A and In Group B, 12 (40.0%) children showed minimal resistant to previous immunization / injection whereas 12(40.0%) children showed Rebellious and high resistance and calm and quiet were 6 (20.0%) .

★ Considering the children reaction on nurses those who injecting vaccine 6 (20.0%) children were accept early, 17 (56.7%) children were withdrawal with minimal resistance and 7 (23.3%) children were totally reluctant to accept them in Group A and In Group B, 9 (30.0%) children were accept early, 11 (36.7%) children were withdrawal with minimal resistance and 10 (33.3%) children were totally reluctant to accept them.

Effects of distraction techniques on pain

★ *In Group A (cartoon video used as distraction) majority of (56.7%) of them were had moderate pain, 33.3% of the toddlers were had mild pain and 10.0% of themwere had severe pain.*

★ *In Group B (music used as distraction) 46.7% of them were had severe pain, 46.7% of them were had moderate pain and 6.6% of the toddlers were had mild pain,*

★ Mean pain score in Group A was 13.37, in Group B was 20.03 and the mean difference pain score was 6.67 (table 8)

- ★ There is a significant difference on pain score (x^2**=30.46**) at p< 0.001 (table 7) level. The results reveal that children who received cartoon video distraction (Group A) had moderate pain score than music distraction (Group B)

- ★ Presence of mothers accompanied with child previous minimal resistance and children with past experience were had less pain than others. Hence the researcher accepts the research hypothesis.

CONCLUSIONS

The following conclusions are drawn from the study:

- ★ With regard to age of the children in months, majority of the children were 19-24 months in Group A and Group B

- ★ With regard to gender, majority 17 (56.7%) of children belongs to Female whereas 13 (43.3%) were male and most of the children 18 (60.0%) children belongs to Hindu Religion in Group A.

- ★ With regard to gender, majority 16(53.3%) of children belongs to Female whereas 14 (46.7%) were male and most of the children 18 (60.0%) children belongs to Hindu Religion in Group B

- ★ In Considering the Relationship of the Care Giver with The children During Immunization Were Mothers 27 (90.0%) In Group A and 28 (93.3%) in Group B.

- ★ Majority of the Children 14 (46.6%) Showed Minimal Resistance To Previous Immunization/Injection In Group A

- ★ Considering Child reaction on Nurses, Majority 17 (56.7%) Children Were Withdrawal With Minimal Resistance in Group A

- ★ The pain score of group A (cartoon video distraction) lower than the Group B (music distraction) during immunization.

- ★ When compare the effectiveness of distraction techniques on pain, cartoon video distraction (Group A) is an effective distraction technique than music therapy (Group B) during immunization.

Thus, this research study concludes that the children who receive cartoon video distraction technique during immunization experienced less pain than compared with music therapy.

6.3. IMPLICATIONS

The findings of the study have implications in various areas of nursing and nursing practice, nursing education, nursing administration and nursing research.

Implications for Nursing Practice:

1. Nurse' s role in health care arena is undergoing rapid changes ; nurses play a major role in the management of pain among children of all age group
2. Pain assessment should be a part of the child's care plan. Hence nurses should assess the pain of the children, according to their age and developmental level based on the standardized pain assessment tool
3. Nursing staff that works in pediatric wards ought to promote the use of distraction technique to relieve pain associated with a brief painful procedure in toddler. It is easy to perform and take care minimal amount of time
4. Nurses in addition, it may be the best to have a variety of distracter devices available on hand since children may pay more attention to one particular device than the other.

5. The nurses should practice the non pharmacological pain reduction technique like behavioral method, distraction techniques, guide imaginary, hypnosis, specific stress reducing counseling or all helpful in the management of pain among children.

6. The nurse can utilize the evidence based practice in improving the quality and standard of care given to the children. This study helps the nurse practitioners to use distraction techniques using the painful procedures. It helps the nurses to be more aware and skillful in assessing pain among children.

Implications for Nursing Education:

1. Education helps nursing students to develop more insight on new concepts, which will enable them to take care of children effectively.

2. Non pharmacological management of pain to the children should be included in the nursing curriculum and in formulating procedures in the manual of nursing procedures.

3. Nursing educators should provide knowledge and the information to their students to help them understand the important of non pharmacological pain management by using distraction in toddlers to received immunization.

4. Pain has been considered as the fifth vital sign. Comprehensive assessment of pain in infants and children are assessed through various standardized scale like numeric pain scale, FLACC behavioral pain scale ouches face scale and these should be insisted to all nursing students.

5. Conduct group teaching for student regarding pain reduction with different distraction techniques and other non pharmacological technique while taking care of the children.

6. Nursing educators can use the finding of the study as an example for teaching their students about the application of distraction to reduce pain in painful procedure. This study significantly recommended the other means of distraction could also be used effectively as non pharmacological pain management to different age group of children.

Implication For The Nursing Administration:

1. The nurse administrator can formulate a policy and protocol for using the distraction techniques as one of the pain relieving techniques for the children.

2. In-service education should be provided to the nursing personnel at various levels related management of pain among children by using non pharmacological measures and to make them aware of simple and effective distraction techniques.

3. Update the nurse's knowledge about current practice and treatment of pain through workshops and conferences. This will enable them to provided care effectively with holistic approach.

Implications for Nursing Research:

1. The professional responsibility of the nurse is to strengthen their profession by means of safe practice, which is based on evidence based practice.
2. Further research should add other pain measurement such as observable behavior performance together with existing self reported to confirm the result of the study.
3. Large scale studies can be conducted in consideration of other contributing variables.
4. Findings of the study can provided the base line information for further research in this area.

6.4. Recommendation for Further Research:

1. Further researches on distraction techniques will help to strengthen its facts and promoting the children well being the reducing their pain during hospitalization for exposure to painful procedure.

2. A similar study can be done with large samples with different demographic variables.

3. A similar study can be done during IV injection among children in different age group.

4. Validate MODIFIED BEHAVIOURAL ASSESSMENT SCALE against other pain assessment tools.

5. The effect of other non pharmacological pain management such as imagery, touch movie distraction in toddlers during painful procedure should be tested.

6. The study can be replicated in different settings to strengthening the findings.

7. The study can be done to assess the knowledge, attitude and practice of non pharmacological management of pain among the staff nurses in the pediatric care setting in the hospital.

6.5. LIMITATIONS

The limitation of the study were,

- ❖ The study was done on a small size of thirty samples in each two groups; Hence generalization is possible only for the selected samples.
- ❖ Children between the ages of 1-3 years
- ❖ Children who undergo DPT Booster immunization
- ❖ Data collection period is limited to four weeks

6.6. CONCLUSION

The following conclusions were drawn from the findings of the study.

Pain is an unpleasant experience and the fifth vital sign which need to the assessed and managed appropriately. The perception of pain depends on anatomic, physiologic and cognitive behavioral factors. Most of the children express their pain by means of cry, restless, kicking or legs drawn up, rigid or jerking. So treating the pain is essential with the help of non pharmacological techniques such as distraction which has the property of analgesic effect for the toddler's' who are receiving immunization/ injection or other invasive procedures. Other non pharmacological technique like touch guided imaginary, hypnosis etc., are helpful to reduce pain perception among children. Number of studies proved that distraction is effective in pain reduction among young children. So as the professional nurses we have to reduce the pain by using different distraction techniques during painful procedures as a procedural intervention for the children.

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APPEDIX-I

DEMOGRAPHIC DATA

The investigator will mark the following items after consulting with parents of children receiving immunization.

1. Age of the children in months
   - 1.1 12-18 ☐
   - 1.2 19-24 ☐
   - 1.3 25-30 ☐
   - 1.4 31-36 ☐
2. Sex of the child
   - 2.1 Male ☐
   - 2.2 Female ☐
3. Religion ☐
   - 3.1 Hindu ☐
   - 3.2 Christian ☐
   - 3.3 Muslim ☐
   - 3.4 Others
4. Name of Immunization the child is going for
   - 4.1 MMR ☐
   - 4.2 DPT Booster ☐
   - 4.3 Others ☐
5. Child's past experiences to immunization / injection
   - 5.1 Calm and quiet ☐
   - 5.2 Minimal resistance ☐
   - 5.3 Rebellious and high resistance ☐
6. Child's reaction on seeing health personnel (Nurses) in general
   - 6.1 Accept early ☐
   - 6.2 Withdrawal with minimal resistance ☐
   - 6.3 Totally reluctant to accept them ☐
7. Person accompanying the child for the immunization procedure
   - 7.1 Father ☐
   - 7.2 Mother ☐
   - 7.3 Grand Parents ☐
   - 7.4 Others ☐

தனிவிபர குறிப்பு

1. **குழந்தையின் வயது**
   - 12 – 18 மாதம் ☐
   - 19 – 24 மாதம ☐
   - 25 – 30 மாதம் ☐
   - 31 – 36 மாதம் ☐
2. **குழந்தையின் பாலினம்**
   - ஆண் ☐
   - பெண் ☐
1. **ஜாதி**
   - இந்து ☐
   - கிறிஸ்துவர் ☐
   - முஸ்லீம ☐
   - இதர் ☐

4. **குழந்தைக்கு போடக்கூடிய தடுப்பூசி**
   - எம்.எம்.ஆர் ☐
   - DPT – Booster ஊக்க முத்தடுப்பு ஊசி? ☐
   - இதர் ☐
5. **குழந்தையின் கடந்தகால தடுப்பூசி அனுபவம்.**
   - அமைதியாக இருத்தல் ☐
   - குறைந்த எதிர்ப்பு தெரிவித்தல் ☐
   - மிகுந்த எதிர்ப்பு தெரிவித்தல் ☐

6. **செவிலியர் அல்லது மருத்துவ குழுவைப்பற்றி குழந்தையின்** பொதுவான கருத்து. ☐
   - விரைவாக ஏற்றுக்கொள்வது. ☐
   - சிறிது தயக்கத்துடன் ஏற்பது. ☐
   - ஏற்க மறுப்பது.

7. **தடுப்பூசியின் போது உடனிருக்கும் உறவுமுறை.**
   - தந்தை ☐
   - தாய் ☐
   - பாட்டி ☐
   - வேறுயாரும் ☐

APPEDIX-II

BEHAVIOUR OBSERVATION SCALE

S.NO.	PARAMETERS	1	2	3
1.	Look	Cheerful (smiling, pleasant) [ ]	Anxious (quiet, no response, draws eyebrows together, staring look) [ ]	Fearful (cries vigorously, vigorous movement of the body) [ ]
2.	Co-operation	Cooperative (maintains the instructed position) [ ]	Partially cooperative (avoids eye contact, withdraws self, mild resistance) [ ]	Uncooperative, shows resistance (anger, aggression, hitting, kicking, destroying) [ ]
3.	Cry	No cry [ ]	Moans or whimpers [ ]	Crying loudly, screaming [ ]
4.	Face	Relaxed facial muscles, smile [ ]	No tightening of facial muscles [ ]	Tight facial muscles [ ]
5.	Eyes	Normal staring [ ]	Opens eyes Widely with fear [ ]	Closes eyes with fear [ ]
6.	Nose	No broadening [ ]	Slight broadening [ ]	Broadened with nasal secretions [ ]
7.	Arms and fingers	Normal position or relaxed [ ]	Withdraws hands/ clenches the fist [ ]	Beats/pushes Away the health personnel / caregiver [ ]
8.	Legs	Normal position or relaxed [ ]	Restless and unusual movements of legs [ ]	Kicks vigorously [ ]
9.	Respiration	Relaxed and regular [ ]	Irregular and rapid [ ]	Holding breath [ ]
10.	Posture	Remains quiet with an instructed position [ ]	Squirms, shifts back and forth, tense in an instructed position [ ]	Rigid and vigorous throwing of limbs with full shaking of body and trying to get up. Instructed position not maintained. [ ]

BEHAVIORAL RESPONSE

Mild = 1 - 10

Moderate = 11 – 20

Severe = 21 - 30

நடத்தை கண்காணிக்கும் வரைவுகோல்

செயல்	1	2	3
1. பார்வை	மகிழ்ச்சியாக (இன்முகம் சிரித்தமுகம்)	பயம் கலந்த படபடப்பு (புருவத்தை சுருக்குதல், முறைத்துப்பார்த்தல், செயலற்று இருத்தல்)	பயம் (கதறி அழுதல், கை கால்களை வேகமாக ஆட்டுதல்)
2. ஒத்துழைப்பு	ஒத்துழைத்தல் (சொன்ன விதத்தில் உடல்நிலையில் வைத்தல்)	ஓரளவுக்கு ஒத்துழைத்தல் (நேராக பார்ப்பதை தவிர்த்தல் சிறிது எதிர்த்தல்)	ஒத்துழைக்காமை, எதிர்ப்பு தெரிவித்தல் (கோபம் , உதைத்தல் , அடித்தல் , பொருளை உடைத்தல்.
3. அழுகை	அழாமல் இருத்தல்	முணுமுணுத்தல் விம்முதல்?	சத்தமாக கத்துதல் (Screaming)
4. முகபாவம்	சாதாரணமாக சிரித்தல்	முகத்தை கடுமையில்லாமல் வைத்தல்	முகத்தை கடுமையாக வைத்தல்
5. கண்கள்	சாதாரணமாக பார்ப்புத	கண்களை பயத்துடன் விரித்து பார்த்தல்	பயத்தில் கண்களை மூடிக்கொள்வது.
6. மூக்கு	விடைத்தல்	லேசாக மூக்கை விடைத்தல்	விரிந்த மூக்குடன் சளிநீர் ஒழுகல்
7. கைகள் மற்றும் விரல்கள்	சாதாரண நிலையில் இருப்பது	கைகளை எடுத்துக்கொள்வது/ விரல்களை இறுக்கமாக மூடிக்கொள்வது	செவிலியரை உடனிருப்பவரை/உற வினரை/ அடிப்பது தள்ளுவது.
8. கால்கள்	சாதாரணநிலை	தவிப்புடன் அசாதாரணமாக கால்களை அசைப்பது.	வேகமாக உதைத்துக்கொள்வது .
9. மூச்சுநிலை	சாதாரணமாக மூச்சு விடுவது	அசாதாரணமாக மற்றும் வேகமாக மூச்சுவிடுவது	சிறிது நேரம் மூச்சை நிறுத்திக்கொள்வது.
10. நிலை	அமைதியாக சொல்லும் நிலையில் இருப்பது.	உடலை பின்வாங்கி கொள்வது படபடப்புடன் சொல்லும் நிலையில் இருப்பது	விரைப்பாக வேகமாக கால்களை உதைத்து உடல்முழுவதையும் ஆட்டி, சொன்ன நிலையில் உடலை வைக்காதிருத்தல்.

BEHAVIORAL RESPONSE

Mild = 1 - 10

Moderate = 11 – 20

Severe = 21 - 30

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. R.GANESAN, M.Sc (N), II Year,** College of Nursing, Madras Medical College, Chennai- 03 has collected his data in Institute of Child Health and Hospital for Children for the research study titled as **"A study to compare the effectiveness of cartoon video distraction technique versus music therapy in altering behaviour response to pain among toddlers receiving immunization at paediatric outpatient department, Institute of child health and hospital for children, Egmore, Chennai-8."** from 02.07.2014 to 29.07.2014.

Place: Signature of HOD

Date:

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mrs. R. MALA, M.Sc (N), II Year ,** College of Nursing, Madras Medical College, Chennai- 03 has collected her data in Institute of Child Health and Hospital for Children for the research study titled as "**A study to assess the effectiveness of Video Assisted Teaching of Prolonged use of Diaper and its illness among mothers of Infant in Surgical department at ICH & HC , Egmore Chennai-8"** from 02.07.2014 to 29.07.2014.

Place: Signature of HOD

Date:

CERTIFICATE OF ENGLISH EDITING

To whomsoever it may concern

This is to certify that the dissertation work **"A study to compare the effectiveness of cartoon video distraction technique versus music therapy in altering behaviour response to pain among toddlers' receiving immunization at paediatric outpatient department, Institute of child health and hospital for children, Egmore, Chennai-8." done by Mr. R.GANESAN, M.Sc (N), II Year ,** College of Nursing, Madras Medical College , Chennai- 03 is edited for English language appropriateness.

Place: Signature

Date: Designation with Seal

CERTIFICATE OF ENGLISH EDITING

To whomsoever it may concern

This is to certify that the dissertation work **"A Study to assess the effectiveness of Video Assisted Teaching of Prolonged use of Diaper and its illness among mothers of Infant in Surgical department at ICH & HC ,Egmore Chennai-8"** done by **Mrs. R. MALA, M.Sc (N), II Year,** College of Nursing, Madras Medical College, Chennai- 03 is edited for English language appropriateness.

Place: Signature

Date: Designation with Seal

PATIENT CONSENT FORM

Title of the study: **"A study to compare the effectiveness of cartoon video distraction technique versus music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, Government institute of child health and hospital for children, Egmore, chennai-8."**

Name of the participant :
Date :
Age / sex :
Name of the principal Investigator : GANESAN. R. .
Name of the Institution : Institution of child health and Hospital for children
Egmore, Chennai – 8.
Enrollment No :
Documentation of the informed consent: (legal representative can sign if the participant is minor or incompetent).

- I ---------- have read /it has been read for me, the information in this form. I was free to ask any questions and they have been answered. I am over 18 years of age and exercising my free power of choice, hereby give my consent for the child to be included as a participant in the study.
- I have read and understood this consent form and the information provided to me.
- I have had the consent document explained in detail to me.
- I have been explained about the nature of my study.
- My rights and responsibilities have been explained to me by the investigator
- I agree to cooperate with the investigator and I will inform her immediately it's suffer from unusual symptoms.
- I have participated in any research study at any time.
- I am assure of the fact that I can opt out of the study at any time without having to give any reason and this will not affect my future treatment in this hospital
- I have give permission to investigators to release the information obtained from one as a result of participation in this study to the institution ethics committee.
- I understand that they are publicly presented my identify will be kept confidential if my data are publicly presented.

Signature of Investigator — Signature of parent/Guardian

Date — Date

INFORMATION TO PARTICIPANTS

Title :"A study to compare the effectiveness of cartoon video distraction technique vs music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, govt. institute of child health and hospital, Egmore, Chennai-8."

Investigator : R.GANESAN

Name of Participant :

You are invited to take part in this research/ study /procedures. The information in this document is meant to help you decide whether or not to take part. Please feel free to ask if you have any queries or concerns.

You are being asked to participate in this study being conducted in Institute of Child Health & Hospital of Children, Chennai

What is the Purpose of the Research (brief explain)

This research is conducted to compare the effectiveness of cartoon video distraction vs. music therapy in altering behavior response to pain among toddler receiving immunization, at pediatric outpatient department, Gov. Institute of child health, Egmore, Chennai 8".We have obtained permission from the Institutional Ethical Committee.

The Study Design

All participants in the study will be divided according to Post-test design.

Study Procedures

The study involves, In this study, selecting 60 samples by randomized method with purposive sample. In that, 30 samples are intervention with cartoon video distraction technique and another 30 samples are intervention with music therapy after the intervention the altered response behavior are measured by modified behavior response scale, which has 30 marks in total, in which 1-10 is mild behavior response, 11-20 are medium behavior response and 21 -30 are severe behavior response and this is computed with appropriate statistical analysis.

Possible Risks to you -Briefly Mention -

No risks involv

Possible benefits to you

After finishing this study, investigator will provide remedies for reducing pain during immunization.

Possible benefits to other people

The result of the research may provide benefits to the society in terms of advancement of medical knowledge and/or therapeutic benefits to future patients.

Confidentiality of the information obtained from you

You have the right to confidentiality regarding the privacy of your medical information (personal details, results of physical examinations, investigations, and your medical history). The information from this study, if published in scientific journals or presented at scientific meetings, will not reveal your identity.

How will your decision to not participate in the study affect you?

Your decisions to not participate in this research study will not affect your activity of daily living, medical care or your relationship with investigator or the institution. Your doctor will still take care of you and you will not lose any benefits to which you are entitled.

Can you decide to stop participating in the study once you start?

The participation in this research is purely voluntary and you have the right to withdraw from this study at any time during course of the study without giving any reasons.

However, it advisable that you talk to the research team prior to stopping the treatment.

Your privacy in the research will be maintained throughout this study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

Signature of Investigator

Date:

Signature of Parent / Guardian.

Date:

CERTIFICATE OF ENGLISH EDITING

To whomsoever it may concern

This is to certify that the dissertation work "**"A study to compare the effectiveness of cartoon video distraction technique versus music therapy in altering behavior response to pain among toddler receiving immunization at pediatric outpatient department, Institute of Child Health and Hospital for Children, Egmore, Chennai-8." done by Mr. R. GANESAN, MSc (N), II Year, College of Nursing, Madras Medical College, Chennai-03 is edited for English language appropriateness.**

Place: **Signature**

Date:

Designation

CERTIFICATE OF ENGLISH EDITING

To whomsoever it may concern

This is to certify that the dissertation work **A study to assess the effectiveness of psycho education on impact of disability in providing care among parents of mentally challenged children in selected Special School in Chennai done by Mrs. R. JEYALAKSHMI, MSc (N), II Year, College of Nursing, Madras Medical College, Chennai-03 is edited for English language appropriateness.**

Place: **Signature**

Date:

Designation