

**A STUDY TO ASSESS THE EFFECTIVENESS OF CARTOON
ANIMATION SHOW DURING VENIPUNCTURE IN
REDUCING PAIN AMONG TODDLERS IN
THE SELECTED HOSPITAL AT
KANYAKUMARI DISTRICT**



**DISSERTATION SUBMITTED TO
THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY CHENNAI
IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE
AWARD OF DEGREE OF MASTER OF
SCIENCE IN NURSING
OCTOBER- 2015**

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2013-2015**

Certified that this is the bonafide work of

JENNIE JOSE. J

II year M.Sc Nursing 2013-2015

Global College of Nursing, Edavilagam,
Nattalam, Marthandam,
Kanyakumari District -629195

COLLEGE SEAL

SIGNATURE:-----

Prof. Mrs. JOSEPHINE GINIGO, M.Sc.(N)

Principal, Global college of Nursing,

Edavilagam, Nattalam.

Marthandam, Kanyakumari District-629195, Tamil Nadu.



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PROFESSOR IN NURSING RESEARCH

Prof.Mrs. Josephine Ginigo, M.Sc(N) -----

Principal,
Global College of Nursing,
Edavilagam, Nattalam,
Marthandam ,Kanyakumari District .

CLINICAL SPECIALITY EXPERT

Mrs. Vimala. M.Sc(N),Asst.Professor, -----

Child Health Nursing,
Global College of Nursing,
Edavilagam, Nattalam,
Marthandam ,Kanyakumari District .

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**Internal Examiner
Examiner**

External

Date:

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CERTIFICATE

This is to certify that the dissertation entitled “A Study to assess the effectiveness of cartoon animation show during venipuncture in reducing pain perception among the toddlers in the selected hospital at Kanyakumari District” is a bonafide work done by Miss. Jennie Jose.J, II Year M.Sc Nursing, Global College of Nursing, Nattalam in partial fulfilment of the University rules and regulations for the award of M.Sc. (N) degree under my guidance and supervision during the academic year October 2013-2015.

Name and Signature of the guide : -----

-

Mrs. VIMALA. M.Sc(N)

Assistant Professor in Nursing.

Date:

Name and Signature of the Head of Department : -----

Mrs. VIJILA BERLIN, M.Sc(N)

Associate Professor in Nursing.

Date:

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

“The power of God within you is greater than the pressure around you.

Keep going god always with you”.

First and Foremost I thank and Praise the almighty god for giving all the wisdom, knowledge, strength and guidance to complete this study successfully.

I express my gratitude to the **Chairman Dr. Sam G Jeba Joselin and the Secretary Mrs. Sakhila Santhakumari, MA.,M.Phil**, the managing Trustee of Global college of nursing for having given me this opportunity to undergo Post Graduate programme in this esteemed institution, that has passed a way for me to conduct this study.

I consider myself fortunate to have been piloted by **Prof. Mrs. Josephine Ginigo, M.Sc(N), Principal, Global College of Nursing** whose guidance and support enabled me to do the work successfully . I shall always be thankful for her constant encouragement, valuable in-depth discussions and suggestions throughout the study and has made it a successful one.

I am privileged to express my hearty thanks to **Mrs. Helen Mary, M.Sc(N),Vice Principal**, Global College of nursing, for her constant impression and motivation to proceed with the study.

I extent my gratitude to **Mrs. Vimala, M.Sc(N), Asst.Prof. of Child Health Nursing, Global College of Nursing** who has guided me as a good mentor and for her valuable suggestions, motivation and guidance throughout this dissertation work.

I extent my gratitude to **Mrs. Vijila Berlin, M.Sc(N), Associate Professor HOD of Child Health Nursing, Global College of Nursing** who has guided me as

a good mentor and for her valuable suggestions, motivation and guidance throughout this dissertation work.

I express my sincere thanks to **Mrs.Jeyanthi, M.Sc(N).**, Department of mental health nursing and my class co-ordinator for her support ,guidance and encouragement to complete this dissertation successfully.

My deep sense of gratitude is expressed to **Dr. Sashya, M.B.B.S, D.C.H Pediatrician**, and all the study subjects for their co-operation without whom the study could not have been completed successfully.

I am very much obligated to **Mr.P.Anto, M.Sc, M.Ed, M.Phil, PGDBS, Biostatistician**, Global college of nursing , for his guidance in the statistical analysis of data in this study.

I am grateful to **Print Land** for having patiently deciphered the manuscripts into a legible piece of work.

My immense thanks to **Mrs.Sindhu Librarian** of **Global College of Nursing** and the library of **The Tamilnadu Dr.MGR Medical University Chennai**, for having assessed me to procure the required literature review for conducting this study.

Words are beyond expression for meticulous effort of my parents and my brother for their encouragement towards the completion of study.

I am thankful to all my classmates and friends who directly and indirectly contributed towards the completion of my project.

JENNIE JOSE.J

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ABS RA

ABSTRACT

The present study is aimed to assess the effectiveness of cartoon animation show during venipuncture in reducing pain perception among toddlers in the selected hospital at Kanyakumari district .

The objectives of the study are,

- To assess the level of pain perceived by the toddlers during venipuncture after cartoon animation show in group A and without cartoon animation show in group B.
- To assess the effect of cartoon animation show in reducing pain during venipuncture by comparing the pain scores among both groups.
- To determine the association of pain perceived by the toddlers in the control group with their selected demographic variables such as age in months, gender, order of birth, number of siblings, type of family, education of father, education of mother, occupation of father, occupation of mother, previous experience of venipuncture, site of venipuncture

The investigator adopted Callista Roy's adaptation theory (1999) as the conceptual framework for the study. Quasi experimental post test only design with control group was used and the formal consent was obtained from Jeyaharan memorial hospital and the investigator selected 60 samples using purposive sampling technique and who are fulfilling the inclusive criteria were selected as a samples both in experimental and control group. Measurement of pain experienced by the

toddler was assessed with the help of FLACC scale (face, legs, activity, consolability, cry).

Descriptive and inferential statistics were used to analyze the data. Analysis of demographic variables was done in terms of frequency and percentage distribution. Comparison of post test level of pain between the experimental and the control groups was analysed by 't' test .Which is an inferential statistical analysis. Association of post test level of pain in the control group with demographic variables was analysed by using chi-square test. The findings concluded that Out of 30 samples in the experimental group majority 15 (50%) had moderate pain,15(50%) had severe pain and in control group majority 27(90%)had severe pain, 3(10%) had moderate pain.

In the experimental group, the post test level of mean pain score was 6.5 with S.D 19.5 and in the control group the post test mean score was 8.16 with S.D 34.168. The mean difference score was ± 1.66 . The calculated 't' value of 6.68* was statistically significant at $P < 0.001$ level indicating that there was significant difference in the post test level of pain between the experimental and control group.Hence the cartoon animation show was responsive in reducing the venipuncture pain among toddlers.

CHAPTER -I

INTRODUCTION

“Bitter are the tears of a child: sweeten them.
Deep are the thoughts of a child: quiet them.
Sharp is the grief of a child: take it from him.
Soft is the heart of a child: Do not harden it.”

PAMELA

Today’s society is complex and ever changing; children grow and learn not only to cope with current demands but also to prepare with many unexpected events they will face in their tomorrows. Adults serve as advocates for children and it is the duty of every adult citizen to keep up this unit of pride safely for the benefit of the country. So we should be sensitive to the feelings, and need of children to build a better tomorrow. For this reason children are considered as the pride of a nation.

Unfortunately children face various crisis in their life, especially during the early years of their life. Often illness and hospitalization are the first crisis that children face. Stressors of hospitalization include separation, loss of control, bodily injuries and the major one is pain.

The word pain is derived from the latin word ‘poena’ which means punishment, which is derived from the Sanskrit root ‘pu’ meaning purification. The international association for the study of pain defines, “pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, are described in terms of such damage”. The international association for the study of pain further states that, pain is subjective. “Each individual learns the application of the word through experiences related to in early life.” This definition emphasizes the individuality of each person’s pain response and the importance of pain experiences, especially those in early life, in shaping that response. Thus, a child experiences

during painful medical procedures likely plays a significant role in shaping that individuals pain response to future events.

Pain continues to be the most complex and challenging sensory emotions in the life of children. It is defined as a universal unpleasant, subjective, sensory and emotional human experience. Because of its strong sensation; it activates the sympathetic nervous system to alter the quality of life in children such as sleep, mobility, nutrition, thought, emotional wellbeing, and creativity

Pain is the fifth vital signs. A pain scale measures a patient's pain intensity or other features. Pain scales are based on self-report, observational (behavioural), or physiological data. Pain scales are available for neonates, infants, toddlers, adolescents, adults, seniors, and persons whose communication is impaired. The appropriate observational pain scale for toddler is FLACC scale. (Face Legs Arms Cry Consolability Scale)

Needle puncturing is painful to all children but how they response to that depends on their developmental ages and their previous experiences. During venipuncture the nurse can provide various diversionary activities before, during and after procedure.

Behaviours that are commonly used to identify presence of pain are facial expression, vocalization, posture, movement. Crying is widely accepted as a method of communicating pain. Cry pattern, facial expression and body movements are behaviour indication of children.

The distraction appears to offer significant promise in the control of pain. Conscious attention is necessary to experience pain. Distraction helps the child to focus attention on something other than the pain. Distraction technique that are more

likely to be effective because, they provoke curiosity in child to use their auditory, visual, tactile and kinesthetic sense when maneuvering them and thus distraction effectively minimizes the distress associated with painful event . The distracting techniques like cartoon animation show, party blowers and music help the child to keep away from thinking of their pain. Distraction techniques seek to focus a child's attention on interesting or challenging tasks to avert the attention from venipuncture.

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 towards something more pleasant. It takes little training to learn, is easy to administer, and 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, looking for hidden objects in the room, counting out loud, hand-held computer games, imagining fun, cartoon shows and exciting things or quiet and relaxing scenes.

Distraction techniques used with the toddler age group are mostly passive. Cognitive strategies used to reduce pain perception in children are either visual or auditory interventions. Visual aids can include pictures, cartoons, mobile phones, and mirrors. Auditory aids include music, lullabies sung by parents or healthcare professionals.

Need for the study

The pain response in individual and is learned through social learning and experience. Early pain experience may play a particularly important role in shaping an individuals pain responses. Inadequate relief of pain during childhood venipuncture may have long- term negative effects on future pain tolerance and pain responses [Ann Emerg Medical 2005; 45:160-171].

Injections of any type can hurt. Children remember pain, and may avoid future medical care because of painful experiences in a hospital or clinic. Untreated pain suffered early in life can have profound and long-lasting effects on social and physical development, and can cause permanent changes in the nervous system that will affect future pain experience and development. Craig states that the intensity of pain behaviour during invasive procedures decreases with the age of the child that is, younger children responds to painful procedures with more distress than older children.

Pain is a subjective experience, and infants and children respond to pain with behavioural reactions that depend upon age and cognitive processes. According to the International Association for the Study of Pain, “Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.

Relief of pain is a basic need and right of all children. Management of pain in the child must be individualised. Age, sex, birth order, cultural background, parents, caregiver’s response, and past experiences affects the child’s response. The newborn baby, the infant, and the toddler are unable to localise and describe the severity of pain. The nurse must be aware of the child’s response to pain through the assessment of behavioural responses and differentiation of crying.

As distraction is a promising, cost effective, non-pharmacological technique in reducing pain among school age children undergoing venipuncture. The researcher in this study is, intended to use cartoon animation show, an audio visual aid as a distractor among children during venipuncture .

Statement of the Problem

A study to assess the effectiveness of cartoon animation show during venipuncture in reducing pain perception among toddlers in selected hospital at Kanyakumari district.

Objectives

1. To assess the pain perceived by the toddlers during venipuncture in both experimental and control group.
2. To assess the effectiveness of cartoon animation show in reducing pain during venipuncture by comparing the pain scores among both groups.
3. To determine the association of pain perceived by the toddlers in the control group with their selected demographic variables such as age in months, gender, order of birth, number of siblings, type of family, education of father, education of mother, occupation of father, occupation of mother, previous experience of venipuncture, site of venipuncture

Hypotheses

H₁ – There is a significant difference in the pain perceived by the toddlers during venipuncture among experimental and control groups.

H₂ – There is a significant association between the pain perceived by the toddlers during venipuncture in control group and their selected demographic variables

such as age, sex, order of birth, number of siblings, type of family, education of father, education of mother, occupation of father, occupation of mother, previous experience of venipuncture, site of venipuncture.

Operational definitions:

- **Effectiveness:**

In this study, it refers to the positive outcome of cartoon animation show in reduction of pain perception during venepuncture, as measured by FLACC scale (Face, leg, activity, cry, consolability)

- **Cartoon animation show:**

In this study, it refers to a motion picture or television film consisting of a photographed series of drawings, objects or computer graphics that stimulate motion by recording very slight, continuous changes in the images, frame by frame shown to the child from the start of venipuncture until it gets over.

- **Reducing pain perception:**

In this study, it refers to bringing down the pain score to low level due to cartoon animation show during venipuncture as measured by FLACC pain rating scale.

- **Venipuncture:**

Introducing a sterile polyethylene tube along with stillet into the vein for a purpose of blood drawing or to infusing fluids.

- **Toddlers:**

In this study, it refers to those boys and girls between the age of 1-3 years admitted in the selected hospital at kanyakumari district.

Assumptions

1. All the toddlers may perceive severe pain during venipuncture.
2. Cartoon animation show may reduce the pain perception among toddlers during venipuncture.
3. Reduction of pain perception may enhance the toddlers to cooperate with venipuncture procedures.

Delimitations

This study is delimited to only:

- one hospital
- toddlers requiring venipuncture
- 60 samples
- 4 weeks for data collection

Conceptual framework

The conceptual framework provides a certain frame reference for clinical, education and research. It gives direction to research for relevant question, phenomenon and points out solution to practical problem.

Conceptual framework refers to interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance of a common theme (Polit and Hunger-1999).

Theoretical model for this study was derived from Callista Roy's adaptation model (1999). According to Roy's adaptation model the goal of nursing is to facilitate adaptation between the person and the environment through the management of stimuli.

The unique focus of the model is the input of the focal, contextual and residual stimuli activity through the regulator and coagulator coping mechanism to produce behavioural responses in the four interrelated adaptation models, self concepts, role function, inter dependence and physiological purposes.

Systems:

Are a set of organized components related to form a whole body, Roy considers the recipient of care to be an open adaptive system.

Input:

In Roy's system input is identified as stimuli which can come from the environment or within the person. A focal stimuli was starting venipuncture. Input stimulates child's response to stimuli. A contextual stimuli was the order of birth, type of family, education of parents, occupation of parents, number of siblings, previous experience of venepuncture. A residual stimuli are age, gender.

Throughput:

Throughput refers to makes use of persons processes and effectors. Processes refers to level of pain in toddlers during venipuncture. Effectors refers to showing cartoon animation show to reduce venipuncture pain.

Output:

Output is the outcome of the system. In Roy's adaptation system output is categorized as adaptive responses that promote a toddlers integrity or ineffective responses. These responses provides feedback to the system. So in this study the samples who were in experimental group had a reduction in the level of pain in toddlers.

Paradigms:**Human Being:**

She emphasized human are individuals possesses unique potential and strives towards self direction and needy stimulation whatever the individual does ,it represents his or her best judgment at the movement .self awareness and self acceptance are essential to individuals. Sense of integrity and self worth these circumstances require respect from the nurse.

Health:

She does not define health, she supports the World health organization's definition of health.

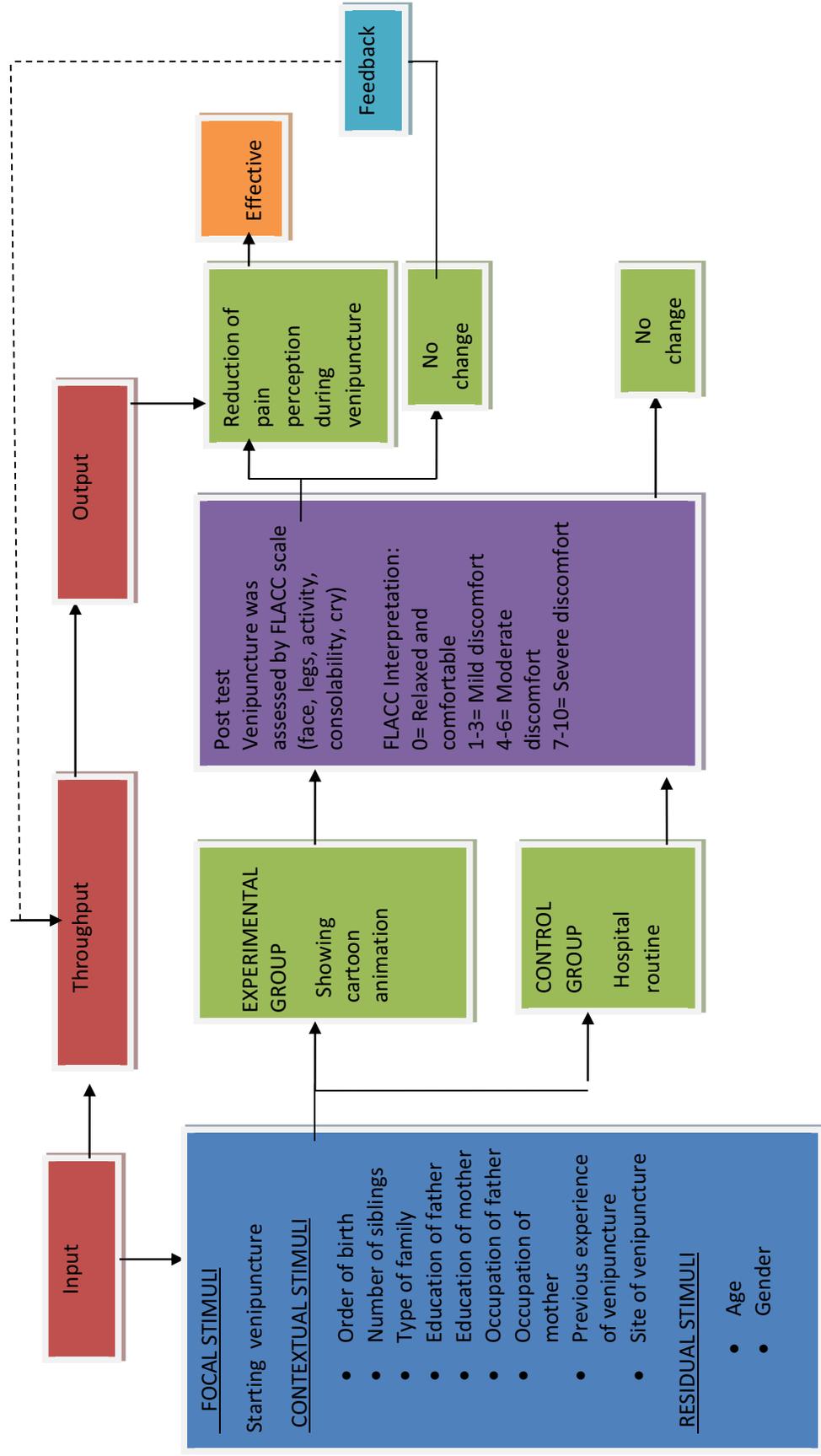
Environment:

Roy's incorporates the environment within the realities in her framework which is a complex of extraneous factors and circumstances that are present in every nursing situation. Framework includes objects such as policies , setting, atmosphere, humans and happenings.

Nursing:

Nursing is a clinical discipline, is a practice discipline designed to procedure explicit desired results. The art of nursing is goal oriented activity requiring the application of knowledge and skills towards meeting a need for help experienced by a patient .Nursing is a helping process that extends to restore the patient's ability to cope with demands implicit in the situation.

Figure 1. Callista Roy's Adaptation Model(1999)



CHAPTER II

REVIEW OF LITERATURE

A review of literature is an eventual aspect of scientific study .It involves the systematic identification location, setting and summary of the written materials that certain information on a research problem. It broadens the view of the investigator regarding the problem under investigation, helps in focusing on the issues especially concerning the study.

This chapter deals with the information collected in relation to the present study through published and unpublished materials which provided the foundation to carryout this study.

The literatures have been organized as follows,

- Studies related to venipuncture or any painful procedures to toddlers
- Studies related to non pharmacological measures to relieve pain among toddlers
- Studies related to effectiveness cartoon animation show during venipuncture in reducing pain perception among toddlers.

Studies related to venipuncture or any painful procedures to toddlers :

Fran Lang Porter, Cynthia M. Welf et. al (1996) conducted a survey regarding pain management in newborns. The purposes of the study was to examine the beliefs and self described behavior of physicians and nurses regarding the management of procedural pain in newborns. A survey was distributed to 467 clinicians (nurses and physicians) working in learn level II and four level III nurseries in a large metropolitan area. respondents were asked to rate the painfulness of 12 common bedside nursery procedures and low often

pharmacologic and non pharmacologic measures are currently used and should be used for those procedures. The results indicated that surveys were completed by 374 clinicians (80% response rate) physicians and nurses believe infants feel as much pain as adults and that of the 12 listed procedures are moderately very painful. Neither pharmacologic nor comfort measures are believed to be used frequently. Even for the most painful procedures. Physicians and nurses believe both pharmacologic and comfort measures should be used more frequently than do physicians. The study concluded in despite their beliefs that infants experience significant procedure related pain; clinicians believe pain management for infant's remains below optimal levels. Barriers to more consistent and effective pain management need to be identified.

Powers KS, Rubenstein.JS.(1999)., conducted a comparative study to evaluate if the parents presence helpful to the child and parent, that allowing 1or both parents to be present during invasive procedures reduces the anxiety that parents experience while their child is in the pediatric intensive care unit; to evaluate if the parents presence helpful to the child and parent; and to determine whether this presence was harmful to the nurses or physicians. A 12-bed pediatric intensive care unit in upstate New York. The study population consisted of the parents of 16 children undergoing 1or more procedures; The study concluded that allowing parental presence during procedures decreases procedure-related anxiety.

Sinno H.P Simons et.al.(2003) conducted a prospective study of procedural pain and analgesia in neonates . The objective of the study was to assess the frequency of use of analgesics in invasive procedure in neonates and the associated pain. 150 neonates were selected and recorded all painful procedures

including the number of attempts required, and analgesic therapy used during the first 14 days of NICU admission. The result showed that the highest exposure to painful procedures occurred during the first day of admission, many procedures were estimated to be painful. The primitive analgesic therapy was provided to fewer than 35% of neonates per day, while 39.7% of the neonates did not receive any analgesic therapy in the NICU. The study concluded that the NICU procedures are painful, but only third of the appropriate analgesics treatment for the painful procedures is limited. Systematic approaches are required to reduce the occurrence of pain and to improve the analgesic treatment of repetitive pain in neonates.

Anil Agarwal et al., (2005) conducted a study to evaluate of the Valsalva maneuver on pain during venous cannulation among children. In this study 75 samples were randomly assigned to 3 groups respectively. Group I was control group without intervention, group II was instructed to blow into sphygmomanometer tubing and raise the mercury column upto 30 mm of hg for 20 seconds and group III was instructed to press a rubber ball. After 20 seconds peripheral venous cannulation was performed. Venous cannulation pain was graded by a 4 point scale. Results showed a significant reduction in the incidence of pain in group II (72%), whereas other two groups experienced 100% pain. Researcher concluded that, the Valsalva maneuver performed at that time of venous cannulation greatly decreases venipuncture pain.

Gupta et al., (2005) carried out a prospective, randomized controlled study to evaluate the efficacy of balloon inflation on venous cannulation pain among children by devandra. The study was conducted among 75 children aged 6-12 years who were randomly divided into three equal groups. Group I was control group with

no intervention, group II was provided with distraction like pressing a ball and group III with balloon inflation. Visual analogue scale was used to assess the venipuncture pain and there was a significant reduction observed in group II and group III, when compared with group I. visual analogue score in group III was decreased when compared with group II ($p < 0.05$). The incidence of pain during venipuncture in group I and group II was 100% and which was reduced to 56% in group III ($p < 0.05$). The study concluded that, inflation of balloon during venipuncture reduced both the incidence and severity of venipuncture pain among children.

Farion et al., (2006) conducted a randomized control study to determine the effect of vapocoolant spray on pain during intravenous cannulation by among 80 children between 6-12 years. The children received either vapocoolant spray or placebo before cannulation. Children rated their pain using a 100-mm colour visual analogue scale. Parents ($p = 0.04$), nurses ($p = 0.01$) and child life specialists ($p < 0.01$) considered the children's pain to be reduced with the use of vapocoolant spray. Thus vapocoolant spray quickly and effectively reduces pain due to intravenous cannulation in children and improved the success rate of cannulation.

Lassetter JH.(2006),, conducted an experimental study on the effectiveness of complementary therapies on the pain experience of hospitalized children. Pain is a complex phenomenon for children, and the concepts of hospitalization and pain are often linked in the minds of children. Despite best-practice guidelines and standard related to pain management, many hospitalized children continue to have unrelieved pain. This suggests that analgesics alone do not sufficiently relieve their discomfort. Complementary therapies may have an important role in holistic pediatric pain management. This review of literature, evaluates available evidence related to the

use and effectiveness of complementary therapies on the pain experience of children in hospital settings. Thirteen recent research articles relative to this topic were located and included in this review. A variety of complementary therapies, including relaxation, distraction, hypnosis, art therapies and imagery are included and it decreases the pain.

Sofia Bisogni, Chiara Dini, et.al.(2009) conducted a comparative study of pain during venipuncture for chronic and non-chronic disease children in karnataka. The study included 230 children in total: 82 of them suffered from chronic diseases and had already experienced venipuncture at least once, while the remaining 148 children had no previous experience of venipuncture. The children with chronic diseases reported more pain (median pain score of 8 on the Wong or numeric scales,) and showed more signs of behavioral distress (median score of 27 on the OSBD) than non-chronic children (median pain score of 2 on the Wong/numeric scales, $p = 0.00001$; median OSBD score 5, $p = 0.00001$).It concluded that pain is more in chronic disease children than in non-chronic disease children.

Harrison et al., (2011) conducted a randomized controlled study to assess the efficacy of sweet tasting solutions or substances for reducing needle related procedural pain in children beyond one year age. A sweet tasting solution or substance was given to 330 children between 1 to 16 years of age randomly in experimental group. Control conditions included water, non- sweet tasting substances, pacifier, distraction, no treatment, positioning or breastfeeding. Results for the toddlers or preschool children show that in the sucrose group in one study had significantly lower cry duration and behavioural pain scores, compared with the no

intervention group in the other study. For school aged children, chewing sweet gum either before, or during the procedure, did not significantly reduce pain scores.

Studies related to non pharmacological measures to relieve pain among toddlers:

Wendy B, Kristen D, Nancy Peterson, Tamara (2001) conducted an experimental study to evaluate the effect of an intervention to reduce procedural pain and distress for children with HIV infection undergoing routine venipuncture at virginia. Following a baseline venipuncture, children were exposed to an intervention including preparation, relaxation, distraction, parent involvement and eutectic mixture of local anesthetics) and followed for three additional venipuncture procedures. After each procedure, child distress was rated on procedure behaviour checklist, pain was rated on using FACES scale. Results is significant reduction in child distress and pain were found. Author concluded that interventions appear effective at reducing pain, distress and parent anxiety for children with HIV.

Evelyn Cohen Reis, Erika Kraus Roth et al. (2003) conducted a study to assess the effectiveness, feasibility and parental acceptance of a simple combination pain reduction intervention for infants receiving multiple immunization injections. The infants receiving their second month immunizations, consisting of 4 injections were selected as a sample. There were 116 infants participated. Subjects were randomly assigned to the intervention or control group for administration of 4 injections. The intervention group received sucrose and oral administration of tactile stimulation and were held by their parents during immunization. The control group did not receive these interventions. The median first cry duration was 19.0 seconds

for the intervention group compared with 57.5 seconds for the control group. Nurse rated ease of vaccine administration was equivalent for both treatment groups. They concluded that combining surge, oral administration of tactile stimulation, and parental holding was associated with significantly reduced crying in infants receiving multiple immunization injections.

Bellieni c v et.al. (2006) conducted an experimental study to reveal, the analgesic effect of passive or active distraction during venipuncture in children in texas hospital. Samples of 69 children aged 7-12 years undergoing venipuncture were randomly divided in to three groups: a control group without any distraction procedure, a group in which mothers preformed active distraction and TV group (TV) in which passive distraction (a TV Cartoon) was used. Purposive sampling technique is used. FACES scale is used to assess the pain level. The study concluded that TV watching was more effective than active distraction or to the distracting power of television.

Mohavedi et al., (2006) conducted a study to examine the effect of local refrigeration prior to venipuncture on pain related responses among school age children. 80 children aged 6-12 years were selected by purposive sampling. In experimental group the injection site was refrigerated for three minutes using an ice bag before venipuncture and in control group venipuncture was performed according to routine procedure. Physiological responses, behavioural responses and subjective responses were assessed in both groups. Results showed no significant difference between two groups for physiological responses, whereas behavioural responses ($p=0.0011$) and subjective responses ($p=0.0097$) showed that, the test group had lower score in behavioural and subjective responses compared to the control group.

The researcher concluded that the use of local refrigeration prior to venipuncture can be considered as an easy and effective intervention for reducing pain related to venipuncture.

Ali Fakhr, Shahnaz, Bijan Kelkhaee, et, al., (2006) conducted a quasi experimental study to determine the effect of local refrigerator prior to venipuncture on pain- related responses in school age children. The samples were 80 children 6-12 years of age selected by purposive sampling after being referred to the pediatric emergency ward. Two groups were chosen for the study : the test and control groups, in order to test the effect of local coldness in reducing the pain of venipuncture. The results of this study suggest that the use of local refrigeration prior to venipuncture can be considered an easy and effective intervention of reducing venipuncture-related pain.

Andrea Windich, Isabella, Debra, et, al., (2007) conducted a study to evaluate the effect of self-selected distracters (ie bubbles, music table, handled video games) on pain, fear and distress in 50 children and adolescents with cancer ages 5 to 18, with port access or venipuncture. Using an intervention- comparison group design. Results show that self- reported pain and fear were significantly different between groups. Intervention participants demonstrated significantly less fear and distress. The authors conclude that distraction has the potential to reduce fear and distress during port access and venipuncture.

Shavit et al., (2009) conducted a single- blind randomized controlled study to examine the efficacy and safety of a new topical anesthetic containing a disinfection ingredient (lidodin cream) in reducing pain associated with venipuncture by comparing it with the proven eutectic mixture of lidocaine 2.5% and prilocaine 2.5%

(EMLA cream). The visual analog scale was used for pain assessment. 20 patients were selected with mean patient age was 6-13 years for the lidodin group and 12-14 years for the EMLA group ($p=0.347$). Patient VAS scores and nurse VAS scores of the lidodin group were not statistically different than those of the EMLA group ($p=0.57$ and 0.93 , respectively). This pilot study demonstrated that lidodin and EMLA seem to be equally safe and effective topical anesthetics for venipuncture.

Lori Huff et al., (2009) conducted a descriptive quantitative study to investigate whether the application of heat placed to a child's potential intravenous site after the application of EMLA cream decreases vasoconstriction, thereby promoting atraumatic care in the hospitalized children. A convenient sample of 30 hospitalized Caucasian children of 8 to 12 years of age were participated. Vascular ultrasound directly measured the vein prior to and 1 hour after EMLA cream application, as well as 2 minutes after heat application. Mean vein measurements were 0.243 cm prior to EMLA cream, 0.205 cm after EMLA cream applied for 1 hour and 0.253 cm after 2 minutes of heat. There was a significant increase in vein visualization from pre- application of heat to post application of heat with a success rate of 80% with the first time attempt of IV insertion. Therefore application of heat counteracts the adverse effect of vasoconstriction that occurs with EMLA cream application, potentially increasing peripheral venous cannulation success rates.

Navjot Kiran, Sukhjit Kaur, RK Marwaha (2013) conducted a quasi experimental study to assess the effectiveness of ice pack application at the site prior to venipuncture on intensity of pain. Samples of 100 subjects were selected by purposive sampling. Randomization was done by lottery method. 50 subjects each in experimental group and control group were assigned. Ice pack (ice cube covered by

flannel cloth over 5 cm area around the site of venipuncture) was applied at the site prior to venipuncture for 3 minutes. Pain was assessed in both the groups by using FLACC behaviour pain assessment scale. Pain score was compared in both the group. Results shows statistically significant reduction in pain during venipuncture in experiment group. Hence null hypothesis was rejected. It was concluded that ice pack application significantly decreases pain during venipuncture in 3-7 years old children. It is safe, easy, cheap and effective method to reduce pain among children.

Studies related to effectiveness cartoon animation show during venipuncture in reducing pain perception among toddlers:

Lobo (2007) conducted a quasi- experimental study was conducted on children of 1-3 years of age who were undergoing venepuncture at selected hospitals at Mangalore. A study comprised of 60 school agers selected by convenience sampling method- 30 in experimental, 30 in control group. Animated cartoon was shown along with the routine care of experimental group and routine care was given to control group. Then the post venepuncture pain was assessed .The tool included was baseline proforma- Wong Baker Faces pain scale. The results revealed that significantly($p < 0.05$) less pain felt by the children who viewed cartoon during venepuncture than those children who did not receive it. The findings also revealed that there was no significant association between the level of pain and demographic variables. It was concluded that cartoon distraction is effective distraction for the children undergoing venepuncture.

Sorokhaibam Nandarani Devi .et.al., (2009) conducted a study to find the effectiveness of cartoon animation show on pain perception reduction among school

agers during venepuncture in selected hospital at Mangalore. Post test only with control group was adopted. The sample for study would comprised of 60 toddlers (30 control group and 30 experimental group). Results showed that the significant level of pain reduction in experimental group than in control group.

Devi SN .(2010) conducted a quasi experimental study was conducted to assess the effectiveness of cartoon movies on pain reduction among schoolers during cannulation in selected hospitals at Mangalore. The sample comprised of 60 schoolers (30 in experimental and 30 in control group) between the ages of 6-12 years. The sample was selected using purposive sampling technique. During cannulation the cartoon movie was provided to schoolers in the experimental group by using laptop where as schoolers in control group were not given the intervention. Mean pain levels rated by modified CHEOPS were 3.13 ± 1.50 and 7.37 ± 2.32 for the experimental and control group, respectively. The calculated 't' value (8.83) is greater than the table value 2.00 ($t=2.00$, $p<0.05$) and the result revealed that there was significant difference between pain score of experimental group and control group. Hence, the cartoon movie was effective to reduce pain among schoolers during cannulation.

James J, Ghai S, Rao KLN, Sharma N (2010) conducted a quasi experimental study was conducted in PGIMER, Chandigarh, on 50 children of three to six years age who were undergoing venipuncture to see the effectiveness of "Animated Cartoons" as a distraction strategy to reduce the perception of pain. During the first venipuncture children were assessed at pre, during and post venipuncture for perception of pain with routine care only and during the second

venipuncture with routine care and animated cartoon. The tools used for the study included a baseline proforma and FLACC (Face, Legs, Activity, Cry and Consolability) behaviour pain scale. The mean pain score was significantly less, i.e., almost half with animated cartoon (2.26 ± 2.18) as compared to routine care (4.76 ± 2.08) at pre-venipuncture. Similarly, the mean pain score during venipuncture was significantly less with animated cartoon (6.24 ± 2.09) as compared to routine care (8.06 ± 1.70). During post-venipuncture also the mean pain score was significantly less, i.e., almost half with animated cartoon (2.94 ± 1.71) as compared to routine care (5.94 ± 1.61). The results revealed that there was significantly ($p < 0.001$) less pain related behavioural responses with the use of animated cartoons as a distraction strategy at pre-, during and post-venipuncture. It was concluded that animated cartoon is an effective distraction strategy to reduce pain among the children undergoing venipuncture. Thus animated cartoons can be used for effective handling of behavioural responses in children during invasive procedures.

Annamaria Bagnasco., (2012) conducted a study to find the effect of distraction techniques in children during venipuncture: an Italian experience. Sample included 203 patients aged 2 and 15 years. During venipuncture a video was shown to the patient. Pain and parent collaboration was measured using validated scale. Significant differences were observed between the mean score of pain in patients undergoing venipuncture with audiovisual distracting technique (2.53 ± 1.76) and the mean score obtained in those undergoing venipuncture without this technique (5.22 ± 2.53). In the group with audio- video distractors, the mean level of cooperation was 0.38 (SD= 0.63) compared to 0.20(SD= 0.54) in the control group. In relation to the presence of parents, no significant differences were found in the

mean pain scores, whereas the mean scores of cooperation were significantly different. Audio visual distraction effectively improved pain management and favoured children's cooperation during venipuncture.

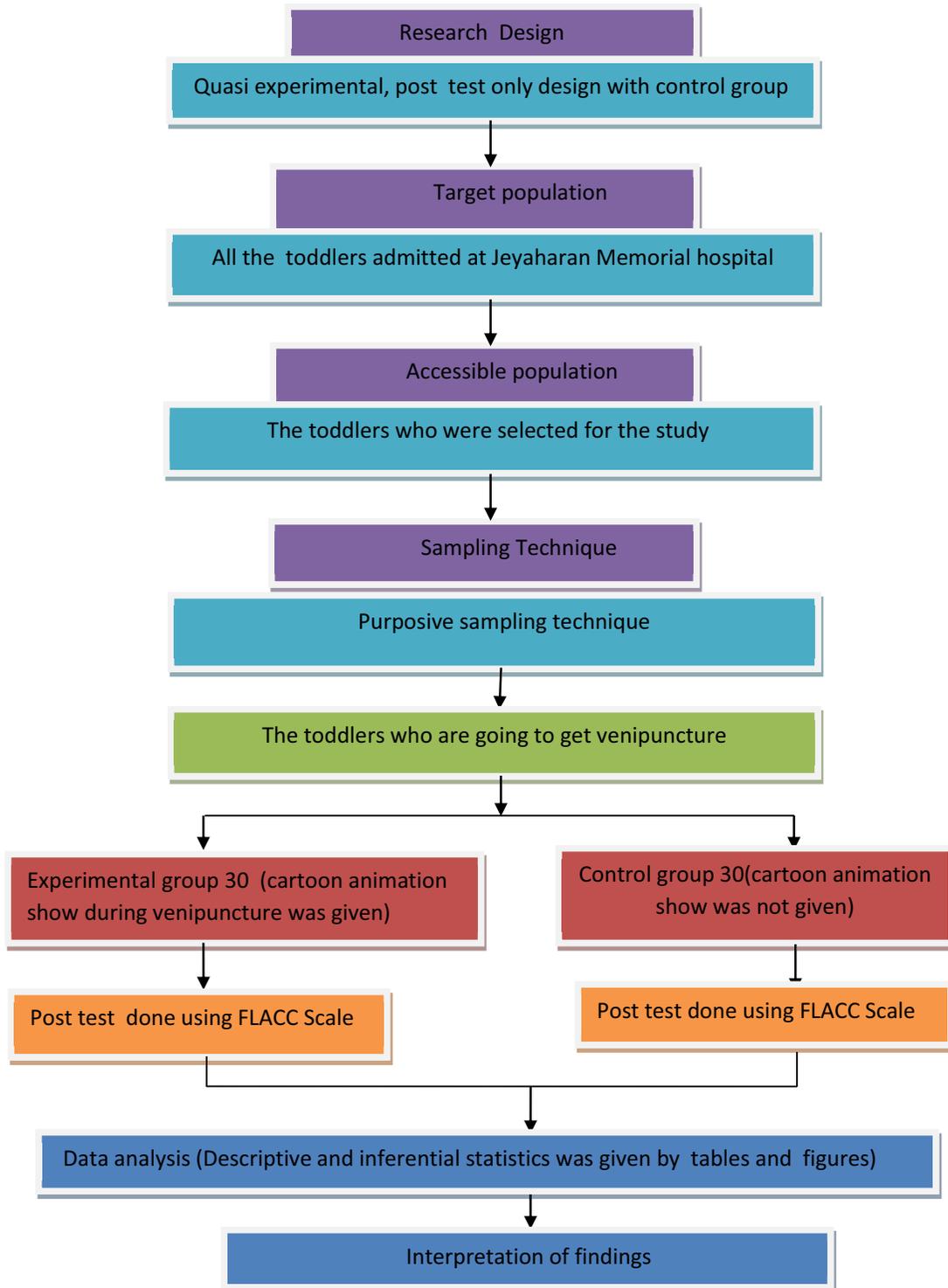
Harsh varshan gupta, amanlo kaur, et, al., (2014) conducted a quasi-experimental study of comparison between the analgesic effect of two techniques on the level of pain perception during venipuncture in children upto 7 years of age. Purposive sampling technique was used to select 70 children admitted in pediatric ward of Guru Singh Medical Hospital, Farikot, 35 children in each group viz. group 1 (child held by family member during venipuncture) and group 2 (child held by family member along with an animation distraction during venipuncture) and video clippings were made for each subject in both groups. Standardized FLACC pain scale was used to assess the level of pain during venipuncture by seeing video clips of procedure in both groups. Findings revealed that the mean pain score of group 1 was 3.86 and that of group 2 was 2.43. Findings revealed that in group 1 majority 31(88.57%) got severe pain and none remained relaxed during venipuncture whereas in group 2 majority 10(28.58%) got moderate pain, 9(25.71%) remained relaxed and only 7(20%) got severe pain. The comparison of mean pain score of both groups was checked statistically by computing independent t test and the value of t comes out to be 7.199 with p- value 0.000*** which was found to be highly significant. The study concluded that when during painful procedures like venipuncture if children are given any non- pharmacological intervention like cartoon distraction along with their family member it helps in managing the pain. In other words, it distracts/ diverts the child's attention from pain and results in better cooperation of child during procedure.

Baljit Kaur, Jyoti Sarin, Yogesh Kumar (2014) conducted a quasi experimental study was undertaken on children of 4 to 12 years age who were undergoing intravenous injections to determine the effectiveness of cartoon distraction as a strategy to reduce pain perception and distress. The study comprised of 30 children selected through purposive sampling method. In this the assessment of pain and distress done in morning without cartoon distraction and in evening with cartoon distraction at initiation, at five minutes and at termination of administration of intravenous injection on FACES pain scale. The results revealed that there is significantly less pain and distress in children with cartoon distraction at initiation, at five minutes and at termination of administration of intravenous injection. It was concluded that cartoon distraction is an effective distraction strategy to reduce pain and distress among children during intravenous injection.

CHAPTER - III

METHODOLOGY

Figure.2 Schematic Representation of research methodology



RESEARCH METHODOLOGY

Methodology is the systematic theoretical analysis of the methods applied to a field of a study. The chapter deals with research design, settings, population, sample, sampling technique, data collection and plan for data analysis.

Research approach:

It involves the description of the plan to investigate the phenomenon under study in a structured, unstructured or a combination of the two methods.

The present study used to determine the effect of cartoon animation show among toddlers undergoing venipuncture. Hence a Quantitative approach is used in this study.

Research design:

A research design is a plan of how, when, and where data are to be collected and analyzed.

The research design adopted for this study is Quasi experimental, Post test only design with control group.

The design of the study is depicted below:

Experimental group (E)	X	O ₁
Control group (C)	–	O ₂

O₁ - Observation of pain during venipuncture in the experimental group.

O₂ - Observation of pain during venipuncture in control group.

X - Intervention by showing cartoon animation show in the experimental group.

Research Setting :

The study setting is the location in which the research is conducted it could be natural, partially controlled or highly controlled.

The study was conducted in Jeyaharan Memorial Hospital, Nagercoil in Kanyakumari district.

Population :

It refers to, “The entire set of individual or objects having some common characteristics selected for a research study”.

The target population was comprised of Whole toddlers admitted in the Jeyaharan Memorial Hospital, Nagercoil in Kanyakumari district.

Sample size :

It refers to, “The Subset of the population that is selected for a study”

The sample for the study considered of 60 toddlers undergoing venepuncture in Jeyaharan Memorial Hospital at Kanyakumari district.

Sampling technique:

It refers to, “The process of selecting a portion of the population to represent the entire population”.

The investigator has selected the sample by Purposive Sampling technique for this study, as she has intentionally selected the toddlers who were going to get venipuncture in Jeyaharan Memorial Hospital at Kanyakumari district.

Criteria for selection of sampling:

List of the characteristics essential for inclusion or exclusion of samples from the target population

Inclusion criteria:

- 1-3 years children undergoing venipuncture
- Those who are willing to participate
- Both male and female.

Exclusion criteria:

- Toddlers with sensory deprivation
- Toddlers who are not willing to participate in the study
- Toddlers who are already on IV infusion
- Mentally challenged toddlers
- Toddlers whose mothers are not willing to conduct the show
- Immediate postoperative toddlers who are on sedation and yet to get IV infusion.

Method of developing the tool:

The tool was developed after an extensive review of literature, internet search and experts opinion. It helped the investigator to select most suitable FLACC scale.

Discription of the tool:

This study tool consisted of 2 sections, section A and section B.

Section : A : Demographic Profile

This dealt with demographic data of the toddlers. The included items such as age, gender, order of birth, Number of siblings ,type of family, education of father, education of mother, occupation of father, occupation of mother, previous experience of venipuncture, site of venipuncture.

Section : B

This dealt with measurement of pain experienced by the toddler with the help of FLACC (Face, leg, activity, consolability, cry) developed by S Merkel in 1997. The FLACC pain scale consists of five categories for which different scoring is given.

The five categories are;

- Face
- Legs
- Activity
- Cry
- Consolability

At the end of pain assessment, pain level was graded based on the following scores;

0	-	Relaxed and Comfortable
1 - 3	-	Mild discomfort.
4 - 6	-	Moderate pain.
7 – 10	-	Severe pain.

Content Validity:

Content validity defined as “The degree to which the items in an instrument adequately represent the universe of content for the concept being measured”. (Denise F. Polit,2011)

The content validity was not necessitated since the investigator has used a standardized FLACC pain Scale developed by S Merkal in 1997 in order to assess the pain experienced by toddlers.

Reliability of the tool:

Reliability is defined as, “The degree of consistency or dependability with which an instrument measures an attribute”. (Denise F. Polit 2011)

The tool was standardized FLACC (face, leg, activity, cry, consolability) pain rating scale developed by S Merkal in 1997 in order to assess the pain experienced by toddlers.

Method of Data collection:**Ethical consideration:**

- The study was conducted after the approval of dissertation committee at global college of nursing.
- Formal written permission was obtained from the medical director of Jeyaharan Memorial Hospital, Nagercoil.
- An informed verbal consent was obtained individually from parents of toddlers who participated in the study.
- Confidentiality was assured to parents throughout the study.
- Parents were informed that their toddlers participation were voluntary based and had the freedom to drop out from the study as when they liked to do so.

Pilot study

Pilot study was conducted in Jeyaharan Memorial Hospital, Nagercoil, after receiving a formal approval from Administrative Officer, Jeyaharan Memorial Hospital, Nagercoil. The pilot study was conducted in Jeyaharan Memorial Hospital, Nagercoil among 6 toddlers 3 were in study group and 3 were in control group who were selected. Then assessment was done with the help of FLACC pain scale for control group. Then intervention was given by showing cartoon animation to the

experimental group and pain was assessed with the help of FLACC scale. Analysis of the data was done by using descriptive and inferential statistics. The tool was reliable and tool scoring was found feasible and practicable. No changes were made and researcher proceeded for main study.

Procedure for data collection

The researcher got permission from Principal, and research ethical committee of Global College of Nursing. A formal permission was obtained from the Administrative Officer of Jeyaharan Memorial Hospital, Nagercoil. The institutional ethics review board approved the protocol.

Data collection period was between 1-9-2014-30-9-2014 morning and evening. 60 toddlers who are getting venipuncture were selected by purposive sampling technique.

Rapport was established with the toddlers and brief introduction about the study was given. Consent was obtained from each child's mother. Pain score was assessed for both control and experimental group. The pain score assessment was done by FLACC pain rating scale. The data were collected approximately 4-5 study subjects per day.

Plan for data analysis

The data were analyzed by using descriptive and inferential statistics.

➤ Descriptive statistics

Frequency and percentage distribution were used to analyze the demographic data.

➤ **Inferential statistics**

Unpaired 't' test was used to assess the effectiveness of reduction of pain during venipuncture. Chi-square test was used to find out the association of the clinical variables and pain among toddlers.

Summary

This chapter consisted of research design, variables in the study, study setting, population, sampling technique, sample size, criteria for selection of sample, development and description of tool, content validity, pilot study, data collection procedure and plan for data analysis.

CHAPTER- IV

DATA ANALYSIS AND INTERPRETATION

According to Polit and Hungler (2005) analysis is the method of organizing, sorting and scrutinizing data in such a way that research question can be answered.

This chapter deals with the analysis and interpretation of data collected from 60 toddlers (30 Experimental and 30 control group) on reducing pain to evaluate the effectiveness of cartoon animation show during venipuncture among toddlers in the selected hospital at Kanyakumari District.

The analysis and interpretation of data were based on data collection and the results were computed by using descriptive (Mean, Frequency, Percentage distribution and Standard deviation) and inferential ('t'-test and chi-square test) statistics and the results were interpreted in tables, figures and diagrams.

Statistical analysis used:

The findings of the study were grouped and analyzed under the following sections.

Section A: The frequency and percentage distribution of the Post test level of pain in the experimental and control groups was an descriptive statistics.

Section B: The frequency and percentage distribution of post test level of pain in the experimental and control group.

Section C: The comparison of post test level of pain between the experimental and control groups was analysed by 't'test. Which is an inferential statistical analysis.

Section D: The Association of post test level of pain in the control group with demographic variables was analysed by using 'chi-square'test.

SECTION :A

Table-1.2 Frequency Percentage distribution of demographic variables in the experimental group and control group

DEMOGRAPHIC VARIABLES	EXPERIMENTAL GROUP		CONTROL GROUP	
	F	%	F	%
1.Age in months				
a) 12-18	7	23.33	8	26.6
b) 19-24	5	16.6	5	16.6
c) 25-30	8	26.6	10	33.3
d) 31-36	10	33.33	7	23.33
2.Gender				
a) Male	12	40	13	43.3
b) Female	18	60	17	56.6
3.Order of birth				
a) First	16	53.33	15	50
b) Second	10	33.33	10	33.3
c) Third and above	4	13.33	5	16.6
4.Number of siblings				
a) Nil	16	53.33	15	50
b) One	10	33.33	10	33.3
c) Two or more	4	13.33	5	16.6
5.Type of family				
a) Nuclear	14	46.66	13	43.3
b) Joint	10	33.33	8	26.6
c) Extended	6	20	9	30
6.Education of father				
a) Illiterate	0	0	0	0
b) Primary	2	6.6	3	10
c) Secondary	5	16.6	5	16.6
d) Collegeate	23	76.6	22	73.3
e) Others- specify	0	0	0	0
7.Education of mother				
a) Illiterate	0	0	0	0
b) Primary	3	10	5	16.6
c) Secondary	5	16.6	3	10
d) Collegeate	22	73.3	22	73.3
e) Others- specify	0	0	0	0

8.Occupation of father				
a) Unemployed	0	0	0	0
b) Coolie	7	23.33	5	16.6
c) Profession	13	43.33	15	50
d) Businessman	10	33.33	10	33.3
e) Others- specify	0	0	0	0
9.Occupation of mother				
a) Housewife	12	40	10	33.3
b) Coolie	3	10	2	6.6
c) Profession	13	43.3	15	50
d) Business	2	6.6	3	10
e) Others- specify	0	0	0	0
10.Previous experience of venipuncture				
a) Nil	16	53.33	15	50
b) Within a week	0	0	0	0
c) A week back	3	10	2	6.6
d) Two weeks back	2	6.6	3	10
e) More than two weeks	9	30	10	33.3
11.Site of venipuncture				
a) Dorsum of hand	18	60	20	66.6
b) Wrist (radial)	12	40	10	33.3
c) Ankle	0	0	0	0
d) Others	0	0	0	0

The above table shows with regard to that age in months in experimental group 7(23.33%) were in 12-18 months, 5(16.6%) were in 19-24 months, 8(26.6%) were in 25- 30 months, 10(33.33%) were in 31- 36 months. In control group 8(26.6%) were in 12-18 months, 5(16.6%) were in 19-24 months, 10(33.3%) were in 25-30 months, 7(23.33%) were in 31-36 months.

With regard to the gender in the experimental group , 12 (40%) were males and 18(60%) were females, where as in the control group, 13 (43.3%) were males and 17(56.6%) were females.

Regarding order of birth in the experimental group,16(53.33%)were in 1st order,10(33.33%)were in the 2nd order and 4(13.33%)were in the 3rd and above, where as in the control group,15(50%) were in the 1st order,10(33.3%) were in the 2nd order,5(16.6%) were in the 3rd and above.

With regard to the number of siblings in experimental group,16 (53.33%) with no siblings, 10(33.33%) with one, 4(13.33%) with two and more siblings, where as in control group, 15(50%) with none, 10(33.3%) with one, 5(16.6%) with two and more.

With regard to type of family in experimental group, 14(46.6%) with nuclear family, 10(33.3%) with joint family, 6(20%) with extended family, were as in control group, 13(43.3%) with nuclear family, 8(26.6%) with joint family, 9(30%) with extended family.

Regarding education of father in experimental group, 0(0%) were illiterate, 2(6.6%) were primary, 5(16.6%) secondary, 23(76.66%) were collegeate,0(0%) were others, where as in control group, none of them were illiterate, 3(10%) were primary, 5(16.6%) were secondary 22(73.3%) were collegeate, 0(0%) were others.

Regarding education of mother in experimental group, 0(0%) illiterate, 3(10%) were primary,5(16.6%) were secondary,22(73.3%) were collegeate, 0(0%) were others, where as in control group, 0(0%) were illiterate,5(16.6%) were primary,3(10%) were secondary, 22(73.3%) were collegeate, 0(0%) were others.

With regard to the occupation of father in experimental group, 0(0%) were is unemployed, 7(23.3%) were coolie, 13(43.33%) were professional,10(33.33%) were businessman, 0(0%) others. where as in control group , 0(0%) were is unemployed,

5(16.6%) were coolie, 15(50%) were professionals, 10(33.3%) were businessman, none of them from other profession.

With regard to occupation of mother in experimental group, 12(40%) were house wives, 3(10%) were coolie, 13(43.33%) were professional, 2(6.6%) were business and 0(0%) were others, where as in control group, 10(33.3%) were housewives, 2(6.6%) were coolie, 15(50%) were professionals, 3(10%) were business and none of them from other profession.

With regard to previous experience of venipuncture in experimental group 16(53.33%) were in no experience, none of them were within a week,3(10%) were a week back, 2(6.6%) were two weeks back and 9(30%) were more than two weeks, where in control group,15(50%) were in no experience, none of them were within a week, 2(6.6%) were a week back, 3(10%) were two weeks back and 10(33.3%) were more than two weeks.

Regarding site of venipuncture in experimental group, 18(60%) were in dorsum of hand, 12(40%) were in wrist (radial), 0(0%) were ankle and 0(0%) were in others, where as in control group, 20(66.6%) were in dorsum of hand, 10(33.3%) were in wrist (radial),0(0%) were ankle and 0(0%) were others.

Fig 4.1 : Percentage distribution of samples according to age in months

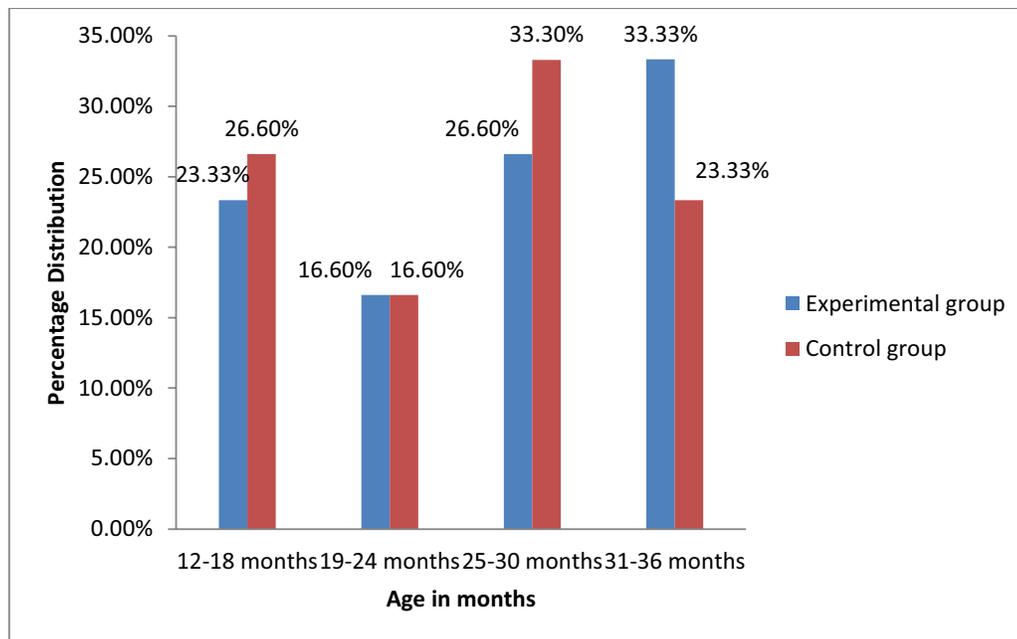


Fig 4.2 : Percentage distribution of samples according to Gender

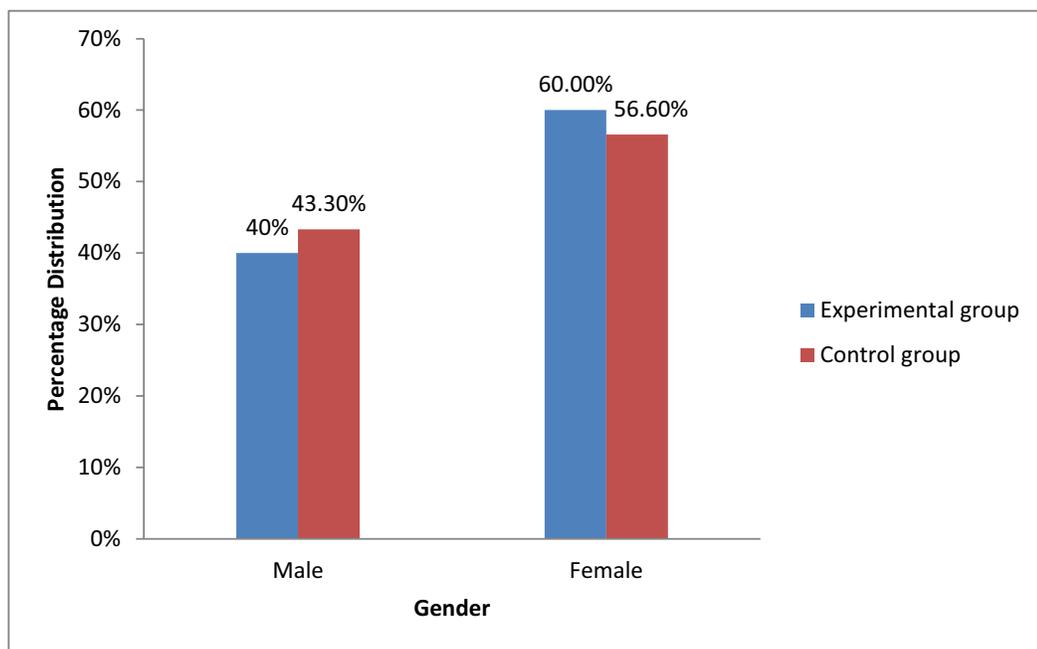


Fig 4.3: Percentage distribution of samples according to Order of birth

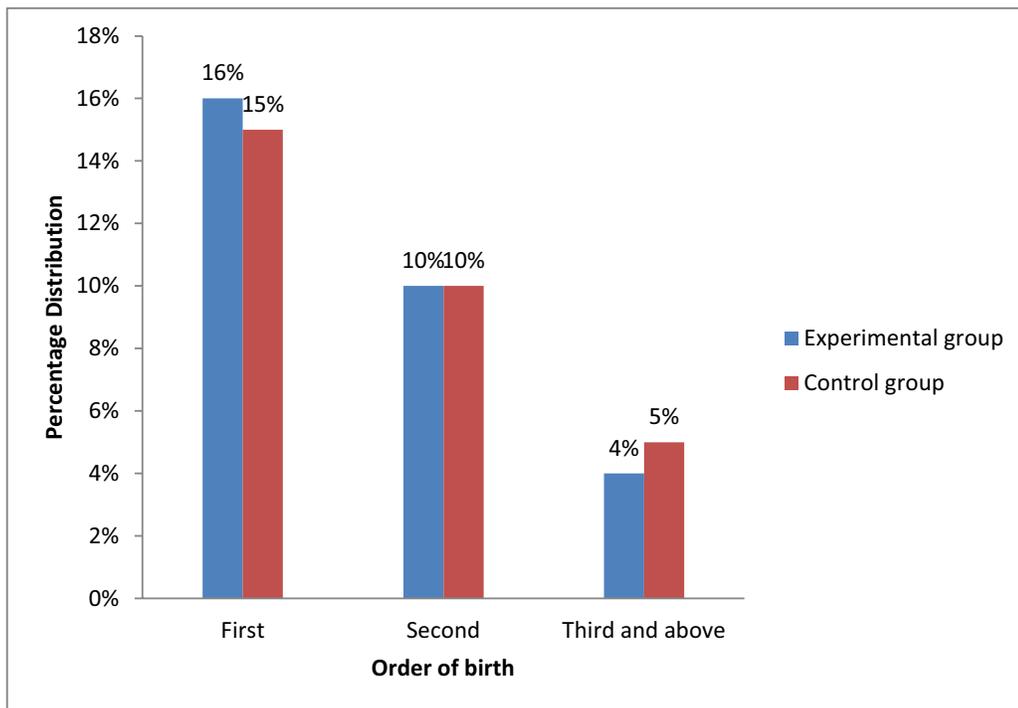


Fig 4.4: Percentage distribution of samples according to Number of siblings

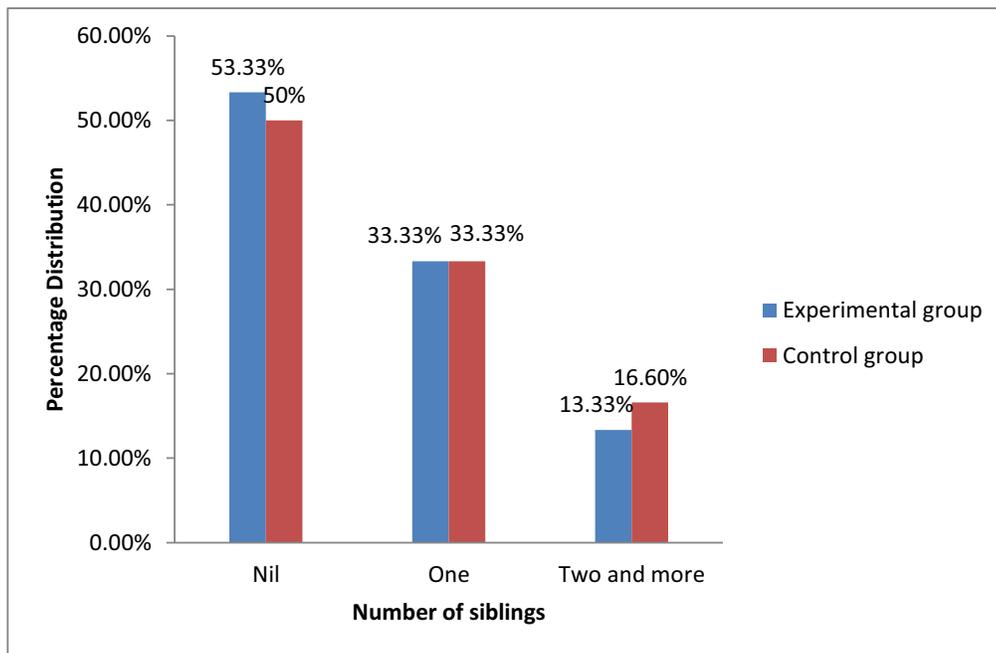


Fig 4.5: Percentage distribution of samples according to Type of family

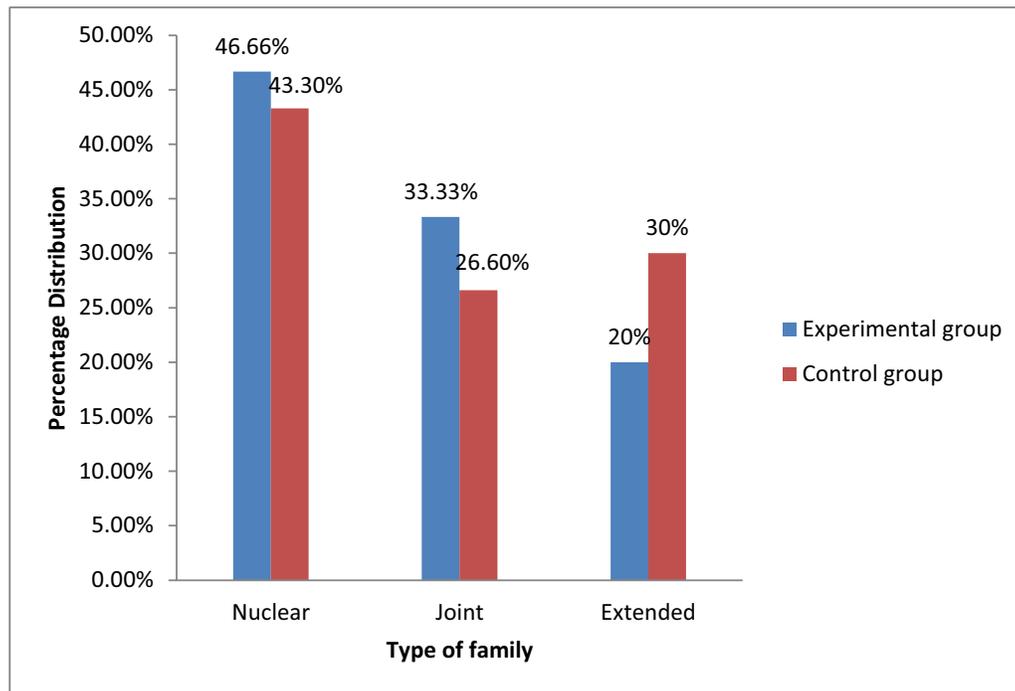


Fig 4.6: Percentage distribution of samples according to Education of father

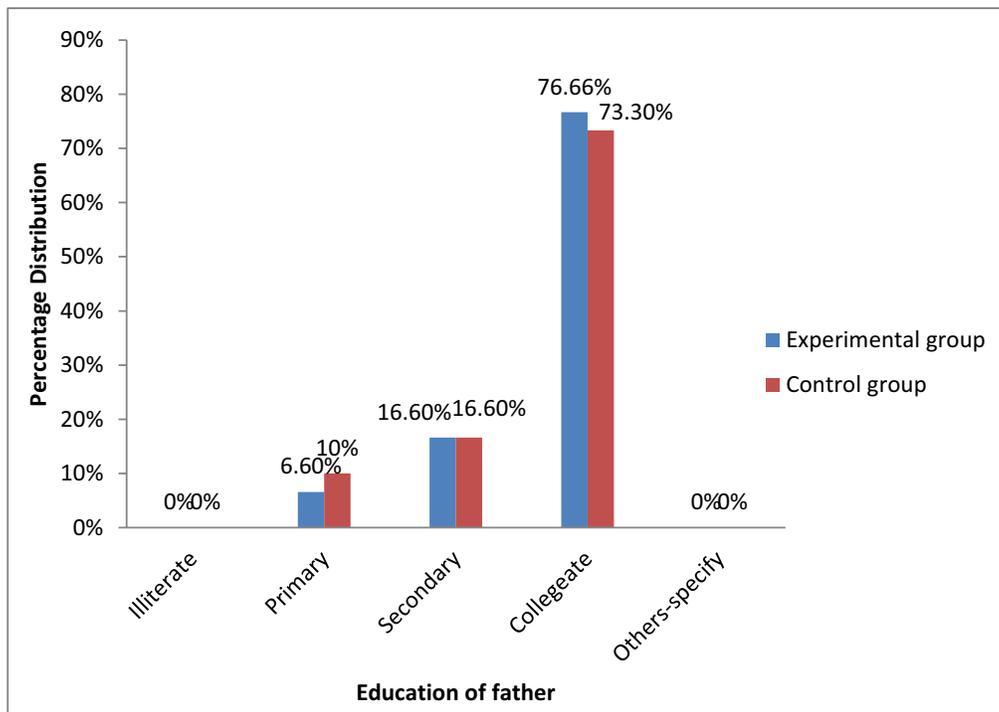


Fig 4.7: Percentage distribution of samples according to Education of mother

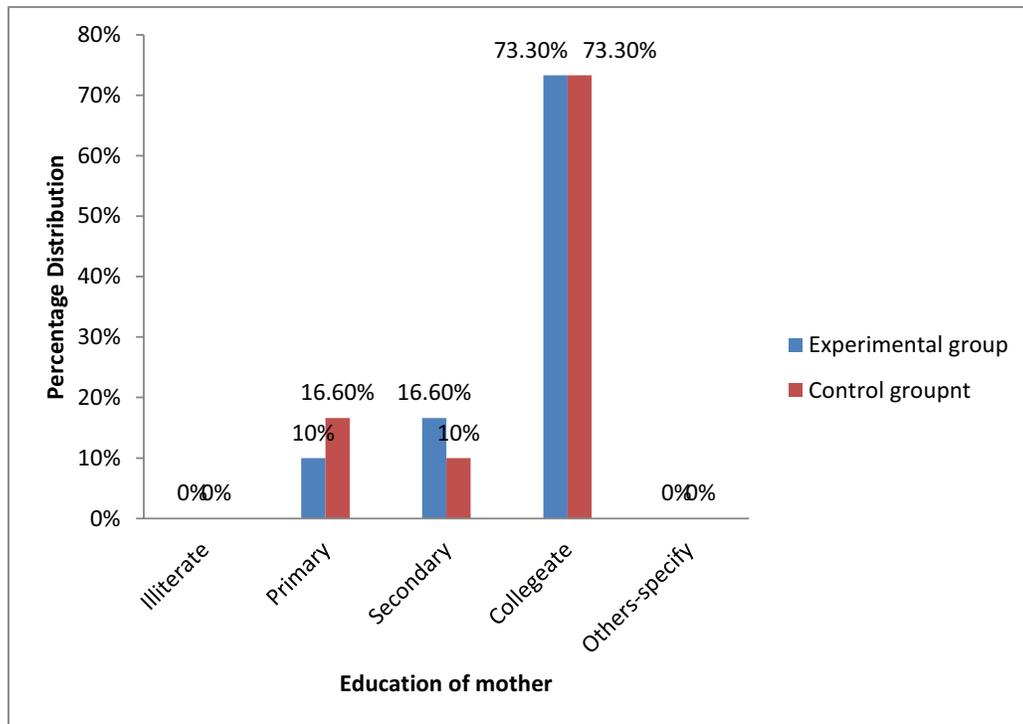


Fig 4.8: Percentage distribution of samples according to Occupation of father

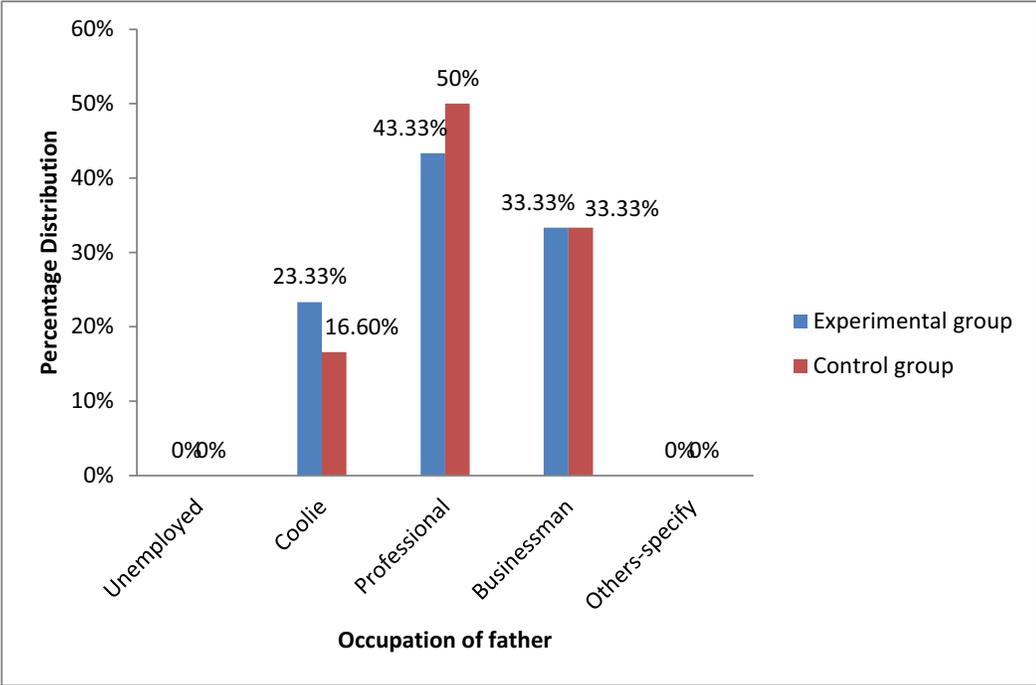


Fig 4.9: Percentage distribution of samples according to Occupation of mother

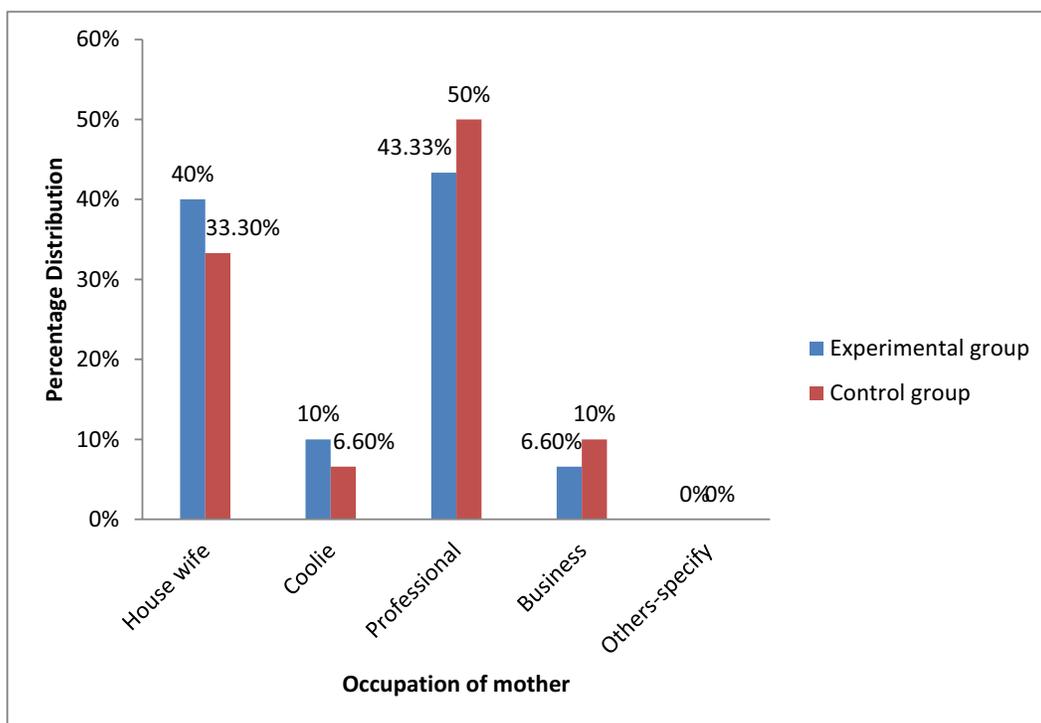


Fig 4.10 Percentage distribution of samples according to Previous experience of venipuncture

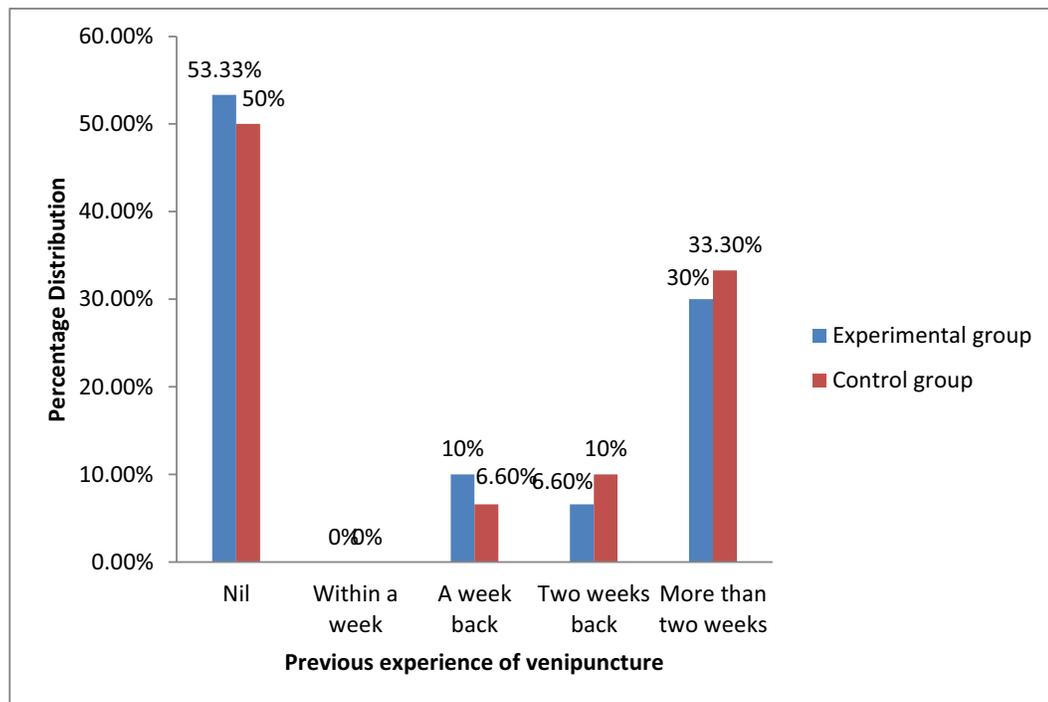
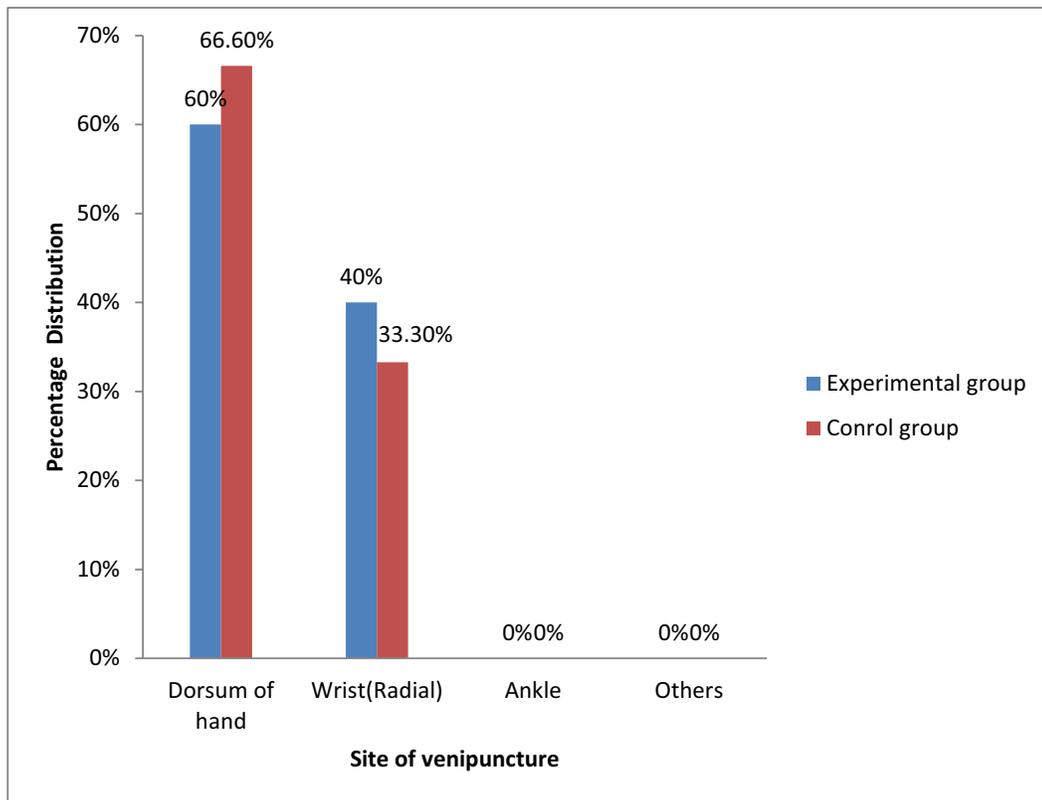


Fig 4.11: Percentage distribution of samples according to Site of venipuncture



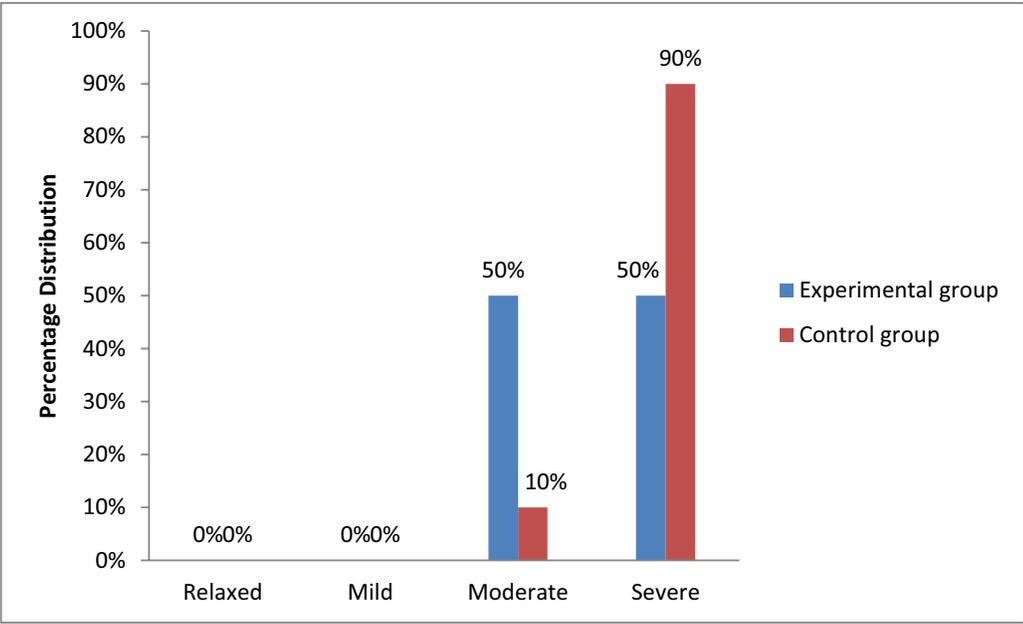
SECTION :B

TABLE: 2 Frequency and Percentage distribution of post test level of pain in the experimental and control group

Group	Relaxed		Mild Pain		Moderate Pain		Severe Pain	
	F	%	F	%	F	%	F	%
Experimental Group	0	0	0	0	15	50	15	50
Control Group	0	0	0	0	3	10	27	90

The Table 2: shows that in the experimental group majority 15 (50%) had moderate pain,15(50%) had severe pain and in control group majority 27(90%)had severe pain, 3(10%) had moderate pain.

Fig 5: Percentage distribution of post test level of pain in the experimental and control group



SECTION : C

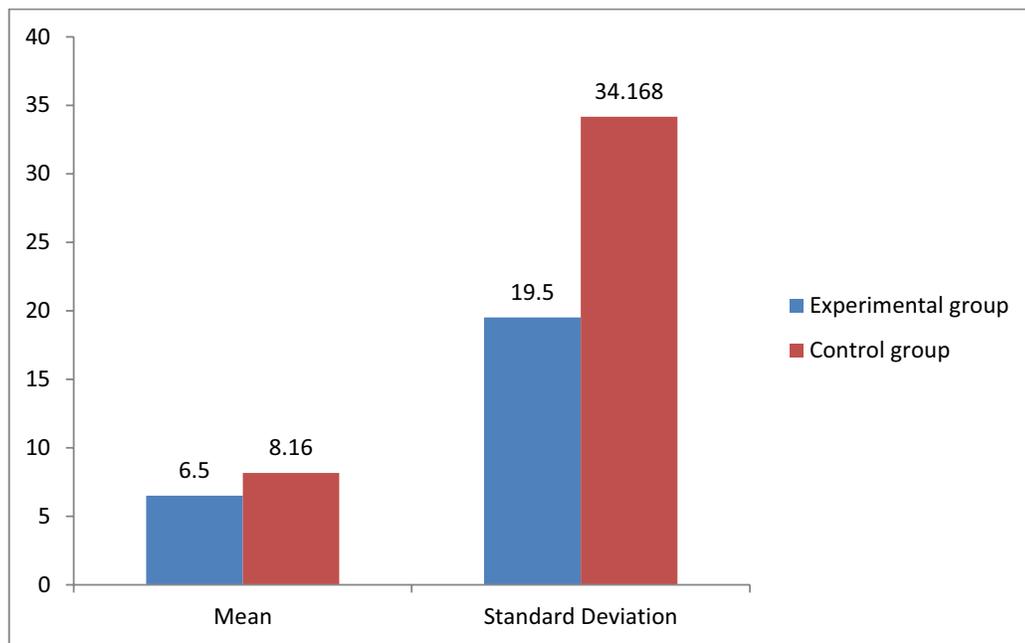
Table: 3 Comparison of post test level of pain between the experimental and control group

POST TEST Level of pain	Mean score	S.D	Mean difference	df	t value
Experimental group	6.5	19.5	1.66	59	6.68* (s)
Control group	8.16	34.168			

Table value $t = 1.66$

Table:3 depicts that in the experimental group, the post test level of mean pain score was 6.5 with S.D 19.5 and in the control group the post test mean score was 8.16 with S.D 34.168. The mean difference score was ± 1.66 . The calculated 't' value of 6.68* was statistically significant at $P < 0.05$ level indicating that there was significant difference in the post test level of pain between the experimental and control group. Hence H_1 is accepted.

Fig 6: Comparison of post test level of pain between the experimental and control group



SECTION- D

Table:4 Association of post test level of pain in the control group with demographic variables

n = 30

S.No	DEMOGRAPHIC VARIABLES	CONTROL GROUP		
		DF	X2	TABLE VALUE
1	Age in months	9	1.95	16.92
2	Gender	3	2.735	7.81
3	Order of birth	6	0.68	12.59
4	Number of siblings	6	0.68	12.59
5	Type of family	6	12.55	12.59
6	Education of father	12	7.63	21.03
7	Education of mother	12	7.63	21.03
8	Occupation of father	12	0.6943	21.03
9	Occupation of mother	12	0.8331	21.03
10	Previous experience of venipuncture	12	1.5831	21.03
11	Site of venipuncture	9	2.4999	16.92

Table 1.5 shows association of post test level of pain in the control group with demographic variable. There was no association between posttest level of pain with selected demographic variable. Hence H_2 is rejected.

CHAPTER- V DISCUSSION

The main aim of the study was to assess the effectiveness of cartoon animation show during venipuncture in reducing pain perception among the toddlers. The study was conducted by using quasi experimental design with post test only design with control group. The present study was conducted in Jeyaharan hospital , Nagercoil, Kanyakumari District. The sampling technique is purposive sampling technique was used for this study . The total sample size was 60, among them 30 were in the experimental group and 30 were in the control group. FLACC (Face, Leg, Activity, Consolability, Cry) developed by S Merkal in 1997 was used for data collection. After data collection, data was organized, tabulated, summarized and analyzed. The study findings were discussed in this chapter with reference to the objectives of the study.

The objectives were,

- To assess the pain perceived by the toddlers during venipuncture in both A and B group.
- To assess the effect of cartoon animation show in reducing pain during venipuncture by comparing the pain scores among both groups .
- To determine the association of pain perceived by the toddlers in the control group with their selected demographic variables such as age in months, gender, order of birth, number of siblings, type of family, education of father, education of mother, occupation of father, occupation of mother, previous experience of venipuncture, site of venipuncture.

The first objective was to assess the pain perception by the toddlers during venipuncture in both A and B group.

In the experimental group out of 30 15(50%) was moderate and 15(50%) was severe in pain during venipuncture. In control group out of 30 3(10%) was moderate and 27(90%) was severe during venipuncture.

The second objective was to assess the effect of cartoon animation show in reducing pain during venipuncture by comparing the pain scores among both groups.

In the experimental group , the post test level of mean pain score was 6.5 with S.D 19.5 and in the control group the post test mean score was 8.16 with S.D 34.168. The calculated 't' value of 6.68 was statistically significant at $p < 0.05$ level indicating that there was significant difference in the post test level of pain between the experimental and control group.

Hence the hypothesis H_1 is accepted and stated that there is significant difference of pain level during venipuncture between group A and group B.

The third object was to determine the association of pain perceived by the toddlers in group B with their selected demographic variables

The association table that the demographic variables had not shown any statistically significant association with the level of pain in the control group.

The conceptual framework of this study was based on Callista Roy's adaptation model (1999). This model describes the goal of nursing is to facilitate adaptation between person and the environment through the management of stimuli.

The focal stimuli is considered as starting venipuncture because the toddlers pain is related responses were tested as a result of intravenous therapy. The contextual stimuli order of birth, number of siblings, education of father, education of mother, occupation of father, occupation of mother, previous experience of venipuncture, site of venipuncture and residual stimuli are age and gender as a response to focal, contextual and residual stimuli the responses exhibited out in physical and psychological aspects. The physical responses to pain are facial expression, crying, breathing pattern, arms restrained, leg restrained ,state of arousal and psychological response. The investigator shown cartoon animation show to toddlers and assess the pain level through (FLACC) by evaluation of post assessment level of pain.

The findings concluded that the toddlers in the experimental group had reduction in the level of pain when compared with control group .Hence the cartoon animation show was responded to reduce the venipuncture pain among toddlers.

CHAPTER VI

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter deals with summary, conclusion, limitations and recommendations for further studies. Further it includes implications of findings of this study in Nursing Practice, Nursing Education, Nursing Administration and Nursing Research.

SUMMARY OF THE STUDY

The aim of the study was to assess the effectiveness of cartoon animation show during venipuncture in reducing pain perception among the toddlers in Jeyaharan Hospital, Nagercoil ,Kanyakumari District.

The objectives of the study were,

- To assess the pain perceived by the toddlers during venipuncture in both A and B group.
- To assess the effect of cartoon animation show in reducing pain during venipuncture by comparing the pain scores among both groups .
- To determine the association of pain perceived by the toddlers in the control group with their selected demographic variables such as age in months, gender, order of birth, number of siblings, type of family, education of father, education of mother, occupation of father, occupation of mother, previous experience of venipuncture, site of venipuncture.

The target population is comprised of all toddlers admitted at Jeyaharan hospital .

Accessible population refers to the aggregate of cases which conform to the designated criteria and which to accessible the researchers as a pool of subjects for the study. In this study is comprised of toddlers those who are in admitted in the Hospital. The physical location and conditions in which data collection take place in a study. The study will be conducted in Jeyaharan hospital. It is 46km away from Global College Of Nursing, Nattalam. The total bed strength of the hospital is 200. This setting was selected because of the availability of participants and feasibility of conducting the study.

A quasi experimental design in nature. Post test only design with control group was chosen for this study. Purposive sampling technique was used for this study. Subjects were selected based upon the inclusion and exclusion criteria. 60 subjects were selected for the study. Purposively 30 Subjects were assigned to group A and 30 subjects were assigned to group B.

The tool used to collect the data consisted of two parts, section A: consisted of the demographic Variables with age in months, gender, order of birth, number of siblings, type of family, education of father, education of mother, occupation of father, occupation of mother, previous experience of venipuncture, site of venipuncture. Section B consisted of FLACC (face, leg, activity, consolability, cry) developed by S Merkel in 1997. FLACC interpretation:

0	-	Relaxed and comfortable.
1 – 3	-	Mild discomfort.
4 – 6	-	Moderate pain.
7 – 10	-	Severe pain

validity of the tool was not obtained because the investigator selected a standardized FLACC Scale developed by S Merkel in 1997. Reliability of the tool was tested by using test-retest method the formula was, $r = \frac{\sum dx dy}{\sqrt{\sum dx^2 \times \sum dy^2}}$ ($r = 0.75$). Data collection was done for 4 weeks. Sample subjects were selected based on the inclusion and exclusion criteria. Demographic variables were collected. Post test was done by using FLACC pain Scale. Intervention was done with showing cartoon animation show to the selected toddlers during venipuncture .

After that collected data were analyzed by both descriptive statistics (inclusive of mean, standard deviation ,frequency and percentage) and inferential statistics (inclusive of dependent and paired ‘t’ test ,chi-square) and results were interpreted in the forms of tables ,figures and diagrams.

Major Findings of the Study:

With regard to the level of venipuncture pain among toddlers, most of them were found to have severe and moderate pain in the group B, as measured by FLACC scale and group A exhibited only moderate and severe . It revealed that the pain during venipuncture which denotes that the reduction of pain was due to showing cartoon animation show.

Out of 30 samples that in the experimental group majority 15 (50%) had moderate pain, 15(50%) had severe pain and in control group majority 27(90%) had severe pain, 3(10%) had moderate pain.

It depicts that in the experimental group, the post test level of mean pain score was 6.5 with S.D 19.5 and in the control group the post test mean score was 8.16 with S.D 34.168. The mean difference score was ± 1.66 . The calculated ‘t’ value of

6.68* was statistically significant at $P < 0.05$ level indicating that there was significant difference in the post test level of pain between the experimental and control group.

With regard to the association of post test level of pain in the control group with demographic variable. There was no association between post test level of pain with selected demographic variable.

CONCLUSION:

The study finally concluded that showing cartoon animation show during venipuncture, has a positive effect on reducing pain for the toddlers. This conclusion was made based on the 't' test value which was found to be highly significant.

IMPLICATIONS OF THE STUDY FINDINGS:

Nursing implications denotes the utility of study findings in various fields of nursing such as Nursing practice, Nursing education, Nursing administration and Nursing research.

Nursing Practice :

- Showing cartoon animation show during venipuncture for reducing pain perception can be included as nursing procedure to while providing care for toddlers during venipuncture.
- The mothers of toddlers undergoing venipuncture can be encouraged to carry out this method if nurses are occupied by venipuncture procedure.

- Cartoon animation show alleviates the anxiety and discomfort with in the mother who may feel very much comfortable and happy due to pain reduction in the child and the child is calm.
- The cartoon animation show can be effectively instituted in the pediatric ward as the toddlers are temporarily separated from mother.

Nursing Education:

- Showing cartoon animation show during venipuncture for toddlers can be included in the curriculum for 3rd year Bsc nursing course ,along with pediatric care in the pediatric ward.
- Nursing students should be supervised by instructors while showing cartoon animation show during venipuncture so that it can become a routine in pediatric ward.
- Adequate inservice training can be given to the nursing staff and students regarding showing cartoon animation show in reducing pain perception.
- Health education can be given to mothers of toddlers in pediatric ward.

Nursing Administration:

- The Nurse administrators can initiate showing cartoon animation show to reduce the venipuncture pain through developmental programme like in-service education and continuing nursing education programme.
- Nurse administrator can prepare written policies and protocols regarding cartoon animation show during venipuncture for all toddlers in pediatric ward.

Nursing Research:

- The nurse researcher can conduct many more studies in different areas of pediatric units to bring about newer perspective in nursing care.
- The study finding will motivate the initial researchers to conduct the same study on large scale and study will be the reference for the extensive and intensive nursing care.

Limitation:

No limitation was encountered by the investigator during or after the study.

Recommendations:

- A similar study can be replicated on a large sample size.
- A similar study can be conducted in different settings such as newborn care units or infant care units.

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APPENDIX – I



Tel. (O) : 273297
270753

GLOBAL COLLEGE OF NURSING

Recognised by the TNC & INC
Affiliated to Tamil Nadu Dr. M.G.R. Medical University
Edavilagam, Nattalam, Kanyakumari District.

Off: S.G. Multi Speciality Hospital, Old Theatre Jn, Pammam, Marthandam - 629 165,
K.K. Dist., Tamil Nadu. Mob : 9443606955, 9944110448.

25/08/2014

To

Dr. Jayaharan,
Jayaharan Memorial Hospital,
Court Road,
Nagercoil-629 001,
Kanyakumari District.

Sir,

Sub: Requisition for the grant of informed consent to conduct a Research-Reg.

Miss. J. Jennie Jose, II year M.Sc. (N) student of Global College of Nursing, Nattalam,
requires to conduct a Research study among the toddlers admitted in your hospital.

The title of the study:

“A STUDY TO ASSESS THE EFFECTIVENESS OF CARTOON ANIMATION
SHOW DURING VENIPUNCTURE IN READING PAIN PERCEPTION AMONG
TODDLERS IN SELECTED HOSPITAL AT KANYAKUMARI DISTRICT”.

Duration of data collection -1/9/2014 to 30/9/2014.

Hence I request you to kindly grant her your consent to conduct the study at your
esteemed hospital.

Thanking You,



Yours faithfully

S. S. S. S.
(PRINCIPAL)

GLOBAL COLLEGE OF NURSING
EDAVILAGAM,
NATTALAM, MARTHANDAM

Principal
GLOBAL COLLEGE OF NURSING
Edavilagam, Nattalam,
Kanyakumari District - 629 165



DR. JAYAHARAN MEMORIAL HOSPITAL

30,31,31A (Old No.33), VICTORIA PRESS ROAD, NAGERCOIL - 629 001.

(Ward) 04652-222664
(Hos) 04652-233337
Fax : 04652-223869
email : jmh_ngl@yahoo.in

Dr. SUNIL J. JAYAHARAN,
M.S., (Gen. Surg) F.S.A.S.M.S., F.M.A.S. (R.No.38109)

Dr. SASHYA JAYAHARAN,
M.D., D.C.H., PGDIP (R.No.37127)

Dr. IRINE FELCITA,
D.C.H., (R. No. 74448)

Dr. PARVEEN BANU,
D.C.H., (R.No.70991)

Dr. RAMESH,
M.D., D.M. (Neonatology) (R. No. 66382)

Dr. JOHN VINOJ,
D.C.H., M.D., (Gen.Medicine) (R.No.67500)

Dr. ANANTHI,
D.A., M.D., (Gen.Medicine) (R.No. 58709)

Dr. SONIA JEROLIN,
D.L.O., (ENT) (R. No. 62790)

Dr. MEENA,
D.M.R.D., (R.No. 39945)

Dr. AROCKIYA ARUL PRAKASH,
M.D., D.A. (Anesthiol) (R. No. 48240)

Dr. SHANTHI,
D.G.O., (R. No. 44859)

Dr. UMA MAHESHWARI,
D.G.O., D.N.B. (D.G.) (R. No.60082)

Dr. S. KRISHNAKUMAR,
M.S. (Ortho) (R.No. 35039)

Dr. JONEY MANDICE,
M.S. (Ortho) (R.No. 64113)

Dr. N. JAYASEELAN,
M.D., D.M. (Cardio) (R.No. 35753)

Dr. ARUL PRAKASH,
M.D., D.P.M., (R.No. 44153)

Dr. C. GAUTHAMAN,
M.S., F.R.C.S. (Eng) Dip. UROL (Lon) (R.No. 36928)

Dr. SIVA RAJAN,
M.S., M.Ch. (Paed. Surg.) (R.No. 29516)

Dr. EDWIN EMPEROR,
M.S. M.Ch. (Plastic Surgery) (R.No.46250)

Dr. K. KRISHNAN KUTTY,
M.D., D.M. (Rheumatology) (R. No. 39380)

Dr. PRABHAHARAN,
M.S., DNB., MRCS., (Edin) M.Ch. (SOE) (R.No.58712)

Dr. SUNIL RICHARDSON,
M.D.S., (Facio-Maxillary Surgeon) (R.No.5762A.)

Dr. SETHURAM,
M.D., D.M. (Neurology) (R.No.49195)

Dr. MUTHURETNAM,
M.S. M.Ch. (Neuro Surgery) (R.No. 55201)

Dr. A.J.S. PRAVIN,
M.D., D.D., D.N.B. (R.No. 41553)

Dr. S. EGWIN ANAND,
M.D., D.V.L., (R.No.58586)

Dr. GANGADEVI,
M.D. (Radn.onco) D.T.M. & H. (Eng.)

Dr. SARAVANA KUMAR,
M.B.B.S. (R.No. 89438)

Dr. SUCITHRA. R.
M.B.B.S. (R.No. 101325)

Dr. JAIKISHORE K.
M.B.B.S. (R.No. 103718)

Dr. THOMAS J.P. SUNNY,
M.B.B.S. (R.No.42167)

Dr. BINITTA SHERIN,
M.B.B.S. (R.No.101468)

Dr. BLESSIE SURESH,
M.B.B.S. (R.No.91204)

Dr. RATHISHA,
M.B.B.S. (R.No.105593)

TO WHOM IT MAY CONCERN

This is to certify that Miss. J. Jennie Jose, Global College of Nursing completed her research project on "A study To Assess The Effectiveness of Cartoon Animation show During Veni puncture in Reducing Pain Perception Among Toddlers In selected Hospital At Kanyakumari District".

Period of study - 01/09/2014 to 30/09/2014.

Date: 01/10/2014

Yours sincerely,

Dr. Sunil J. Jayaharan
Dr. Sunil J. Jayaharan
M.B.B.S., M.S. (Gen. Surg.), F.S.A.S.M.S., F.M.A.S.
MEDICAL SUPERINTENDENT
Dr. JAYAHARAN MEMORIAL HOSPITAL,
33, Victoria Press Road, NAGERCOIL - 629 001.
(Reg.No. 38109)

APPENDIX-II

Tools For Data Collection

Section : A

Demographic variables

1. Age in months
 - a) 12-18
 - b) 19-24
 - c) 25-30
 - d) 31-36
2. Gender
 - a) Male
 - b) Female
3. Order of birth
 - a) First
 - b) Second
 - c) Third and above
4. Number of siblings
 - a) Nil
 - b) One
 - c) Two and more
5. Type of family
 - a) Nuclear
 - b) Joint
 - c) Extended
6. Education of father
 - a) Illiterate
 - b) Primary
 - c) Secondary
 - d) Collegiate
 - e) Others-specify

7. Education of mother
 - a) Illiterate
 - b) Primary
 - c) Secondary
 - d) Collegiate
 - e) Others- specify
8. Occupation of father
 - a) Unemployed
 - b) Coolie
 - c) Professional
 - d) Businessman
 - e) Others – specify
9. Occupation of mother
 - a) House wife
 - b) Coolie
 - c) Professional
 - d) Business
 - e) Others – specify
10. Previous experience of venipuncture
 - a) No
 - b) Within a week
 - c) A week back
 - d) Two weeks back
 - e) More than two weeks
11. Site of venipuncture
 - a) Dorsum of hand
 - b) Wrist (radial)
 - c) Ankle
 - d) Others

Section B:

It deals with FLACC pain rating scale score.

CATEGORIES	FINDINGS	SCORING	SCORE
Face	No particular expression	0	
	Occasional grimace	1	
	Clenched jaw, quivering chin.	2	
Legs	Relaxed.	0	
	Uneasy, restless, tense.	1	
	Kicking or legs drawn up.	2	
Activity	Lying quietly.	0	
	Shifting back, tense	1	
	Jerking	2	
Cry	No cry	0	
	Cries	1	
	Screams	2	
Consolability	Relaxed	0	
	Hugging	1	
	Difficult to console	2	
Total			

0= no pain 4-6=moderate pain

1-3=mild pain 7-10=severe pain

The flacc pain scale can be used with infant and paediatric patients age 0-3 years who are unable to communicate pain.

The flacc pain assessment scale by S.Merkel, 1997.

Section: C

Intervention:

Intervention was given during venipuncture for the toddlers. The Cartoon animation show of Tom and Jerry was played at initiation, at five minutes and at termination of venipuncture. The cartoon animation show was showed to the toddlers during venipuncture.