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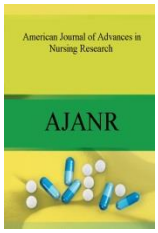


# A STUDY TO COMPARE THE EFFECTIVENESS OF CARTOON VIDEO DISTRACTION TECHNIQUE VERSUS MUSIC THERAPY IN ALTERING BEHAVIOUR RESPONSE TO PAIN AMONG TODDLER RECEIVING IMMUNIZATION AT PAEDIATRIC OUTPATIENT DEPARTMENT

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**Key word:** Cartoon video, immunization, pain reflex.

**ABSTRACT**

Immunization is a global health priority for every child. It is regarded as one of the significant medical achievements of all time. METHODS: Quasi Experimental design was utilized and data collected by Non probability convenient sampling technique. The tool used for the study consists of demographic data, Modified Behavioural Assessment Scale and physiological parameters. The population 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 I toddlers, they are having 13.37 pain score and in group II toddlers they are having 20.03 score. Difference is 6.67 pain score. The difference between Group I and Group II pain score is large and it is statistically significant. It was analyzed 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. 25–30 months, male children, previous experience and mother accompanying with children during immunization where more reduced pain during immunization than others. CONCLUSION: Cartoon video therapy is more effective than music therapy in reduction of pain during immunization in toddlerss.

## INTRODUCTION

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.

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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.

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. **Cohen (2009)** explained that, fears is a normal response to threatening stimuli, and involves three response systems. Kleiber, Charmaine, Harper & Dennis (2008) 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 behaviour in children. **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, whereas distraction has been associated with a diminished pain response. So the present study was designed to determine the behavioral responses to pain among toddler who are given a cartoon video (Group I) as distraction while receiving immunization and determine the behavioral responses to pain among toddler who are given music (Group II) as a distraction while receiving immunization.

**Methodology**

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.

**Setting of the study:**

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

**Study Population:**

Constitutes children (1-3 years) who are attended immunization clinic, Government Institute of Child Health and Hospital for Children, Egmore, Chennai-8.

**Accessible Population:**

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

**Target Population:**

The children those who are attend the pediatric immunization clinic.

**Sample**

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

**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 I (cartoon video distraction), Experimental Group II (music distraction) aged 1-3 years who were undergoing intra muscular immunization.

**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 I, Group II.

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

Those who are willing to participate will be enrolled and informed consent will be obtained from parents.

**Scoring procedure:**

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

**Data Collection procedure:**

The formal permission will be obtained from the Director and the Head of the department, pediatric immunization clinic, Out Patient Department Government 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 that 30 samples for experimental group-I, 30 samples for experimental group – II. The time taken to collect the data of each sample in experimental group is approximately 10 minutes.

**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.

**Statistical Analysis**

Data will be analyzed by using descriptive and inferential statistics

- Frequencies and percentage for the analysis of background data.
- Mean, mode and median and standard deviation of the post assessment scores.
- Unpaired T test will be used to assess the effectiveness of distraction techniques in altering the behavior responses to pain among toddler receiving immunization.
- Chi- square test will be used to find out association between post assessment score and the selected demographic variables.

Multiple bar diagram, Pie diagram, and percentage bar diagram and line graph will be used to represent the data.

**Results**

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 – I. 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 – II. In Considering The Gender, 13 (43.3%) children belong to male, whereas 17 ( 56.7%) children were female in Group I and 16 (53.3%) children belong to male, whereas 14 ( 46.7%) children were female in Group II. 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 – I, and 22(73.3%) were Hindu children, 6 (20.0%) were Christian and 2 (6.7%) were Muslim in Group –II. The majority of 24 (80.0%) children were received DPT vaccine and 6 (20.0%) in Group – I and 20 (66.7%) children were received DPT vaccine and 10 (33,3%) in Group – II. 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 – I. In Group – II, 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 – I. In Group- II, 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 – II. 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-I. In Group – II, 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.

Regarding look, children showed cheerful 8 (26.7%), 20 (66.7%) children were anxious and 2 (6,7%) children were fearful in Group – I, In Group – II, , 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 – I. In Group II, 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 – I. In Group – II, 8 ( 26.7%) were not cried, 9 (30.0%) children were moans & whimpers and 13 (43.3%) children were cried loudly in Group – I. 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 – I. In Group – II, 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 – I.In Group – II, 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 – II, 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- I. In Group – II, 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 – I. In Group – II, 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 – I. In Group – II, 14 (46.7.%) children were relaxed and regular, 14 (46.7%) children were irregular and rapid , 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 – I. In Group – II, 7 (23.3%) children were remains quiet, 15 (50.0%) children were squirms and 8 (26.7%) children were rigid and vigorous.

**Research Design Notation**

| Group | intervention | observation |
|---|---|---|
| $E_1$ | **x** | $O_1$ |
| $E_2$ | **X** | $O_2$ |

**E1= Group I: Children receiving immunization where a cartoon video is used as a distraction**
**E2= Group II: Children receiving immunization where music is used as a distraction**
**X = Intervention**
**O1= Observation in Group I by modified behavioral observation scale**
**O2:= Observation in Group II by modified behavioral observation scale**

**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) |

**Fig. 1: Distribution of sample percentage according to the age**

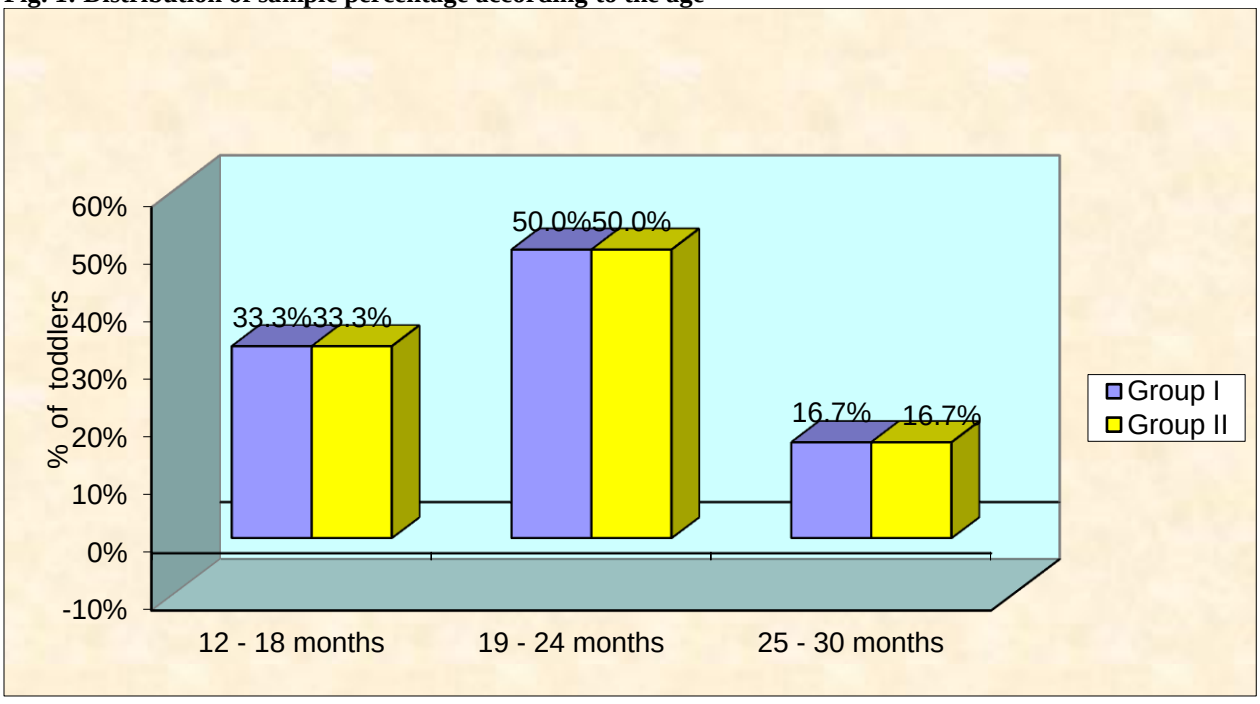


**Fig.2: Distribution of sample percentage according to sex**

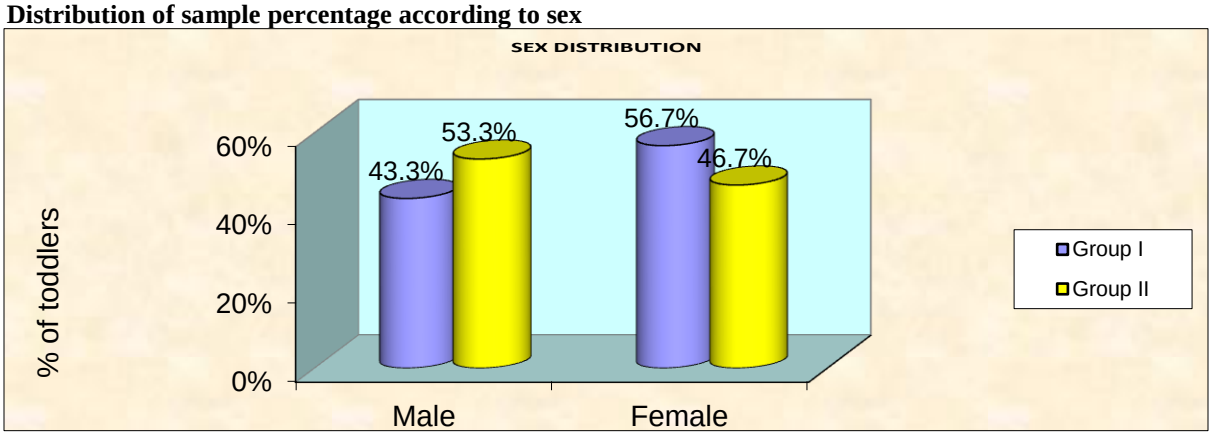



**Fig.3: Distribution of sample percentage according to name of vaccine**

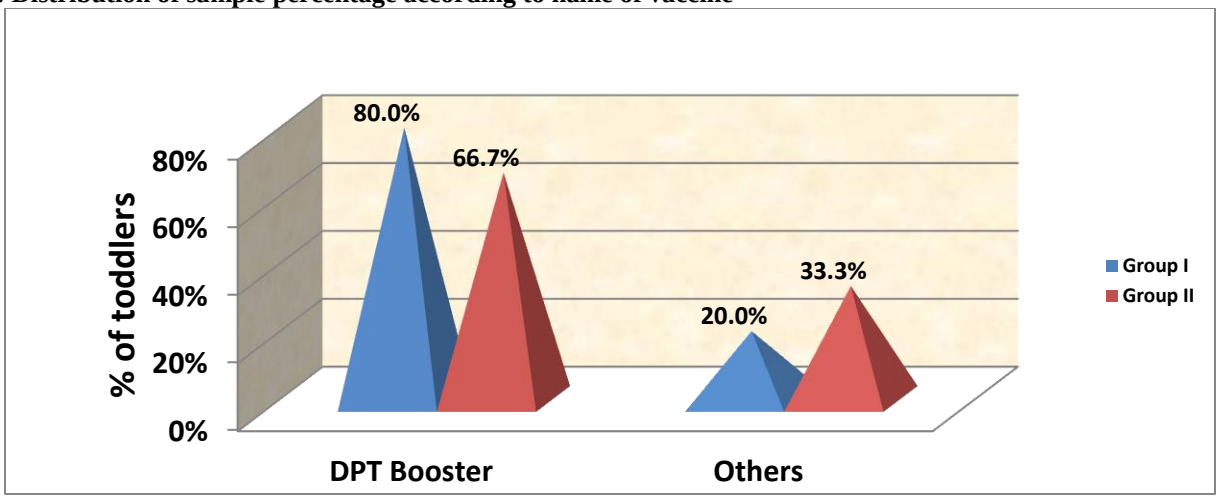



**Fig.4: Distribution of sample percentage according to past experience**

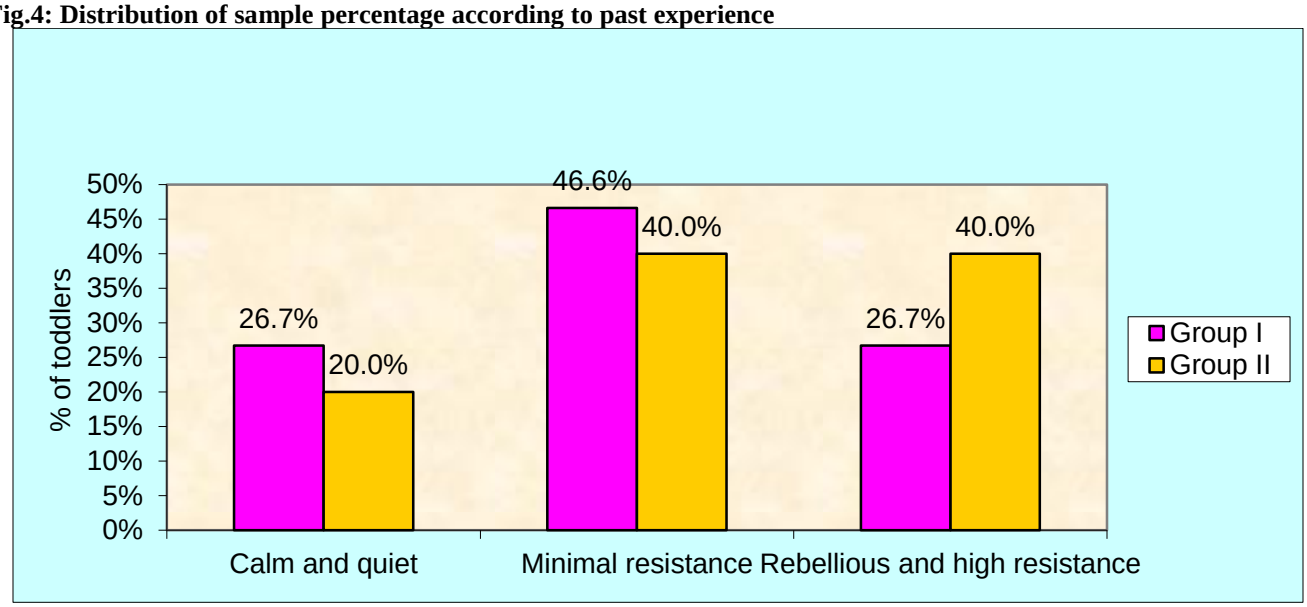


**Fig.5: Distribution of sample percentage according to child reaction on nurse**

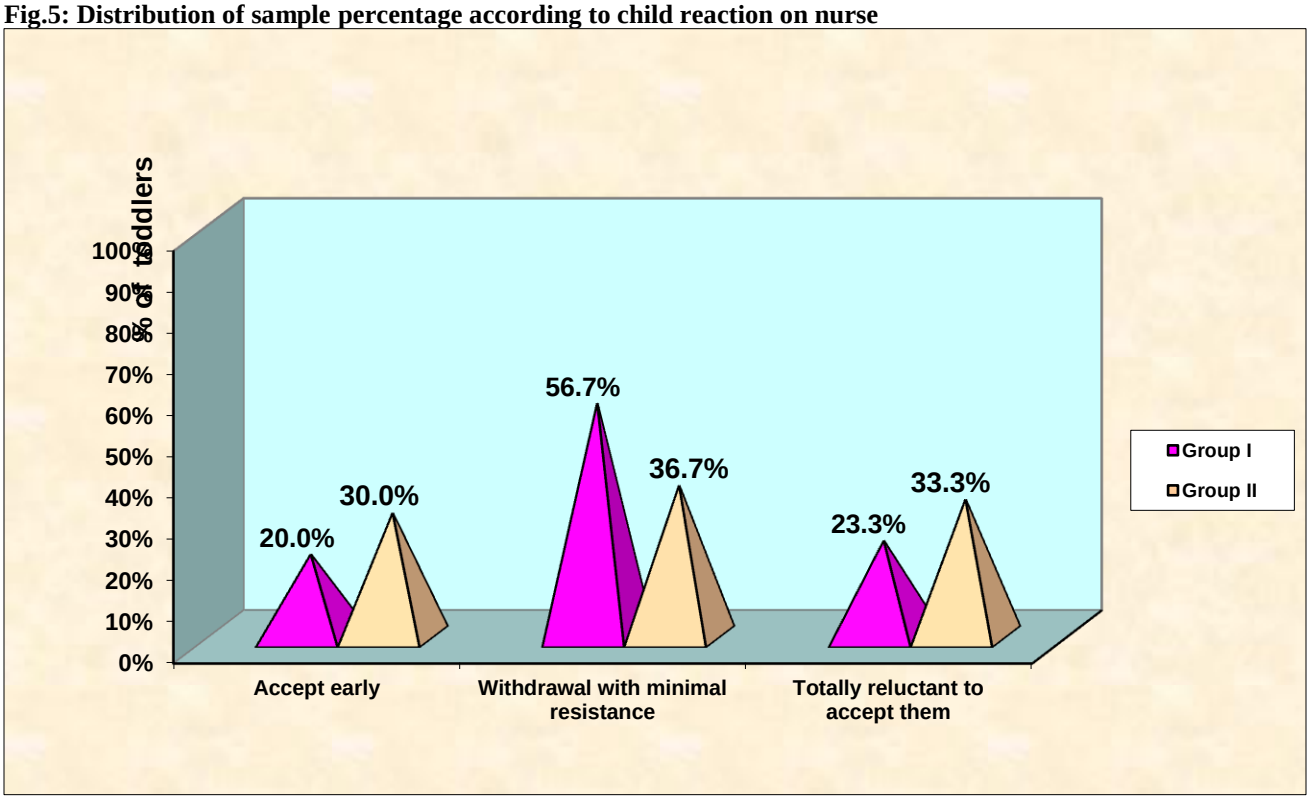



**Fig. 6: Distribution of sample percentage according to person accompanying the child**

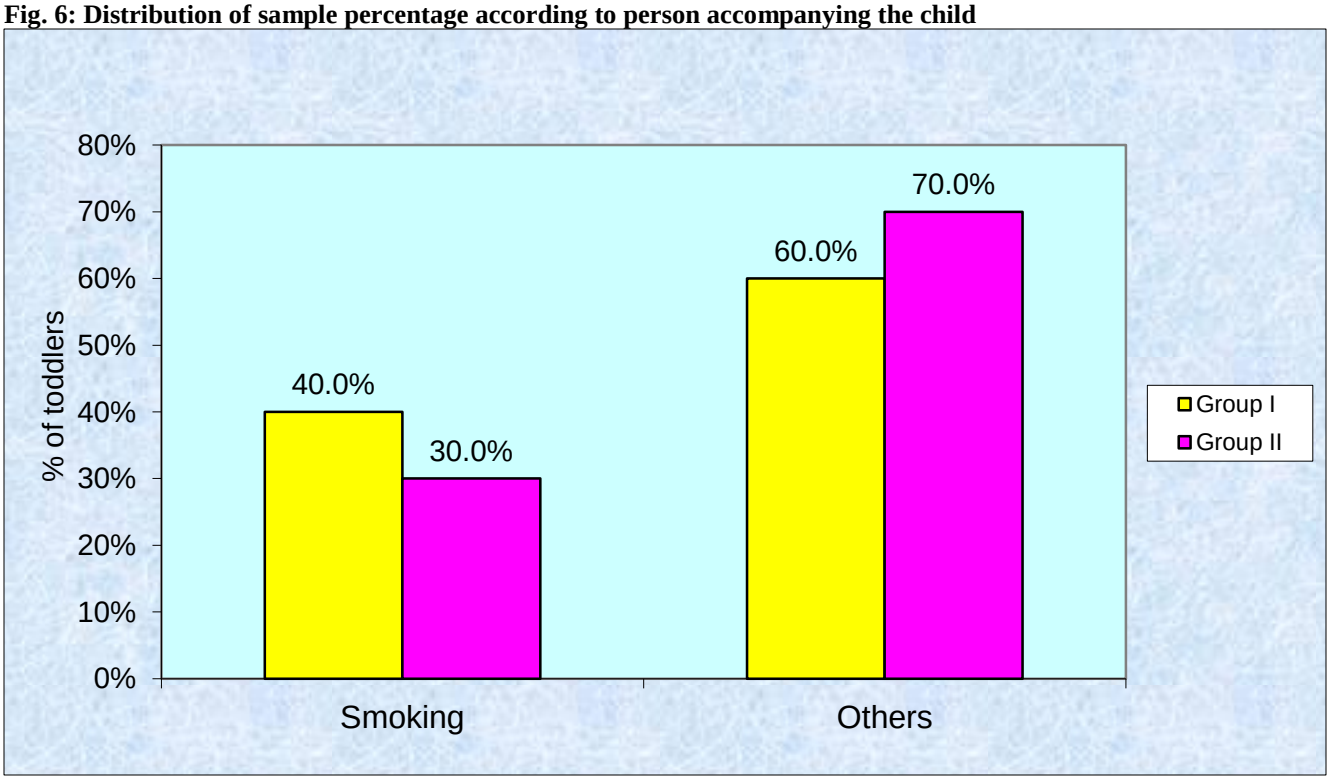


**Fig.7: Distribution of sample percentage according to comparison of level of pain**

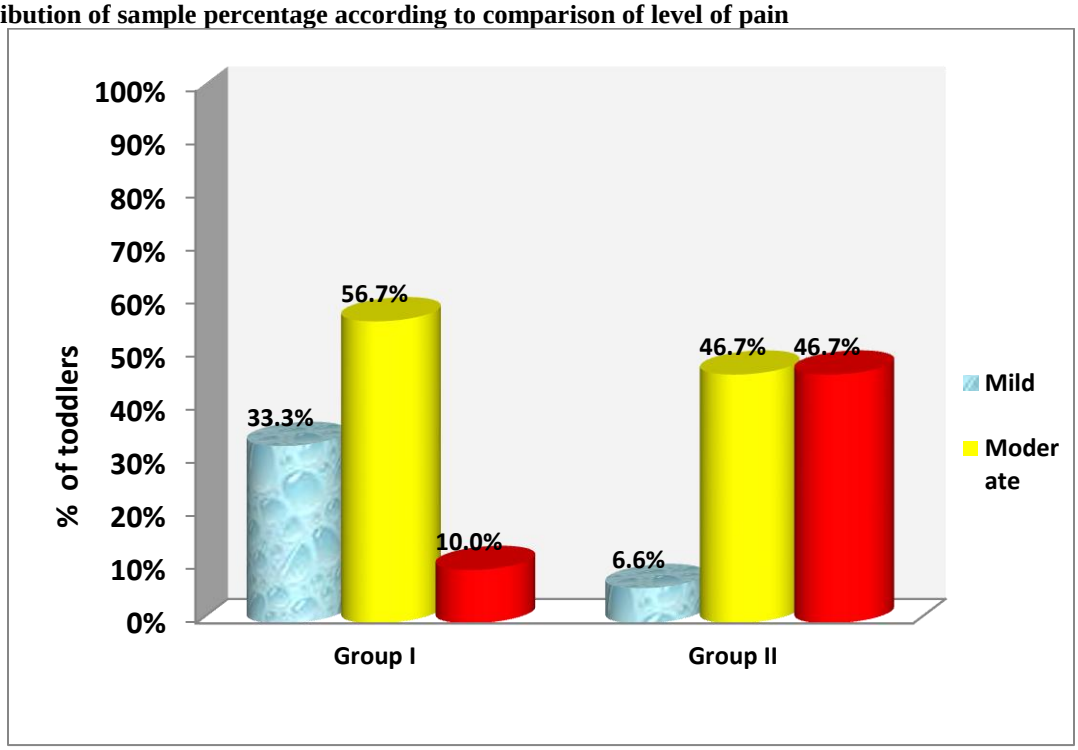



**Fig.8: Association between level of pain and children age (Group I)**

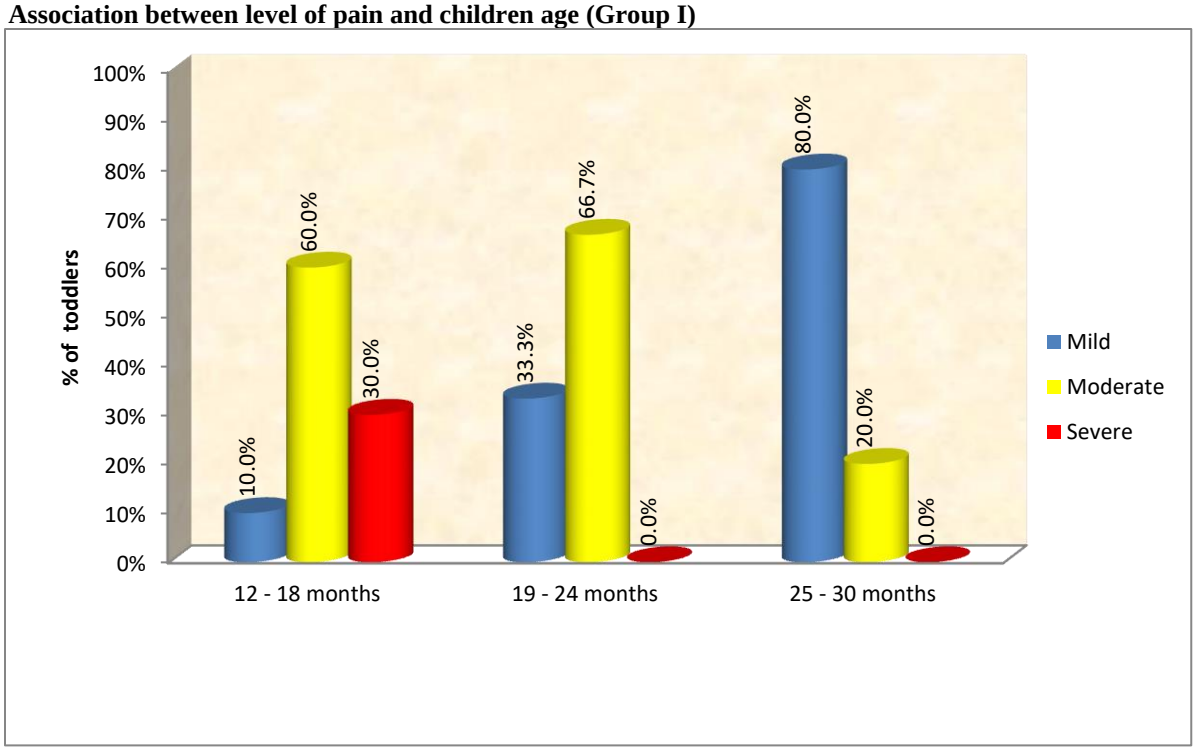


**Fig.9: Association between level of pain and child reaction on nurse (Group I)**

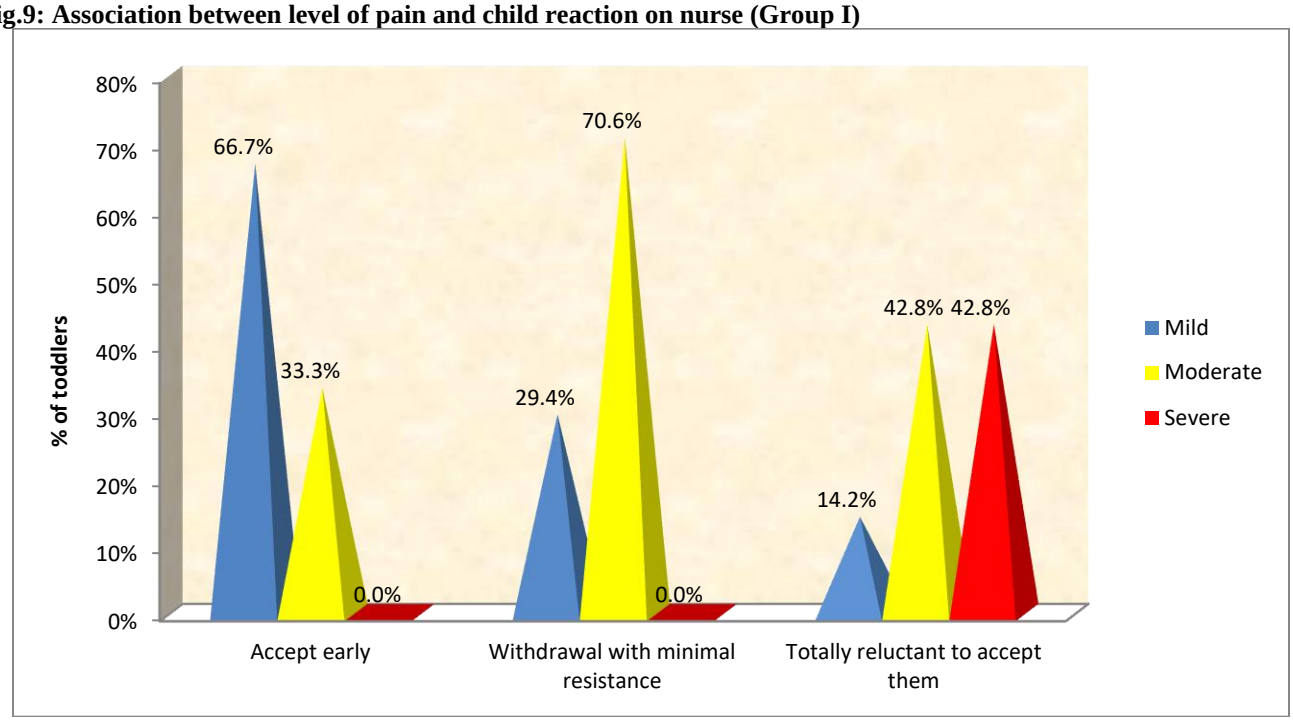



**Fig.10: Association between level of pain and past experience (Group II)**

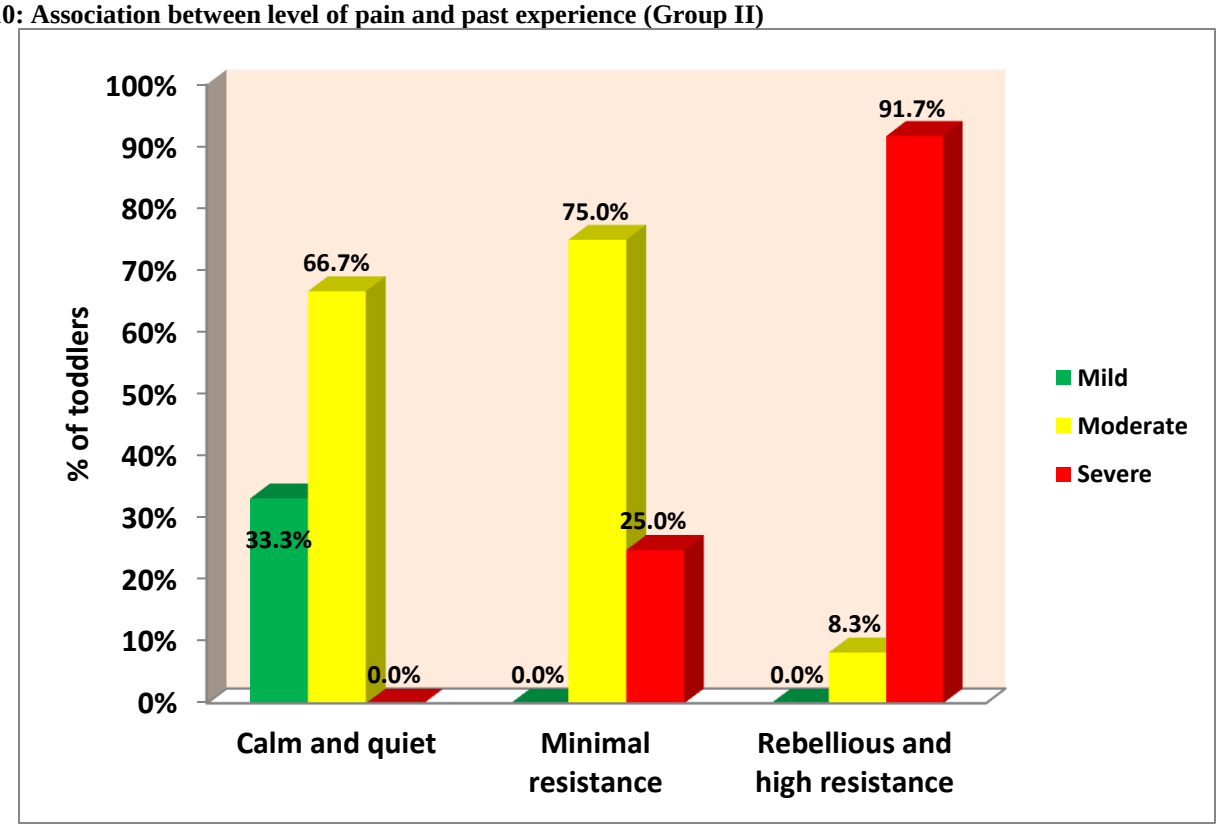
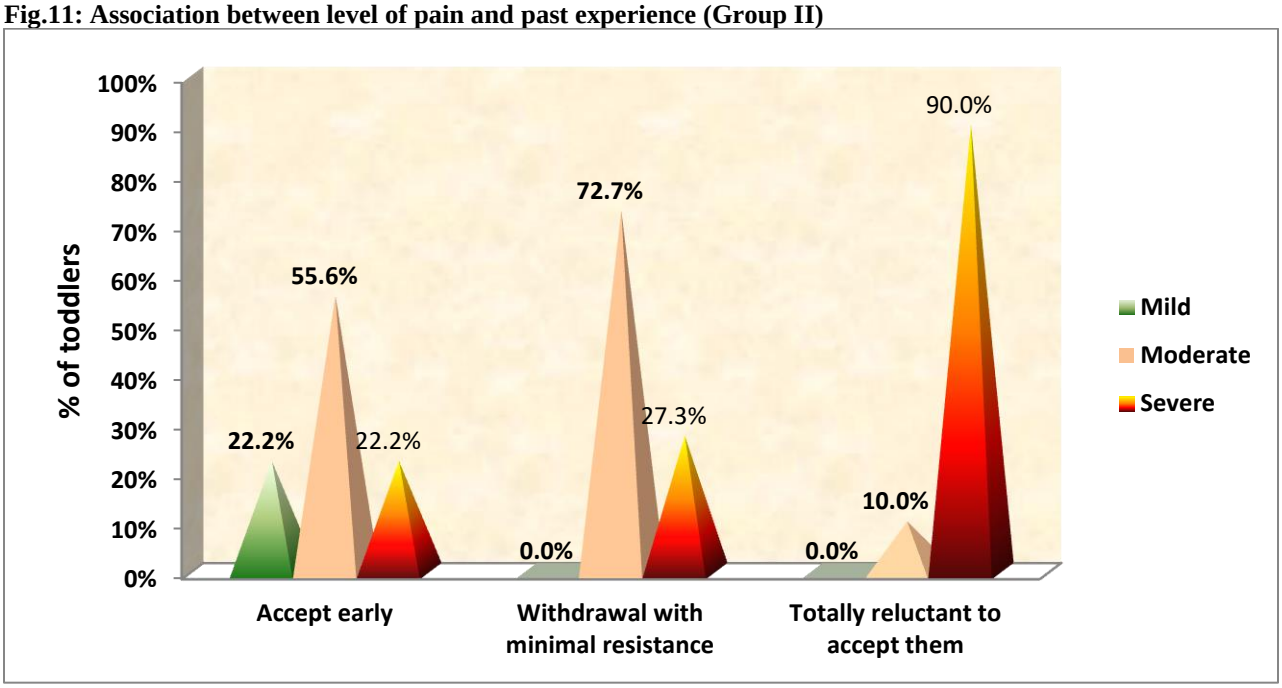


**Fig.11: Association between level of pain and past experience (Group II)**




**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 (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 clinic, 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 three randomly assigned groups but no pre-test was done.

The data collection tools used were demographic variables, modified behavioural assessment scale `to assess the level of pain in Group-I and Group-II. 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 first and second objective of the study was to determine the behavioral responses to pain among toddler who are given a cartoon video (Group I) as distraction and music distraction (Group II) while receiving Immunization.

Klassen **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 owive, boo-boo, there are some unique tools available to measure pain intensity in children.

**Conclusion**

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 behavioural 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 is has the property of analgesic effect for the toddlers 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 nurses we have to reduce the pain by using different distraction during painful procedures for the children as a procedural intervention.

**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

**REFRENCES**

1. Cohen L.L., (2009). Reducing infant immunization distress through distraction, health psychology, 21(2):207-211.
2. Carroll, D. & Seers, K. (2008). Relaxation for the relief of chronic pain. Journal of advanced nursing, 27(3):1.
3. Kleiber, Charmaine, Harper & Dennis (2008). Effects of distraction on children's pain and distress during medical procedures. Nursing research, 48(1): 44-49.
4. Klassen JA, Liang Y, Tjosvold L et al. (2009). Music for pain and anxiety in children undergoing medical procedures: a systematic review of randomized controlled trials. Ambul pediatrics. 8(2): 117-128.