Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/22562
DOI URL: http://dx.doi.org/10.21474/IJAR01/22562

*RESEARCH ARTICLE*

# THE EFFECT OF CARTOON-BASED DISTRACTION ON PAIN PERCEPTION DURING INTRAVENOUS INJECTION AMONG PRESCHOOL CHILDREN

**Blessy Kurian and Jojo George**

*Manuscript Info*

***Manuscript History***
Received: 04 November 2025
Final Accepted: 06 December 2025
Published: January 2026

*Abstract*

The health of the children is of vital importance in all societies. Preschool age is the age at which most of the children suffer with illness due to lack of immunity. Management of infection is mainly done by intravenous injection.For pediatric patients,medical procedures may cause pain and moreover it will be an unpleasantexperience. The reduction of such pain and distress becomes the responsibility of health care professionals to an extent as possible while maintaining patient safety by using various pharmacological and non-pharmacological interventions.From the reviews it is found that 90% of children got admitted were on IV antibiotics, every 6 to 8 hourlies, for which no distraction techniques were evident. So, there was a need to assess the effectiveness of Cartoon Show in clinical settings to relieve pain perception in preschool children who were undergoing painful procedures. Cartoon-based distraction is especially useful for preschool children during medical procedures. At this age, children respond strongly to visual and auditory stimuli, and cartoons naturally attract and hold their attention better than simple distractions such as toys.Familiarcartoon characters also help children feel more comfortable in an unfamiliar clinical environment. Seeing something they recognize creates a sense of safety and normalcy, which can reduce fear. In addition, the bright colours, movement, and engaging stories of cartoons can fully absorb the child's attention, helping to shift their focus away from medical equipment and the injection site.



## Introduction:-

The use of cartoon-based distraction during intravenous (IV) procedures aims to:
Reduce the child's perceived level of pain during needle insertion
Decrease anxiety, fear, and emotional distress during the procedure
Assist healthcare professionals by making cannulation quicker and smoother
Promote positive healthcare experiences, thereby reducing the risk of future medical fear or avoidance.

## Objectives: -

The present study is intended to evaluate the effect cartoon-based distraction on pain perception during intravenous injection among pre-school children.

**Corresponding Author:-** Blessy Kurian

**Hypothesis: -**
H1: There is significant difference between the pre and post test scores of pain perception during intravenous injection among pre-school children

## Methods:-

**Design and setting:-**
The research design selected for this study was one group pretest -posttestpre-experimental design.This study was conducted in PICU and pediatric ward of a tertiary care hospital .

**Sampling:-**
The sample size was calculated using nMaster sample size calculation software.The sample size was 65 preschool children(3-6 years of age) who were admitted and were undergoing intravenous injection in PICU and pediatric wards of tertiary care hospital at Kolencherry.
The researcher adapted non -probability convenience sampling technique to select the sample.

**Tools:-**
**Section-A:** Socio demographic and clinical profile
**Section-B:** FLACC pain scale (standardized tool)

**Data collection process:-**
**Preparatory phase:-**
Ethical clearance from IRB and permission were obtained. By using simple random sampling technique 65 children who were admitted in PICU and Pediatrics wards of a tertiary care hospital, Kolencherry and who were getting intravenousinjection and who fulfilled the inclusion criteria were selected.

**Data collection phase:-**
The purpose of the study was explained to the child's parents. Written consent was obtained from each child's mother/father, and demographic data was collected by using structured questionnaire by interview technique. Pretest was conducted by assessing the level of pain perception of preschool children before administration of cartoon during initial period up to 1ml of intravenous injection by using FLACC pain scale. Posttest pain perception score was assessed during the rest of the time of same injection when the cartoon wasplayed. Theposttest pain perception score was assessed for those who had pretest pain perception score more than one.

## Results:-

The data were collected and analyzed using SPSS software, on the basis of the objectives and hypothesis formulated for this study.

**Distribution of preschool children according to their socio demographic characteristics:-**

**Table 1: frequency and percentage distribution of preschool children according to sociodemographic variable.**

| Sl no | Variable | Frequency | Percentage |
|---|---|---|---|
| 1 | **Age of Child**<br>**3-4**<br>**4-5**<br>**5-6** | <br>26<br>**17**<br>**22** | <br>**40%**<br>**26.2%**<br>**33.8%** |

**Distribution of preschool children according to clinical variables:-**

**Table2: - Frequency and percentage distribution of preschool children according to clinical variables n=65**

| Clinical variables | f | % |
|---|---|---|
| History of previous hospitalization | | |

| | | |
|---|---|---|
| Yes | 40 | 61.5% |
| No | 25 | 38.5% |
| Number of previous hospitalizations | | |
| <3 | 35 | 53.8% |
| >3 | 30 | 46.2% |
| Previous history of IV injection | | |
| Yes | 39 | 60% |
| No | 26 | 40% |
| Reason for hospitalization | | |
| Fever | 37 | 56.9% |
| Pneumonia | 15 | 23.1% |
| LRTI | 13 | 20% |

**Table 2 shows that majority of subjects (61.5%) had history of previous hospitalization, in that (60%)of children had previous history of intravenous injection and majority of children(56.9%) admitted with fever.**

**Assessment of pain perception of preschool children during intravenous injection before cartoon show:-**

**Table 3**:**Frequency and percentage distribution of pain perception among preschool children according to level of pain perception during iv injection before and after cartoon show. n=65**

| **Category** | **Pretest** | | **Post test** | |
|---|---|---|---|---|
| | **f** | **%** | **f** | **%** |
| Relaxed | 0 | 0% | 22 | 33.8% |
| Mild | 17 | 26.2% | 13 | 20.0% |
| Moderate | 19 | 29.2% | 24 | 36.9% |
| Severe | 29 | 44.6% | 6 | 9.2% |
| Total | 65 | 100% | 65 | 100% |

The table 3 showed that in this study assessment of pain perception during iv injection by using FLACC pain scale before and after cartoon show revealedthat during the pretest none of the study subjects were relaxed score, whereas in the post test (33.8%) subjects were relaxed. During pretest (26.2%) subjects had mild pain perception but in posttest that decreased to (20%). Inpretest (29.2%) children had moderate pain perception but in posttest that increased to (36.9%). In pretest (44.6%) children had severe level of pain perception but in posttestonly (9.2%) subjects had severe pain perception. Totally 58 children had decreased their level of pain perception. Inthose 22 children were shifted to relaxed pain perception group.

**Assessment of mean pain perception score of preschool children during intravenous injection before and after cartoon show:-**

**Table 4: pain perception score of preschool children during intravenous injection before and after cartoon show**
**n=65**

| **Intensity of pain** | **Mean** | **Mean difference** | **SD** | **Mean rank** | | **T** | **z** | **P** |
|---|---|---|---|---|---|---|---|---|
| | | | | **Positive rank** | **Negative rank** | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Pre test | 6.35 | 3.35 | 3.18 | 0.0 | 29.50 | 0 | -6.665 | .001** |
| Post test | 3.000 | | 2.96 | | | | | |

**Wilcoxon signed rank test** **Level of significance p≤0.05***

The table 8 shows that mean pain perception score after cartoon show (3.000) was significantly lower than the mean pretestscore (6.35) of preschool children was calculated by using Wilcoxon signed rank test. The obtained z value of (-6.665) wassignificant (p<0.001**) This indicated that the difference between means (3.35) was a true difference and has not occurred by chance. So, the researcher accepted research hypotheses $H_1$. The difference between the mean pretest and posttest may be due to the effect of cartoon show.There was significant reduction in pain perception of p r e s c h o o l children aftercartoon show during administration of intravenous injection.

## Discussions:-

- Keeping the findings of the study as base pediatric wards nurses can assess the pain perception during every painful procedure like intravenous injection.
- Pediatric nurses can use distraction technique to avoid pain during painful procedure especially during intravenous injection.
- The nurses working in clinical area as well as community settings should follow the practice of cartoon distraction during Intravenous injection in order to reduce pain and distress related to Intravenous injection.
- Pain and distress assessment and its management through distraction technique should be made mandatory in all pediatric units.

## Conclusion:-

The findings of the study concluded that Cartoon show is effective in reducing pain perception of preschool children during intravenous injection and also level of pain perception of preschool children had an association with age and number of children in the family.

## References:-

1.Morton Spain assessment in children. Journal of Pediatric Anaesthesia.1997; 7(4):267-72.
2. Ball's, BandlerR. Caring for children. Journal of Pediatric Nursing. 1995;6(3):47.
3. Cohen LL. Behavioral approaches to anxiety and pain management for pediatric venous access. Journal of Pediatrics 2008; 122:134-9.