

A Study to Evaluate the Effectiveness of Cartoon Based Diversional Therapy on Pain during Intravenous Medication among Preschoolers in Selected Hospitals, Bangalore

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ABSTRACT

The study was to evaluate the effectiveness of cartoon based diversional therapy on pain during Intravenous medication among preschoolers. A Quasi-experimental study post-test only design was undertaken in a ward of Indira Gandhi Children's Hospital. 60 preschoolers, 3 to 6 years of age were selected by purposive sampling. The obtained data was analyzed using descriptive and inferential statistics and interpreted in terms of objectives.

OBJECTIVES: 1. to compare the effectiveness of cartoon based diversion therapy on pain among the preschoolers in experimental group and control group. 2. to find association between the level of pain among preschoolers during intravenous medication in experimental and control group with their selected demographic variables of experimental and control group.

INTERVENTIONS: Two groups were chosen for the study: the experimental and control group, in order to test the effect of cartoon diversion therapy in reducing pain during intravenous medication. In experimental group, animated cartoon was showed during intravenous medication and in control group; the procedure was performed according to usual routine. FLACC pain scale was used to assess the level of pain in both groups. The result of the study shows that, majority of the subjects 14 (46.7) in the experimental group had pain score between (1-3) mild discomfort and in control group 25 (83.3%) had score (7-10) severe discomfort. Therefore, the data subjected for statistical test reveals that the overall response in behavioural pain level between experimental and control groups found to significant at 5% level. The overall behavioural pain level among experimental group and control group, calculated 't' value came out 47.14, which is more than table value at 0.05 levels. It reveals that overall behavioural pain level among preschoolers is significant difference at 0.05 levels. When an association between demographic variables and behavioural pain level among experimental and control group is considered, there is statistically significant association found in socio demographic variables age ($\chi^2= 14.81^*$, $df=6$), gender ($\chi^2=7.55^*$, $df=2$), history of previous hospitalization ($\chi^2= 9.11^*$, $df=2$) and site of cannulization ($\chi^2=13.20^*$, $df=6$) in experimental group; gender ($\chi^2= 6.86^*$, $df=1$), type of family ($\chi^2=7.85^*$, $df=2$), and history of previous hospitalization ($\chi^2=4.00^*$, $df=1$) in control group; The findings concluded that cartoon based diversional therapy is an effective distraction strategy to reduce pain during Intravenous medication among preschoolers.

Keywords: Effectiveness, Cartoon Based Diversional Therapy, Pain, Intravenous Medication

INTRODUCTION

Children are our most precious assets and our investments for the future of

this planet. As the largest health care provider group in this part of the world, we are aware of our immense responsibility and

commitment to the improvement in the health and wellbeing of our children. The study of children should be an important part of every person's life. We cannot communicate with children if we do not understand them. Our lives have been greatly influenced by our childhood and our experiences. [1]

In hospital setting, children often experience unpredictable and severe procedure-related pain that can be associated with negative emotional and psychological implications. [1] Pain in children with acute and chronic diseases is a major public health problem that has been increasing over the last 20 years. [2]

Pain may occur as a result of procedure. The degree of pain perception varies from child to child; the preschool children still have limited ability to understand anything beyond the immediate event. They may see themselves as the cause of pain and fear mutilation, body invasion and loss of recently gained control. They may try to delay procedures until they feel some control over the situation. Participation in the procedure or making simple choices will assist the child to maintain some control. [3]

According to Whaley and Wong's, schooler children easily distracted even though they have different temperaments. In order to decrease the painful experience during procedures diversional activities in the form of play, game, radio, video-cassette recorder and television can be used. Cartoon movies are successful diversion for a child who is hospitalized. [4]

Distraction involves capturing the 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, requires few materials, and is something familiar to most individuals. It is particularly useful for younger children. Examples of distracters used with children are picture books, toys, talking to 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 and exciting things, or quiet and relaxing scenes. [5]

Painful procedures are very common among children during hospitalization. Many hospitalized children have to undergo painful procedures. The study of the paediatric pain experience has increased exponentially during the past 2 decades. Besides the negative experience of pain itself, growing evidence supports the occurrence of long-term negative effects from inadequately treated paediatric pain, especially in preschoolers. Significant short-term adverse outcome have also been demonstrated, including hypoxemia, altered metabolic stress responses, even mortality. [5]

For this purposes, the researcher want to do a study by using the cartoon based diversional therapy to the preschoolers during intravenous medications to see the effectiveness of cartoon based diversional therapy during intravenous medications by using FLACC Behavioural Pain Assessment Scale. Cartoon based diversional therapy is the most effective and is a simple, labor saving and easy to administer therapy that relieves pain in children during intravenous injection procedures as equally and effectively as common psychological interventions.

Cartoon distraction help nurses to solve the problem of lack of attention to pain relief, while saving nurses time and make it possible for them to pay more attention to their jobs. [6] The goal of the present treatment study was to develop a practical and cost effective means of reducing child pain during intravenous medication. The intervention consisted of distraction in the form of popular children's cartoon rhymes.

Objectives:

1. to compare the effectiveness of cartoon based diversion therapy on pain among the preschoolers in experimental group and control group.

2. to find association between the level of pain among preschoolers during intravenous medication in experimental and control group with their selected demographic variables of experimental and control group.

Bangalore. The population refers to 60 preschoolers having intravenous medication. Non probability purposive sampling technique was adopted in selecting samples.

FLACC Scale was used as a tool to assess the level of pain perception among children undergoing intravenous medication. This tool includes five categories of pain behaviour, including Facial expression, Leg movement, Activity, Cry, Consolability.^[7]

MATERIALS AND METHODS

Quasi-experimental control group post test only design was conducted in Indira Gandhi Institute of Child health at

GROUP	No. of Respondents	PRE TEST 0 ₁	INTERVENTION X	POST TEST 0 ₂
Experimental Group	30	—	Animated Cartoon	Level of pain by using FLACC Scale
Control Group	30	—	—	Level of pain by using FLACC Scale

FLACC pain scale

Table 1. Criteria for the FLACC Behavioural pain scale.

Behaviour	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting, back and forth, tense	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans or whimpers; occasional complaint	Crying steadily, screams, sobs, frequent complaints
Consolability	Content, relaxed	Reassured by touching, hugging or being talked to, distractible	Difficult to console or comfort

Instructions

Patients who are awake:

- Observe for at least 2-5 minutes.
- Observe legs and body uncovered.
- Reposition patient or observe activity; assess body for tenseness and tone.
- Initiate consoling interventions if needed.

Patients who are asleep:

- Observe for at least 5 minutes or longer.
- Observe body and legs uncovered.
- If possible reposition the patient.
- Touch the body and assess for tenseness and tone.
- Each category is scored on the 0-2 scale which results in a total score of 0-10.

Assessment of Behavioural Score:

Table 2 Assessment of Behavioural Score:

Score	Level
0	Relaxed and comfortable
1-3	Mild discomfort
4-6	Moderate pain
7-10	Severe discomfort/pain

RESULTS

Overall and aspect wise behavioural pain level among experimental and control group.

In table 3, shows in the post test in experimental group, majority of the subjects 14 (46.7%) had pain score 1-3 (mild discomfort), 9 (30.0%) had pain score 4-6 (moderate discomfort), and 7 (23.3%) had score 0 (comfortable). In control group, 25 (83.3%) had pain score 4-6 (severe discomfort) and 5 (16.7%) had score 4-6 (moderate discomfort).

In table 4, FACE criteria of behavioural pain level in experimental group 14 (46.7%) had score 0 (smile), 12 (40.0%) had score 1 (disinterested) and 4 (13.3%) had score in 2 (clenched jaw). In control group, 20 (66.7%) had score 2 (clenched jaw), 8 (26.7%) had score 1 (disinterested) and 2 (6.7%) had score 0 (smile).

Regarding the LEG criteria, in experimental group 14 (46.7%) had score 0 (relaxed) and 1 (tense) and 2 (6.6%) had score 2 (kicking). In control group, 20

(66.7%) had score 2 (kicking) and 10 (33.3%) had score 1 (tense).

In the context of ACTIVITY, behavioural pain level in experimental group, 18 (60.0%) had score 0 (normal position), and 12 (40.0%) had score 1 (squirming). In control group, 23 (76.7%) had score 2 (rigid), and 7 (23.3%) had score 1 (squirming).

In reference to CRY, in experimental group 18 (60.0%) had score in 0 (no cry), 11 (36.7%) had score 1 (whimpers) and 1

(3.3%) had score 2 (crying steadily) where as in control group, 21 (70.0%) had score 2 (crying steadily), 7 (23.3%) had score 1 (whimpers) and 2 (6.7%) had score 0 (No cry).

Regarding the CONSOLABILITY, in experimental group 15 (50%) had score in both 0 (relaxed) and 1 (hugging). In control group, 21 (70.0%) had score 2 (not comfort) and 9 (30.0%) had score 1 (hugging).

Table 3: Overall Behavioural Pain Levels according to post-level of pain among Experimental and Control Groups . N=60

S.n	Behavioural pain Level	Scores	Respondents			
			Experimental		Control	
			N	%	N	%
1	Comfortable	0	7	23.3	0	0.0
2	Mild Discomfort	1-3	14	46.7	0	0.0
3	Moderate Discomfort	4-6	9	30.0	5	16.7
4	Severe Discomfort	7-10	0	0.0	25	83.3
Total			30	100.0	30	100.0

Table 4: Overall aspect wise behavioural pain levels among Experimental and Control groups . N=60

Categories		Scores	Respondents			
			Experimental		Control	
			N	%	N	%
Face	Smile	0	14	46.7	2	6.7
	Disinterested	1	12	40.0	8	26.7
	Clenched jaw	2	4	13.3	20	66.7
Total			30	100.0	30	100.0
Leg	Relaxed	0	14	46.7	0	0.0
	Tense	1	14	46.7	10	33.3
	Kicking	2	2	6.6	20	66.7
Total			30	100.0	30	100.0
Activity	Normal position	0	18	60.0	0	0.0
	Squirming	1	12	40.0	7	23.3
	Rigid	2	0	0.0	23	76.7
Total			30	100.0	30	100.0
Cry	No cry	0	18	60.0	2	6.7
	Whimpers	1	11	36.7	7	23.3
	Crying steadily	2	1	3.3	21	70.0
Total			30	100.0	30	100.0
Consolability	Relaxed	0	15	50.0	0	0.0
	Hugging	1	15	50.0	9	30.0
	Not Comfort	2	0	0.0	21	70.0
Total			30	100.0	30	100.0

The study revealed that all of the preschoolers in the control group had severe pain during intravenous medication which indicates a significant reduction in pain with cartoon based diversional therapy during intravenous medication.

TABLE – 5: Comparison of Behavioural pain among Experimental and Control group. N=60

Group	Sample (n)	Max. Score	Post-test pain				't' Test
			Mean	SD	Mean (%)	SD (%)	
Experimental	30	10	2.60	1.96	26.0	19.6	2.79*
Control	30	10	3.17	2.56	31.7	25.6	

*Significant at 5% level,

(0.05, 2df, t = 1.96)

A null hypothesis (H_{01}), there was no significant difference in mean scores of level of pain among preschoolers during

intravenous medication between the experimental and control group.

Since, the score are ordinal and comparison between two groups. The level of significance was set at 0.05 levels. Student t-test was applied to compare the overall behavioural pain. Non- parametric test for unpaired "t" test.

In table 5, With regard to pain in experimental group, post test pain mean was 2.60, SD was 1.96. In control group post test, mean was 3.17, SD was 2.56. The "t" test value at $p < 0.05$ was 2.79. Hence, there was existed of statistical significance in the level of pain among preschoolers during intravenous medication after cartoon based diversional therapy between experimental and control group.

Inference:

The calculated value of student t-test came out to be 2.79, which was more than the table value at 0.05 levels i.e., 1.96. So that null hypothesis (H_{01}) is rejected and research hypothesis is accepted which says that there was a significant difference between in pain level among experimental and control group.

Association between demographic variables and behavioural pain level among Experimental group

To determine the association between demographic variables and behavioral pain level of Experimental group among preschoolers with their selected socio-demographic variables null hypothesis (H_{02}) was developed i.e., there is no significant association on level of pain among pre schoolers during intravenous medication with selected socio demographic variables of experimental group.

Inference:

From the table 6, it was evident that with regard to age, the obtained chi-square (χ^2) value of 14.81 was found to be more than the table value (12.59, 6df, $P < 0.05$) at 0.05 level of significance. Therefore, the null hypothesis is rejected and the research hypothesis is accepted. So, there was a significant association between demographic variables and behavioral pain level with their age.

When the socio-demographic variable gender is considered, the obtained chi-square (χ^2) value of 7.55 was found to be more than the table value (5.99, 2df, $P < 0.05$). Based on this, the null hypothesis is rejected and the research hypothesis is accepted, which says there was a significant association between demographic variables and behavioral pain level with their gender.

When the socio- demographic variable educational status is considered The obtained chi-square (χ^2) value of 5.74 was found to be less than the table value (12.59, 6df, $P > 0.05$) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. This says non-significant association between demographic variables and behavioral pain level with educational status.

With regard to religion, obtained chi-square (χ^2) value of 6.56 was found to be less than the table value (12.59, 6df, $P > 0.05$) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. It means that there was non-significant association between demographic variables and behavioral pain level with their religion.

With regard to type of family, the obtained chi-square (χ^2) value of 5.81 was found to be less than the table value (9.49, 4df, $P > 0.05$) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. It means that there was non-significant association between type of family and behavioral pain level.

When the family income per month is considered, the obtained chi-square (χ^2) value of 6.29 was found to be less than the table value (9.49, 4df, $P > 0.05$) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. This says non-significant association between demographic variables and behavioral pain level with family income per month.

With regard to history of previous hospitalization, the obtained chi-square (χ^2)

value of 9.11 was found to be more than the table value (5.99, 2df, P<0.05) at 0.05 level of significance. Based on this, the null hypothesis is rejected and the research hypothesis is accepted. It means that there was a significant association between history of previous hospitalization and behavioral pain level.

With regard to history of previous cannulization, the obtained chi-square (χ^2) value of 3.21 was found to be less than the table value (5.99, 2df, P>0.05) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. It means that there was non-significant association between history of previous cannulization and behavioral pain level.

With regard to care giver of child to hospital, the obtained chi-square (χ^2) value

of 6.12 was found to be less than the table value (9.49, 4df, P>0.05) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. It means that there was non-significant association between care giver of child to hospital and behavioral pain level.

With regard to site of cannula, the obtained chi-square (χ^2) value of 13.20 was found to be more than the table value (12.59, 6df, P<0.05) at 0.05 level of significance. Based on this, the null hypothesis is rejected and the research hypothesis is accepted. It means that there was a significant association between care giver of child to hospital and behavioral pain level.

Table 6: Association between Demographic variables and Behavioral Pain Level among Experimental Group. N=60

Demographic Variables	Category	Sample	Pain Level						χ^2 Value
			Comfortable		Mild Discomfort		Moderate Discomfort		
			N	%	N	%	N	%	
Age group (years)	3 years	9	0	0.0	5	55.6	4	44.4	14.81*
	4 years	14	4	28.6	9	64.3	1	7.1	
	5 years	3	2	66.7	0	0.0	1	33.3	
	6 years	4	1	25.0	0	0.0	3	75.0	
Gender	Male	11	0	0.0	5	45.5	6	54.5	7.55*
	Female	19	7	36.8	9	47.4	3	15.8	
Educational status	Play group	7	0	0.0	4	57.1	3	42.9	5.74 NS
	Nursery	12	4	33.3	5	41.7	3	25.0	
	LKG	10	3	30.0	5	50.0	2	20.0	
	UKG	1	0	0.0	0	0.0	1	100.0	
Religion	Hindu	8	2	25.0	4	50.0	2	25.0	6.56 NS
	Muslim	9	3	33.3	2	22.2	4	44.5	
	Christian	12	2	16.7	8	66.6	2	16.7	
	Others	1	0	0.0	0	0.0	1	100.0	
Type of family	Nuclear	12	3	25.0	4	33.3	5	41.7	5.81 NS
	Joint	14	4	28.6	6	42.9	4	28.5	
	Others	4	0	0.0	4	100	0	0.0	
Family income/month	Less than Rs.10,000	14	1	7.1	7	50.0	6	42.9	6.29 NS
	Rs.10,000-15,000	14	5	35.7	7	50.0	2	14.3	
	Rs.16,000-20,000	2	1	50.0	0	0.0	1	50.0	
History of previous hospitalization	Yes	10	5	50.0	5	50.0	0	0.0	9.11*
	No	20							
History of previous cannulization	Yes	6	2	33.3	4	66.7	0	0.0	3.21 NS
	No	24	5	20.8	10	41.7	9	37.5	
Care giver of child in hospital	Mother	11	3	27.2	4	36.4	4	36.4	6.12 NS
	Father	12	3	25.0	4	33.3	5	41.7	
	Grand parents	7	1	14.3	6	85.7	0	0.0	
Site of cannula	Radial	13	5	38.5	2	15.4	6	46.1	13.20*
	Brachial	5	0	0.0	5	100	0	0.0	
	Pedal	10	2	20.0	5	50.0	3	30.0	
	Others	2	0	0.0	2	100	0	0.0	
Combined		30	7	23.3	14	46.7	9	30.0	

* Significant at 5% Level,

NS: Non-Significant

Association between demographic variables and behavioural pain level among Control group

To determine the association between demographic variables and behavioral pain level of control group with their selected socio-demographic variables null hypothesis (H_{02}) was developed i.e., there is no significant association on behavioural pain level among pre schoolers during intravenous medication with selected socio demographic variables.

In table 7, the level of significance was set at 0.05 levels. In order to determine association between demographic variables and behavioral pain level with their selected demographic variables the chi square test (χ^2) was computed.

Inference:

From the table, it was evident that with regard to age, the obtained chi-square (χ^2) value of 0.92 was found to be less than the table value (7.82, 3df, $P>0.05$) at 0.05 level of significance. Therefore the null hypothesis is accepted and the research hypothesis is rejected. So there was non-significant association between demographic variables and behavioral pain level with their age.

When the socio-demographic variable gender is considered, the obtained chi-square (χ^2) value of 6.86 was found to be more than the table value (3.84, 1df, $P<0.05$) at 0.05 level of significance. Based on this, the null hypothesis is rejected and the research hypothesis is accepted, which says there was significant association between demographic variables and behavioral pain level with their gender.

When the socio- demographic variable educational status is considered The obtained chi-square (χ^2) value of 4.41 was found to be less than the table value (7.82, 6df, $P>0.05$) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. This says non-significant association between demographic variables and behavioral pain level with educational status.

With regard to religion, obtained chi-square (χ^2) value of 1.86 was found to be less than the table value (7.82, 3df, $P>0.05$) at 0.05 level of significance. Based on this the null hypothesis is accepted and the research hypothesis is rejected. It means that there was non-significant association between demographic variables and behavioral pain level with their religion.

With regard to type of family, the obtained chi-square (χ^2) value of 7.85 was found to be more than the table value (5.99, 2df, $P<0.05$) at 0.05 level of significance. Based on this, the null hypothesis is rejected and the research hypothesis is accepted. It means that there was a significant association between type of family and behavioral pain level.

When the family income per month is considered the obtained chi-square (χ^2) value of 0.91 was found to be less than the table value (5.99, 2df $P>0.05$) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. This says non-significant association between demographic variables and behavioral pain level with family income per month.

With regard to history of previous hospitalization, the obtained chi-square (χ^2) value of 4.00 was found to be more than the table value (3.84, 1df, $P<0.05$) at 0.05 level of significance. Based on this, the null hypothesis is rejected and the research hypothesis is accepted. It means that there was a significant association between history of previous hospitalization and behavioral pain level.

With regard to history of previous cannulization, the obtained chi-square (χ^2) value of 1.20 was found to be less than the table value (3.84, 1df, $P>0.05$) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. It means that there was non-significant association between history of previous cannulization and behavioral pain level.

With regard to care giver of child to hospital, the obtained chi-square (χ^2) value

of 0.72 was found to be less than the table value (5.99, 2df, P>0.05) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. It means that there was non-significant association between care giver of child to hospital and behavioral pain level.

With regard to site of cannula, the obtained chi-square (χ^2) value of 1.23 was found to be less than the table value (7.82, 3df, P>0.05) at 0.05 level of significance. Based on this, the null hypothesis is accepted and the research hypothesis is rejected. It means that there was non-significant association between care giver of child to hospital and behavioral pain level.

Table 7: Association between Demographic variables and Behavioral pain level among Control group. N=60

Demographic Variables	Category	Sample	Pain Level				χ^2 Value
			Moderate Discomfort		Severe Discomfort		
			N	%	N	%	
Age group (years)	3 years	15	3	20.0	12	80.0	0.92 NS
	4 years	9	1	11.1	8	88.9	
	5 years	2	0	0.0	2	100	
	6 years	4	1	25.0	3	75.0	
Gender	Male	14	5	35.7	9	64.3	6.86*
	Female	16	0	0.0	16	100	
Educational status	Play group	4	1	25.0	3	75.0	4.41 NS
	Nursery	14	1	7.1	13	92.9	
	LKG	8	1	12.5	7	87.5	
	UKG	4	2	50.0	2	50.0	
Religion	Hindu	4	1	25.0	3	75.0	1.86 NS
	Muslim	11	1	9.1	10	90.9	
	Christian	12	3	25.0	9	75.0	
	Others	3	0	0.0	3	100	
Type of family	Nuclear	11	0	0.0	11	100	7.85*
	Joint	13	5	38.5	8	61.5	
	Others	6	0	0.0	6	100	
Family income/month	Less than Rs.10,000	2	0	0.0	2	100	0.91 NS
	Rs.10,000-15,000	15	2	13.3	13	86.7	
	Rs.16,000-20,000	13	3	23.1	10	76.9	
History of previous hospitalization	Yes	12	0	0.0	12	100	4.00*
	No	18	5	27.8	13	72.2	
History of previous cannulization	Yes	5	0	0.0	5	100	1.20 NS
	No	25	5	20.0	20	80.0	
Care giver of child in hospital	Mother	10	1	10.0	9	90.0	0.72 NS
	Father	12	2	16.7	10	83.3	
	Grand parents	8	2	25.0	6	75.0	
Site of cannula	Radial	10	1	10.0	9	90.0	1.23 NS
	Brachial	12	2	16.7	10	83.3	
	Pedal	7	2	28.6	5	71.4	
	Others	1	0	0.0	1	100.0	
Combined		30	5	16.7	25	83.3	

* Significant at 5% Level,

NS: Non-Significant

DISCUSSION

The main aim of the study was to evaluate the effectiveness of cartoon based diversional therapy on pain during intravenous medication among preschoolers in hospital, Bangalore. Findings of this study revealed that cartoon based diversional therapy had significant effect on behavioural pain level

The present study revealed that all of the preschoolers in the control group had severe pain during intravenous medication which indicates a significant reduction in pain

with cartoon based diversional therapy during intravenous medication. Bellieni CV et al. surveyed among 69 children aged 7-12 years undergoing intravenous injection with the use of the Oucher Scale found that TV watching (i.e. watching an age appropriate cartoon on TV) was more effective than active distraction performed by their mothers. [8]

The findings of the study is supported by the study which was conducted by Jeena James et al. (2012) to assess the effectiveness of animated cartoons as a distraction to reduce

perception of pain and fear among children of 3-6 years age undergoing venipuncture at pediatric surgery ward. The study concluded that the animated cartoon was found significantly effective in reducing the perception of pain and fear among children undergoing venipuncture. The results revealed that there is significantly ($p < 0.001$) less pain related behavioural responses as well as decreased perception of fear with animated cartoons as intervention at pre, during and post venipuncture. It is an effective, easy, economical, non pharmacological intervention which needs limited training and can be used in clinical set.

CONCLUSION

Injections are the universal experience for children. Diversion therapy was found to be effective for reduction of pain of preschoolers during intravenous medication. Therefore it can be used as a routine with medication so that preschoolers' pain can be managed in an effective way. It is important for the health professionals, who administer medication, to take the challenge for relieving the pain by distracting the preschoolers

The present study was conducted to evaluate the effectiveness of cartoon based diversional therapy on pain during intravenous medication among preschoolers in selected hospital. The samples were allotted to two groups- experimental and control with 30 samples each. The samples in the experimental group received the intervention of animated cartoon during intravenous medication and samples in control group received no intervention.

The study concluded that all of the preschoolers in the control group had severe pain during intravenous medication which indicates a significant reduction in pain with cartoon based diversional therapy during intravenous medication. The cartoon based diversional therapy is an effective distraction strategy to reduce pain during intravenous medication among preschoolers.

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