



RESEARCH ARTICLE

EFFECTIVENESS OF DISTRACTION TECHNIQUE ON PAIN PERCEPTION DURING VENIPUNCTURE AMONG 1-5 YEARS OF CHILDREN AT AIIMS, RAIPUR C.G.

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ABSTRACT

Pain perception is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, are described in terms of such damage⁽¹⁾. The present study is aimed to assess the effectiveness distraction technique on pain perception during venipuncture among children in the age group of 1-5 years at AIIMS, Raipur, C.G. Methods: The research design used was Quasi-experimental non equivalent control group post test only design. The investigator selected 60 samples using purposive sampling technique and who are fulfilling the inclusion criteria were selected as the sample in experimental and control group. Measurement of pain experienced by the children 1-5 year was assessed with help of FLACC scale. Results: The findings shows that out of 30 sample in the experimental group majority 16(53.33%) had moderate pain, 12(40%) had severe pain and 2(6.66%) had mild pain and in control group majority 18(60%) had severe pain and 12(40%) had severe pain. In the experimental group, the post test level of mean pain score was 6.2 with S.D 0.18 and in the control group the post test mean score was 7.9 with S.D 0.25. The mean difference score was 1.7. The calculated 't' value of 4.5* 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 the control group. Conclusion: The study results concluded that the animated cartoon video as distraction technique was very responsive in reducing the venipuncture pain among the children in the age group of 1-5 years.

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INTRODUCTION

Today's society is the 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 advocate 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. The parents and health care workers have to be very much sensitive to the children feelings, and to their need. Unfortunately children face various crises in their life, especially during the early years of their life. Frequent illness and related hospitalization will put the child in to more crisis situation. The stressors of hospitalization include separation, loss of control, bodily injuries and the major one is pain⁽²⁾. According to international association for the study of pain, pain is always subjective experiences. Every child learns the application of the pain word through their early life experiences. The children individuality of pain response, understanding of the pain experience, and the importance of pain experiences, in early life are going to shape their response⁽³⁾.

Pain continues to be the most complex and challenging sensory emotion in the life of children. Pain is universal unpleasant sensation, also subjective in nature, sensory and emotional human experience. While assessing the pain, it has to reflect the child cognitive, emotional and physical capabilities. The acute pain in children may be due many reasons like immunization, venipuncture etc. so the pain intensity assessment measures focus on behavioral measures, physiologic measures, and measures of self reports⁽⁴⁾. A pain scale measures a children level of pain intensity and other features also. The commonly used behavioral pain measure is the FLACC. The FLACC pain assessment tool is one of the interval scale which going to measure: facial expression (F), legs(L), activity(A), cry (C), consolability(C)⁽⁴⁾. The distraction appears to offer a 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 is 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 various distraction techniques effectively reducing the distress significant with painful event.

The distraction technique like animated cartoon video, 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 task to avert the attention from venipuncture. Distraction techniques used with the children 1-5 years 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 health professionals.

MATERIALS AND METHODS

Objectives of the study

- To assess the pain perception of children in the age group 1-5 years during venipuncture in both experimental and control group.
- To determine the effectiveness of distraction technique on pain perception during venipuncture among the children age of 1-5 years.
- To determine the association between the level of pain and the selected demographic variables in experimental.

Hypothesis

H1- The mean post test score of pain in experimental group significantly lower than the post test score of pain in control group.

H2- There will be a significant association between the pains during venipuncture procedures among children 1-5 year with their selected demographic variables in experimental group.

Assumptions

- All the children 1-5 year may perceive severe pain during venipuncture.
- Animated cartoon videos may reduce the pain perception among the children 1-5 year during venipuncture.
- Reduction of pain perception may enhance the children (1-5 year) to cooperate with venipuncture procedure.

Variables

Independent: animated cartoon video which is used as distraction technique.

Dependent: pain during venipuncture procedure.

Extraneous - The extraneous variables are age, gender, family, parental support and previous experience of child.

Delimitations

This study is delimited to:

- One hospital (AIIMS RAIPUR)
- Children (1-5years) undergoing venipuncture.
- 60 samples (for 30 experimental and 30 control group).
- 4-5 week for data collection.

Research approach

- The present study used to determine the effect of animated cartoon video among children 1-5 years undergoing venipuncture, hence, a Quantitative approach is used in this study.

Research design

- The research design used for the study is Quasi experimental, non equivalent control group post test only design.

Research setting: The study was conducted in Pediatric Medical Surgical Ward and Trauma and Emergency Department at AIIMS, Raipur.

Population: The target population was comprised of whole children 1-5 years admitted and undergoing venipuncture In Pediatric Medical Surgical Ward and Trauma and Emergency in the AIIMS Raipur hospital, Chhattisgarh.

Sample size: The sample consists of 60 children aged 1-5 years distributed in the experimental and control group (30 in each group).

Inclusion criteria

- Parents who are willing to allow their children to participate in the study.
- Parents who can understand Hindi /Chhattisgarhi.
- 1-5 years children who are undergoing venipuncture.
- Both male and female children of age 1-5 years who are available at the time of data collection.

Exclusion criteria

- Children who are unconscious and comatose.
- Severe mentally challenged children.
- Immediate postoperative children 1-5 year who are on sedation and yet to get IV infusion.

Sampling technique: The investigator has selected the sample by purposive sampling technique for this study, as they have intentionally selected children in the age group of 1-5 years who were going to get venipuncture in medical and surgical ward of AIIMS, Raipur, CG.

Data collection technique: Participants were divided into two identical groups assigned into two groups, experimental and control groups. The experimental group will be 30 children and control group will be 30. Data will be collected using FLACC scale to assess children's pain level during venipuncture procedure. The nurse obligated for venipuncture catheterizing, type, size and responsible for catheter site of venipuncture and surrounding conditions should be similar in all patients. The pain will be distracted among children of the experimental group by using animated cartoons video like tom and jerry that are rapid engage and promote a child's focusing. The pain for each child from recruited sample was taken during and after the venipuncture procedure using the pain scale. Accordingly, the effectiveness of distraction between experimental and control groups will be compared and measured. The researchers observed each child at both experimental and control group, one time for each tool before, during and after venipuncture procedure.

Description of tool

Section A : Socio-demographic data

It consists of information related to the child, such age, gender, birth order, and type of family, previous experience and site of venipuncture.

Section B: FLACC scale. The FLACC scale (face, legs, activity, cry, consolability) developed by S Merkel in 1997. The face, legs, activity, cry, consolability or FLACC scale is a measurement used to assess pain for children between the age group of 2 months and 7 years or individual that is unable to communicate their pain. The scale is scored in range of 0-10 with 0 representing no pain. The scale has 5 criteria, which are each assigned a score of 0, 1 or 2⁽⁵⁾.

At the end of the pain assessment level will graded based on the following score:

- 0 - relaxed and comfortable.
- 1-3 – mild discomfort
- 4-6 – moderate pain

- 7-10 – severe pain

Data collection procedure: The researcher got permission from the IEC committee of AIIMS Raipur. A formal permission was obtained from the head of the department of pediatrics, AIIMS Raipur. Data were collected from the 60 children in the age group of 1-5 years who were getting venipuncture which were selected by purposive sampling technique. Rapport was maintained with the children (1-5years) and brief introduction about the study was given. Consent was obtained from each child’s parent. Pain score was assessed for both control and experimental group. The study were collected approximately 3-4 study subjects per day.

Plan for data analysis: The collected data was analyzed with descriptive and inferential statistics. Frequency and percentage distribution were used to analyze the demographic data. Paired ‘t’ test was used to find the effectiveness of reduction of pain in children in the age group of 1-5 years during venipuncture. Chi square test was used to find out the association of demographic variables and pain among children in age group 1-5 years⁽⁶⁾.

RESULTS AND DISCUSSION

The analysis and interpretation of collected data on the effectiveness of distraction technique on pain perception during venipuncture among 1-5 years children admitted in pediatric medical surgical ward , AIIMS Raipur C.G, the data being collected from 60 patients (30 experimental , 30 control). The data analysis is based on objectives set by the researchers. The data collected were organized, tabulated, analyzed and interpreted by statistical table.

Table 1. frequency percentage distribution of demographic variables in the experimental group and control group

Selected demographic Variables	Experimental group		Control group	
	F	%	F	%
1.Age (in years)				
a) Toddler (1-3 years)	14	46.66%	17	56.66%
b) Pre schooler (upto 5)	16	53.33%	13	43.33%
2. Gender				
a) Male	16	53.33%	11	36.66%
b) female	14	46.66%	19	63.33%
3. Order of birth				
a) first	15	50%	14	46.66%
b) second	11	36.66%	10	33.34%
c) third and above	4	13.34%	6	20%
4. Type of family				
a) Nuclear	10	33.34%	12	40%
b) joint	18	60%	15	50%
c) extended	2	6.66%	3	10%
5. previous experience of venipuncture				
a) yes	19	63.33%	10	33.33%
b) no	11	36.66%	20	66.66%
6. Site of venipuncture				
a) dorsum of hand	23	76.66%	22	73.33%
b) ankle	7	23.33%	8	26.66%

Section A

The above table shows with regard to the age in year in experimental group 14 (46.66%) were toddlers and 16(53.33%) were pre schoolers .In control group 17(56.66%) were in toddler, 13(43.33%) were in preschoolers (up to 5 years). With regard to gender in the experimental group 16(53.33%) were male and 14 (46.66%) were females were as in the control group, 11(36.66%) were males and 19(63.33%) were females. Regarding order of birth in the experimental group 15(50%) were in first order and 11(36.66%) were in the second order and 4(13.34%) were in third and above, where as in the control group 14(46.66%) were in first order, 10(33.33%) in second order, 6(20%) were in third and above. With regard to type of family in experimental group 10(33.34%) with nuclear family, 18(60%) with joint family, 2(6.66%) with extended family, where as in control group 12(40%)

with nuclear family, 15(50%) with joint family and 3(10%) with extended. With regard to previous experience of venipuncture in experimental group, 19(63.33%) were experience, 11(36.66%) were in no experience. Where as in the control group, 10(33.33%) were experience, 20(66.66%) were in no experience .With regard to the site of venipuncture in experimental group, 23(76.66%) were in dorsum of hand, 7(23.33%) were in ankle, whereas in control group 22(73.33%) were in dorsum of hand, 8(26.66%) were in ankle.

Section B

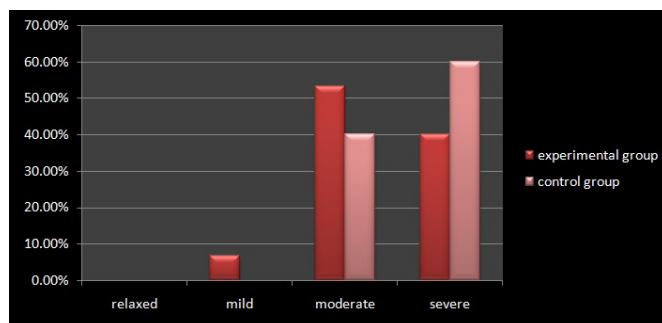


Figure 4.1. Percentage distribution of post test level of pain in the experimental and the control group

It shows that in experimental group majority 16(53.33%) had moderate pain, 12(40%) had severe pain and 2(6.66%) had mild pain and in control group majority 18(60%) had severe pain and 12(40%) had moderate pain.

Section C: Table 2 depicts that in the experimental group, the post test level of mean pain score was 6.2 with S.D 0.18 and in the control group the post test mean score was 7.9 with S.D 0.25. The mean difference score was ±1.7. The calculated ‘t’ value of 4.5 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 H1 is accepted.

Table 2. Comparison of post test level of pain between the experimental and the control group

Post test Level of pain	Mean score	S.D	Mean difference	df	t value
Experimental group	6.2	0.18			
Control group	7.9	0.25	1.7	29	4.5

Table ‘t’ value= 2.05

Section D: Table 3 shows association of post test level of pain in the experimental group with demographic variables.

Table 3. Association of post test level of pain in the experimental group with the demographic variables

S.no.	Demographic variables	Experimental group		
		df	X2	Table value
1	Age (in years)	3	1.039	7.82
2	Gender	3	3.454	7.82
3	Order of birth	6	0.65	12.59
4	Type of family	6	0.33	12.59
5	Previous experience of venipuncture	3	0.267	7.82
6	Site of venipuncture	3	1.1	7.82

There was significant association between post test levels of pain with selected demographic variables. Hence H2 is accepted.

CONCLUSION

The findings concluded that the children 1-5 years in the experimental group had reduction in the level of pain when compared with control

group. Hence showing animated cartoon video during venipuncture, has a positive effect on reducing pain for children in the age group 1-5 years. This conclusion was made based on the 't' test value which was found to be highly significant.

Conflict of interest: Nil

Funding Statement: Self

Ethical consideration: The approval was taken from the Institutional Ethical Committee, An informed written consent was obtained individually from parents of children in age group 1-5 years who participated in the study, and Confidentiality was assured to parents throughout the study.

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