

Effectiveness of animation distraction on pain response among preschool children during venipuncture in selected hospitals at Bagalkot

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Abstract: Background: Today's society is complex and ever changing children need to grow and learn many things. Children are vulnerable to different forms of illness, hospitalization is one of the stressful event in child life . Venepuncture is an invasive procedure in hospital settings. Which may produce pain, anxiety, and discomfort in children. The animation distraction is one of the effective method which helps to reduce the pain stimuli. Objectives: To assess the pain perceived by the pre school children during venipuncture in both experimental and control group. Methods : A Quasi experimental study with sample of considered of 60 pre school children (30 sample in the control group ,30 sample in experimental group) selected by inclusion or exclusion of samples from the target population. FLACC SCALE was used to assess the pain level. The data was entered in the MS excel sheet and transferred to SPSS 18 for analysis . Result : The mean value of experimental group of pain score during venipuncture 2.8 ± 1.03 and control group pain score during venipuncture 7.9 ± 0.71 . The mean pain score between the control group and experimental group $5.1, P < 0.001$. Conclusion : Mean score of control group is greater than mean score of experimental group. This study found that animation distraction is one of the effective nursing intervention in reducing the pain level among pre school children during venipuncture .

Keywords: Animation ,Distraction ,Effectiveness , Pain , Preschool children.

INTRODUCTION

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. In India, 39% (472 million) of the country's population are contributed by children less than 18 years. Children are vulnerable to different forms of illness during childhood.¹

Perception of pain in paediatrics is complex and entails physiological, psychological, behavioral, and developmental factors. However, in spite of its frequency, pain in infants, children and adolescents is often underestimated and under treated.²

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 . Venipuncture is the most typical procedure in any illness and generates a painful experience. Most children are frightened before and during venipuncture with the needle's sight; hence, they cry and refuse to cooperate.³ Repeated venipuncture is an especially stressful and painful experience for children.⁵

Distraction techniques are often provided by service providers, parents or child life specialists and help in pain alleviation during invasive procedures. Perception of pain in Paediatrics is complex, and entails physiological, psychological, behavioral and developmental factors. ⁴ Animation or cartoon distraction is cost-effective and simple audio-visual distractive management for pain. This method can relieve the child's stress as well as the parents and nurses.⁶

Distraction is one of the pain control techniques utilizing five senses in order to focus the patient's attention on other stimuli and hence control pain in a better way. Distractions can be active or passive. The distraction appears to offer significant promise in the control of pain. Conscious attention is necessary to experience pain.⁷

Despite best-practice guidelines and standards 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 Paediatric pain management.⁸

Methods : A Quasi experimental study with sample of considered of 60 pre school children , 30 sample in the control group, 30 sample in experimental group selected by inclusion or exclusion of samples from the target population. FLACC SCALE was used to assess the pain level. The data was entered in the MS excel sheet and transferred to SPSS 18 for analysis .

Study participants: The study participants were preschool children of Bagalkot, between 3-6 years of age who are admitted in the HSK hospital. The sampling criteria included the preschool children admitted in the HSK hospital who are available and willing to participate and whose parents give consent for participation of their children.

Setting of the study: The study was conducted in the paediatric wards of HSK hospital. preschool children admitted in the selected hospital of Bagalkot during the study period from them only those who qualified the inclusion criteria will be included in analysis . The sample for the study considered of 60,30 samples in the control group and 30 samples in the experimental group .

Data collection instrument : The data regarding assessment of severity of pain during venipuncture among pre school children was assessed by FLACC pain scale(face, legs,activity,cry, consolability).It is developed by Sandra Merkel in the year of 1997. It includes that severity of pain 0 - Relaxed and Comfortable,1 - 3 - Mild discomfort,4 - 6 - Moderate pain,7 -10 - Severe pain.

Validity ,reliability and trancelation of data collection instruments.

The content validity of the tool was ascertained by the five experts in the field of nursing and medical. The experts gave their opinions and suggestions for further modification of items to improve the clarity and content of the question. The formal tool was prepared as per the suggestion and advice given by experts. Standardised tool such as FLACC (S Merkel) Pain Rating Scale was used . The reliability was established by administering the tool for 6 students. The calculated r value is 0.99 suggesting the tool was reliable for data collection.

Ethical clearance :Ethical clearance certificate was obtained from institutional ethical clearance committee,B.V.V.S Sajjalashree Institute of Nursing Sciences ,Bagalkot written consent of participation was obtained from participants and their parents before data collection.

Statistical analysis: The data was analysed using SPSS version 25.The obtained data was entered in MS excel sheet. The data was edited for accuracy and completeness. The categorical response were coded with numerical codes. The data was presented with frequency and percentage distribution tables and diagrams. The description of severity of pain was presented with arithmetic mean ,range and standard deviation .

Data collection procedure: The data was collected from preschool children who were admitted in HSK hospital Bagalkot. Prior permissions were taken from the Nursing superintendent of selected hospitals . After taking the formal administrative approval from concerned authority children undergoing venipuncture procedure will be screened for eligibility to participate in the study as per sampling criteria. Eligible subjects are invited to participate in the study. Informed verbal consent will be obtained from subjects. Data regarding socio-demographic, level of pain will be collect.

Results: . Represent,during venipuncture in control group 30(100%) had severe level of pain , no one of them had mild and moderate level of pain. In experimental group 26 (87%) had mild level of pain , 4 (13%) had moderate level of pain, no one had severe level of pain The animation distraction made a significant difference in the mean pain score between the experimental and control groups (5.1, $p < 0.001$). The calculated t-value $t(58) = 22.3$ $p < 0.001$ was greater than the table value $t(58) = 2.02$ at 0.05 level of significance

Table-1.1 Frequency and percentage distribution of children according to the level of pain in control group

n=60

Sl. No	Level of pain	Control group n=30	
		Frequency(f)	Percentage(%)
1	Mild pain	0	0
2	Moderate pain	0	0
3	Severe pain	30	100

Table-1.2 Frequency and percentage distribution of children according to the level of pain in experimental group

n=60

S.No	Level of pain	Experimental group n=30	
		Frequency(f)	Percentage(%)
1	Mild pain	26	87
2	Moderate pain	04	13
3	Severe pain	30	100

Table 2.1: Effectiveness of animation distraction on pain response during venepuncture procedure between the control and experimental group.

Group	Mean ± SD	Std error	Mean difference	t value	P value
Experimental	2.8 ± 1.03	0.13	5.1	22.3	0.00*
Control	7.9 ± 0.71	0.19			

DISCUSSION

The study findings reveals that during venipuncture in control group is 30(100%) preschool children had severe level of pain , no one of them had mild and moderate level of pain. In experimental group is 26 (87%) preschool children had mild level of pain , 4 (13%) preschool children had moderate level of pain, no one had severe level of pain.

The pain level of both groups were compared and found that 7.9+/_ 0.71 (SD) in experimental group and 2.8+/- 1.03(SD) in control group. The mean pain score between the experimental and control groups (5.1, p<0.001). The calculated t-value t(58)=22.3 p<0.001 was greater than the table value t(58)=2.00 at 0.05 level of significance

The similar study undertaken by Baljith Kaur et al on children of 4 to 12 years age shows that there is significantly (p <0.005) less pain and distress in children with cartoon distraction at initiation, The findings also revealed that there is no influence of gender on perception of pain. 9

The similar study by Divya1, Deepa Danieal2 shows that experimental group’s mean post-test pain score (3.4±1.68) was lower than the control group (8.2±1.53) with p<0.001. Three-fourths of the control group (75%) had severe pain, whereas in the experimental group, none of the samples experienced severe pain, and 55% of the

samples had moderate pain. Notably, 5% of the samples from the experimental group reported no pain during venepuncture. 10

In similar study Measurement of pain in toddler was assessed with the help of FLACC scale. 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. Hence the cartoon animation show was responsive in reducing the venipuncture pain among toddlers.11

Present study by *Baby S.S. Sharmila Jansi Rani*, Clement I revealed that there was a significantly high reduction in level of pain among experimental group with mean pain score was 5.45 1.7(SD) where as mean pain score among control group was 7.91.4 (SD) with mean difference of 2.45. The 't' value for assessing the effectiveness of cartoon is 4.814, which is significance at the level of $P < 0.05$. In this study there is an association was found between the level of pain and selected demographic variable such as mother's occupation and no association with age, sex, orders of birth.12

An experimental study among 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 performed 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.13

Lobo MR and Umarani J where it showed that the majority (73%) from the group received cartoon distraction during venepuncture experienced only moderate pain, the result revealed that there is significantly ($p < 0.05$) less pain felt by who viewed cartoon during venepuncture than those children who did not receive it. 14

The study results also consistent with another study conducted by Shaker NZ and Taha AA revealed that the highest percentage of (55%) samples from the experimental group had only mild discomfort whereas, in the control group, the highest percentage of children (56.7%) had severe pain and discomfort [15].

CONCLUSION

Illness and hospitalisation are inevitable in any child's life. Pain is a vital element of these two scenarios. Effective non-pharmacological measures can result in a happy stay during hospitalisation for a child who experienced pain; In-turn will help to provide high quality care. The use of an animation distraction intervention was effective in reducing pain responses in preschool-aged children during their venipuncture. Because it is an intervention which requires minimum effort and time, as well as being cost-effective and convenient, an animation distraction may be an excellent nursing intervention for use in clinical settings. The findings provide a strong foundation to implement these nonpharmacological therapies as a routine in the care of children during a painful procedure.

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