

Effect of Local Cold Application on Venipuncture Site in Reducing Pain among School Age Children

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ABSTRACT

Background: Hospitalized children undergo numerous painful medical procedures in their life. Venipuncture is one of the most feared and acute painful experience in children. Non-pharmacological pain intervention is a prophylactic and complementary approach to reduce pain. Cold treatment which is a simple and cheap treatment method has an important place in non-drug therapies for pain management. The study was undertaken to assess the effect of local cold application on venipuncture site in reducing pain among school children in selected hospitals at Kannur District.

The objectives of the study were

- Assess the pain score among school age children during venipuncture.
- Determine the effectiveness of local cold application on pain score during venipuncture among school age children.
- Determine the association between pain score and selected socio personal variables (age, sex, previous exposure to venipuncture).

Methods: An evaluative approach with post-test only control group design was used. The study was conducted at Raslock Hospital and JJS Kannur Medical Centre in Kannur District. The data was collected for a period of 6 week. The subjects comprised of 60 children aged 6-12 years. The subjects was selected by using purposive sampling technique, and assigned into two groups (experimental - Group I and control -Group II). Data was collected by using socio personal variables and Wong-Baker FACES Pain Rating Scale.

Results: The findings of the study showed that experimental group (Group I) (2.8 ± 1.44 V/S 8.26 ± 1.36) had significantly less pain response than that of control group (Group II). The calculated 't' value 15.107 was greater than the table value ($t_{58} = 2.660$, $P < 0.01$). There was no association between pain score and selected socio personal variables such us age, sex, previous exposure to venipuncture. The findings of the study support the effect of local cold application on venipuncture site in reducing pain among school age children and it can be used in paediatric wards to prevent physiological and psychological effects.

Key Words: Effect; Local cold application; Pain; School age children; Venipuncture.

INTRODUCTION

Children are major consumers of health care and are the future citizen of the country. They are not only in large number but vulnerable to various health problems and considered as a special risk group. Good health of these precious members of the society should be ensured as prime

importance in all countries. (Parul Datta).^[1] Children are a vulnerable segment of the population, and are entitled to special consideration in all respects, including health care.^[2] Inadequate prevention and relief of children's pain is still widespread. This failure reflects shortcomings in recognizing children's ability to perceive,

respond, and be harmed by pain exaggerated fears of the side effects of analgesics and anesthetics in children, and lack of resources to provide training for clinicians and treatments for children. (The United Nations Convention on Rights of the Child). [3]

Normally hospitalized child will come across many painful procedures during their childhood, especially procedures like injections, blood sampling etc. These procedures are painful and moreover create a fearful memory in child's mind and make the child afraid of future hospitalization. (Jennifer Stinson). [4] Pain is one of the most frequent complaints presented in paediatric emergency settings. Pain is a personal, subjective experience. Thus self-report is considered an integral part of pain assessment for children 3 years and above. The Faces Pain Scale – revised is recommended for measuring acute procedural pain in children between the ages of 4 and 12 years. Health care professionals depend more comfortably on self reports from school-aged children. Although children at this age understand pain, their use of language to report it is different from adults (Wong and Baker). [2] Venipuncture is one of the most feared and acute painful experience in children. [5]

MATERIALS AND METHODS

The research approach used for this study was evaluative approach. The research design adopted for the study was quasi experimental post-test only control group design. The study population comprised of children in the age group of 6-12 years who were undergoing venipuncture. Subjects consisted of 60 children 30 each in Experimental (Group I) and 30 in the control group (Group II) aged 6 -12 years who were undergoing venipuncture. The study was conducted in the paediatric OPD of Raslock Hospital and JJS Kannur Medical Centre, at Kannur District. The subjects was selected by using purposive sampling technique and assigned to Group I and Group II. The investigator selected

standardized tool Wong - Baker FACES Pain Rating Scale for assessing the pain score among children undergoing venipuncture. Researcher did not modify the Wong- Baker FACES Pain Rating Scale for the study. The permission for tool was obtained from Wong- Baker FACES Pain Rating Scale foundation by sending a requisition letter.

Wong- Baker FACES Pain Rating Scale foundation granted the permission to use their scale.

The tools used for the data collection in this study were:

Section 1: Socio personal variables

Section 2: Wong - Baker FACES Pain Rating Scale

Section 1: The socio personal variables consisted of 3 items like age, sex, child's previous exposure to venipuncture.

Section 2: Wong – Baker FACES Pain Rating Scale

Tool was used by the investigator to assess the children's pain score during venipuncture. This includes 6 parameters namely no hurt, hurts little bit, hurts little more, hurts even more, hurts whole lot, and hurts worst. The maximum score was 10 and minimum was 0.

A formal written permission was obtained from the administrator of the hospital and nursing superintendent of the Raslock Hospital and JJS Kannur Medical Centre. The investigator explained the purpose of study and obtained written consent from the parents of the subjects who participated in the study. Purposive sampling technique was used for allotment. Children were identified as per inclusion criteria. The parents were interviewed on the basis of sociopersonal variables. Investigator explained to the children regarding pain score by showing Wong-Baker FACES Pain Rating Scale and asked to report the pain score. Technique used for this study is Ice cube covered with gauze is applied 3 minutes before venipuncture and conventional standard practice was given in the experimental group(group 1) and the children in the control group (Group II)

underwent venipuncture without any cold application and conventional standard practice only were maintained. Data were analyzed using descriptive and inferential statistics.

RESULTS

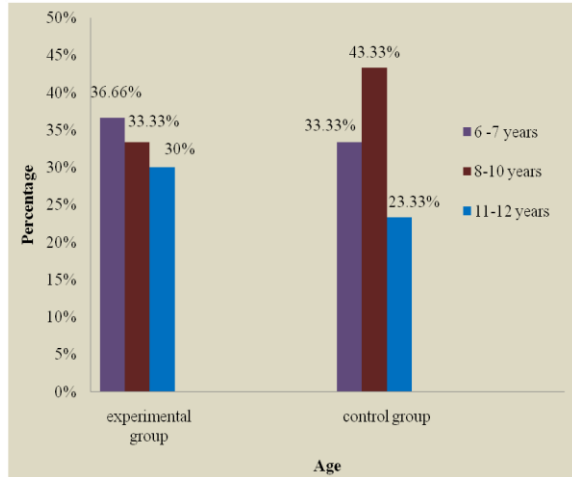


Figure 1 : Bar diagram showing percentage distribution of subjects according to age

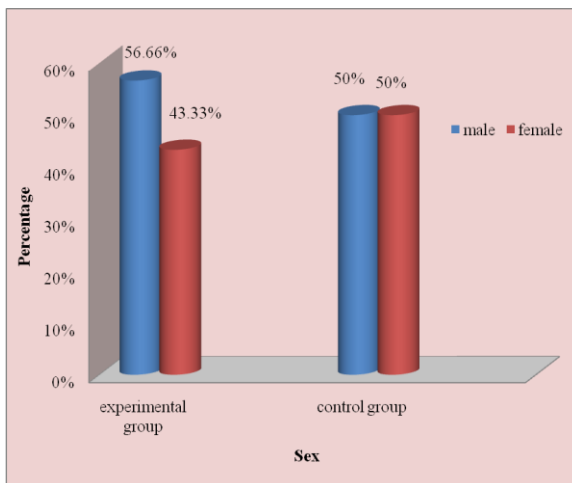


Figure 2: Bar diagram showing Percentage distribution of subjects according to sex

The data presented in table 1 highlights that 10% children demonstrated no hurt and (43.33%) of children demonstrated hurts little bit pain (43.3%) children demonstrated hurts little more pain and 3.33% children were having hurts even more pain when cold was applied before venipuncture. In control group 16.66% of children demonstrated hurts even more pain and majority of children (53.33) demonstrated

hurts whole lot pain and 30% of children demonstrated hurts worst pain when there was no cold application technique was used.

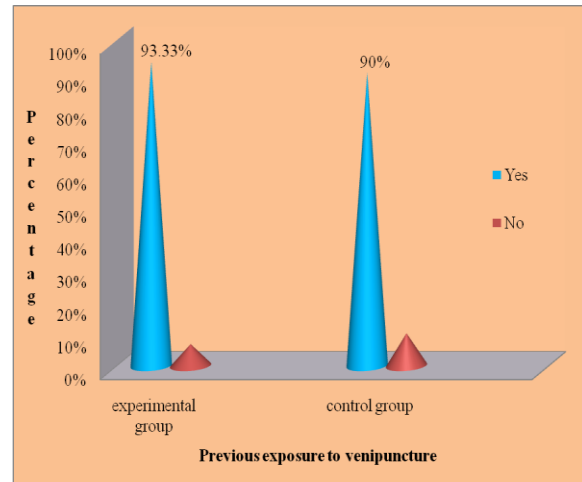


Figure 3: Bar diagram showing percentage distribution of the subjects according to child's previous exposure to venipuncture

Table 1. Frequency and percentage distribution of the subject in experimental and control group according to the pain score (n₁=30 n₂=30)

Pain score	Range of Score	Experimental		Control	
		F	%	F	%
No hurt	0	3	10	0	0
Hurts little bit	2	13	43.33	0	0
Hurts little more	4	13	43.33	0	0
Hurts even more	6	1	3.33	5	16.66
Hurts whole lot	8	0	0	16	53.33
Hurts worst	10	0	0	9	30

Table 2. Comparison of pain response score between experimental (Group I) and control (Group II). (n₁=30 n₂=30)

Group	Mean	Standard Deviation	Df	Calculated Table value 't' value
Group I	2.8	1.44	58	15.11 2.66**
Group II	8.26	1.36		

df(58)=2.66, P<0.01, **significant

The data presented in Table 2 showed that there was significant difference in the pain score between experimental (Group I) and control group. The table value of df 58 at 0.01 level (2.66) is lesser than obtained 't' value (15.11). It proved that local cold application is an effective method to reduce pain among children during venipuncture.

Table 3. Chi-square test showing association between pain score and selected socio-personal variables- experimental (Group I) and control (Group II). (n₁=30 n₂= 30)

Sl. No	Variables	Group I χ^2	Df	Table Value	Inference	Group II χ^2	Df	Table Value	Inference
1.	Age	4.06	10	18.31	NS	4.89	10	18.31	NS
2.	Sex	3.48	5	11.07	NS	1.45	5	11.07	NS
3.	Previous exposure to venipuncture	2.80	5	11.07	NS	0.82	5	11.07	NS

Association between age and pain score

Calculated χ^2 value of experimental group is 4.06 and control group is 4.89 with table value of 10df is 18.31. The calculated χ^2 value is less than the table value at 0.05 level of significance. It showed that there was no significant association between the age in years and pain score of the children in both experimental group and control group.

Association between sex and pain score

Calculated χ^2 value of experimental group is 3.48 and control group is 1.45 with table value of 5df 11.07. The calculated χ^2 value is less than the table value at 0.05 level of significance. It showed that there was no significant association between the sex and of pain score of the children in both experimental group and control group.

Association between child previous exposure to venipuncture and pain score

The calculated χ^2 value of experimental group is 2.80, and control group is 0.82 with table value of 5df is 11.07. The calculated χ^2 value is less than the table value at 0.05 level of significance. It showed that there was no significant association between the child's previous exposure to venipuncture and pain score in children in the experimental group and control group.

DISCUSSION

Present study has been concluded that there was significant difference in the pain score after local cold application hence the research hypothesis has been retained. Analysis of the present study showed that mean score of pain responses to pain of Group II control group (8.26±1.36) was greater than that of Group I experimental group (2.8 ±1.44). The table value of df 58 at 0.01 level (2.66) is lesser than obtained 't' value (15.11). Hence it is concluded that local cold application is an effective in

reducing venipuncture pain among school age children. Study findings can also be compared with the quasi experimental study was conducted to assess the effect of ice pack application at the site prior to venipuncture on intensity of pain among 100 children in India Chandigarh (2013). [6] Result of the present study showed that there was no association between age, sex and pain score. This study findings can also be compared with a prospective, observational study was conducted to determine the validation of the Wong-Baker FACES Pain Rating Scale in Pediatric emergency department among 120 children ages 8-17 years (2010). Result of the study showed that there was no association between age, sex and pain score. [7]

CONCLUSION

This study concludes that local cold application is an effective technique in reducing the pain among school age children during venipuncture. It is important for the nurses, who are doing venipuncture, to reduce the painful response among children as much as possible. Nurses must meet the challenges in relieving the pain by administering local cold application prior to venipuncture, and prevent short term and long term complications.

REFERENCES

1. Datta P. Pediatric Nursing. 1st edition, New Delhi, India: Jaypee Brothers Medical Publisher; 2009
2. Wong DL, Hockenberry MJ. Text book of infants and children. 7th ed. St. Louis: Elsevier; 2003.993-995
3. Walker S. Pain in children: recent advances and ongoing challenges. British journal of anaesthesia. 2008; 101(1):101-110.

4. UK Essays A. Proposal for the Diagnosis and Treatment of Pain [Internet]. Ukessays.com. 2014 [30 March 2014]. Available from: <http://www.ukessays.com/essays/nursing/proposal-for-the-diagnosis-and-treatment-of-pain-nursing-essay.php>
5. Cummings EA et al. Prevalence and source of pain in pediatric inpatients. - PubMed - NCBI [Internet]. Ncbi.nlm.nih.gov. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/9251995>
6. Kiran N, Kaur S, Marwaha R. Effect of ice pack application at the site prior to venipuncture on intensity of pain among children [Internet]. 4th ed. Nursing and Midwifery Research journal; 2013 Available from: <http://medind.nic.in/nad/t13/i4/nadt13i4p160.pdf>
7. Garra G, Singer A, Taira B, Chohan J, Cardoz H, Chisena E et al. Validation of the Wong-Baker FACES Pain Rating Scale in Pediatric Emergency Department Patients. Academic Emergency Medicine. 2010;17(1):50--54.

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