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"EFFECTIVENESS OF ICE APPLICATION PRIOR TO INTRAMUSCULAR INJECTION, IN REDUCTION OF PAIN AMONG CHILDREN IN SELECTED HOSPITAL, HASSAN."

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ABSTRACT

BACKGROUND: I*ntramuscular is the common route for administration of immunization and is a painful procedure which requires effective pain management. Immunization is the safest and most effective way to prevent serious illness and death, intramuscular injection. The study was conducted in Pediatric Outpatient department in SSM and MANGALA Hospital, at Hassan. To reduce the pain among children.* ***METHODOLOGY:*** *The chosen research methodology for this study was a Quantitative approach, the research design employed was a true experimental research design was used for this study. A sample size of 60 children and age is 3-12 yrs, who meet the inclusion criteria is chosen for this study, in that 30 will be taken for control group and 30 will be taken for experimental group. Sampling involves gathering information from selected individual MODIFIED FLACC (Face, Leg Movement, Activity, Cry, and Consolobility) pain scale was used its Developed by Sandra Merkel, MS, RN, Terrivoeoel-Lewis, MS, RN, and Shobha Malviya, MD was used to assess the pain level. The participants of the present study will be selected by non-probability Purposive sampling technique in which the children who satisfies the inclusion criteria were selected and categorized as 'A' and 'B'. The children who are categorized 'A' was assigned to control group and categorized 'B' to experimental group. In the experimental group, the child was placed in a comfortable position on the bed [Supine position] and a small ice pack is made with ice cube and terry wash cloth. The site was identified and ice pack was applied over the area for 60 seconds. Once an ice cube application is over, the intramuscular injection was administered at intramuscular site. Conducted on 2022 in Pediatric Outpatient department in SSM and MANGALA Hospital* ***RESULTS****: The overall study represents that cold application is effective on reducing the pain obtained 't' value is 4.35 significant at 0.05 level. This concludes that experimental group experienced less pain than control group. Hence, the ice application prior to intramuscular immunization had effect on reducing the pain during intramuscular injection.* ***CONCLUSION:*** *The cold application can be used as an effective technique on reduce pain during IM injection among children receiving intramuscular injection. It is a simple effective independent nursing intervention to enhance children comfort and safety with minimal or no risk to children.*

Key words: Pain, Intramuscular injection, Cold application, Immunization

INTRODUCTION

‘’Pain is a more terrible lord of mankind than even death itself.’’

[Dr. Albert Schweitzer]

Pain is highly unpleasant and very personal sensation. It is not just a physical feeling. It effects on one’s attitude and personality. The world is full of unexplained pain, has many possible causes. All persons either Infants or adults have pain during their life time from different reasons, it may be due to any injury or any infection. For the treatment of said causes they needs medical attention but always there is a fear of needle prick pain during intramuscular injection in their mind that leads to them to delay seek help. This is the main cause that people avoid to go nearby health care centers and hospital. But now days so many pharmacologic and non-pharmacologic therapies are in practice in reducing intramuscular injection pain. One of them is local cold application, it is a simple procedure to reduce pain due to intramuscular injection.[1]

The American pain society created the phrase "pain: as the fifth vital signs" to increase awareness of pain assessment among the health care professionals especially nurses. The rationale is that if pain were assessed the seriousness as other vital signs, it would more likely to be treated perfectly (2).The pain response is individual (subjective) and is learned through social learning and experience, moreover the experience of pain is quite complex. Silkman (2008) described the multidimensional complexity of pain in physiological, sensory, behavioral, socio-cultural, cognitive and affective. The physiological dimension includes; the patient perception of pain and body’s reaction to the stimulus. Then sensory dimension concerns the quality of the pain and how severe the pain is perceived to be. This dimension includes: patient perception of pain’s location, intensity and quality. The behavioral dimension refers to the verbal and nonverbal behavioral that the patient response to the pain.[2]

Evaluative quasi experimental posttest only control group design was used. Purposive sampling technique was used to select 90 sample in pediatric Nursing, Laxmi Memorial College of Nursing. , JTowers, Balmatta, Mangalore, Karnataka on June 2015. The data was obtained by baseline proforma and FLACC scale. The study showed that majority of children receiving manual pressure showed mild behavioral response (83.3%) to pain, ice application showed moderate response (73.3%) and routine care showed severe response (96.7%) to pain. The study found that there is significant difference between the behavioral response to pain among children with manual pressure at LI4 area (t58= 27.31) and ice application (t58=13.13).The study concluded that manual pressure is effective than ice application. Study also found that there is significant association between the educational status of mothers, reaction of children towards health personnel in experimental group I and child’s past experience to injection in control group and in experimental group I with behavioral response to pain at $p < 0.05$ level of significance. The provision of ice application. Ice application therapy helps to reduction of pain among the children.[3]

MATERIALS AND METHODS

Methods

To accomplish the objectives of the study, an experimental approach was used and A true experimental research design was used for this study. True experimental research is a powerful method available for testing the hypothesis of cause-and-effect relationship between variables. It has the characteristic feature such as manipulation, control and randomization. Randomization was carried out to select 60 samples and to assign them in the control and experimental group Ice cube application was given as

intervention in the experimental group. In this study, posttest only design was adopted. The researcher manipulated the independent variable i.e., ice application to the experimental group of children. The effective of ice cube application upon the independent variable i.e., the level of pain in children was computed.

Materials

Treece and Treece (1986) emphasized that the instrument in the research should as far as possible be the vehicle that could best obtain data for drawing a conclusion pertinent to the study. The effectiveness of ice cube application upon level of pain in children during intramuscular injection in children age group 3 to 12 years of age was assessed by FLACC scale for pain assessment.

Section I:

Demographic pro forma for children Demographic pro forma of children includes the age in months, gender, religion, number of siblings, area of residence, education of mother and education of father.

Section II:

FLACC scale for pain assessment FLACC scale for pain is a standardized scale which was developed by Merkel et al in 1997. But in this study we used MODIFIED FLACC pain scale It consists of five criteria- face, leg, activity, cry, consolably. Each criterion has scores 0,1 and 2

METHOD OF DATA COLLECTION:

Data collection is the gathering of information needed to address a research problem. After obtaining approval of the dissertation committee of N.D.R.K. College of nursing and formal approval from the Director of MANGALA AND SSM hospital, the investigator proceeded with the data collection. The data was collected from 28/06/2022 to 4/07/2022 in MANGALA hospital and from 06/07/2022 to 12/07/2022 in SSM Hospital at Hassan. Introduction about investigator was given to samples. The investigator established good rapport with the children and the care taker, and assured that the information would be kept confidential. Written consent was obtained from the care taker. In this study, children who satisfied the inclusion criteria were selected by, Non probability convenient sampling and categorized as ‘A’ and ‘B’. The children who were in category ‘A’ were assigned to control group and those in ‘B’ to experimental group. The researcher collected the demographic variables by interviewing the parents. The children in the control group were assessed using a MODIFIED FLACC PAIN scale for pain levels after intramuscular injection without any intervention. In the experimental group, ice cube application was given for a period of 60 seconds at intramuscular site before 10 minutes of intramuscular injection. After ice cube application, intra muscular injection was given and post assessment of pain was done immediately by using MODIFIED FLACC PAIN scale for pain assessment.

Statistical analysis:

The collected data was analyzed in line with the study's objectives, employing both descriptive and inferential statistical techniques.

RESEARCH HYPOTHESIS

H_1 - There will be significant difference between ice cube application and level of pain after giving intra muscular injection.

H_2 - There will be significant association between level of pain and selected socio demographic variables.

RESULTS AND DISCUSSION

TABLE 8: ASSOCIATION BETWEEN LEVEL OF PAIN AMONG CHILDREN IN EXPERIMENTAL GROUP AND THEIR SOCIO-DEMOGRAPHIC VARIABLES. (N=30)

Sl. No	Socio demographic variables	Categories	Level of pain			Calculated chi square value	df
			No pain	Mild pain	Moderate pain		
1	Age of the child	>3 years	0	2	0	5.28 (NS)	6
		3-6 years	1	7	0		
		6-9 years	2	6	1		
		9-12 years	5	5	1		
2	Gender of the child	Male	8	13	0	8.33 (S)	2
		Female	0	7	2		
3	Religion	Hindu	2	6	0	4.80 (NS)	6
		Muslim	3	6	0		
		Christian	3	6	2		
		others	0	2	0		
4	Number of siblings	None	2	5	0	2.82 (NS)	4
		One	3	7	0		
		Two or More	3	8	2		
5	Care taker	Parent	2	10	1	2.37 (NS)	4
		Grandparent	3	4	0		
		Others	3	6	1		
6	Area of Residence	Urban	0	4	2	10.58 (S)	4
		Suburban	1	4	0		

		Rural	7	12	0		
7	**Education of the father**	**Uneducated**	4	8	0	1.66 **(NS)**	2
		High School	4	12	2		
		Undergraduate	0	0	0		
		Post Graduate	0	0	0		
8	**Education of the mother**	**Uneducated**	5	10	1	0.36 **(NS)**	2
		High School	3	10	1		
		Undergraduate	0	0	0		
		Post Graduate	0	0	0		

(NS)= NOT SIGNIFICANT (S) = SIGNIFICANT AT 0.05 LEVEL

Association between level of pain among the children in experimental group and their sociodemographic variables, this table depicts that there is no significant association between the pain level of children and demographic variables such as Age of the child, Religion, Number of siblings, Care taker, Education of the father, Education of the mother. And also there is significant difference between the pain level of children and demographic variables such as Gender of the child and Area of Residence about pain reduction interventions among experimental group.

TABLE 9: ASSOCIATION BETWEEN LEVEL OF PAIN AMONG CHILDREN IN CONTROL GROUP AND THEIR SOCIO-DEMOGRAPHIC VARIABLES. (N=30)

Sl. No	**Socio demographic variables**	**Categories**	**Level of pain**		**Calculated chi square value**	**df**
			Mild pain	**Moderate pain**		
1	**Age of the child**	**>3 years**	5	2	0.69 **(NS)**	3
		3-6 years	8	3		
		6-9 years	7	5		
		9-12 years	5	2		
2	**Gender of the**	**Male**	8	6	1.07	1

	child	**Female**	12	4	**(NS)**	
3	**Religion**	**Hindu**	4	4	1.39 **(NS)**	2
		Muslim	10	4		
		Christian	6	2		
		others	0	0		
4	**Number of siblings**	**None**	9	0	6.47 **(S)**	2
		One	5	5		
		Two or More	6	5		
5	**Care taker**	**Parent**	8	3	0.38 **(NS)**	2
		Grandparent	6	3		
		Others	6	4		
6	**Area of Residence**	**Urban**	0	0	0.26 **(NS)**	1
		Suburban	10	4		
		Rural	10	6		
7	**Education of the father**	**Uneducated**	10	4	0.26 **(NS)**	1
		High School	10	6		
		Undergraduate	0	0		
		Post Graduate	0	0		
8	**Education of the mother**	**Uneducated**	8	5	0.27 **(NS)**	1
		High School	12	5		
		Undergraduate	0	0		
		Post Graduate	0	0		

(NS)= NOT SIGNIFICANT (S) = SIGNIFICANT AT 0.05 LEVEL

Association between level of pain among the children in control group and their sociodemographic variables, this table depicts that there is no significant association between the pain level of children and demographic variables such as Age of the child, Gender of the child, Religion, Care taker, Area of Residence, Education of the father, Education of the mother. And also, there is significant difference between the pain level of children and demographic variable such as Number of siblings about pain reduction interventions among experimental group.

CONCLUSION

The cold application can be used as an effective technique on reduce pain during IM injection among children receiving intramuscular injection. It is a simple effective independent nursing intervention to enhance children comfort and safety with minimal or no risk to children.

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