

“A Study To Assess The Effectiveness Of Ice Application Prior To Intramuscular Injection On Reduction Of Pain Intensity Among Patients Receiving Intramuscular Injection In Injection O.P.D In Shri Vinoba Bhave Civil Hospital, Silvassa, DNH & DD”.

Ms. Pinal Patel¹, Ms. Saphiga Prem Barnabas², Ms. Krishna Gandhi³

¹Nursing Tutor, NKM college of Nursing, Valsad

²Assistant Professor, Shri Vinoba Bhave College of Nursing, Silvassa

³Lecturer, Geetanjali College and School of Nursing, Udaipur

Abstract:

Background: Pain has been introduced as the fifth vital sign by Joint Commission of Health Care Organization (JCAHO) and they have published the standards for pain management in the hospital setting in 2001. The injection is an unpleasant experience for the patients. Extra caution is required when administering injection to all patients. Management of pain is an important part of a health professional's role. Cold therapy is one of the most effective yet underused physical modalities for pain relief. Local external cooling has been widely used for pre-injection anesthesia.

Materials and Methods: True Experimental Randomized Post Test Only Control Group Design study was Conducted in Shri Vinoba Bhave Civil Hospital Silvassa among 60 patients receiving IM injection neurobion in injection OPD by using Simple Random sampling technique, Lottery method was used to select the subjects from the sample frame and assigned to two groups (each 30 patients were assigned to experimental and control group). In Experimental group applied Ice for two minutes prior to intramuscular injection and in Control group followed the routine. Post- test was done for both groups. Assessed pain intensity with Wong Baker FACES pain Rating Scale and assessed effectiveness of ice application.

Results: The overall in experimental group the standard deviation score was 3.4000 ± 1.30252 respectively. In the control group, standard deviation score was 7.6667 ± 1.58296 respectively. The calculated t value (11.400) at ($p < 0.05$) is greater than table value (11.400). Hence research hypothesis H_1 is retained. In experimental group there was significant association of level of pain reduction with age and Gender. In the control group there was no significant association with the selected demographic variables. Hence research hypothesis H_2 is retained for age in years and gender in experimental group.

Conclusion: The findings highlighted that the Ice application and reduction of pain intensity among patients receiving intramuscular injection were effective. Ice application is help in reduction of pain intensity.

Key Word: Effectiveness, Ice application, IM injection.

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I. Introduction

Pain is omnipresent, an intolerable sensation and makes the patient vulnerable. There is a saying that there is no gain without pain. Pain occurs in all clinical settings and among many different groups of patients. Nurses have a central role in pain assessment and management. Pain is one of the most common widely under-treated health problems.

As a basic scientific definition, pain is a sensation caused by some type of noxious stimulus. From the behavioral aspect, pain is a pattern of responses that function to protect an individual from harm. Pain is the unpleasant feeling. The reactions to pain are the psychological and behavioral responses that occur after pain perception¹.

Intramuscular injection is an unpleasant experience for the patients. Intramuscular injections (IM) are a common and complex technique, used to deliver medication deep into the large muscle of the body. A simple and inexpensive therapy, Ice application has been accepted for effective non-pharmacologic intervention for pain management. Ice application reduces the ability of pain fibers to transmit pain impulses & reduce the pain associated with IM injection.

Pain resulting from IM injection should not be underrated, in light of the fact that painful injection might affect serious apprehension of injection, which may lead a patient to postpone looking medical help. Decreasing patient's pain is critical for all nurses in light of numerous reasons. Unnecessary pain can harm the nurses- patient relationship. Intramuscular injection are regular complex procedure used to deliver medication profound into the vast muscle of the body. There are various pharmacological and non-pharmacological measures to lessen pain.²

II. Material and Methods

This study was carried out among patients receiving IM injection neurobion in injection OPD at Shri Vinoba Bhav Civil Hospital, Silvassa, DNH & DD. This study aims to assess the effectiveness of the Effectiveness of Ice Application Prior To Intramuscular Injection Among Patients Receiving Intramuscular Injection in Injection OPD. Simple Random sampling technique, Lottery method was used to select the subjects from the sample frame and assigned to two groups (each 30 patients were assigned to experimental and control group. Data collection included, Part I: Socio-demographic variable with 8 items and Part II: Wong Baker FACES pain Rating Scale.

Study Approach: Quantitative research approach

Study Design: True experimental randomized post-test only control group design

Study Location: Injection OPD at Shri Vinoba Bhav Civil Hospital, Silvassa, DNH & DD.

Study Duration: 1 Month.

Sample size: 60 Patients receiving Intra Muscular Inj. Neurobion.

Sample size calculation: The sample size was estimated on the basis of Cochran's formula. We assumed that the confidence level of 95% with a margin of error of 5%. The sample size for this study was 60, 30 for each experimental and control group.

Inclusion criteria were

1. willing to participate in the study.
2. both male and female patients receiving intramuscular injection.
3. coming to Injection OPD.
4. capable of giving adequate response to pain.
5. available during the study period.
6. getting Inj. neurobion intramuscular injection in ventrogluteal site.

Exclusion criteria were

1. critically ill.
2. getting any other type of oral or IV analgesia.
3. unable to assume side lying position with flexed knees.
4. not willing to participate in the study.
5. with chronic pain.
6. with impaired circulation, peripheral vascular disease, local infection.

Procedure methodology

In the present study, researcher used interview method for data collection. To assess effectiveness of ice application in experimental group and for control group no intervention was given. The study was conducted with the permission of the Head of the Department and the Institutional Ethical committee. The samples were selected based on the inclusion and exclusion criteria using Simple Random sampling technique. Lottery method was used to select the subjects from the sample frame and assigned to two groups. Data collection included, Part I: Socio-demographic variable with 8 items and Part II: Wong Baker FACES pain Rating Scale.

Step in procedure; Researcher:-

1. Wash hands
2. Provide privacy and explain the procedure to the Sample
3. Gather all needed supplies

Assemble the following supplies:

- needle and syringe with medication
 - alcohol pads
 - gauze
 - puncture-resistant container to discard the used needles and syringe
 - Ice pack
4. Locate injection site (ventrogluteal site)
 5. Clean injection site
 - Clean the site selected for injection with an alcohol swab and allow the skin to air dry.

6. Covered ice pack with sterile cover
7. Apply ice pack in Ventrogluteal site for 2 minutes in Experimental Group.
Nursing Officer :
8. Prepare syringe with medication
 - Remove the cap.
 - **Withdraw the medication.**
 - **Remove air bubbles.**
9. Inject the medication and researcher assess the level of pain intensity with wong baker faces pain rating scale.
10. Withdraw the needle, and apply gentle pressure at the site with cotton swab.
11. Position the patient comfortably.
12. Level of pain assessed with Wong Baker FACES pain Rating Scale.
13. Record the date, time, and name of the drug, dosage, route, and signature of the nurse.

Statistical analysis

Data was analyzed using SPSS version 20. The data analysis was done by using descriptive and inferential statistics. The collected data was summarized and tabulated by using descriptive statistics which included mean, percentage, standard deviation. Inferential statistics which included t-test and chi-square test for association between the pain score and socio-demographic variables. The level $P < 0.05$ was considered as the cutoff value or significance.

III.RESULT

The data findings based on the objectives were organized and finalized according to the plan for data analysis and are presented in following sections:

Section I: Description of patient according to demographic variables.

Table 1: Frequency and Percentage distribution of socio-demographic variables of the patients receiving injection neurobion intramuscularly.

N=60

Sr No.	Demographic data	Subjects (n=60)		Sr No.	Demographic data	Subjects (n=60)	
		f	%			f	%
1	AGE			2	GENDER		
	a) 31-35years	06	10		a) Nuclear	27	45
	b)36-50 years	18	30		b) Joint	33	55
	c)51-65 years	24	40				
	d)>66 year	12	20				
3	DO YOU HAVE PREVIOUS EXPERIENCE OF IM INJECTION			4	PREVIOUS VENUE OF INTRAMUSCULAR INJECTION GOT IN		
	a) Yes	53	88.33		a) Health sub centre	11	29.33
	b) No	07	11.66		b) Primary health centre	10	16.66
			c) Government Hospital		10	16.66	
			d) Private hospital		22	36.66	
			e) No experience	07	11.66		
5	PREVIOUSLY HISTORY OF ALLERGIC REACTION DUE TO IM INJECTION			6	DO YOU HAVE PREVIOUS KNOWLEDGE ABOUT PAIN REDUCTION INTERVENTIONS REGARDING IM INJECTION		
	a) Yes	19	31.66		a) Yes	11	18.33
	b) No	41	68.33		b) No	49	81.67

Section II: Description of post-test level of Pain among patient's receiving IM injection experimental and control group.

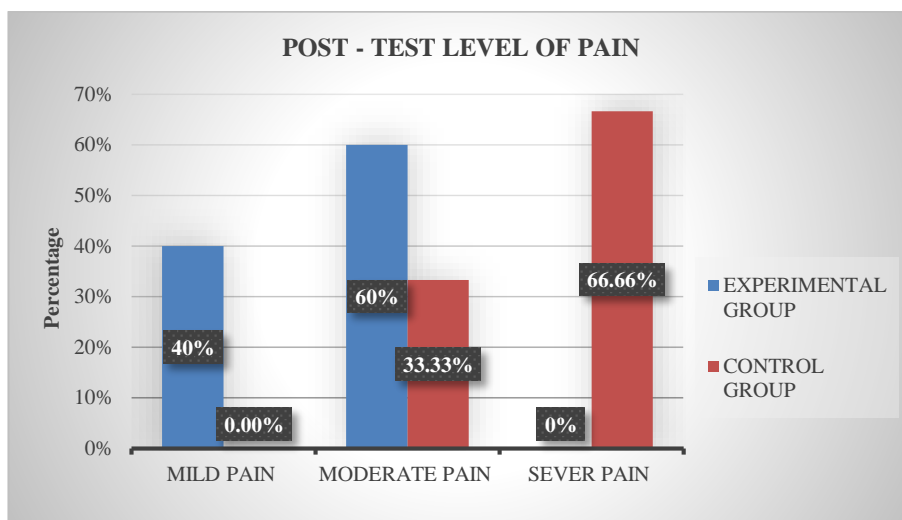


Fig. 1. Description of post-test level of pain among patient's receiving IM injection experimental and control group.

SECTION III: Effectiveness of Ice application

**Table 2: Effectiveness of Ice application prior to IM injection in reduction of pain intensity in experimental group
N=60**

Group	No. of patients	Post Test		Student's independent t-test
		Mean	SD	
Experimental group	30	3.4000	1.30252	t = 11.400 p ≤ 0.05
Control group	30	7.6667	1.58296	

The above table shows that comparison of pain score in experimental group the standard deviation score was 3.4000 ± 1.30252 respectively. In the control group, standard deviation score was 7.6667±1.58296 respectively. The calculated t value (11.400) at (p<0.05) is greater than table value(1.672) hence the research hypothesis H₁ is retained. It was evident that Ice application and reduction of pain intensity among patients receiving intramuscular injection were effective.

Section VII: Association between level of pain intensity and their demographic variables

**Table 3: Association between level of pain intensity and their demographic variables in the control and experimental group.
N=60**

Demographic variables	Experimental group (n=30)				Control group (n=30)			
	df	X ²	Table value	P value	df	X ²	Table value	P value
Age	3	* 8.993	7.82	0.029	3	1.425	7.82	0.700
Gender	1	*7.232	6.31	.007	1	0.271	3.84	0.602
Do you have Previous Experience of injection IM	1	0.000	3.84	1.000	1	0.000	3.84	1.000
Previous venue of intramuscular injection got in	4	2.292	9.49	0.682	4	1.350	9.49	0.853
Previously History of allergic reaction due to intramuscular injection	1	2.500	3.84	0.114	1	0.000	3.84	1.000
Do you have Previous Knowledge about pain reduction interventions Regarding IM injection	1	1.875	3.84	0.171	1	0.714	3.84	0.398

S* -- Significant at 0.05 level (P<0.05). , NS – Non significant at 0.05level(P>0.05)

IV. Discussion

The present study discusses about the effectiveness of Effectiveness of Ice application prior to IM injection. In experimental group, 12(40%) of the patients having mild pain, 18(60%) of patient had moderate pain and no patients having sever pain. In control group, 00 of the patients having mild pain, 10 (33.33%) of patient had moderate pain and 20(66.66%) patients having sever pain. The comparison of pain score in experimental group the mean \pm standard deviation score was 3.4000 ± 1.30252 . In the control group, it was 7.6667 ± 1.58296 . The calculated t value (11.400) at ($p < 0.05$) is greater than table value (1.672) hence the research hypothesis H_1 is retained. It was evident that Ice application and reduction of pain intensity among patients receiving intramuscular injection were effective. In experimental group there was significant association of level of pain reduction in age & Gender in the control group there was no significant association with the selected demographic variables. Hence research hypothesis H_2 is retained for age in years and Gender in experimental group.

V. Conclusion

The ice application was effective in reduced pain intensity among Patients Receiving Intramuscular Injection In Injection OPD in Shri Vinoba Bhave Civil Hospital Silvassa.

The main conclusion in study most of the patients had mild and moderate pain in experimental group and moderate and severe pain in control group. This shows that the cold application was effective on Prior to Intramuscular Injection reduction Of Pain intensity Among Patients Receiving Intramuscular Injection In Shri Vinoba Bhave Civil Hospital Injection OPD Silvassa.

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