



“A Study To Assess The Effectiveness Of Helper Skin Technique On Level Of Pain During Intra-Muscular Injection Among Adult Patients At Selected Hospitals Of Vadodara City.”

Ms. Hirnisha Makwana^{1*}, Ms. Dipti Chauhan²

¹ Nursing Tutor, M.Sc. Nursing, Medical Surgical Nursing, Pioneer Nursing College, Vadodara, Gujarat

² Associate Professor, Dept. of Medical Surgical Nursing, R.B.Amin Nursing Institute, Vadodara, Gujarat.

E-Mail: dipti480@gmail.com

**Corresponding Author: Ms. Hirnisha Makwana*

**Nursing Tutor, M.Sc. Nursing, Medical Surgical Nursing, Pioneer Nursing College, Vadodara, Gujarat*

<i>Article History</i>	<i>Abstract</i>
Received: 10 January 2024 Revised: 25 January 2024 Accepted: 10 February 2024	<p>INTRODUCTION: Ensuring patient comfort is a crucial aspect of nursing care, with pain management being a primary concern for healthcare providers. Pain is often cited as a key reason for seeking medical assistance and is considered the fifth vital sign. It can significantly impact an individual's thoughts, activities, and overall quality of life. One common experience of pain is associated with intramuscular injections. Nurse Joanne Helfer introduced the Helfer technique, which aims to minimize pain during these injections by stimulating muscle fibers, providing mechanical stimulation, and offering distraction to the patient.</p> <p>AIM: The goal of this research is to assess the efficiency of the helper skin method on the amount of discomfort experienced after intramuscular injection in adults.</p> <p>MATERIALS & METHODS: For this study, a quasi-experimental post-test-only research design was employed to evaluate the effectiveness of the Helfer technique in reducing pain among 80 hospitalized adults undergoing intramuscular injections. Participants were selected using a non-probability convenient sampling method. Data was gathered using the standardized 0-10 numerical pain scale developed by McCaffery. The intervention involved applying the Helfer technique.</p> <p>RESULTS: The current research assessed the effectiveness of the Helfer skin tap method in reducing pain from intramuscular injections among hospitalized adults. Results showed that the average pain score associated with intramuscular injections was lower in the study group compared to the control group. The obtained "t" value of 13.57 was statistically significant at a significance level of $p \leq 0.05$.</p> <p>INTERPRETATION & CONCLUSION: Further analysis revealed a substantial difference between the mean pain perception scores of the study and control groups. The calculated unpaired "t" test value of 13.57* which was statistically significant at</p>

<p>CC License CC-BY-NC-SA 4.0</p>	<p>p<0.05 and indicates a significant reduction in pain perception among patients who received the Helfer skin tap technique compared to those in the control group. These findings strongly support the acceptance of the research hypothesis, demonstrating the effectiveness of the intervention in reducing pain perception levels.</p>
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INTRODUCTION :

Pain is often regarded as the fifth vital sign, capable of dominating an individual's thoughts, actions, and overall quality of life. However, communicating pain can be daunting for patients, especially since medical professionals cannot directly sense or experience it. One common source of discomfort is pain at the injection site, a frequent reaction to vaccine or medication administration. Managing pain during such procedures poses a challenge for nurses, particularly when dealing with patients who fear needles.

Nurse Joanne Helfer introduced the Helfer technique to address this issue. This method involves stimulating muscle fibers to provide mechanical stimulation and distraction during intramuscular injections, thereby reducing pain. By keeping the muscle relaxed, the technique aligns with the gate control theory of pain management. A key component of the Helfer technique is the "skin tap" method, which entails rhythmic tapping on the skin before and during injection. This tapping not only helps relax the muscle but also stimulates large-diameter fibers, further aiding in pain reduction according to the gate theory. Overall, the Helfer technique offers a more comfortable injection experience for patients.

According to WHO (2006), An intramuscular injection involves the administration of medication through a needle penetrating the skin and reaching deep into a large muscle for therapeutic or preventative purposes. This method allows for quicker absorption of the drug compared to subcutaneous injections due to the muscles' abundant blood supply.

The "Helfer skin tap technique" serves to alleviate the discomfort associated with intramuscular injections and may also help reduce needle anxiety. By tapping the skin prior to the injection, this technique aims to activate the gate control theory, "which suggests that stimulating non-painful sensory inputs can inhibit the transmission of painful sensations to the brain". Essentially, by tapping the skin, the nervous system is distracted, and the sensation of pain from the injection is lessened.

METHODOLOGY:

The study employed a quantitative approach to assess the efficacy of the Helfer skin tap technique in alleviating pain associated with intramuscular injections among adult patients in selected hospitals in Vadodara city. A Quasi Experimental Post-test only Research Design was utilized. This design facilitated sample selection for observation and guided the type of analysis to be employed for data interpretation. The study's dependent variable was the level of pain experienced during intramuscular injections among hospitalized adults, while the independent variable was the Helfer skin tap technique. Thus, demographic variables were considered. The research was conducted at Jamnabai General Hospital, Vadodara, with a sample size of 80 participants selected through non-probability convenient sampling technique.

RESULTS:

SECTION I: DATA SHOWING "DEMOGRAPHIC VARIABLES OF HOSPITALIZED ADULTS". = 80

Sr. No.	DEMOGRAPHIC VARIABLES	STUDY GROUP N = 40		CONTROL GROUP N = 40	
		F	%	f	%
1.	Age In Years				

	a) 20-29 years	20	50	12	30
	b) 30-39 years	11	27.5	20	50
	c) 40-45 years	09	22.5	08	20
2.	Gender				
	a) Male	21	52.5	23	57.5
	b) Female	19	47.5	17	42.5
3.	Educational Status				
	a) No formal education	35	7.5	06	15
	b) Primary education	09	22.5	11	27.5
	c) Higher Secondary education	24	60	14	35
	d) Graduate and above	04	10	09	22.5
4.	Habit of practicing muscle exercise				
	a) Yes	14	35	12	30
	b) No	26	65	28	70
5.	Form of Drug				
	a) Suspension	03	7.5	02	5
	b) Aqueous	37	92.5	38	95
6.	Volume of substance injected				
	a) < 2 ml	36	90	38	95
	b) > 2 ml	04	10	02	5

In Section I, it is noted that the majority of participants fall within the 20-25 age bracket, comprising 52% of the study group. Additionally, 28% are aged 26-30, and 20% are aged 31-35, with a smaller proportion in each subsequent age group. For the control group, 32% are aged 20-25, 44% are aged 26-30, and 24% are aged 31-35.

In terms of gender distribution, the study group consists of 52.5% male and 47.5% female hospitalized adults. In comparison, the control group comprises 57.5% male and 42.5% female participants.

With regard of educational status, 35 (7.5%) are having no formal education, 9 (22.5%) are having primary education, 24 (60%) are having higher secondary education, 4 (10%) are having graduation and above in the study group. Meanwhile in control group, 6 (15%) are having no formal education, 11 (27.5%) are having primary education, 14 (35%) are having higher secondary education, 9 (22.5%) are having graduation and above education.

Regarding the habit of practicing muscle exercise, within the study group, 14 individuals (35%) were not engaged in any type of muscle exercise, while 26 individuals (65%) were actively participating in muscle exercises. In contrast, within the control group, 12 individuals (30%) were not practicing any type of muscle exercise, while 28 individuals (70%) were actively engaging in muscle exercises.

In terms of the form of drug administration, within the study group, 3 individuals (7.5%) were receiving medication in suspension form, while 37 individuals (92.5%) were receiving medication in aqueous form. In comparison, within the control group, 2 individuals (5%) were receiving medication in suspension form, while 38 individuals (95%) were receiving medication in aqueous form.

Concerning the volume of substance injected, within the study group, 36 individuals (90%) were receiving less than 2ml of medication via intramuscular injection, while 4 individuals (10%) were receiving more than 2ml of medication via intramuscular injection. In the control group, 38 individuals (95%) were receiving less than 2ml of medication via intramuscular injection, while 2 individuals (5%) were receiving more than 2ml of medication via intramuscular injection.

SECTION II: DATA ON “EFFECTIVENESS OF HEIFER SKIN TAP TECHNIQUE ON PAIN ASSOCIATED WITH INTRAMUSCULAR INJECTION AMONG HOSPITALIZED ADULTS”.

N = 80

Sr. No.	Groups	Mean	StandardDeviation	df	‘t’ value
1.	Study group	2	0.92	39	13.57*
2.	Controlgroup	6.75	1.98		

“Significant at $p \leq 0.05$ ”

SECTION II presents a “comparison of the mean, standard deviation, and unpaired ‘t’ test value for post-test pain perception among patients receiving intra-muscular injection, significant differences were observed between the study group and the control group”. Specifically, the study group exhibited a mean pain perception score of 2, accompanied by a standard deviation of 0.92, whereas the control group had a mean score of 6.75, with a standard deviation of 1.98. The calculated unpaired “t” test value was 13.57*, signifying statistical significance at $p \leq 0.05$. These findings indicate the effectiveness of the Helfer skin tap technique in reducing pain perception levels, thus supporting the acceptance of the research hypothesis.

SECTION III: DATA ON ASSOCIATION BETWEEN “PAIN ASSOCIATED WITH INTRAMUSCULAR INJECTION AMONG HOSPITALIZED ADULTS WITH THEIR SELECTED DEMOGRAPHIC VARIABLES”.

N = 40

Control Group											
Sr.No	Demographic Variables		No pain		Mildpain		Moderatepain		Severepain		Chi- squaretest χ^2
			F	%	f	%	f	%	f	%	
1	Age	20-29 years	0	0	0	0	7	17.5	5	12.5	$\chi^2 = 55.02$ df=6 Table value=12.59
		30-39 years	0	0	0	0	8	20	12	30	
		40-45 years	0	0	1	2.5	5	12.5	2	5	
2	Gender	Male	0	0	1	2.5	16	40	6	15	$\chi^2 = 10.05$ df=3 Table value=7.82
		Female	0	0	0	0	4	10	13	32.5	
3	Educational status	No formal education	0	0	1	2.5	2	5	3	7.5	$\chi^2 = 17.137$ df=9 Table value=16.92
		Primary education	0	0	0	0	4	10	7	17.5	
		Higher secondary education	0	0	0	0	5	12.5	9	22.5	
		Graduate and above	0	0	0	0	9	22.5	0	0	

4	Habit of practicing	Yes	0	0	1	2.5	11	27.5	1	2.5	$\chi^2= 13.14$
	muscle exercise	No	0	0	0	0	9	22.5	18	45	df=3 Table value=7.82
5	Form of Drug	Suspension	0	0	0	0	0	0	2	5	$\chi^2= 7.82$ df=3 Table value= 2.325
		Aqueous	0	0	1	2.5	20	50	17	42.5	
6	Volume of substance injected	< 2ml	0	0	1	2.5	20	50	17	42.5	$\chi^2= 7.82$ df=3 Table value=2.324
		> 2 ml	0	0	0	0	0	0	2	5	

Section III represents “that in the control group, the computed values for the demographic variables like Age, Gender, Educational status, Habit of practicing muscle exercise, Form of drug, and Volume of substance injected among patients are higher than the table value”. This suggests a efficient association between the level of pain perception and the chosen demographic variables.

SECTION IV: The relationship among the post-test levels of pain perception among patients getting intramuscular injections in the study group and their specified demographic factors.

N = 40

Study Group/Experimental Group:											
Sr. No.	Demographic Variables		No pain		Mildpain		Moderatepain		Severe pain		Chi- squaretest χ^2
			F	%	f	%	F	%	F	%	
1	Age	20-29 years	0	0	20	50	0	0	0	0	$\chi^2= 7.03$ df=6 Table value=12.59
		30-39 years	2	5	9	22.5	0	0	0	0	
		40-45 years	0	0	8	20	1	2.5	0	0	
2	Gender	Male	1	2.5	20	50	0	0	0	0	$\chi^2= 1.80$ df=3 Table value=7.82
		Female	1	2.5	17	42.5	1	2.5	0	0	
3	Educationalstatus	No formaleducation	1	2.5	2	5	0	0	0	0	$\chi^2= 9.254$ df=9 Table value=16.92
		Primary education	0	0	8	20	1	2.5	0	0	
		Higher secondary education	1	2.5	23	57.5	0	0	0	0	
		Graduate and above	0	0	4	0	0	0	0	0	
4	Habit of practicing muscle exercise	Yes	2	5	12	30	0	0	0	0	$\chi^2= 7.82$ df=3 Table value=5.385
		No	0	0	26	65	1	2.5	0	0	

5	Form of Drug	Suspension	0	0	2	5	1	2.5	0	0	$\chi^2 = 12.94$
		Aqueous	2	5	35	87.5	0	0	0	0	df=3 Table value=7.82
6	Volume of substance injected	< 2ml	2	5	34	85	0	0	0	0	$\chi^2 = 9.369$ df=3 Table value=7.82
		> 2 ml	0	0	3	7.5	1	2.5	0	0	

Section IV illustrates that within the control group, “the computed values for certain demographic variables like the Habit of practicing muscle exercise, Form of drug, and Volume of substance injected show a higher magnitude compared to the tabulated values”. This suggests a significant association between the “level of pain perception” and these selected “demographic factors”. Conversely, the calculated values for Age, Gender, and Educational status are lower than the tabulated values, indicating no significant association between these variables and the level of pain perception.

CONCLUSION OF THE STUDY :

The following conclusion was drawn based on the all the findings. A study demonstrated the efficacy of the Helfer skin tap technique in alleviating pain associated with intramuscular injections among hospitalized adults. In the group receiving the technique, the mean pain score was 2 with a standard deviation of 0.92, while the control group recorded a mean score of 6.75 with a standard deviation of 1.98. The observed difference in means between the two groups was 4.75. Importantly, the calculated t-value of 13.57 was found to be statistically significant at a p-value below 0.05, indicating a highly significant distinction in pain perception between the two groups. Thus, the study concluded that the “Helfer skin tap technique” is effective in reducing pain associated with intramuscular injections among hospitalized adults.

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