ISSN Print: 2581-8546 ISSN Online: 2582-2934

Original Article

Helfer Skin Tap Technique on the Level of Pain During IM Injection

Ankur Yadav[1], Supinder Kaur[2]
[1]Medical Surgical Nursing/Nursing Tutor/Silver Oaks College of Nursing, Abhipur, Punjab India/BFUHS
[2]Medical Surgical Nursing /Asst.Prof/MM Institute of Nursing, Ambala, Haryana, India/MMU2
Corresponding author : Ankur Yadav, Medical Surgical Nursing/Silver Oaks College of Nursing, Abhipur, Punjab, BFUHS/India
Corresponding E-mail : Rao788435@gmail.com

Abstract

Introduction : This is a study to assess the effectiveness of Helfer skin tap technique on the level of pain during IM injection among adults in selected hospital of district Mohali, Punjab. Pain is an unpleasant sensation which caused by strong stimuli which create severe pain. It is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. It is a feeling triggered in the nervous system. Pain may be sharp or dull. It may come and go, or it may be constant. Good injection technique can help in reducing pain and discomforts.

Methodology : The study was conducted on 80 (40 in Experimental group and 40 in Control group) patients of Ivy hospital sector 71, district Mohali, Punjab. Content validity determined by experts and reliability (0.74 by correlation of coefficient) was checked. Subject was selected by simple random sampling technique and numerical pain rating scale was adopted to assess technique and numerical pain rating scale was adopted to assess the level of pain during IM injection. Data was analyzed by descriptive inferential statistics.

Results : Result of the present study shows the descriptive and inferential statistics in experimental group out of total majority 65% of study subjects had no pain, 15% of study subjects had annoying pain, 10% of study subjects were feel uncomfortable pain, 5% of study subjects were had horrible pain & 5% of study subjects were had worst possible pain during IM injection by using helfer skin tap technique. whereas in control group 10% of study subjects had no pain, 35% of study subjects had annoying pain, 30% of study subjects were feel uncomfortable pain perception, 15% of study subjects had horrible pain & 10% of study subjects were had worst possible pain. Therefore, Helfer skin tap technique was effective in reducing pain during IM injection in study subjects.

Conclusions : It was concluded that the present study findings show that in experimental group mean & SD was 1.825/ 2.977 and in control group the mean & SD was 4.575/3.307. To find out the difference unpaired t test was applied, the value of t was (4.08913*) and $p < 0.05$. Hence, I can be inferred that in experimental group level of pain was significantly lower than control group it can be concluded that the Helfer skin tap technique was effective in reducing the pain during IM injection in study subjects. Therefore, null hypothesis was rejected and research hypothesis was accepted.

Keywords : Helfer skin tap technique, Adults, Pain level, IM injection

How to cite this article : Yadav A, Kaur S. Helfer Skin Tap Technique on the Level of Pain During IM Injection. Glob. Nurs. J. India 2024; 8: I: 783-790.

Submitted : 16/03/2025, Accepted : 14/04/2025, Published : 06/05/2025

ISSN Print: 2581-8546 ISSN Online: 2582-2934

Introduction

The word "pain" comes from the Latin word "poena" meaning a fine or penalty. An unpleasant sensation that can range from mild, localized discomfort to agony. Pain has both physical as well as emotional factors. The physical part of pain results from nerve stimulation. Pain may be contained to a separate area as in an injury, or it can be more prolix, as in diseases like fibromyalgia. Pain is a complex miracle and its exact nature remains a riddle. A person in pain frequently experiences it as an all consuming reality and wants only one intervention- pain relief. Pain is intermediated by specific nerve fibres that carry the pain impulses to the brain, where their conscious appreciation may be modified by numerous factors. The physical part of pain results from nerve stimulation which may be contained to a separate area, as in an injury or it can be more difuse.1International Association for the study of pain defines pain as "an unpleasant, subjective sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.[1]

Pain is an unpleasing sensation which caused by strong stimulants which produce severe pain. It's an unpleasant sensitive and emotional experience associated with factual or implicit tissue damage. It's a feeling triggered in the nervous system. Pain may be sharp or dull. It may come and go, or it may be constant.[2]

Pain management is an integral part of nursing. Nurses have a responsibility to effectively manage clients' pain. Nurses play a greater part in minimizing the pain and discomfort during any invasive procedure. The nurse can minimize the discomfort and pain during intra muscular injection by helping the client to assume a proper position and by perpetration of different physical and intellectual interventions. Physical interventions and injection techniques that minimize pain during injection offer an advantage over other approaches because they can be readily incorporated in clinical practice without added the cost of time.[3]

Vital signs are frequently taken by health professionals in order to assess the most underlying body functions. The act of taking vital signs typically entails recording body temperature, palpitation rate(heart rate), blood pressure and respiratory rate, but the idiom "fifth vital sign" generally refers to pain, as perceived by the patient on a pain scale of 0 - 10. Pain management is considered such an important part of care that it's appertained as "the fifth vital sign" to emphasize its significance and to increase the mindfulness among health care professionals about the significance of effective pain management.[4]

Different Societies and different genders tolerate, accept and will manifest pain differently. There's no device that allows someone differently to assess the pain. Some people manifest their pain as facial grimacing; others through descriptive words, while still others withdraw, say nothing, or separate themselves. No one can say with any certainty that the pain of one person is minor or more than pain of others.[5]

Comfort is a conception central to the art of nursing and it's an important need and securing a patient's comfort is a major nursing responsibility. A variety of nursing philosopher refers to comfort as a essential client need for which nursing care is delivered. Nurses are morally and fairly responsible assessment of pain, current substantiation grounded practices regarding pain. As well as, some investigator reported that nurse's techniques in giving intramuscular injections were traditional rather than substantiation grounded.[6]

Medicine is considered as one of the most important necessity to all of us. Drug is a substance used in the diagnosis, treatment, cure, relief, or prevention of health problems. The route specified for administering a drug depends on the properties and desired effect of the drug and the client's physical and internal condition. The varied routes of drug administration are oral routes, sublingual administration, buccal administration, parenteral routes and topical administration.[7]

There are 16 billion intramuscular injections administered annually throughout the world. In developing countries alone, sixteen thousand million injections are administered annually. Over 90, are administered for curative purposes whereas 5 to 10% are administered for disease prevention, the foremost important side- effect associated with injections is pain.[8]

Intramuscular injection of medication is a procedure generally performed by nurse and is associated with discomfort, pain and trauma to the injected tissue. There are several factors which impact person's experiences of pain during intramuscular injection similar as anxiety, culture, age, gender and anticipation of pain relief. These factors may increase or lessen the experience of pain during intramuscular injection.[9]

An injection is the preface of a drug, vaccine, contraceptive or other restorative agent into the body using a needle and syringe. Intramuscular injection is the injection of a substance

DOI:10.46376/GNJI/8.I.2025.783-790

directly into a muscle. Depending on the injection site, an administration is limited to between 2 and 5 milliliters of fluid. Sites that are bruised, tender, red, tumid, inflamed or scarred are avoided. Intramuscular injections are frequently given in the deltoid muscle of the arm, the vastuslateralis muscle of the leg, and the ventrogluteal and dorsogluteal muscles of the buttocks.[7]

Methodology

Research Approach

For the present study Quantitative Research Approach was adopted to assess the effectiveness of Helfer Skin tap technique on the level of pain during IM injection among adults in selected hospital of district Mohali, Punjab.

Research Design

For the present study, An Experimental (Post test only control group design) was utilized to achieve the objectives of study.

Variables Under Study

Dependent variable : Level of pain during IM injection among adults.

Independent variable : Helfer skin tap technique.

Demographic variable : The demographic variable under the study are age, gender, education, occupation and BMI.

Research Setting

The present study was conducted in IVY Hospital which is 200 bedded Multispecialty Hospital at sector - 71 Mohali, Punjab. It is located 28km away from the Silver Oaks College of Nursing Abhipur Mohali, Punjab. It has all facilities such as Cardiology, Critical Care, Dermatology, Endocrinology, Obstetrics and Gynecology, Pulmonology, Gastroenterology and other specialties. The hospital record 200 to 500 intramuscular injections were administered daily.

Population/Target Population

For the present study, population was all the adult patients who are fulfilling the inclusion and exclusion criteria admitted in IVY Hospital Sector-71 Mohali, Punjab.

Sampling Technique

In the present study Simple Random Sampling technique was used to select 40 in control group and 40 in experimental group all the adult patients of IVY Hospital Sector-71 Mohali, Punjab.

Results :

SECTION- I Distribution of selected socio- demographic variables in terms of frequency and percentage in Experimental and Control group.

Table-1(a) Frequency and percentage distribution of demographic data in Experimental and Control group.

N=80

Demographic variable	Option	Experimental Group (n=40)		Control Group (n=40)	
		n	%	n	%
Age in years	18 - 25	08	20%	04	10%
	26 - 35	14	35%	12	30%
	36 - 45	18	45%	24	60%
Gender	Male	27	67.5%	22	55%
	Female	13	32.5%	18	45%
Educational status	No formal education	00	00%	02	5%
	Primary education	02	5%	04	10%
	Secondary education	10	25%	06	15%
	Higher sec. education	16	40%	08	20%
	Graduation & Above	12	30%	20	50%
Occupation	Homemaker	02	5%	11	27.5
	Not working	06	15%	02	5%

DOI:10.46376/GNJI/8.I.2025.783-790

	Govt. employee	12	30%	02	5%
	Private	16	40%	25	62.5
	Others	04	10%	00	00%
Body mass index (Acc to W.H.O.)	Below 18.5 (Under wt)	05	12.5%	10	25%
	18.5- 24.9 (normal w)	18	45%	12	30%
	25.0- 29.9 (pre obesity)	13	32.5%	08	20%
	30.0- 34.9 (obesity class I)	02	5%	06	15%
	35.0- 39.9 (obesity class II)	02	5%	04	10%
	Above 40 (obesity class III)	00	00 %	00	00%

Table - 1 (b) Frequency and percentage distribution of Clinical Profile in Experimental & Control group

N=80

Demographic variable	Option	Experimental Group (n=40)		Control Group (n=40)	
		n	%	n	%
Site of injection	Deltoid muscle	02	5%	06	15%
	Dorsogluteal site	12	30%	10	25%
	Ventrogluteal	26	65%	24	60%
Frequency of IM injection	Once in a day	26	65%	30	75%
	Twice in a day	14	35%	10	25%
Volume of substance injected	<3ml	38	95%	34	85%
	>3ml	02	5%	06	15%
Fear of IM injection	Yes	11	27.5%	28	70%
	No	29	72.5%	12	30%
Previous exposure to IM injection	Yes	16	40%	26	65%
	No	24	60%	14	35%
Previous complication of IM injection	Yes	04	10%	08	20%
	No	36	90%	32	80%

SECTION- II Frequency and Percentage distribution of level of pain perception among patients receiving intra muscular injection in Experimental and Control Group.

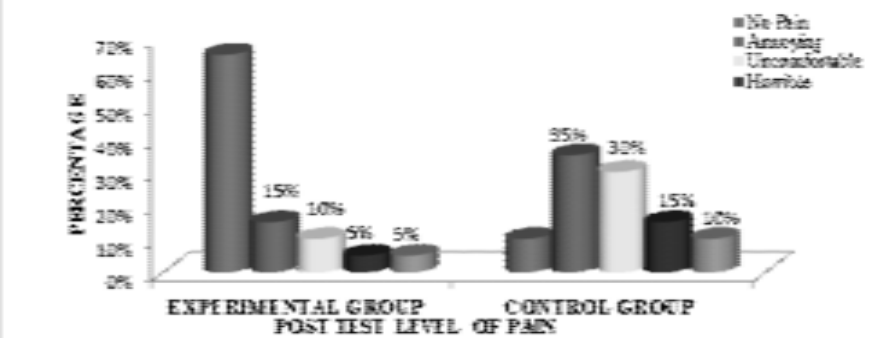

Figure1: Frequency and Percentage distribution of level of pain perception among patients receiving intra muscular injection in Experimental and Control Group.

DOI:10.46376/GNJI/8.I.2025.783-790

ISSN Print: 2581-8546 ISSN Online: 2582-2934

Section- III:- Comparison of Post Test mean score regarding perception of pain during IM injection in Experimental and Control group.

Table No 2. Comparisons of Post Test mean score regarding perception of pain during IM injection in Experimental and Control group.

N=80

Level of Pain Score	Mean/SD	df	Unpaired t Test	P value
Experimental group	1.825/2.977	79	4.08913*	0.000052
Control group	4.575/3.307			
* Significance Level 0.05				

Section - VI:- Analysis to find the association between the post test level pain perception among patients receiving IM injection with their selected socio demographic variables in Experimental group and control group.

Table 3 (a) - Association of post test pain score with selected socio demographic variable in Experimental group.

N=40

			Level of Pain							
Sr. No.	Demographic variable	Options	No pain	Annoying	Un-comfortable	Horrible	Worst possible pain	Chi test	df	P value
1.	Age in year	18 - 25	07	00	01	00	00	8.717NS	08	0.366
		26 - 35	10	02	02	00	00			
		36 - 45	09	04	01	02	02			
2.	Gender	Male	21	02	01	02	01	9.8512*	04	0.0436
		Female	05	04	03	00	01			
3.	Educational status	No formal education	00	00	00	00	00	7.748NS	16	0.9560
		Primary education	01	00	01	00	00			
		Secondary education	08	01	00	01	00			
		Higher sec. education	09	03	02	01	01			
		Graduation & Above	08	02	01	00	01			
4.	Occupation	Homemaker	01	00	01	00	00	15.208NS	16	0.5094
		Not working	03	01	00	01	01			
		Govt. employee	08	02	02	00	00			
		Private	12	01	01	01	01			
		Others	02	02	00	00	00			
5.	BMI	Below 18.5 (Under wt)	03	01	00	01	00	17.349NS	20	0.6302
		18.5-24.9 (normal wt)	15	01	01	01	00			
		25.0-29.9 (pre obesity)	06	03	02	00	02			
		30-34.9 (obesity class I)	01	01	00	00	00			
		35-39.9 (obesity class II)	01	00	01	00	00			
		Above 40 (obesity class III)	00	00	00	00	00			

***Significance level, NS not significant, P value < (0.05)**

DOI:10.46376/GNJI/8.I.2025.783-790

ISSN Print: 2581-8546 ISSN Online: 2582-2934

Table 3 (b) Association of post test pain score with selected clinical profile variable in Experimental group. N=40

			Level of pain							
Sr. No.	**Clinical Profile**	**Options**	**No pain**	**Annoying**	**Un-comfortable**	**Horrible**	**Worst possible pain**	**Chi test**	**df**	**P value**
1.	**Site of IM injection**	Deltoid muscle	01	00	00	01	00	18.21*	08	0.0197
		Dorsogluteal site	04	03	03	01	01			
		Ventrogluteal	21	03	01	00	01			
2.	**Frequency of IM injection**	once in a day	14	05	04	01	02	5.737NS	04	0.2196
		twice in a day	12	01	00	01	00			
3.	**Volume of substance injected**	<3ml	25	06	04	01	02	9.231*	04	0.05
		>3ml	01	00	00	01	00			
4.	**Fear of IM injection**	Yes	08	01	01	01	00	1.772NS	04	0.7776
		No	18	05	03	01	02			
5.	**Previous exposure to intramuscular injection**	Yes	11	02	01	01	01	0.71NS	04	0.9500
		No	15	04	03	01	01			
6.	**Previous complication of IM injection**	Yes	02	00	01	00	01	5.593NS	04	0.2312
		No	24	06	03	02	01			

***Significance level, NS not significant, P value < (0.05)**

Section - VI:- Analysis to find the association between the post test level pain perception among patients receiving IM injection with their selected socio demographic variables in Control group.

Table 4 (a) - Association of post test pain score with selected socio demographic variable in Control group. N=40

			Level of Pain							
Sr. No.	**Demographic variable**	**Options**	**No pain**	**Annoying**	**Un-comfortable**	**Horrible**	**Worst possible pain**	**Chi test**	**df**	**P value**
1.	**Age in year**	18 - 25	00	01	01	00	01	9.782NS	08	0.280
		26 - 35	01	05	06	00	00			
		36 - 45	03	07	05	06	03			
2.	Gender	Male	03	08	08	00	03	9.312*	04	0.05
		Female	01	06	04	06	01			
3.	Educational	No formal education	01	01	00	00	00	15.742NS	16	0.4711
	status	Primary education	00	00	03	01	00			
		Secondary education	00	02	03	01	00			
		Higher sec. education	01	04	02	01	00			
		Graduation & Above	02	07	04	03	04			
4.	Occupation	Homemaker	01	02	03	04	01	15.005NS	16	0.524
		Not working	01	00	01	00	00			
		Govt. employee	00	01	00	00	01			
		Private	02	11	08	02	02			
		Others	00	00	00	00	00			
5.	BMI	Below 18.5 (Under wt)	00	04	04	00	02	24.123NS	20	0.2370
		18.5- 24.9 (normal w)	01	06	05	00	00			
		25.0- 29.9 (pre obesity)	01	02	00	03	02			
		30.0-34.9 (obesity class I)	02	01	02	01	00			
		35.0-39.9 (obesity class II)	00	01	01	02	00			
		Above 40 (obesity class III)	00	00	00	00	00			

***Significance level, NS not significant, P value < (0.05)**

DOI:10.46376/GNJI/8.I.2025.783-790

ISSN Print: 2581-8546 ISSN Online: 2582-2934

Table 4 (b) Association of post test pain score with selected clinical profile variable in Control group.

N=40

Level of pain										
Sr. No.	**Clinical Profile**	**Options**	**No pain**	**Annoying**	**Un-comfortable**	**Horrible**	**Worst possible pain**	**Chi test**	**df**	**P value**
1.	**Site of IM** injection	Deltoid muscle	00	01	03	00	02	14.952NS	08	0.06
		Dorsogluteal site	02	03	01	04	00			
		Ventrogluteal	02	10	08	02	02			
2.	Frequency of IM Injection	once in a day	03	11	10	04	02	2.095NS	04	0.718
		twice in a day	01	03	02	02	02			
3.	Volume of substance Injected	<3ml	04	13	09	06	02	7.227NS	04	0.124
		>3ml	00	01	03	00	02			
4.	Fear of IM injection	Yes	02	10	08	04	04	2.582NS	04	0.6294
		No	02	04	04	02	00			
5.	Previous exposure to intramuscular Injection	Yes	02	09	09	04	02	0.606NS	04	0.9623
		No	02	05	03	02	02			
6.	Previous complication of IM injection	Yes	01	02	04	00	01	3.244NS	04	0.5178
		No	03	12	08	06	03			

***Significance level, NS not significant, P value < (0.05)**

Result of the present study shows the descriptive and inferential statistics in experimental group out of total majority 65% of study subjects had no pain, 15% of study subjects had annoying pain, 10% of study subjects were feel uncomfortable pain, 5% of study subjects were had horrible pain & 5% of study subjects were had worst possible pain during IM injection by using helfer skin tap technique. whereas In control group 10% of study subjects had no pain, 35% of study subjects had annoying pain, 30% of study subjects were feel uncomfortable pain perception, 15% of study subjects had horrible pain & 10% of study subjects were had worst possible pain. Therefore Helfer skin tap technique was effective in reducing pain during IM injection in study subjects. Hence null hypothesis was rejected and research hypothesis was accepted.

Conclusions

This chapter deals with the conclusion of the study which was done to evaluate the Effectiveness of Helfer skin tap technique on the level of pain during IM injection was effective in reducing pain in the study subjects. The present study findings shows that in experimental group mean & SD was 1.825/2.977 and in control group the mean & SD was 4.575/3.307. To find out the difference unpaired t test was applied, the value of t was (4.08913*) and p< 0.05. Hence, I can be inferred that in experimental group level of pain was significantly lower than control group it can be concluded that the Helfer skin tap technique was effective in reducing the pain during IM injection in study subjects. Therefore, null hypothesis was rejected and research hypothesis was accepted.

Recommendation :

Based on the result of study following recommendation are made

- The study can be replicated on the large sample to validate and generalize its findings.
- A study can be conducted to assess the knowledge of nurses regarding Helfer skin tap technique among patient receiving intra muscular injection.
- Similar study can be conducted among other subjects.
- Similar study can be using in other settings.
- Similar study can be conducted by using pre test post test design.

Financial support and sponsorship : Nil

Conflicts of interests : The authors declare that they have no conflict of interest with regard to the content of the report.

DOI:10.46376/GNJI/8.I.2025.783-790

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