

A Study to Assess the Effectiveness of Helfer Skin Tap Technique on Pain Level among Patients Receiving I/M Injection at Selected Hospitals of Amritsar, Punjab

Gagandeep Kaur, Manpreet Kaur Garcha*, Jicy Shahji
Mai Bhago College of Nursing, Punjab, India

Abstract

Intramuscular injection is a painful practice which is different from person to person. Helfer Skin Tap technique was suggested by Joanne Helfer. Skin tapping (Helfer Skin Tap technique) is one of the methods which keeps the muscles relaxed and while administration the intramuscular injection. In the present-day study a Quasi experimental design was used with Purposive Sampling technique to assess the effectiveness of interventional tapping technique that is Helfer Skin Tap technique to decrease the level of pain during administration of the intramuscular injection. The study was conducted out in Guru Nanak Dev Hospital, C.K Life care hospital. The sample contained 100 from medical and surgical wards. A numerical pain scale is usage to assess the effectiveness of Helfer Skin Tap Technique. Investigation was done using both descriptive and inferential statistics. Finding of the study disclosed that, there was significant difference between in the mean post score of (Helfer Skin Tap technique) is less than the control group. The numeric pain scale that is $1.60(SD \pm 1.143)$ and $4.98(SD \pm 1.755)$ separately and "t" test value is 11.410 which is significant at 0.05 level. The result shown that the comparison between the experimental control groups show that pain is reduce with the help of skin tapping technique after the intramuscular injection.

Keywords: Helfer Skin Tap technique, Intramuscular injection, pain scale, effectiveness

***Corresponding Author**

E-mail: garcha98151@gmail.com

INTRODUCTION

Intra muscular injection is common and complex technique used to deliver the medication deep into the large muscles of the body. Intra muscular injection route provides faster drug action and absorption than the subcutaneous route because in the muscles have greater vascularity.

There are different categories which influences person experiences of pain during Intra muscular injection for example anxiety, culture, age, gender, and expectation of pain relief. These factors increase or decrease the experience of pain during Intra muscular injection^[1-3]

The International Association for the Study of pain (IASP, 1979) defined pain as the "An unpleasant, subjective, sensory and emotional experience associated with actual or potential tissue damage or characterized in terms of such damage". The pain generating stimulus sends an impulse across a peripheral nerve fiber. Then the pain fiber inflowing into the spinal cord and after that travels into several routes and ending point within the gray matter of the spinal cord. There the pain give message and interacts with inhibitory nerve cells and preventing the pain stimulus from reaching the brain

towards cerebral cortex. After that a pain stimulus reaches towards the cerebral cortex the brain interprets the quality of pain and processes information about past experience, knowledge and cultural associations in the perception of pain.^[4]

Helfer skin tap technique is believed to provide painless injection experience. In some of medical provides effective rhythmic technique tapping before and over the skin at site of injection is given. This technique keep the muscle relaxes and stimulate the large diameter fibers. It provides a mechanical stimulation to the patient and distraction during the injection and helps to reduce pain as described in gate control theory by Roger Metzack (1965)^[5,6]

Some of the medical health professionals may recognized pain with the help of verbal pain score, which ranging from zero (no pain) to 10 (worst possible pain imaginable). Other medical providers use a series of facial expressions to determine the level of pain, and potential pain treatment or pain relief measure.

OBJECTIVES OF THE STUDY

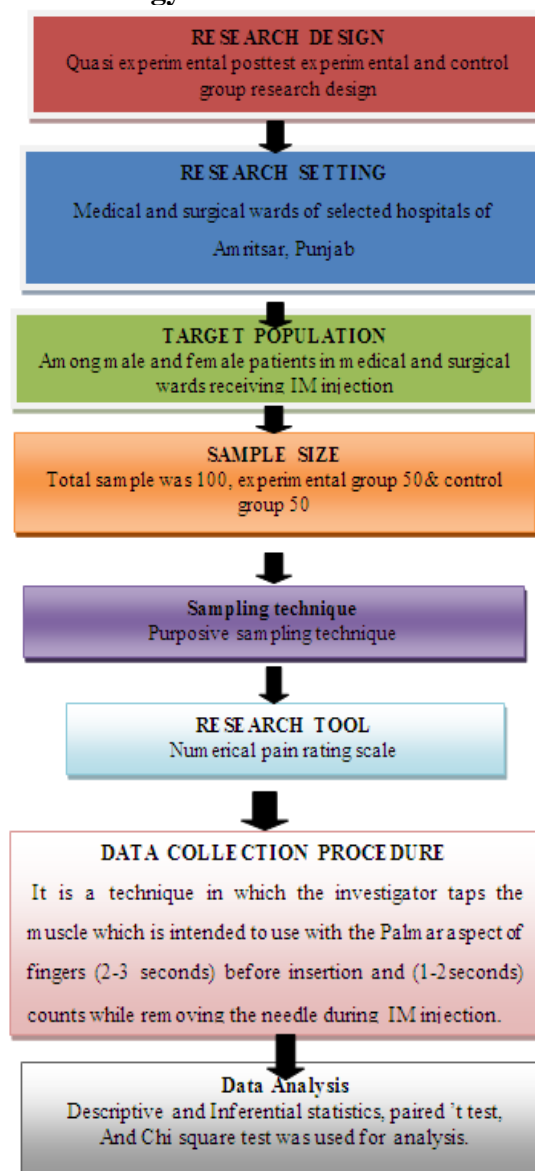
- Assess the level of pain during I/M injection using Helfer Skin Tap technique in experimental group
- Assess the level of pain during I/M injection in control group without using Helfer Skin Tap technique
- Compare the level of pain in both experimental and control group after giving I/M injection
- Associate the pain level with selected demographic variables of posttest of experimental and control group

Data Collection Procedure

Formal permission was obtained from the concerned authorities and research ethical committee to conduct the study. The data collection was done in Guru Nanak Dev hospital, CK life care hospital, of

Amritsar. 100 samples were selected purposively and non-randomly assigned in both experimental and control group. In experimental group 50 samples (Helfer Skin Tap technique) was used and in control group 50 samples (without using Helfer Skin Tap technique) and in both group Post test was conducted by using numerical pain rating scale 0-10. to assess the level of pain after administration the intramuscular injection.

Methodology



Plan for Data Analysis

Analysis of demographic characteristics of patient receiving intramuscular injection.

Table 1. Frequency and Percentage Distribution of Demographic Variables in Both the Groups.

S. no	Demographic variable	Experimental group		Control group	
		F	Percentage	F	Percentage
1.	Age				
a)	20–40	18	36.0%	16	32.0%
b)	41–60	20	40.0%	19	38.0%
c)	61–80	12	24.0%	15	30.0%
2.	Gender				
a)	Male	24	48.0%	24	48.0%
b)	Female	26	52.0%	26	52.0%
3.	Type of injections				
a)	Antibiotics	14	28.0%	10	20.0%
b)	Antipyretics	9	18.0%	4	8.0%
c)	Antihypertensive	9	18.0%	11	22.0%
d)	Antiemetic	8	16.0%	7	14.0%
e)	Vitamin D	5	10.0%	9	18.0%
f)	Painkillers	5	10.0%	9	18.0%
4.	Size of needle				
a)	21 Gauge	26	52.0%	25	50.0%
b)	23 Gauge	24	48.0%	25	50.0%
5.	Volume of injection				
a)	1 mL	26	52.0%	24	48.0%
b)	2 mL	24	48.0%	15	30.0%
c)	3 mL	0	0.0%	11	22.0%
6.	Site of injection				
a)	Dorsogluteal	22	44.0%	18	36.0%
b)	Ventrogluteal	17	34.0%	14	28.0%
c)	Deltoid	11	22.0%	18	36.0%
7.	History of previous injection				
a)	Yes	27	54.0%	26	52.0%
b)	No	23	46.0%	24	48.0%

Experimental Group (Helfer Skin Tap Technique)

Table 1 depicts the variable of the subjects according to age, gender, type of injection, volume of injection, site of injection, and size of needle, history of injection. The results indicate the highest percentage of subjects (40%) belongs to age group 41–60 years, 20–40 age group indicates (36.0%) and about 24.0% were belongs to 61–80 age group. It can be seen majority of respondents (48.0%) were males, (52.0%) were females. It depicts that type of injection of respondents giving antibiotics (28.0%), antipyretic (18.0%), antihypertensive (18.0%), antiemetic (16 %) and (10.0%), Painkillers 10.0%, respectively. In relation to volume of injection 1 mL highest (52.0%), 2 mL (48.0%), and 3 mL is (0%), respectively. It depicts that size of needle having 21 g needle highest percentage (52.0%), and 23 g needle (48.0%),

respectively. In relation to site of intramuscular injection dorsogluteal having highest percentage (44.0%) and ventrogluteal having (34.0%) whereas deltoid having least percentage (11%). The result indicates in history of previous injection (55%) in which on history of previous injection having percentage (46.0%).

Control Group (Without Using Helfer Skin Tap Technique)

Table 1 depicts the variable of the subjects according to age, gender, type of injection, volume of injection, site of injection, and size of needle, history of injection. The results indicate the highest percentage of subjects (38.0%) belongs to age group 41–60 years, 20–40 age group indicates (32.0%) and (30.0%) were belongs to 61–80 age group. It can be seen that majority of respondents (48.0%) were males,

(52.0%) were females. It depicts that type of injection of respondents having highest percentage of antihypertensive (22.0%), antibiotics (20.0%), vitamin D (18.0%), painkillers (18.0%), antiemetics (14.0%), antipyretics (13.0%), respectively. In relation to volume of injection 1 mL highest (48.0%), 2 mL (30.0%), and 3 mL is (22.0%), respectively. It depicts that size of needle having 21 g needle percentage (50.0%), and 23 g needle (50.0%), respectively. In relation to site of intramuscular injection dorsogluteal having percentage (36.0%) and deltoid having also (36.0%) ventrogluteal site having least percentage (28.0%). The result indicates in history of previous injection (52%) and no history of previous injection having percentage (48.0%).

Objective 1

To assess the level of pain in experimental group.

Table 2. Posttest Scores in the Experimental Group.

Variable	Experimental group Pain score
Mean	1.60
Mean percentage	16%
Standard deviation	1.143

Table 2 shows that mean score of experimental group (Helfer skintap technique) numeric rating pain score is 1.60 (sd \pm 1.143), respectively.

Objective 2

To assess the level of pain in control group after giving the intramuscular injection without applying Helfer Skin Tap technique.

Table 3. Posttest Scores in the Control Group.

S. No.	Pain score
Mean	4.9
Mean percentage	49.8%
Standard deviation	1.755

Table 3 shows that mean score of control group (without using Helfer Skin Tap technique) numeric rating pain score mean 4.98 (SD \pm 1.755) respectively.

Objective 3

To compare the level of pain in both experimental and control group

Table 4. Compare the level of pain in both groups the experimental group and control group after giving the intramuscular injection. N: 100.

S. No.	Mean	Standard deviation	t-Test	Table value
Experimental group	1.60	1.143	11.4	1.98
Control group	4.98	1.755	10	

df=98.

Table 4 shows that mean score of experimental group of numeric scale is 1.60 (SD \pm 1.143) and control group mean 4.98 (SD \pm 1.755) respectively. Scores of mean and standard deviation is less than the control group and 't' test value is 11.410 which is significant at 0.05 level.

To find the association between the effectiveness of Helfer Skin Tap technique on pain level with their selected demographic variables in experimental group

	Experimental group (Helfer skin tap technique (numerical pain rating sacle))								
S. no	Demographic variable	No pain		Mild		Modrate		Chi value	Table value
		F	%Age	F	%Age	F	%Age		
1.	Age (years)							12.394 (S)	9.49
(a)	20-40	4	8.0%	14	28.0%	0	0.0%		
(b)	41-60	5	10.0%	15	30.0%	0	0.0%		
(c)	61-80	0	0.0%	9	18.0%	3	6.0%		
2.	Gender							0.470 (NS)	5.59
(a)	Male	5	10%	18	36.0%	1	2.0%		
(b)	Female	4	8.0%	20	40.0%	2	4.0%		

3.	Type of injections								
(a)	Antibiotics	2	4.0%	11	22.0%	1	2.0%	7.277 (NS)	18.31
(b)	Antipyretics	3	6.0%	5	10.0%	0	2.0%		
(c)	Antihypertensives	1	2.0%	8	16.0%	1	0.0%		
(d)	Antiemetics	2	4.0%	6	12.0%	0	0.0%		
(e)	Vitamin D	0	0.0%	5	10.0%	0	0%		
(f)	Painkillers	1	2.0%	3	6.0%	1	2.0%		
4.	Volume of injection							1.255 (NS)	5.99
(a)	1 mL	6	12.0%	19	38.0%	1	2.0%		
(b)	2 mL	3	6.0%	19	38.0%	2	4.0%		
(c)	3 mL	0	0.0%	0	0.0%	0	0.0%	3.768 (NS)	9.49
5.	Size of needle								
(a)	21 Gauge	6	12.0%	19	38.0%	1	2.00%		
(b)	23 Gauge	3	6.0%	19	38.0%	2	4.0%	0.549 (NS)	5.99
6.	Site of injection								
(a)	Dorsogluteal site	6	12.0%	10	20.0%	2	4.0%		
(b)	Ventrogluteal site	2	4.0%	14	28.0%	1	2.0%	0.549 (NS)	5.99
(c)	Deltoid site	1	2.0%	10	20.0%	0	0.0%		
7.	History of previous injections							0.549 (NS)	5.99
(a)	Yes	4	8.0%	21	42.0%	2	4.0%		
(b)	No	5	10.0%	17	21.0%	1	2.0%		

(S)=Significant, (NS)=Nonsignificant, (F)=Frequency, (P)=percentage, (df)=Degree of freedom.

The Chi-square values were calculated to find out the association between effectiveness of Helfer Skin Tap technique on pain level among the patients receiving intramuscular injection with age (12.394), association with gender (0.470), association with type of injection (7.277), association with gauge of needle (1.255),

association with site of injection (3.768), association with history of previous injection (0.549) at the ($p \geq 0.05$)

To find the association between the effectiveness on pain level with their selected demographic variables in control group

Control group (Helfer skin tap technique (numerical pain rating scale))									
S. no	Demographic variable	Mild		Moderate		Severe		Chi	Table value
		F	%Age	F	%Age	F	%Age		
1.	Age (years)							6.837 (NS)	9.49
(a)	20–40	2	4.0%	9	18.0%	5	10.0%		
(b)	41–60	6	12.0%	12	24.0%	1	2.0%		
(c)	61–80	1	2.0%	10	20.0%	4	8.0%	0.464 (NS)	5.99
2.	Gender								
(a)	Male	4	8.0%	16	32.0%	1	2.0%		
(b)	Female	5	10.0%	15	30.0%	2	4.0%	7.076 (NS)	18.31
3.	Type of injections								
(a)	Antibiotics	1	2.0%	7	4.0%	2	4.0%		
(b)	Antipyretics	0	.0%	2	4.0%	2	4.0%		
(c)	Antihypertensives	3	6.0%	5	10.0%	3	6.0%		
(d)	Antiemetics	2	4.0%	5	10.0%	5	10.0%		
(e)	Vitamin D	2	4.0%	6	12.0%	1	2.0%		
(f)	Painkillers	1	2.0%	6	12.0%	2	4.0%	3.026 (NS)	9.49
4.	Volume of injection								
(a)	1 mL	5	10.0%	15	30.0%	4	8.0%		
(b)	2 mL	2	4.0%	11	22.0%	2	4.0%	1.798	
(c)	3 mL	2	4.0%	5	10.0%	4	8.0%		
5.	Size of needle								
(a)	21 Gauge	3	6.0%	16	32.0%	6	12.0%	1.798	
(b)	23 Gauge	6	12.0%	15	30.0%	4	4.0%		
6.	Site of injection							1.798	
(a)	Dorsogluteal site	2	4.0%	11	24.0%	4	8.0%		
(b)	Ventrogluteal site	4	8.0%	8	16.0%	2	4.0%		

(c)	Deltoid site	3	6.0%	11	22.0%	4	8.0%	(NS)	9.49
7.	History of previous injections							2.993	
(a)	Yes	7	14.0%	14	28.0%	5	10.0%	(NS)	5.99
(b)	No	2	4.0%	17	34.0%	5	10.0%		

IMPLICATION

The implications of findings have been discussed in relation to nursing service, nursing administration, nursing education and nursing research.

(A) Implication for Nursing Practice

- Helfer Skin Tap technique can be adapted to the procedure of intramuscular injection. Nurses can be taught about the Helfer Skin Tap technique and it can be practiced in clinical area.
- There is not much empirical evidence for the procedure of intramuscular injection findings can be merged into evidence based tool nursing practice.

(B) Implications in Nursing Education

- Helfer Skin Tap procedure can be included in the literature on intramuscular injection.
- The procedure of using Helfer Skin Tap technique for intramuscular injection in nursing curriculum.
- Nursing students can be taught about the Helfer Skin Tap Technique of intramuscular injection

(C) Implication in Nursing Research

- Nurse researcher can conduct study to verify the scientific rationale /physiology behind the effect of Helfer Skin technique.
- Recommendations for the procedure of intramuscular injection technique can be prepared based on Helfer Skin Tap technique.
- The research findings can be used by the new students in their research work.
- The research work will help to attend research presentation at professional conference.

- The tool used in the present study will be used as original or modified for further research.
- Further research can be conducted by taking more variables for better results.

(D) Nursing Administration

Nurse as an administrator plays an important role in education the professionals such as mass health education measures in hospital.

- Policies for procedure of intramuscular can be developed based on the study findings by incorporating Helfer SkinTap Technique into the procedure.
- Nurse manger can update about the procedure of intramuscular injection using Helfer Skin Tap technique and educate nurses about it through in-service education programmes.
- Nursing administrators can inspire nurses to use Helfer Skin Tap technique in their clinical area.

CONCLUSION

As good health is very important for each and every individual and self-care strategies can help the clients to restore the health and prevent from life threatening condition. The main intervention is to that can help in reducing the pain without any cost and also to prevent the complications. The result shows that mean score of Helfer Skin Tap technique of numeric scale is 1.60 (SD ± 1.143) in control group 4.98(1.755) respectively. Comparison of scores of mean and standard deviation of (Helfer Skin Tap technique) is less (without using Helfer Skin Tap technique) the 't' test value is 11.410 which is significant at 0.05 level. The result concludes that Helfer Skin Tap technique is effective in reducing the pain of intramuscular injection among the patients

who are receiving the intramuscular injection.

REFERENCES

1. Pain management [internet] 2012 [cited 2012 Oct 16]. Available from: en.wikipedia.org/wiki/pain_management.
2. Lala M.K., Lala K.R. Review of injection practice, *Indian J Practical Pediatr.* 2001; 3: 72p.
3. Wise E.A., Price D. Gender role expectations of pain. Relationship to experimental pain perception. 96(3): 335-42.
4. Potter P.A. *Fundamentals of Nursing*. 6th Edn. New Delhi: Elsevier Publications; 2005, 25–9p.
5. Vital signs [internet] 2012 [cited 2012 Oct 16]. Available from: en.wikipedia.org/wiki/vital_signs.
6. Helfer J.K. Painless injection; Helfer Skin Technique, *Nurse Educ.* 2000; 25(6): 56–62p.