

Effectiveness of Helfer Skin Tap Technique in Reducing Pain during Intra Muscular Injection among Adult Patients Admitted in IGMC, Shimla, HP

Priyanka Thakur¹, Sunita Verma²

¹Student, M. Sc. (N), Sister Nivedita Govt. Nursing College, I. G. M. C., Shimla, H. P., India
Email Id: priyankathakur1301[at]gmail.com

²Guide, Lecturer, Medical Surgical Nursing, S. N. G. N. C, I. G. M. C, Shimla, H. P., India

Abstract: Background: In the medical practice, intramuscular (IM) injection is one of the most frequent procedure done every day. Ms Joanne Helfer made an attempt to alleviate pain due to intramuscular injection by developing, "Helfer Skin Tapping technique" in which tapping of the skin over the injection site is done before administering IM injection. Mechanical stimulation which is given by tapping, can diminishes the influence of small, pain carrying fibers. Objective: Effectiveness of Helfer Skin Tap Technique in reducing pain during intra - muscular Diclofenac sodium injection among adult patients was assessed. Methods and materials: The true experimental design was used with sample size of 60 admitted patients in selected wards of IGMC, Shimla, HP. Random sampling method was used. The tool consisting of socio - demographic variables, Numeric Pain Rating Scale was prepared. Intramuscular injection was administered to experimental group with Helfer Skin Tap Technique and with standard technique to control group. Pain level was assessed using Numeric Pain Rating Scale. Statistical analysis was done. Result: In experimental group mean pain score was 1.70 whereas, in control group mean score was 4.00. Standard deviation of experimental group score was 1.368 and of control group was 1.462. The 't' value of unpaired test score was 6.291 which was significant at the level of 0.05. In experimental group, the calculated Chi square was 16.26, which shows significant association between the level of pain score of experimental group and frequency of injection administration. Conclusion: The study findings showed that the Helfer Skin Tap Technique was effective than the Routine Technique during administering Intra Muscular Injection.

Keywords: Intramuscular Injection, Diclofenac Sodium Injection, Pain, Helfer Skin Tap Technique, Effectiveness

1. Introduction

"Pain is an uncomfortable feeling that even a tiny amount of it is enough to ruin every enjoyment"

Will Rogers

Pain is the most common reason that people seek medical attention. But it is actually hard to define because it's a subjective feeling. **The International Association for the study of Pain** defines it as "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such harm". Every person born in the world has suffered some type or degree of pain. People with pain feel distress or suffering and seeks relief.¹

In the medical practice, intramuscular (IM) injection is one of the most frequent procedures done almost every day. It is fact that any intra muscular injection will cause pain at the site of injection i. e. pain is evident when administering intramuscular injection.² Pain originating from intramuscular (IM) injection shouldn't be underestimated, because it can harm the nurse - patient relationship. Pain relieving measures is a most fundamental requisite of human right, thus it's the responsibility of the nurse to use best approach to pain management. Nurses have legal and ethical responsibilities for managing pain. Effective pain control measures not only alleviate discomfort, but also promote clients' quality of life. According **American pain society**,

Pain is referred as "the fifth vital sign" to stress its significance and to improve attention of health care professionals about the importance of effective pain management strategies, as well as continuous assessment.³ In 1998, Ms Joanne Helfer made an attempt to alleviate pain due to intramuscular injection by developing,, "Helfer Skin Tapping technique" in which tapping of the skin over the injection site. The technique uses basic concepts of theory of pain; including the gate control theory. Mechanical stimulation which is given by tapping can diminishes the influence of small, pain - carrying fibers. It consists two basic points: 1. Muscle relaxation, which physically decreases the resistance to needle entry into the skin.² Diversion, by simultaneous tapping over the skin before the needle is inserted and removed.⁴

The current study conducted there was no need of any special tools but just knowledgeable nurse and it is an innovative idea to perform painless injection. Considering all the above facts motivated the investigator to conduct this study to determine the effectiveness of Helfer Skin Tap technique in adult patients admitted in selected wards of Indira Gandhi Medical College and Hospital, Shimla.

Research Problem Statement

"A true experimental study to assess the effectiveness of Helfer Skin Tap Technique in reducing pain during intra - muscular diclofenac sodium injection among adult patients

admitted in selected wards of Indira Gandhi Medical College and Hospital, Shimla, Himachal Pradesh. ”

Objectives of the study

- 1) To assess the level of pain of experimental group during intramuscular injection among adult patients admitted in selected wards of Indira Gandhi Medical College and Hospital, Shimla, Himachal Pradesh.
- 2) To assess the level of pain of control group during intramuscular injection among adult patients admitted in selected wards of Indira Gandhi Medical College and Hospital, Shimla, Himachal Pradesh.
- 3) To evaluate the effectiveness of Helfer skin tap technique on level of pain during intramuscular injection among adult patients admitted in selected wards of Indira Gandhi Medical College and Hospital, Shimla, Himachal Pradesh.
- 4) To find out the association between level of pain of experimental and control group during intramuscular injection with selected demographic variables.

2. Methodology

In this study quantitative true experimental approach and post test only control design was used to collect the data from the sample size of 60 adult patients (30 in experimental group advised with Diclofenac Sodium Intramuscular injection and 30 in control group) admitted in various wards of Indira Gandhi Medical college and Hospital, Shimla.

Random Sampling technique was used to select the study sample and structured numerical pain rating scale was used to collect the data from subjects. The tool comprised of two

sections. Section I had questions related to socio - demographic variables (age, gender, work style, body build, habit of practicing muscle exercise, frequency of injection administration), while section B consisted of Numerical Pain Rating Scale.

Content validity of tool was ensured by medical and nursing experts. Reliability of tool was compound by using Karl Pearson Correlation Coefficient and was found to be reliable with value of 0.78.

Ethical approval was sought from the concerned authorities of Indira Gandhi Medical College and Hospital, Shimla. An informed consent was obtained from the participants before administering the tool. Confidentiality and privacy of the collected data was maintained. Intramuscular injection was administered to experimental group with Helfer Skin Tap Technique and with standard technique to control group. Pain level was assessed using Numeric Pain Rating Scale.

Socio - demographic data of patients was analyzed by statistical analysis (Number of frequency and percentage distribution. Mean, mean percentage, standard deviation and inferential measures) and unpaired t test was used to compare the pain scores of Experimental and Control Group. Chi square test was used to determine the association between pain score of Experimental Group with selected socio - demographic variables.

3. Results

Section I: Findings related to the classification of socio - demographic variables of the adult patients.

Table 1: Frequency and percentage distribution of socio - demographic variables of adult patients

Section - 1 Socio Demographic Proforma		Experimental (%)	Control (%)	Experimental (F)	Control (F)
Age	18 - 35 yrs	13.3%	10.0%	4	3
	36 to 55 yrs	50.0%	46.7%	15	14
	56 years and older	36.7%	43.3%	11	13
Body Build	Thin	26.7%	30.0%	8	9
	Average	56.7%	60.0%	17	18
	Obese	16.7%	10.0%	5	3
Gender	Male	33.3%	80.0%	10	24
	Female	66.7%	20.0%	20	6
Work Style	Heavy worker	10.0%	13.3%	3	4
	Moderate worker	63.3%	76.7%	19	23
	Sedentary worker	26.7%	10.0%	8	3
Habit of Practicing Muscle Exercise	Yes	6.7%	6.7%	2	2
	No	93.3%	93.3%	28	28
Frequency of Injection Administration	Once a day	50.0%	40.0%	15	12
	Twice a day	46.7%	53.3%	14	16
	Thrice a day	3.3%	6.7%	1	2
	As needed	0.0%	0.0%	0	0

Section II: Findings related to level of pain score of experimental group.

Among 30 hospitalized adult patients of experimental group, 20 (66.7%) experienced mild pain and 7 (23.3%) experienced no pain, 3 (10%) experienced moderate pain.

Section III: Findings Related to Level of Pain Score of Control Group.

In control group maximum participants experienced moderate level of pain i. e.19 (63.3%), 11 (36.7%) experienced mild pain and 0 (0%) experienced severe pain and no pain.

Section IV: Findings Related to the Effectiveness of Helfer Skin Tap Technique.

Table 2: Descriptive statistical findings on effectiveness of Helfer Skin Tap Technique among adult patients

Unpaired T Test		Mean Score	S. D.	N	Mean F	Unpaired Test	P value	Table Value at 0.05
Pain Rating Scale Score	Experimental	1.7	1.368	30	17	6.291	<0.001	2.002
	Control	4	1.462	30	40			

Table 2, The t value of unpaired test is 6.291 and table value at 0.05 is 2.002 which is less than calculated unpaired t test value. Hence the results were significant.

Section V: Findings related to association between the pain score of experimental group and control group with socio - demographic variables.

Table 3: Association of Experimental Pain Rating Scale Score and demographic variables

Demographic Data		Levels				Association with Experimental Pain Rating Scale Score				
Variables	Opts	No Pain	Mild Pain	Moderate Pain	Severe Pain	Chi Test	P Value	Df	Table Value	Result
Age	18 - 35 yrs	0	4	0	0	3.786	0.436	4	9.488	Not Significant
	36 to 55 yrs	5	9	1	0					
	56 years and older	2	7	2	0					
Body Build	Thin	2	5	1	0	0.801	0.938	4	9.488	Not Significant
	Average	4	11	2	0					
	Obese	1	4	0	0					
Gender	Male	3	6	1	0	0.386	0.825	2	5.991	Not Significant
	Female	4	14	2	0					
Work Style	Heavy worker	2	1	0	0	5.765	0.217	4	9.488	Not Significant
	Moderate worker	5	12	2	0					
	Sedentary worker	0	7	1	0					
Habit of Practicing Muscle Exercise	Yes	1	1	0	0	0.957	0.620	2	5.991	Not Significant
	No	6	19	3	0					
Frequency of Injection Administration	Once a day	6	7	2	0	16.266	0.003	4	9.488	Significant
	Twice a day	1	13	0	0					
	Thrice a day	0	0	1	0					
	As needed	0	0	0	0					

Table 3 The calculated Chi square was 16.26, which was more than the table value at 0.05 level of significance i. e.9.488 in frequency of injection administration. Hence there was significant association between the level of pain score of experimental group and frequency of injection administration.

4. Discussion

Discussion on the findings was arranged in the order of objectives of the study. The first objective was to assess the level of pain of experimental group during intramuscular injection among adult patients admitted in selected wards of Indira Gandhi Medical College and Hospital, Shimla, Himachal Pradesh. The study revealed that after using Helfer skin tap technique among hospitalized adults 20 (66.7%) patients experienced mild pain and 7 (23.3%) experienced no pain, 3 (10%) experienced moderate pain. A similar study was conducted by Arora S., Jyoti Gyan to assess the effectiveness of Helfer Skin Tap Technique for IM Injection Pain. They concluded that a significant decrease was observed in the pain score on the administration of IM injection with Helfer skin tap technique ($p < 0.05$) and routine treatment.⁵

The second objective was to assess the level of pain of control group during intramuscular injection among adult patients admitted in selected wards of Indira Gandhi Medical College and Hospital, Shimla, Himachal Pradesh. In control group maximum participants experienced moderate level of pain i. e.19 (63.3%), 11 (36.7%) experienced mild pain and 0 (0%) experienced severe pain and no pain. A similar study was conducted by Amira A. H. to assess the efficacy of

Helfer Sin Tap Technique on pain intensity as perceived by the patients receiving Intramuscular Injection. In control group mean pain value was more than experimental group.⁽³⁾

The third objective was to evaluate the effectiveness of Helfer skin tap technique on level of pain during intramuscular injection among adult patients admitted in selected wards of Indira Gandhi Medical College and Hospital, Shimla, Himachal Pradesh. In experimental group mean pain score was 1.70 whereas in control group mean score was 4.00. Standard deviation of experimental group was 1.368 and of control group was 1.462. The t value of unpaired test is 6.291 and table value at 0.05 is 2.002 which is less than unpaired test value. Hence the results were significant. A similar study was conducted by Therese M, Devi S. (2014) to assess the effectiveness of Helfer Skin tap technique and routine technique on pain reduction among patients receiving intramuscular injection at Government General Hospital, Puducherry. The finding indicated that Helfer Skin Tap technique is statistically significant than routine technique.⁽²⁾

The fourth objective was to find out the association between level of pain of experimental and control group during intramuscular injection with selected demographic variables. In experimental group, the calculated Chi square was more than the table value at 0.05 level of significance in frequency of injection administration. Hence there was significant association between the level of pain score of experimental group and frequency of injection administration. In control group, the calculated Chi square was less than the table value at 0.05 level of significance. Hence there was no

significant association between the level of pain score of experimental group and demographic variables (age, gender, body build, work style, habit of practicing muscle exercises). A similar study was conducted by Menaka J, Malarvizhi G, Glory H to assess the effectiveness of Helfer Skin tap technique in pain reduction among infants underlying Intramuscular Vaccination in tertiary care setting, Coimbatore, tamil Nadu. The study shows that a significant association was found between the gender with the pain level of infants during intramuscular vaccination in routine group and most of the female infants experienced severe pain compared with male infants in routine group.⁶

5. Conclusion

On the basis of findings of the current study, Unpaired 't' test result revealed that there was significant difference between experimental group pain score and control group pain score of adult patients receiving IM injection. Also, there was significant association between the level of pain score of experimental group and frequency of injection administration. The study findings indicate that there is a need for applying Helfer Skin Tap Technique to decrease pain level experienced by patient during intramuscular injection.

References

- [1] Potter PA., Perry AG. Fundamentals of nursing, 9th edition, New Delhi, ELSEVIER publisher, 2017.
- [2] Therese A M, Devi S, (2014). Effectiveness of Helfer Skin Tap Technique and Routine Technique on Pain Reduction among Patients Receiving Intramuscular Injection at Government General Hospital, Puducherry. International Journal of Science and Research (IJSR). Volume 3 Issue 10.1446 - 1449. Available from: https://www.researchgate.net/publication/267351980_Effectiveness_of_Helfer_Skin_Tap_Technique_and_Routine_Technique_on_Pain_Reduction_among_Patients_Receiving_Intramuscular_Injection_at_Government_General_Hospital_Puducherry
- [3] Amira A H, Mohamed H., Mohamed S. (2016), International Journal of Nursing Didactics. Volume 6. Issue 02. Available from: https://www.researchgate.net/publication/324941316_Helfer_Skin_Tap_Technique_for_IM_Injection_Pain_A_Review
- [4] Chaudhari H, Vageriya V. (2018). Assess the Effectiveness of Helfer Skin Tap Technique on Pain During Vaccination among Infants. International Journal of Innovative Studies in Sociology and Humanities (IJISSH). Volume 3. Issue 12, pages 73 - 75. Available from: <http://ijissh.org/wpcontent/uploads/2018/12/V3I12-11.pdf>
- [5] Arora S., Jyoti G. (2017), Helfer Skin Tap Technique for IM Injection Pain: A Review, International Journal of Science and Research (IJSR), Volume 7 Issue 4, page no.1593 - 1595. Available from https://www.researchgate.net/publication/324941316_Helfer_Skin_Tap_Technique_for_IM_Injection_Pain_A_Review
- [6] Menaka J, Malarvizhi G, Glory H (2019), A Study to Assess the Effectiveness of Helfer Skin Tap Technique

in Pain Reduction among Infants Undergoing Intramuscular Vaccination in Tertiary Care Setting, Coimbatore, Tamil Nadu, India, International Journal of Nursing & Midwifery Research Volume 6, Issue 1 - 2019, Pg. No.11 - 16 Available from: <https://medical.advancedresearchpublications.com/index.php/IntJ-Nursing-MidwiferyResearch/article/view/16>