

# Effectiveness of Helfer Skin Tap Technique and Routine Technique on Pain Reduction among Patients Receiving Intramuscular Injection at Government General Hospital, Puducherry

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**Abstract:** *This study was conducted 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 by Simple random sampling technique (lottery method), 25 subjects were first assigned for intramuscular injection using Helfer Skin Tap Technique followed by Routine Technique for the next dose of injection and other 25 subjects were first assigned for intramuscular injection using Routine Technique followed by Helfer Skin Tap Technique for the next dose of injection. The subjects were examined with 4 variables viz pain, systolic and diastolic blood pressure and pulse rate. The intervention was implemented for four continuous days for both the groups. It was indicated that the perception of pain intensity is less when intra muscular injection is administered using Helfer Skin Tap Technique. Helfer Skin Tap Technique can be implemented in intramuscular injection technique while caring for patients in various clinical settings.*

**Keywords:** Helfer Skin Tap Technique, Intramuscular Injection

## 1. Introduction

Comfort is an important need and ensuring a patient's comfort is a major nursing responsibility. Health care interventions can be undertaken on the basis of customs and habits that practitioner no longer critically question. The term 'custom and practice' is commonly used to describe this phenomenon of practicing health care interventions based on customs and habits.

In the medical practice, intramuscular (IM) injection is one of the most frequent procedures done almost everyday. 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.

Pain management is one of the main facets of nursing care, where nurses need to be competent. Pain management during invasive procedure is a challenge to the direct care providers. If there is a technique, by which the nurses can provide painless injections that will be a great relief for those clients who are afraid of needles.

Helfer skin tap technique offers a painless injection experience. In this technique rhythmic tapping before and during injection over the skin at the site of injection keeps the muscle relaxed and stimulates large diameter fibres. It provides a mechanical stimulation and distraction during intramuscular injection and thus helps to reduce pain as described in gate control theory by Roger Metzack and Past Wall in 1965.

## 2. Materials and methods

The research approach selected for the study is quantitative approach and experimental design, cross over design. The study was conducted in medical ward, government general hospital, Puducherry. Sample size was 50. The study was confined to the subjects who receive intra muscular injection. By Simple random sampling technique, with the help of lottery method, 25 subjects were first assigned for intramuscular injection using Helfer Skin Tap Technique followed by Routine Technique for the next dose of injection and other 25 subjects were first assigned for intramuscular injection using Routine Technique followed by Helfer Skin Tap Technique for the next dose of injection. The subjects were examined with 4 variables viz pain, systolic and diastolic blood pressure and pulse rate. The intervention was implemented for four continuous days for both the groups.

"t - Test" was used to compare the pain level and physiological parameters between Helfer Skin Tap Technique and Routine Technique, and it is significant if ( $p < 0.05$ ).

## 3. Results

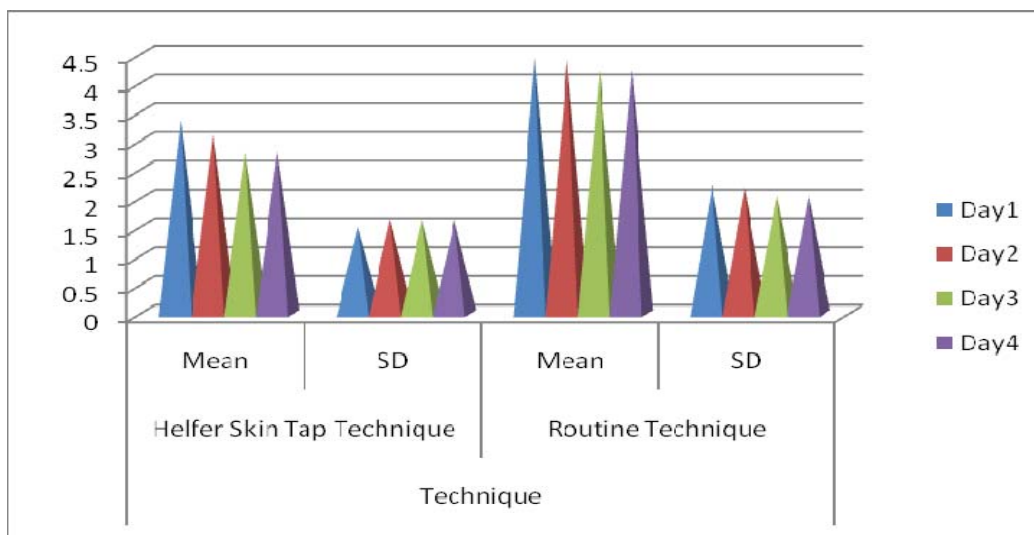
The results show that on the day 1, the obtained t value was 2.01 at p level of 0.05. On the day 2, the obtained t value was 2.33 at p level of 0.02. On the day 3 & 4, the obtained t value was 2.76 at p level of 0.01. It indicated that Helfer skin tap technique is statistically significant than routine technique on all the 4 days.

**Table 1:** Comparison Pain level among Samples receiving intramuscular injection by helper Skin tap technique and routine technique.

N = 50

Days	Technique				Student Independent t-test
	Helper Skin Tap Technique		Routine Technique		
	Mean	SD	Mean	SD	
Day1	3.36	1.50	4.44	2.24	t=2.01 p=0.05* significant
Day2	3.12	1.64	4.40	2.20	t=2.33 p=0.02* significant
Day3	2.80	1.63	4.24	2.04	t=2.76 p=0.01* significant
Day4	2.80	1.63	4.24	2.04	t=2.76 p=0.01* significant

Comparison of pretest Physiological parameters between Helper Skin Tap Technique and routine technique reveals that on the Day 1, the obtained 't' value of systolic BP was 0.04 which was not significant at p = 0.97 level. On the Day 2, the obtained 't' value of systolic BP was 0.15 which was not significant at p = 0.87 level. On the Day 3, the obtained 't' value of systolic BP was 0.20 which was not significant at p = 0.84 level. On the Day 4, the obtained 't' value of systolic BP was 0.05 which was not significant at p = 0.96 level.



**Figure 1:** Comparison Pain level among Samples receiving intramuscular injection by both a technique

**Table 2:** Comparison Of Pretest the Level of Systolic Blood Pressure Among Patients Receiving IM Injection By Helper Skin Tap Technique And Routine Technique

N = 50

Physiological parameters	Days	Pretest score				Independent t-test.
		Tap technique		Routine technique		
		Mean	SD	Mean	SD	
Systolic Blood Pressure	Day1	125.20	16.07	125.40	16.36	t=0.04 P=0.97 DF=48 Not significant
	Day2	125.60	14.17	125.00	13.25	t=0.15 P=0.87 DF=48 Not significant
	Day3	125.60	13.87	124.80	14.43	t=0.20 P=0.84 DF=48 Not significant
	Day4	124.80	13.87	125.00	16.10	t=0.05 P=0.96 DF=48 Not significant

**Table 3:** Comparison Of Pretest the level of Diastolic Blood Pressure Among Patients Receiving IM Injection By Helper Skin Tap Technique And Routine Technique

N = 50

Physiological parameters	Days	Pretest score				Independent t-test.
		Tap technique		Routine technique		
		Mean	SD	Mean	SD	
Diastolic BP	Day1	83.20	16.76	82.80	12.42	t=0.10 P=0.92 DF=48 Not significant
	Day2	82.40	16.45	82.80	9.80	t=0.11 P=0.90 DF=48 Not significant
	Day3	81.60	19.72	82.60	9.43	t=0.23 P=0.82 DF=48 Not significant
	Day4	81.40	18.48	82.60	12.08	t=0.28 P=0.77 DF=48 Not significant

On the Day 1, the obtained 't' value of Diastolic BP was 0.10 which was not significant at p = 0.92 level. On the Day 2, the obtained 't' value of Diastolic BP was 0.11 which was not significant at p = 0.90 level. On the Day 3, the obtained 't' value of Diastolic BP was 0.23 which was not significant at p = 0.82 level. On the Day 4, the obtained 't' value of Diastolic BP was 0.28 which was not significant at p = 0.77 level.

On the Day 1, the obtained 't' value of Pulse was 0.21 which was not significant at p = 0.98 level. On the Day 2, the obtained 't' value of Pulse was 0.16 which was not significant at p = 0.87 level. On the Day 3, the obtained 't' value of Pulse was 0.16 which was not significant at p = 0.87 level. On the Day 4, the obtained 't' value of Pulse was 0.44 which was not significant at p = 0.66 level.

**Table 4:** Comparison Of pretest level Of Pulse rate Among Patients Receiving IM Injection By Helfer Skin Tap Technique And Routine Technique  
N = 50

Physiological parameters	Days	Pretest score				Independent t-test.
		Tap technique		Routine technique		
		Mean	SD	Mean	SD	
Pulse	Day1	82.56	7.43	82.16	5.86	t=0.21 P=0.83 DF=48 Not significant
	Day2	81.98	7.68	81.68	5.88	t=0.02 P=0.98 DF=48 Not significant
	Day3	81.76	6.54	81.76	6.39	t=0.16 P=0.87 DF=48 Not significant
	Day4	81.12	5.83	81.84	5.68	t=0.44 P=0.66 DF=48 Not significant

**Comparison of the Level of Pre& post test Physiological Parameters (BP, Pulse) among samples receiving intramuscular injection by Helfer Skin Tap Technique and Routine Technique**

When comparing the pretest and post test score of Physiological parameters between Helfer skin tap technique and routine technique, It was found that all the parameters Systolic Blood Pressure, Diastolic Blood Pressure and Pulse, there is no statistically significant difference between Helfer skin tap technique and routine technique. Statistical significance was calculated using student independent t-test.

**Table 5:** Pre & Post Test Comparison Of Physiological Parameters (Bp, Pulse)

Paramters	Routine Technique				Helfer's Technique		
	Test	Mean	SD	t-test	Mean	SD	t-test
SBP	Pretest	125.05	15.03	t=0.09	125.30	14.49	t=0.22
	Post test	124.65	14.99	p=0.89 N.S	124.40	13.72	p=0.87 N.S
DBP	Pretest	82.7	10.9	t=0.22	82.15	17.85	t=0.07
	Post test	81.85	12.28	p=0.80 N.S	81.8	16.76	p=0.90 N.S
Pulse	Pretest	81.86	5.95	t=0.07	81.85	6.87	t=0.11
	Post test	81.98	5.87	p=0.66 N.S	81.65	5.05	p=0.87 N.S

\* - P<0.05, S – Significant, NS – Not significant

There is no significant difference in systolic and diastolic blood pressure and pulse rate by using both Helfer Skin Tap Technique and Routine Technique.

**4. Discussion**

The study was conducted to evaluate the effectiveness of Helfer Skin Tap Technique and Routine Technique on Pain Reduction associated with Intramuscular Injection at Government General Hospital, Puducherry. **Potter (2003)** said that Helfer skin tap technique offers a painless injection experience. **Shimmy, (2010)** conducted a randomized control trial in chandigarh to assess the skin tap technique on pain during intra muscular injection among adult patients receiving intra muscular analgesic injection. It was observed

that mean pain score of control group was 2.94±1.68 and the experimental group was 2.08±1.26. The difference t-4 at df – 198 was statistically significant (p<0.05). It was concluded that perception of pain intensity is less when intra muscular injections are administered using skin tap technique. In this study it was found that the perception of pain intensity is less when intra muscular injections are administered using Helfer Skin Tap Technique rather than routine technique. **Serena, (2010)** conducted a quasi experimental study (one group pre test and post test design) was conducted on 60 patients in Karnataka, India to assess the effectiveness of Helfer skin tap technique on pain in relation to intramuscular injection. Study revealed that the paired t-test was significant at p < 0.001. in present study also it revealed that the effectiveness of Helfer Skin Tap Technique has produced a statistically highly significant in reducing pain during intra muscular injection among patients at a correlation of p<0.05 level. On All the four days, Helfer skin tap technique is statistically significant than routine technique. It clearly shows that there is significant reduction of the pain level using Helfer Skin tap Technique than Routine Technique among patients receiving intra muscular injection. When we compare the level of Physiological Parameters (BP, Pulse) among patients before and after receiving intramuscular injection by Helfer Skin Tap Technique and Routine Technique. In all the parameters SBP, DBP and Pulse, before and after receiving intramuscular injection, there is no statistically significant difference between Helfer skin tap technique and Routine technique.

**Kenneth (1992)** assessed the nature and extent of group differences in pain tolerance according to age, sex and race. Results showed that on the average, (1) pain tolerance decreases with age; (2) men tolerate more pain than women; and (3) whites tolerate more pain than Orientals. When the results of this study are compared with previous studies, it showed that, with increasing age, tolerance to cutaneous pain increases and tolerance to deep pain decreases. In all the parameters SBP, DBP and Pulse, before and after receiving intramuscular injection, there is no statistically significant difference between Helfer skin tap technique and routine technique. Statistical significance was calculated using student independent t-test.

**5. Conclusion**

The following conclusions were drawn from the study. The study proved that Helfer Skin Tap Technique was effective than the Routine Technique in administering Intra Muscular Injection with mild pain or no pain and there is an association between Helfer Skin Tap Technique and Low Volume of Drug, Low dosage of drug and lateral position and no association on the remaining variables. It was concluded that the perception of pain intensity is less when intra muscular injection is administered using Helfer Skin Tap Technique. It works on the theoretical basis such as gate control theory. The technique can be adapted to the nursing education and to the nursing practice so that the quality can be ensured.

## 6. Implication

The findings of the study have the following implications in nursing.

### a) Implication for Nursing Practice

- Helper Skin Tap Technique can be adapted to the procedure of intra muscular injection. \_ Nurses can be taught about the Helper Skin Tap Technique and it can be practiced in the clinical setting. \_ As there is not much empirical evidence for the procedure of intra muscular injection findings can be merged into evidence based nursing practice.

### b) Implications in Nursing Education

- Helper skin tap technique can be included in the literature on intramuscular injection.
- The procedure of using Helper Skin Tap Technique for intra muscular injection can be included into the nursing curriculum.
- Nursing students can be taught about Helper Skin Tap Technique for intra muscular injection.

### c) Implications in Nursing Administration

- Policies for the procedure of intra muscular injection can be developed based on the study findings by incorporating Helper Skin Tap Technique into the procedure.
- Nurse Managers can update about the procedure of intra muscular injection using Helper Skin Tap Technique and educate nurses about it through in-service education programs.
- Nursing administrators can motivate nurses to use Helper Skin Tap Technique in their clinical area.

### d) Implications in Nursing Research

- Nurse researcher can conduct study to verify the scientific rationale / physiology behind the effect of Helper Skin Tap Technique.
- Randomized clinical trials could be undertaken so that the validity of the results can be increased and it can be incorporated into the evidence based nursing practice.
- Guidelines for the procedure of intramuscular injection technique can be prepared based on Helper Skin Tap Technique.

## 7. Recommendations

Injection itself is a fear to all irrespective of our age because it causes pain. It is a foremost responsibility of the health care contributor to provide a care for easing of discomfort like pain while rendering care. So that the health care receiver will be much benefited without any hurdles. So in future these kinds of studies definitely will be useful to the entire health care delivery system.

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