IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A QUASI-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF HELFER SKIN TAP TECHNIQUE ON THE LEVEL OF PAIN AMONG ADULT PATIENTS RECEIVING INTRAMUSCULAR INJECTION AT SELECTED HOSPITALS OF DISTRICT KANGRA HIMACHAL PRADESH.

Ms. Neha Thakur [1], Ms. Shailja Sharma[2], Ms. Ruchi Chaudhary[3]

1. M.Sc.(N) Dept. of Medical Surgical Nursing, Neta Ji Subhash College Of Nursing Palampur 176061, Himachal Pradesh, India

2. Assistant Professor (Dept. of Medical Surgical Nursing), Neta Ji Subhash College Of Nursing Palampur 176061, Himachal Pradesh, India

3. Assistant Professor Neta Ji Subhash College of Nursing Palampur 176061, Himachal Pradesh, India

ABSTRACT-An intramuscular injection is a technique used to deliver a medication deep into the muscles. Intramuscular injections commonly result in pain, redness swelling or inflammation around the injection site. Rarely, nerves or blood vessels around the injection site can be damaged, resulting in severe pain. Comfort is an important need and ensuring a patient's comfort is a major nursing responsibility. Helfer Skin Tap Technique is a non- pharmacological pain management techniques describes that mechanical stimulation over the skin can help to alter the balance between the small diameter fibers that carrying pain to the brain, and the large diameter fibers not carrying pain to the brain.

Methodology: A Quantitative research approach and quasi experimental "post test only control group design" was adopted to conduct the study. The non-probability convenient sampling technique was used to select 60 adult patients. Numerical pain rating scale was used to assess the level of pain among adult

patients receiving intramuscular injection. Analysis of collected data was done by using descriptive and inferential statistics.

Results: The majority of adult patients Le. 50% have Moderate pain, 30% were having mild pain, 13.3% were having no pain, and 6.7% were having severe pain. The majority of adult patients ie. 50% have severe pain, 36.7% were having moderate pain, 10% were having worst possible pain, and 3.3% were having mild pain. In the experimental group mean score was 3.77, SD was 2.128, Mean frequency was 37.67 and in control group mean score was 6.83, SD was 1.895, mean frequency was 68.33 and obtained 't'value has been found statistically very highly significant (5.894) at $p<0.001$ level of significance which show the significant difference between post test level of pain among adult patients receiving intramuscular injection in experimental group and control group. It shows that Helfer skin tap technique was an effective strategy for reducing the level of pain among adult patients receiving intramuscular injection in experimental group.

Conclusion: It was concluded that there is significant reduction in the level of pain level of pain among adult patients receiving intramuscular injection in experimental group. Helfer skin tap technique was an effective strategy for reduction in the level of pain level of pain among adult patients receiving intramuscular injection in experimental group. Keywords: Adult patients receiving intramuscular injection, Helfer skin tap technique.

INTRODUCTION

CURE SOMETIMES, TREAT OFTEN, COMFORT ALWAYS." -

(HIPPOCRATES)

Nursing is a profession within the health care sector focused on the care of individuals, families, and communities. Nurses help people in every walk of life and every part of life. A nurse career can take many forms, from working in hospital with gravely ill patients; Nurses help individuals from before birth to the time of death; and even help family members cope with the loss of a loved one, imaginable situation involving the health or illness of a person. They attain, maintain, or recover optimal health and quality of life. A nurse career can take many forms, from working in hospital with gravely ill patients.

According to American pain society, The International association for the study of pain defines it as a "disagreeable sensation and exciting feeling experienced by the individuals related with physical or hidden tissue damage, or described in terms of such damage . Pain is as "the fifth vital sign" so it focuses on its management during pain induced procedures. The world health organisation estimates that 12 billion

injections are given annually. Only in developing countries near about 16 thousand million injections are administered every year, and more than 90%, are given for therapeutic purposes. 5 to 10% are given as preventive services such as immunization and family planning. The most important side-effect resulted from injections is pain. It resulted from the penetration of the skin by the sharp edge of needle. Mechanical and chemical effects are also contributing factors of pain. In India, a survey conducted found that 96% of all injections given by private doctors were of antibiotics, vitamins and analgesics.

Skin tap technique includes tapping over the intramuscular injection site with the palmer aspect of the dominant hand sixteen times to relax the muscle making a “V” with the thumb and other fingers of the non dominant hand and tap the skin again for three times during the insertion and removal of the needle. The mechanical tapping stimulation over the skin by this technique alters the balance between the small diameter fibres that carry pain to the brain, and the large diameter fibres that do not carry pain. The large diameter fibres i.e. non-pain fibres block the small diameter fibres to slower the response to pain through effective skin tapping.

NEED

Pain is a multidimensional phenomenon, it is difficult to define, it is an individual and subjective experience, and no two individuals experience pain is the very same way. The international association for study of pain (IASP) gives the definition of the pain as "unpleasant sensory and emotional experience combined with the damage of actual or potential tissue, or describe in terms of such damage. According American pain society, Pain is 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.

According to WHO 2015 guidelines, every year at least 16 billion injections are administered worldwide. The vast majority –around 90% –are given in curative care. Immunization injections account for around 5% of all injections, with the remaining covering other indications, including transfusion of blood and blood products, intravenous administration of drugs and fluids and the administration of injectable contraceptives. A conservative estimate of average number of intramuscular injections ranged from 0.9 to 8.5 per person per year, with a median of 1.5 intramuscular injections per person per year. The prevalence of intramuscular injection in European countries was 5.6-11.3 injection per person per year. The lowest annual number of intramuscular injections were in America i.e., 1.7-1.9 injections per person per year.

An injection is the introduction of a drug, vaccine, contraceptive or other therapeutic agent into the body using a needle and syringe. Intramuscular injection is the injection of a substance directly into a muscle.

Depending on the injection site, and decisions regarding the injection site, volume of the drug to be injected, position of the client during injection and methods to keep the site relaxed to reduce the pain.

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.

PROBLEM STATEMENT

A quasi-experimental study to assess the effectiveness of helfer skin tap technique on the level of pain among adult patients receiving intramuscular injection at selected hospital of district Kangra Himachal Pradesh.

OBJECTIVES

1. To assess the level of pain among adult patients receiving intramuscular injection in experimental group and control group.
2. To compare the level of pain during intramuscular injection among adult patients in both experimental group and control group.
3. To find out the association of level of pain among adult patients with their selected socio demographic variables in experimental group and control group.

HYPOTHESES

H_1: There will be significant difference in level of pain among adult patients receiving intramuscular injection in experimental group and control group.

H_{01}: There will be no significant difference in the level of pain among adult patients receiving intramuscular injection in experimental and control group.

H_2: There will be significant association between the levels of pain during intramuscular injection with selected socio demographic variables among adult patients.

H_{02}: There will be no significant association between the levels of pain during intramuscular injection with selected socio demographic variables among adult patients.

REVIEW OF LITERATIURE

A literature review is an overview of the previously published works on a topic. The term can refer to a full scholarly paper or a section of a scholarly work such as a book, or an article. Either way, a literature review is supposed to provide the researcher/author and the audiences with a general image of the existing knowledge on the topic under question. A good literature review can ensure that a proper research question has been asked and a proper theoretical framework and/or research methodology have been chosen. To be precise, a literature review serves to situate the current study within the body of the relevant literature and to provide context for the reader. In such case, the review usually precedes the methodology and results sections of the work.

REVIEW OF LITERATURE ARE DIVIDED INTO SUBHEADINGS

Section A: Review of literature related to Helfer tap technique.

Section B: Review of literature related to intramuscular injection.

SECTION A: REVIEW OF LITERATURE RELATED TO HELFER TAP TECHNIQUE:

Nirosha 2021 conducted a quasi experimental study to a*ssess* the Effectiveness of helfer Skin Tap Technique on the level of Pain among Infants Undergoing Intramuscular Injection. Time series research design was used Purposive sampling technique used to select the eligible population. Simple random sampling technique was used to allocate the 60 study subjects to experimental and control group which comprised 30 in each group. The study reveals that the experimental and control group 't' value at 1st min t-1.88, at 5th minute t- 25.56 and the 10th min the 't' value is t-12.37. The result finding revealed that Helfer skin tap technique was effective in reducing the pain during intramuscular injection.

Semwal R et al 2021 conducted a experimental study to assess the effectiveness of helfer skin tap technique on the level of pain reduction during intra muscular injection among orthopaedic patient. Cross-over design was used. There were 50 subjects that fulfil the inclusion and exclusion criteria are divided into two experimental groups (25 samples in each groups)by simple random sampling technique. The pain level was assessed by universal numerical pain rating scale. The mean pain score with Helfer skin tap technique was 3.52 was less than conventional technique 5.16. The obtained t value was 5.479 was significant ^{at} $p < 0.05$ level of significance. There was no significant association found between level of pain during intramuscular injection with selected demographic variables. The overall result shows that Helfer skin tap technique was helpful in reducing the level of pain during intramuscular injection among orthopedic patients.

SSECTION B : REVIEW OF LITERATURE RELATED TO INTRAMUSCULAR INJECTION :

Dr. Prabu Vidhyalakshmi 2022: conducted a true experimental study was conducted to assess the effectiveness cold application before administering intramuscular injection on the reduction of needle stick pain among patients in selected Primary Health Centre, at Jalna, Maharashtra, India. Data was collected Primary Health Centre, Panives at Jalna. The study design used for study was Post test only control group design. A total 40 samples were selected by Convenience sampling technique. After collected the data Intervention was given as cold application for 1-2 minutes before administering intramuscular injection. Then,post-test done immediately after intervention to assess effectiveness of cold application by using Visual Analogue Scale. The statistical test used for analysis was. The study was concluded, that the cold application is effective to reduce needle stick pain.

Bhusal Pampha et al 2022: conducting a pre-experimental research design (one group pre-test and post-test design) was applied for this study, which included Fifty five nursing students. Purposive sampling technique was used for the sample selection. Majority of the nursing students had moderately adequate knowledge 31(56.4%), 16(29.1%) had inadequate knowledge and 8(14.5%) had adequate knowledge on pre-test. There was a significant improvement in post test knowledge score of nursing students regarding IM injections (M=10.89 SD=4.508) compared to the pre-test scores (M=14.42 SD=3.720) with the‘t’ value of $p < 0.01$. The present study reveals that more practical exposure is necessary so that they can gain more knowledge regarding intramuscular injections.

CHAPTER –III

METHODLOGY

Research methodology is the most important aspect f the research as it is the framework for conducting the study. It is a significant part of any research which enables the researcher to organize the procedure of collecting reliable data for the problem under study or investigation. This chapter deals with the description of the methodology and the various steps adopted to collected and organize data for the study. The purpose of this chapter is to communicate the readers what investigations were carried out on to solve the problem or answer the research question.

According to **Pilot and Beck (2004)** research methods are the techniques used by the researcher to structure a study to gather and analyze the information relevant to research question.[43]

The methodology section includes the research approach, research design, variable, population, sample, sample size, sampling technique, inclusion and exclusion criteria, selection and development of tool, description of tool, validity of tool, reliability of tool, pilot study, data collection, procedure, ethical consideration and plan for data analysis.

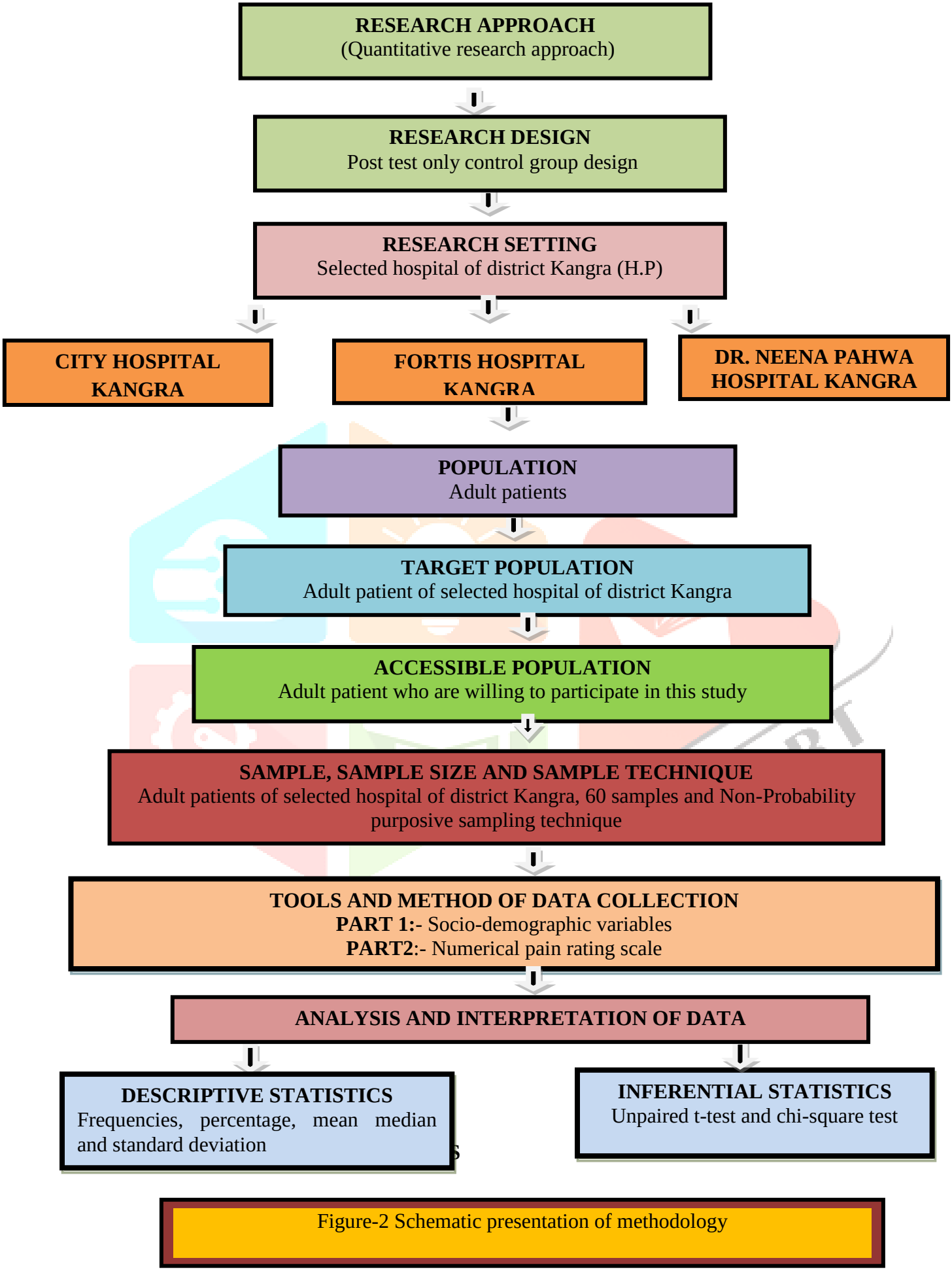


Figure-2 Schematic presentation of methodology

As the study concerned with the effectiveness of helfer skin tap technique on the level of pain among adult patients receiving intramuscular injection; So, Numerical Pain scale was used. - Informed consent form (Appendix -) was prepared to obtain permission from the adult patients for the participation in a clinical study after understanding all the relevant information.

SELECTION AND DEVELOPMENT DESCRIPTION OF TOOL

The tool was formulated after an extensive review of literature and discussion with the experts and guides:

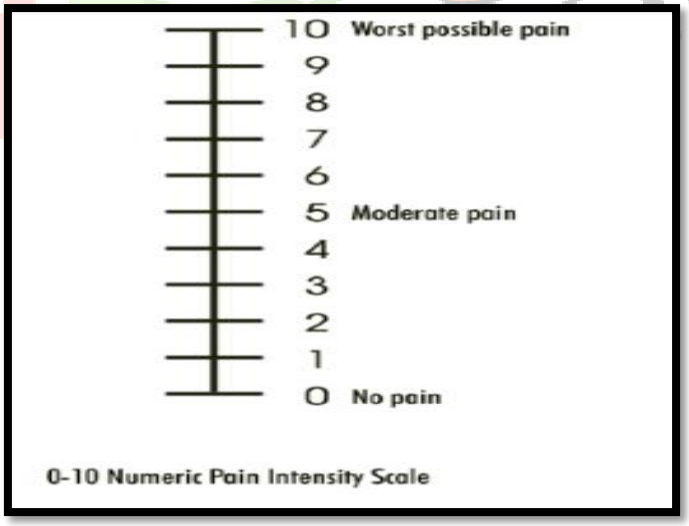
The tool was consisting of two parts:

Part-I: Socio demographic variables:

The first part of the tool consist of some items for obtaining an information about the selected background factor such as age (in years), gender, religion, educational status, residence, type of work, previously exposure to intramuscular injection, history of side effect due to intramuscular injection previously, if yes specify.., habit of practicing muscle exercise, body built.

Part-II: Numerical pain rating scale:

Numeric pain rating scale is the simplest and most common used scale. The numerical scale is most commonly 0 to 10. With 0 being " no pain, 1-3 "Mild pain", 4-6 means "Moderate ,7-9 "Severe pain" 10 means " worst possible pain".



SCORING PATTERN

The numerical value marked by the patient and evaluates the pain intensity over time to determine the effectiveness of pain treatments.

SCORE	DEGREE OF PAIN
0	NO PAIN
1-3	MILD PAIN
4-6	MODERATE PAIN
7-9	SEVERE PAIN
10	WORST POSSIBLE PAIN

ETHICAL CONSIDERATION

- A written permission will be obtained from Principal, Netaji Subhash College of Nursing, Palampur.
- Ethical clearance will be taken from ethical clearance committee of Netaji Subhash college of Nursing, Palampur.
- Written permission will be taken from Medical Superintendent of selected hospital of District Kangra.
- Written informed consent will be taken from each study sample anonymity and confidentiality of each sample will be assured and maintained throughout the study.

PROCEDURE OF DATA COLLECTION

- The researcher obtained prior permission from the head of the department in medical ward and Principal College of Nursing and Ethical committee to conduct this study.
- First researcher established the good rapport and introduced the study topic to the patients.
- Obtained consent from patients.
- Eligible 60 adult were assigned to experimental and control group using purposive sampling.
- Experimental group (n=30) Control group (n=30)
- Demographic assessment done prior to the procedure
- Helfer skin taps technique was given to the experimental group.
- Tapping over the intramuscular injection site with the palmer aspect of finger 16times before and 3 counts during intramuscular injection continue the tapping till needle was removed.
- Routine technique was used for control group.
- Administered the injection over the intramuscular site and slowly with drawn the Needle.

- ❖ Post-test was done to assess the level of pain at (E2), (C2) 1st minute and 5 minute after administration of injection by using Numerical pain rating scale.

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with analysis and interpretation of data collected to evaluate the effectiveness of helfer skin tap technique on the level of pain among adult patients receiving intramuscular injection at selected hospitals of district Kangra Himachal Pradesh.

The purpose of data analysis, regardless of the type of data, is to impose some order in a large body of information so that it can be synthesized, interpreted and communicated.

The analysis and interpretation of data was done according to objectives and hypotheses laid down for the study. The Numerical pain rating scale was used to assess the level of pain. The result was computed by using descriptive and inferential statistics.

Descriptive statistics, i.e. frequency, percentage, mean, median and standard deviation were used to analyzing the socio-demographic variables post test level of pain score among both experimental and control group.

Inferential statistics, i.e. unpaired t-test was used to compare the post test result of both experimental and control group and Chi-square was used to find out the association on post test level of pain among adult patients with their selected socio-demographic variables. The level of significance selected for the study was <0.001.

The data findings have been organized and presented under the following objectives:

1. To assess the level of pain among adult patients receiving intramuscular injection in experimental group and control group.

2. To compare the level of pain among adult patients receiving intramuscular injection in experimental group and control group.

3. To find out the association of level of pain among adult patients with their selected socio demographic variables in experimental group and control group.

ORGANIZATION AND PRESENTATION OF DATA

Data was entered in master sheet, for tabulation and statistical processing in order to analyze and interpret by using descriptive and inferential statistics methods. The result of analysis of data have been organized and presented under following sections:

SECTION-I

Description of Socio-demographic variables of adult patients

- Frequency and percentage distribution of adult patients receiving intramuscular injection.

SECTION-II

Findings related to assess the level of pain among adult patients receiving intramuscular injection in experimental group and control group.

- Mean, SD, Median score, Maximum, Minimum, and Range of level of pain among adult patients receiving intramuscular injection in experimental group and control group.

SECTION-III

- Findings related to comparison between post test level of pain among adult patients receiving intramuscular injection in both experimental and control group.

SECTION-IV

- Findings related to association of post test level of pain among adult patients receiving intramuscular injection with their selected socio-demographic variables.

SECTION-I

DESCRIPTION OF SOCIO-DEMOGRAPHIC VARIABLES OF ADULT PATIENTS

This section describe the frequency and percentage distribution of socio-demographic variables like age, sex, religion, education, residence, type of work, previously exposure to intramuscular injection, history of side effects due to intramuscular injection previously if yes, specify..., habit of practicing muscle exercise, body built.

Frequency and percentage distribution were calculated describing the socio demographic variables. The findings are presented in table 1.

TABLE-1

DATA ON FREQUENCY AND PERCENTAGE DISTRIBUTION OF SELECTED SOCIO-DEMOGRAPHIC VARIABLES OF ADULT PATIENTS IN EXPERIEMTAL GROUP.

Demographic Data and Clinical Variables		PERCENTAGE (%)	FREQUENCY (f)
Age	20 to 30 years	23%	7
	31 to 40 years	40%	12
	41 to 50 years	37%	11
Gender	Male	60%	18
	Female	40%	12
Religion	Hindu	77%	23
	Muslim	20%	6
	Christian	3%	1
Educational Status	Primary education	10%	3
	Secondary	47%	14

	education		
	Graduate	33%	10
	Post graduate	10%	3
Residence	Urban	43%	13
	Rural	57%	17
Type of work	Heavy worker	33%	10
	Moderate worker	67%	20
Previously exposure to intramuscular injection	Yes	63%	19
	No	37%	11
History of any side effect due to IM injection previously if yes then specify	Yes	0%	0
	No	100%	30
Habit of Practicing muscle exercise	Yes	23%	7
	No	77%	23
Body Built	Thin	70%	21
	Obese	30%	9

Table 1: This depicts the socio demographic variables of adult patients in Experimental group

Regarding age group, majority of adult patients in experimental group (40%) were age group of 31 to 40 years, 37% of adult patients were age group 41-50 years, 23% of adult patients 20 to 30 years.

Regarding gender, majority of adult patients 60% were male and 40% were female.

Regarding religion majority of adult patients were (77%) Hindu, 20% were Muslim, 3% were Christian.

Regarding educational status majority of adult patients (47%) were having secondary education, (33%) were graduate, (11%) were having primary education.

Regarding residence majority of adult patients (57%) belongs to rural area and 43% belongs to urban area.

Regarding type of work majority of adult patients (67%) was moderate worker and 33% were heavy worker.

Regarding previous exposure to intramuscular injection majority of adult patients (63%) were having exposure to intramuscular injection and (33%) were not having exposure to intramuscular injection.

Regarding History of any side effects due to intramuscular injection majority of the adult patients (100%) were not having any side effects due to intramuscular injection.

Regarding Habit of practicing muscle exercise majority of adult patients (77%) were not practicing and (23%) were doing muscle exercise.

Regarding Body built majority of adult patients (70%) were obese and (30%) were thin.

TABLE-2

DATA ON FREQUENCY AND PERCENTAGE DISTRIBUTION OF SELECTED SOCIO-DEMOGRAPHIC VARIABLES OF ADULT PATIENTS IN CONTROL GROUP.

Demographic Data and Clinical Variables		PERCENTAGE (%)	FREQUENCY (f)
Age	20 to 30 years	33%	10
	31 to 40 years	37%	11
	41 to 50 years	30%	9
Gender	Male	50%	15
	Female	50%	15
Religion	Hindu	97%	29
	Muslim	3%	1
	Christian	0%	0
Educational Status	Primary education	0%	0
	Secondary education	50%	15
	Graduate	37%	11
	Post graduate	13%	4
Residence	Urban	47%	14
	Rural	53%	16
Type of work	Heavy worker	50%	15
	Moderate worker	50%	15
Previously	Yes	57%	17

exposure to intramuscular injection	No	43%	13
History of any side effect due to IM injection previously if yes then specify	Yes	0%	0
	No	100%	30
Habit of Practicing muscle exercise	Yes	27%	8
	No	73%	22
Body Built	Thin	57%	17
	Obese	43%	13

Table 2: This depicts the socio demographic variables of adult patients in control group.

Regarding age group, majority of adult patients in control group (37%) were age group of 31 to 40 years, 33% of adult patients were age group 20-30 years, 30% of adult patients 41 to 50 years.

Regarding gender, adult patients 50% were male and 50% were female.

Regarding religion majority of adult patients were (97%) Hindu, 3% were Muslim, 0% were Christian.

Regarding educational status majority of adult patients (50%) were having secondary education, (33%) were graduate.

Regarding residence majority of adult patients (53%) belongs to rural area and 47% belongs to urban area.

Regarding type of work adult patients (50%) was moderate worker and (50%) were heavy worker.

Regarding previous exposure to intramuscular injection majority of adult patients (57%) were having exposure to intramuscular injection and (43%) were not having exposure to intramuscular injection.

Regarding History of any side effects due to intramuscular injection majority of the adult patients (100%) were not having any side effects due to intramuscular injection.

Regarding Habit of practicing muscle exercise majority of adult patients (73%) were not practicing and (27%) were doing muscle exercise.

Regarding Body built majority of adult patients (57%) were thin and (43%) were obese.

SECTION—II

DATA TO ASSESS THE LEVEL OF PAIN AMONG ADULT PATIENTS RECEIVING INTRAMUSCULAR INJECTION IN EXPERIMENTAL GROUP AND CONTROL GROUP.

This section describe the findings related to the frequency, percentage, distribution and mean, median, standard deviation, maximum, minimum on level of pain among adult patients receiving intramuscular injection in experimental group. The data is represented in the form of frequency percentage distribution according to the level of pain.

Table: 3

Frequency and percentage distribution of level of pain among adult patients receiving intramuscular injection in experimental group.

CRITERIA MEASURE OF PAIN SCORE N=30	
CATEGORY SCORE	**EXPERIMENTAL PAIN f (%)**
WORST PAIN (10)	0(0%)
SEVERE (7-9)	2(6.7%)
MODERATE (4-6)	15(50%)
MILD (1-3)	9(30%)

NO PAIN (0)	4(13.3%)
Maximum = 10	**Minimum = 0**

Table 3- shows frequency and percentage distribution of level of pain among adult patients receiving intramuscular injection in experimental group.

The majority of adult patients i.e. 50% have Moderate pain, 30% were having mild pain, 13.3% were having no pain, and 6.7% were having severe pain.

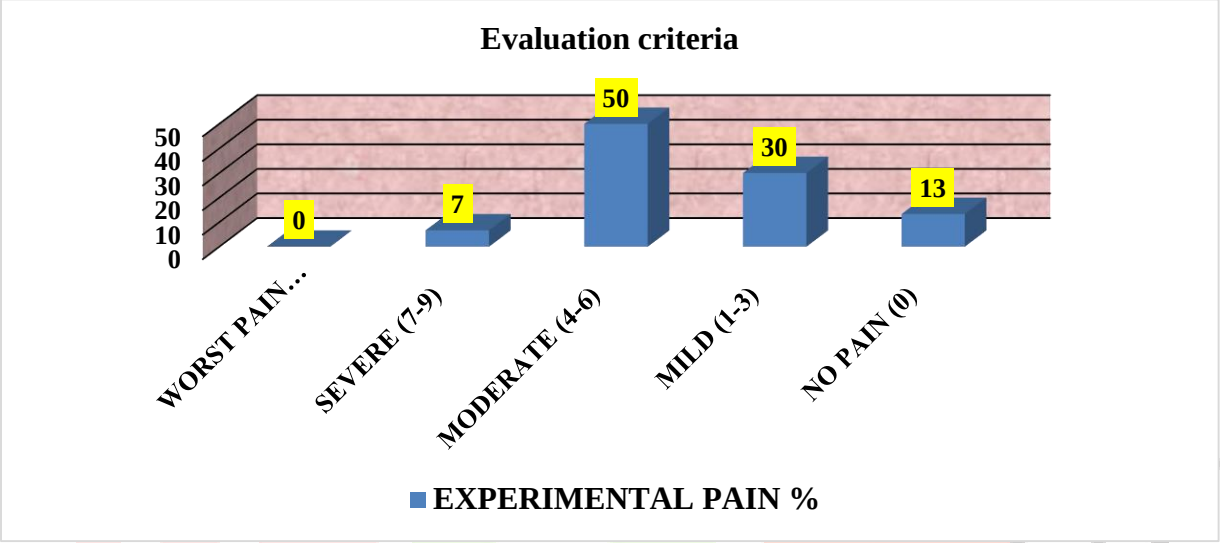


Figure: 13 Frequency and percentage distribution of level of pain among adult patients receiving intramuscular injection in experimental group.

TABLE -4

DATA ON MEAN, MEDIAN, STANDARD DEVIATION, MAXIMUM, MINIMUM, SCORE AND MEAN PERCENTAGE OF LEVEL OF PAIN IN EXPERIMENTAL GROUP

This table describes the mean, median, standard deviation, maximum, minimum, and mean percentage of level of pain through numerical pain rating scale among adult patients receiving intramuscular injection.

DESCRIPTIVE STATISTICS		Mean	S.D.	Median	Range	Maximum	Minimum	Mean %
PAIN SCORE	**EXPERIMENTAL**	3.77	2.128	4	8	8	0	37.67

The data depicted in Table-4 shows the mean, median, standard deviation, maximum, minimum, and mean percentage of level of pain among adult patients receiving intramuscular injection. The mean level of pain score in experimental group was 3.77, standard deviation score was 2.128, median score was 4, maximum was 10, minimum was 0, Range was 8 and mean percentage was 37.67% through Numerical pain rating scale among adult patients receiving intramuscular injection.

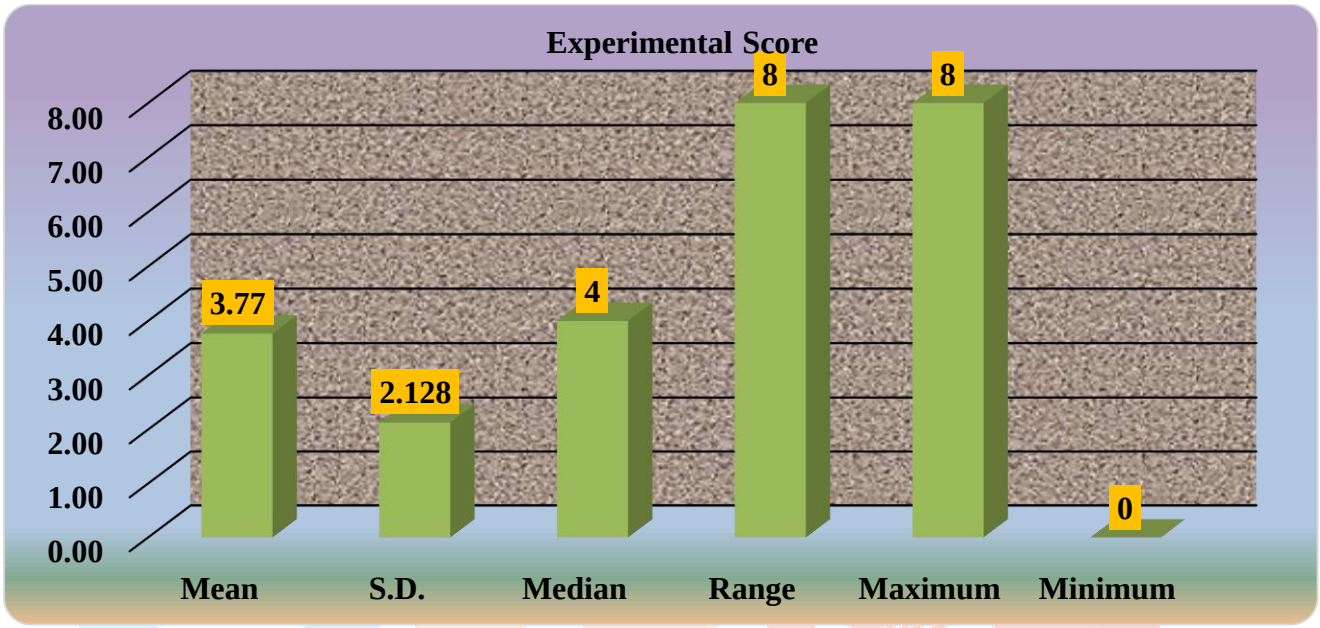


Figure: 14: Bar diagram represents Mean, SD, Median score, Maximum, Minimum, and Range of level of pain in experimental group.

DATA TO ASSESS THE LEVEL OF PAIN AMONG ADULT PATIENTS RECEIVING INTRAMUSCULAR INJECTION IN CONTROL GROUP.

This section describe the findings related to the frequency, percentage, distribution and mean, median, standard deviation, maximum, minimum on level of pain among adult patients receiving intramuscular injection in control group. The data is represented in the form of frequency percentage distribution according to the level of pain.

Table: 5

FREQUENCY AND PERCENTAGE DISTRIBUTION OF LEVEL OF PAIN AMONG ADULT PATIENTS RECEIVING INTRAMUSCULAR INJECTION IN CONTROL GROUP.

CRITERIA MEASURE OF PAIN SCORE N=30

CATEGORY SCORE	CONTROL PAIN f (%)
WORST PAIN (10)	3(10%)
SEVERE (7-9)	15(50%)
MODERATE (4-6)	11(36.7%)
MILD (1-3)	1(3.3%)
NO PAIN (0)	0(0%)
Maximum = 10	Minimum = 0

Table 5 - shows frequency and percentage distribution of level of pain among adult patients receiving intramuscular injection in control group.

The majority of adult patients i.e. 50% have severe pain, 36.7% were having moderate pain, 10% were having worst possible pain, and 3.3% were having mild pain.

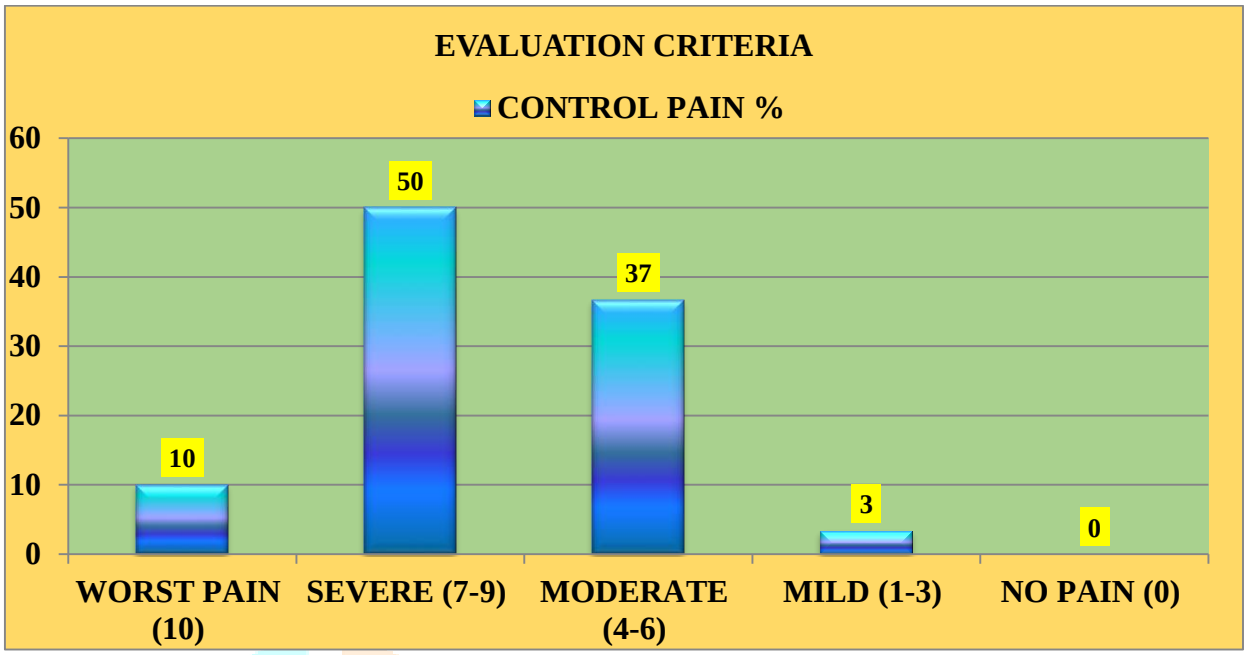


Fig 15: Bar diagram represents Frequency and percentage distribution of level of pain among adult patients receiving intramuscular injection in control group.

TABLE: 6

DATA ON MEAN, MEDIAN, STANDARD DEVIATION, MAXIMUM, MINIMUM, SCORE AND MEAN PERCENTAGE OF LEVEL OF PAIN IN CONTROL GROUP

This table describes the mean, median, standard deviation, maximum, minimum, and mean percentage of level of pain through numerical pain rating scale among adult patients receiving intramuscular injection.

							N=	30
DESCRIPTIVE STATISTICS		Mean	S.D.	Median	Range	Maximum	Minimum	Mean %
PAIN SCORE	CONTROL	6.83	1.895	7	7	10	3	68.33
Maximum=10							Minimum=0	

The data depicted in Table-6 shows the mean, median, standard deviation, maximum, minimum, and mean percentage of level of pain among adult patients receiving intramuscular injection. The mean level of pain score in control group was 6.83, standard deviation score was 1.895, median score was 7, maximum was 10, minimum was 3, Range was 8 and mean percentage was 68.33% through Numerical pain rating scale among adult patients receiving intramuscular injection.

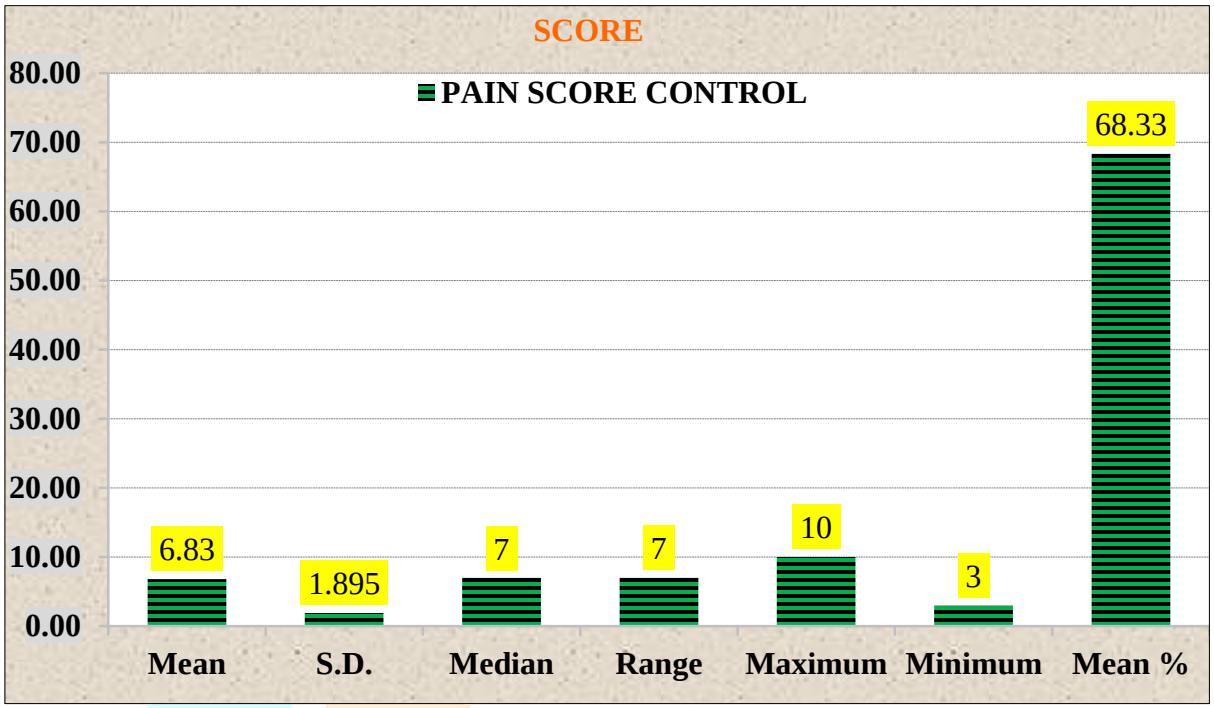


Figure: 16: Bar diagram represents Mean, SD, Median score, Maximum, Minimum, and Range of level of pain in control group.

TABLE-7

DATA ON COMPARISION ON THE LEVEL OF PAIN AMONG ADULT PATIENTS RECIEVING INTRAMUSCULAR INJECTION IN EXPERIMENTAL GROUP AND CONTROL GROUP

CRITERIA OF LEVEL OF PAIN

CATEGORY SCORE	EXPERIEMNTAL GROUP	CONTROL GROUP
WORST POSSIBLE PAIN (10)	0 (0%)	3 (10%)
SEVERE PAIN (7-9)	2 (6.7%)	15 (50%)
MODERATE PAIN (4-6)	15 (50%)	11 (36.7%)
MILD PAIN (1-3)	9 (30%)	1 (3.3%)
NO PAIN (0)	4(13.3%)	0 (0%)
Maximum score=10		Minimum score=0

Table-7 shows the findings related to comparison between frequency and percentage of level of pain among adult patients receiving intramuscular injection in experimental group and control group.

The data depicts that in post test experimental group level of pain score was frequency 15 percentage 50% in moderate pain, frequency 9 percentage 30% in mild pain, frequency 4 percentage 13.3% in no pain and post test control group level of pain score was frequency 15 percentage 50% in severe pain, frequency percentage 11 36.7% in moderate pain, frequency 1 percentage 3.3% in mild pain.

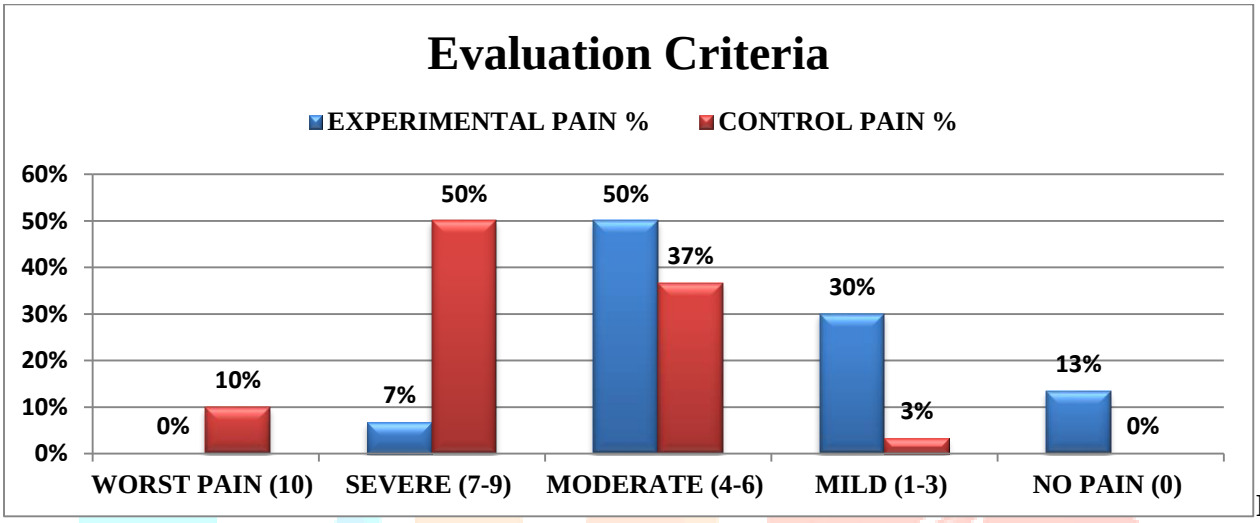


Fig 17: Bar diagram represents the level of pain among adult patients receiving intramuscular injection in experimental group and control group

TABLE-8

DATA ON COMPARISON MEAN, MEDIAN, STANDARD DEVIATION, MAXIMUM, MINIMUM, SCORE AND MEAN PERCENTAGE OF LEVEL OF PAIN IN EXPERIEMENTAL AND CONTROL GROUP

								N=60	
Unpaired T Test		Mean Score	S.D.	N	Mean F	Unpaired Test	P value	Table Value at <0.001	Result
PAIN SCORE	EXPERIMENTAL	3.77	2.128	30	37.67	5.894	0.000***	2.002	Significant
	CONTROL	6.83	1.895	30	68.33				

Significance level <0.001= very highly significant

Table-8 shows the finding related to the comparison between post test level of pain among adult patients receiving intramuscular injection in both experimental group and control group.

The data depicts in table show the comparison between the experimental and control group. In the experimental group mean score was 3.77, SD was 2.128, Mean frequency was 37.67 and in control group mean score was 6.83, SD was 1.895, mean frequency was 68.33 and obtained‘t’ value has been found statistically very highly significant (5.894) at $p<0.001$ level of significance which show the significant difference between post test level of pain among adult patients receiving intramuscular injection in experimental group and control group.

Hence, the research hypothesis H_1 was accepted and null hypothesis H_{01} was rejected.

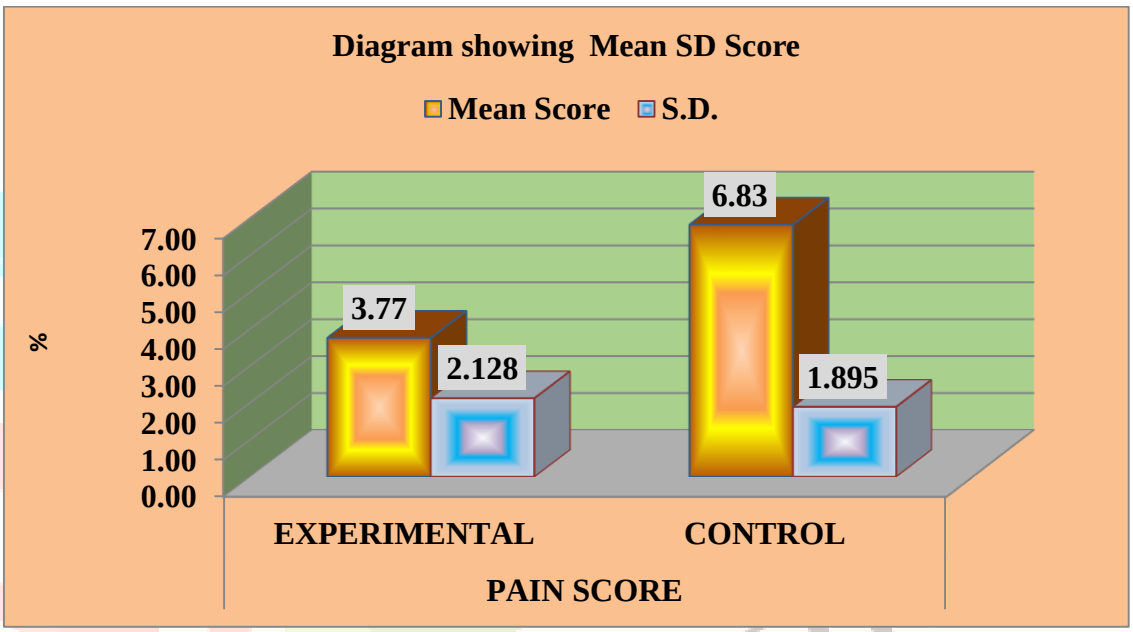


Fig 18: Bar diagram represents the mean score and SD of experimental group and control Group

SECTION-IV

DATA ON ASSOCIATION OF POST –TEST LEVEL OF PAIN AMONG ADULT PATIENTS WITH THEIR SELECTED SOCIO DEMOGRAPHIC VARIABLES IN EXPERIMENTAL GROUP AND CONTROL GROUP

This section deals with the findings related to the association of post-test level of pain among adult patients with their selected socio demographic variables. The Chi-square test was used to determine the association between the level of pain among adult patients receiving intramuscular injection with selected socio demographic variables.

H_2: There will be significant association between the level of pain among adult patients receiving intramuscular injection with selected socio demographic variables.

H_{02}: There will be no significant association between the level of pain among adult patients receiving intramuscular injection with selected socio demographic variables.

To determine the association of level of pain among adult patients receiving intramuscular injection with selected socio demographic variables was calculated and it is presented in table.

ASSOCIATION OF LEVEL OF PAIN AMONG ADULT PATIENTS WITH THEIR SOCIO-DEMOGRAPHIC VARIABLES

EXPERIMENTAL GROUP

TABLE-9

DEMOGRAPHIC DATA AND CLINICAL VARIABLES		LEVELS					LEVELS				
Variables	**Options**	**WORST PAIN**	**SEVERE**	**MODERATE**	**MILD**	**NO PAIN**	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
Age	20 to 30 years	0	3	4	0	0	4.283	0.638	6	12.592	Not Significant
	31 to 40 years	3	2	6	1	0					
	41 to 50 years	1	4	5	1	0					
Gender	Male	1	5	10	2	0	3.727	0.293	3	7.815	Not Significant
	Female	3	4	5	0	0					
Religion	Hindu	4	5	12	2	0	6.193	0.402	6	12.592	Not Significant
	Muslim	0	4	2	0	0					
	Christian	0	0	1	0	0					
Educational Status	Primary education	1	2	0	0	0	8.463	0.488	9	16.919	Not Significant
	Secondary	2	4	7	1	0					

	education										
	Graduate	1	1	7	1	0					
	Post graduate	0	2	1	0	0					
Residence	Urban	1	2	9	1	0	3.914	0.271	3	7.815	Not Significant
	Rural	3	7	6	1	0					
Type of work	Heavy worker	2	4	4	0	0	2.300	0.513	3	7.815	Not Significant
	Moderate worker	2	5	11	2	0					
Previously exposure to intramuscular injection	Yes	2	5	12	0	0	5.789	0.122	3	7.815	Not Significant
	No	2	4	3	2	0					
History of any side effect due to IM injection previously if yes then specify	Yes	0	0	0	0	0		N.A		N.A	
	No	4	9	15	2	0					
Habit of Practicing muscle exercise	Yes	0	2	4	1	0	2.112	0.550	3	7.815	Not Significant
	No	4	7	11	1	0					
Body Built	Thin	3	7	9	2	0	1.878	0.598	3	7.815	Not Significant
	Obese	1	2	6	0	0					

TABLE-10

CONTROL GROUP

DEMOGRAPHIC DATA AND CLINICAL VARIABLES		LEVELS					LEVELS				
Variables	**Options**	**WORST PAIN**	**SEVERE**	**MODERATE**	**MILD**	**NO PAIN**	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
Age	20 to 30 years	0	0	4	5	1	3.908	0.689	6	12.592	Not Significant
	31 to 40 years	0	1	3	5	2					
	41 to 50 years	0	0	4	5	0					
Gender	Male	0	0	4	9	2	2.752	0.432	3	7.815	Not Significant
	Female	0	1	7	6	1					
Religion	Hindu	0	1	10	15	3	1.787	0.618	3	7.815	Not Significant
	Muslim	0	0	1	0	0					
	Christian	0	0	0	0	0					
Educational Status	Primary education	0	0	0	0	0	4.167	0.654	6	12.592	Not Significant
	Secondary education	0	0	6	8	1					
	Graduate	0	1	4	4	2					
	Post graduate	0	0	1	3	0					
Residence	Urban	0	0	4	8	2	2.094	0.553	3	7.815	Not Significant
	Rural	0	1	7	7	1					
Type of work	Heavy worker	0	0	5	9	1	2.024	0.567	3	7.815	Not Significant
	Moderate worker	0	1	6	6	2					
Previously	Yes	0	1	5	9	2	1.518	0.678	3	7.815	Not

exposure to intramuscular injection	No	0	0	6	6	1					Significant
History of any side effect due to IM injection previously if yes then specify	Yes	0	0	0	0	0		N.A		N.A	
	No	0	1	11	15	3					
Habit of Practicing muscle exercise	Yes	0	0	3	5	0	1.798	0.615	3	7.815	Not Significant
	No	0	1	8	10	3					
Body Built	Thin	0	0	6	9	2	1.518	0.678	3	7.815	Not Significant
	Obese	0	1	5	6	1					

Table 9, 10 shows the association between level of pain among adult patients receiving intramuscular injection in experimental and control group with their selected socio demographic variables. It was observed that there was no significant association of level of pain in experimental and control group with their selected socio demographic variables age, sex, religion, education, residence, type of work, previously exposure to intramuscular injection, history of side effects due to intramuscular injection previously if yes, specify..., habit of practicing muscle exercise, body built.

According to the all socio demographic variables, the obtained chi-square value was less than the table value so there is no association between level of pain among adult patients receiving intramuscular injection in experimental and control group at 0.001 and 0.05level of significance.

Hence, research hypothesis H_2 was rejected and null hypothesis H_{02} was accepted.

DISCUSSION

The purpose of the study was to assess the effectiveness of helfer skin tap technique on the level of pain among adult patients receiving intramuscular injection at selected hospital of district Kangra Himachal Pradesh. This chapter relates the findings of the present study in accordance with the studies done earlier.

Analysis of the study indicated that significant effect of helfer skin tap technique on the level of pain among adult patients receiving intramuscular injection.

The present study shows the effectiveness of helfer skin tap technique on the level of pain among adult patients receiving intramuscular injection in experimental group. The data depicts in table show the comparison between the experimental and control group. In the experimental group mean score was 3.77, SD was 2.128, Mean frequency was 37.67 and in control group mean score was 6.83, SD was 1.895, mean frequency was 68.33 and obtained‘t’ value has been found statistically very highly significant (5.894) at $p<0.001$ level of significance which show the significant difference between post test level of pain among adult patients receiving intramuscular injection in experimental group and control group. Hence, the research hypothesis H_1 was accepted and null hypothesis H_{01} was rejected.

In present study there was no significant association of level of pain in experimental and control group with their selected socio demographic variables age, sex, religion, education, residence, type of work, previously exposure to intramuscular injection, history of side effects due to intramuscular injection previously if yes, specify..., habit of practicing muscle exercise, body built. According to the all socio demographic variables, the obtained chi-square value was less than the table value so there is no association between level of pain among adult patients receiving intramuscular injection in experimental and control group at 0.001 and 0.005 level of significance. Hence, research hypothesis H_2 was rejected and null hypothesis H_{02} was accepted.

Similar findings has been found by **Dimpleshree K et al 2020** conducted a quasi-experimental study to assess the effectiveness of helfer skin tap technique on pain experience among the patient receiving intramuscular injection. Post test only design was used. Sample was selected using non-probability purposive sampling technique. There were 60 samples 30 in experimental group and 30 in control group. The finding revealed that the mean and SD was 3.03 +_ 1.60 in experimental group, where the mean and SD was 5.57+_2.33 in control group. Calculated “t” value of 4.90 which show statistically significant difference at $p <0.001$ level, which clearly demonstrated that there was significant reduction in pain after using helfer skin tap technique among experimental group.[25]

Vathani G 1 et al 2017 conducted a true experimental study to assess the effectiveness of helfer skin tap technique on the level of pain among the patients receiving intramuscular injection. Design was randomized controlled trial The sample of the study was chosen by simple random sampling technique, in which it included 67 patients in study group and 67 patients in control group. The finding of the study revealed that among 134 patients, the post test pain score in the study group and control group (0.67±1.17 vs. 4.95±1.77) were found to be statistically highly significant at $p<0.001$ level. There was an effective pain reduction among the patients in study group who received Helfer Skin Tap Technique than the patients in the control group who received routine technique.[18]

MAJOR FINDINGS

Section I: Frequency and percentage distribution of socio demographic variables in experimental and control group:

Experimental group:

- Regarding age group, majority of adult patients in experimental group (40%) were age group of 31 to 40 years, 37% of adult patients were age group 41-50 years, 23% of adult patients 20 to 30 years.
- In relation to gender, majority of adult patients 60% were male and 40% were female.
- Regarding religion majority of adult patients were (77%) Hindu, 20% were Muslim, 3% were Christian.
- Regarding educational status majority of adult patients (47%) were having secondary education, (33%) were graduate, (11%) were having primary education.
- Regarding residence majority of adult patients (57%) belongs to rural area and 43% belongs to urban area.
- Regarding type of work majority of adult patients (67%) was moderate worker and 33% were heavy worker.
- In relation to previous exposure to intramuscular injection majority of adult patients (63%) were having exposure to intramuscular injection and (33%) were not having exposure to intramuscular injection.
- Regarding History of any side effects due to intramuscular injection majority of the adult patients (100%) were not having any side effects due to intramuscular injection.
- Regarding Habit of practicing muscle exercise majority of adult patients (77%) were not practicing and (23%) were doing muscle exercise.
- Regarding Body built majority of adult patients (70%) were obese and (30%) were thin.

Control group:

- Regarding age group, majority of adult patients in control group (37%) were age group of 31 to 40 years, 33% of adult patients were age group 20-30 years, 30% of adult patients 41 to 50 years.
- In relation to gender, adult patients 50% were male and 50% were female.
- Regarding religion majority of adult patients were (97%) Hindu, 3% were Muslim, 0% were Christian.
- Regarding educational status majority of adult patients (50%) were having secondary education, (33%) were graduate.
- Regarding residence majority of adult patients (53%) belongs to rural area and 47% belongs to urban area.
- Regarding type of work adult patients (50%) was moderate worker and (50%) were heavy worker.
- In relation to previous exposure to intramuscular injection majority of adult patients (57%) were having exposure to intramuscular injection and (43%) were not having exposure to intramuscular injection.
- Regarding History of any side effects due to intramuscular injection majority of the adult patients (100%) were not having any side effects due to intramuscular injection.
- Regarding Habit of practicing muscle exercise majority of adult patients (73%) were not practicing and (27%) were doing muscle exercise.
- Regarding Body built majority of adult patients (57%) were thin and (43%) were obese.

SECTION—II: Findings related assess the level of pain in experimental group and control group:

Experimental group:

- The majority of adult patients in experimental group i.e. 50% have Moderate pain, 30% were having mild pain, 13.3% were having no pain, and 6.7% were having severe pain.

Control group:

- The majority of adult patients in control group i.e. 50% have severe pain, 36.7% were having moderate pain, 10% were having worst possible pain, and 3.3% were having mild pain.

Section III: Findings related to the comparison between post test level of pain in experimental group and control group:

- The comparison between the experimental and control group. In the experimental group mean score was 3.77, SD was 2.128, Mean frequency was 37.67 and in control group mean score was 6.83, SD was 1.895, mean frequency was 68.33 and obtained‘t’ value has been found statistically very highly significant (5.894) at $p<0.001$ level of significance which show the significant difference between post test level of pain among adult patients receiving intramuscular injection in experimental group and control group.

  Hence, the research hypothesis H_1 was accepted and null hypothesis H_{01} was rejected.

Section IV: Findings related to the association on level of pain among adult patients with their selected socio demographic variables in experimental group and control group:

- It was observed that there was no significant association of level of pain in experimental and control group with their selected socio demographic variables age, sex, religion, education, residence, type of work, previously exposure to intramuscular injection, history of side effects due to intramuscular injection previously if yes, specify..., habit of practicing muscle exercise, body built.
- According to the all socio demographic variables, the obtained chi-square value was less than the table value so there is no association between level of pain among adult patients receiving intramuscular injection in experimental and control group at 0.001 and 0.05 level of significance.

Hence, research hypothesis H_2 was rejected and null hypothesis H_{02} was accepted.

CONCLUSION

The result from this study reveals that implementation of helfer skin tap technique to assess the level of pain among adult patients receiving intramuscular injection in experimental group was effective. Chi square value had no significant association in the level of pain among adult patients receiving intramuscular injection with their selected socio demographic variables in experimental group and control group so it is concluded that selected demographic variables had no effect on level of pain among adult patients receiving intramuscular injection.

We hypothesized that providing helfer skin tap technique may reduce the level of pain among adult patients receiving intramuscular injection in experimental group. This hypothesis was supported by the findings of the current study level of pain reduction after interventional helfer skin tap technique. Hence it

was concluded that use of helfer skin tap technique is an effective among adult patients receiving intramuscular injection in experimental group.

PROCEDURE OF DATA COLLECTION

- The researcher obtained prior permission from the head of the department in medical ward and Principal College of Nursing and Ethical committee to conduct this study.
- First researcher established the good rapport and introduced the study topic to the patients.
- Obtained consent from patients.
- Eligible 60 adult were assigned to experimental and control group using purposive sampling.
- Experimental group (n=30) Control group (n=30)
- Demographic assessment done prior to the procedure
- Helfer skin taps technique was given to the experimental group.
- Tapping over the intramuscular injection site with the palmer aspect of finger 16times before and 3 counts during intramuscular injection continue the tapping till needle was removed.
- Routine technique was used for control group.
- Administered the injection over the intramuscular site and slowly with drawn the Needle.
- Post-test was done to assess the level of pain at (E2), (C2) 1st minute and 5 minute after administration of injection by using Numerical pain rating scale.

NURSING IMPLICATION

- **Nursing Practice**
- **Nursing Education**
- **Nursing Administration**
- **Nursing Research**

Nursing Practice:

- Nursing person should develop in depth knowledge regarding helfer skin tap technique during intramuscular injection.
- Complementary therapies can provide effective economical, non-invasive, non-pharmacological complements to medical care.
- Nurse should promote and encourages nursing students regarding use of helfer skin tap technique during intramuscular injection.
- Nurse should be knowledgeable regarding helfer skin tap technique during intramuscular injection.
- Nurse should able to provide helfer skin tap technique during intramuscular injection.

Nursing Education:

- Several implications can be drawn from the present study for nursing education.
- The curriculum incorporating the recent trends and demands of the changing society needed for the progress of nursing education.
- Practical hours for complementary and alternative medicine including yoga, massage and reflexology can be included in the nursing curriculum which will help the students to improve their skills.

Nursing Administration:

- Nurse Administrators can arrange seminars and workshop to educate learners and staff nurse regarding helfer skin tap technique among adult patients.
- The findings of this study will help nurse administrators to plan and organize various in service programmes like in-service education and workshop on helfer skin tap technique and its effect during intramuscular injection.
- The nurse administrators can take part in developing protocols related to helfer skin tap technique.

Nurse Research:

- This study motivates nursing personnel to do further studies related to this field.
- Research can be conducted to find out the effectiveness of various non-pharmacological methods in pain management of patients who have received intramuscular injection.

REFERENCES

1. Baxter. J A. Heifer skin tap technique and intramuscular injection. Indian Journal of Holistic Nursing: 10. 67-70. Available from: http://repository-tnmgrmu.ac.in/1279/1/3001102abhijapv.pdf

2. Tomar G et al a study to assess the pain and intramuscular injection: helfer skin tap: systematic analysis International Journal of Current Research Vol. 9, Issue, 09, pp.57185,57189,September017.Availablefrom:https://recentscientific.com/sites/default/files/14434-A-2019.pdf

3. WHO. WHO calls for worldwide use of “smart” syringes. http://www.who.int/ (accessed 20 November 2017). Available from:

http://apps.who.int/iris/bitstream/handle/10665/170470/WHO_HIS_SDS_2015.5_eng.pdf%20shields?sequence=1

4. Neupan U et al A Study to Assess the Effectiveness of Helfer Skin Tap Technique on the Level of Pain during Intramuscular Injection among Adults in a Selected Hospital Bangalore International Journal of Health Sciences & Research 95 Vol.9; Issue: 1 January2019. Available from: https://www.ijhsr.org/IJHSR_Vol.9_Issue.1_Jan2019/IJHSR_Abstract.016.html

5. ThereseM(2014)Effectivenessof_Helfer_Skin_Tap_Technique_and_Routine_Technique_on_Pain_Reduction_among_Patients_Receiving_Intramuscular_Injection.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

6. Sivapriya M Helfer skin tap technique, labour room, new born babies Edition**:** Volume 4 Issue 4 April 2015, Pages: 547 – 552

7. Pilot Beck Essentials of Nursing Research Appraising Evidence for Nursing practice, Seventh Edition. Wolters Kluwer India Pvt. Ltd; 567

8. Chronic Pain: Hope Through Research NINDS Publication date January 2014.NIH Publication No.14-2406. Available from: https://www.ninds.nih.gov/Disorders/Patient-CaregiverEducation/Hope- Through-Research/Pain-Hope Through-Research

9. Semwal R (et al 2021) a study to assess the effectiveness of helfer skin tap technique on the level of pain reduction during intra muscular injection among orthopaedic patient of pandit deen dayal upadhyay government hospital. Article DOI:10.21474/ijar01/13892 DOI url: http://dx.doi.org/10.21474/ijar01/13892

10. Dr. Prabu Vidhyalakshmi 2022 effectiveness cold application before administering intramuscular injection on the reduction of needle stick pain among patients. 2022 JETIR July 2022, Volume 9, Issue 7.Available from: https://www.jetir.org/papers/JETIR2207082.pdf

11. Pampha Bhusal2022 Study to Assess the Knowledge Regarding Intramuscular (IM) Injection among Undergraduate Students in SRM College of Nursing, International Journal of Science and Healthcare Research Vol.7; Issue: 1; Jan.-Mar. 2022.Available from: https://ijshr.com/IJSHR_Vol.7_Issue.1_Jan2022/IJSHR042.pdf

12. Sharma SK. Nursing Research & Statistics. Second edition. Reed Elsevier. India Private Limited ;2014.138,39,40,206,288