EFFECTIVENESS OF HEIFER SKIN TAPE TECHNIQUE ON LEVEL OF PAIN ASSOCIATED WITH INTRAMUSTCULAR INJECTIONAMONG HOSPITALIZED ADULTS IN SELECTED HOSPITALS PANIPAT

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Abstract

Nursing is a profession within the health care sector focused on the care of individuals, families and communities. Nurses help individuals from before birth to the time up death and even help family members cope with the loss of loved one, imaginable situation involving the health or illness of a person. Analysis is a process of organizing and synthesizing data in such a way that research questions can be answered and hypothesis tested.

Both experimental group and control group 27 (90%) and 26 (86.7%) were Hindus. Both experimental and control group equal number of subjects 10 (33.3%) were studied up to secondary education. In experimental group one half of the subjects 15 (30%) were sedentary workers and in control group majority 13 (43.3%) were moderate workers. Injections are the most frequent painful medical procedure during hospitalization. Injections are the most common reason for iatrogenic pain.

Keywords*: physician therapists, working, Intramuscular injection.*

INTRODUCTION

Nursing is a profession within the health care sector focused on the care of individuals, families and communities. They attain, maintain or recover optimal health and quality of life. Nurses help people in every walk of life and every part of life. Nurses help individuals from before birth to the time up death and even help family members cope with the loss of loved one, imaginable situation involving the health or illness of a person. Nurses may be differentiated from other health care providers by their approach to patient care, training and scope of practice. Nurses develop a plan of care, working collaboratively with physician therapists, the patient, the patients' family and other team members that focus on treating illness to improve quality of life.[1]

According to **WHO** "Intramuscular injection is an administration of medicine parenterally through a skin puncture by a syringe and a needle deep into a large muscle of the body for prophylactic or curative purposes."[4]

NEED FOR THE STUDY

Pain is a common and a ubiquitous sensation for children and adults. Every person has his or her own perception of pain.

Injections are the most frequent painful medical procedure during hospitalization. Injections are the most common reason for iatrogenic pain. With the steadily increasing number of recommended injections, there has been a concomitant increase in concern regarding the adequacy of pain management.

STATEMENT OF THE PROBLEM:
A study to assess the effectiveness of Heifer Skin Tap Technique on level of pain associated with intramuscular injection among hospitalized adults in selected hospital at Panipat, Haryana.

OBJECTIVES OF THE STUDY

1. To assess the level of pain associated with intramuscular injection among hospitalized adults in experimental and control group.
2. To evaluate the effectiveness of heifer skin tap technique on level of pain associated with intramuscular injection among hospitalized adults in experimental and control group.
3. To associate the post test level of pain in hospitalized adults with their selected demographic variables in experimental and control group.

HYPOTHESES
H1- There will be significant difference between level of pain associated with intramuscular injection among hospitalized adults in experimental and control group at $p < 0.05$ level.
H2- There will be a significant association between post test level of pain associated with intramuscular injection with their selected demographic variables in experimental and control group at $p < 0.05$ level.
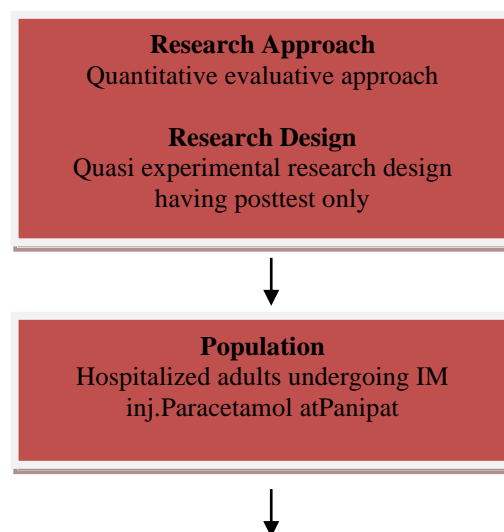
REVIEW OF LITERATURE
In this study the literature were reviewed and organized under the following headings;
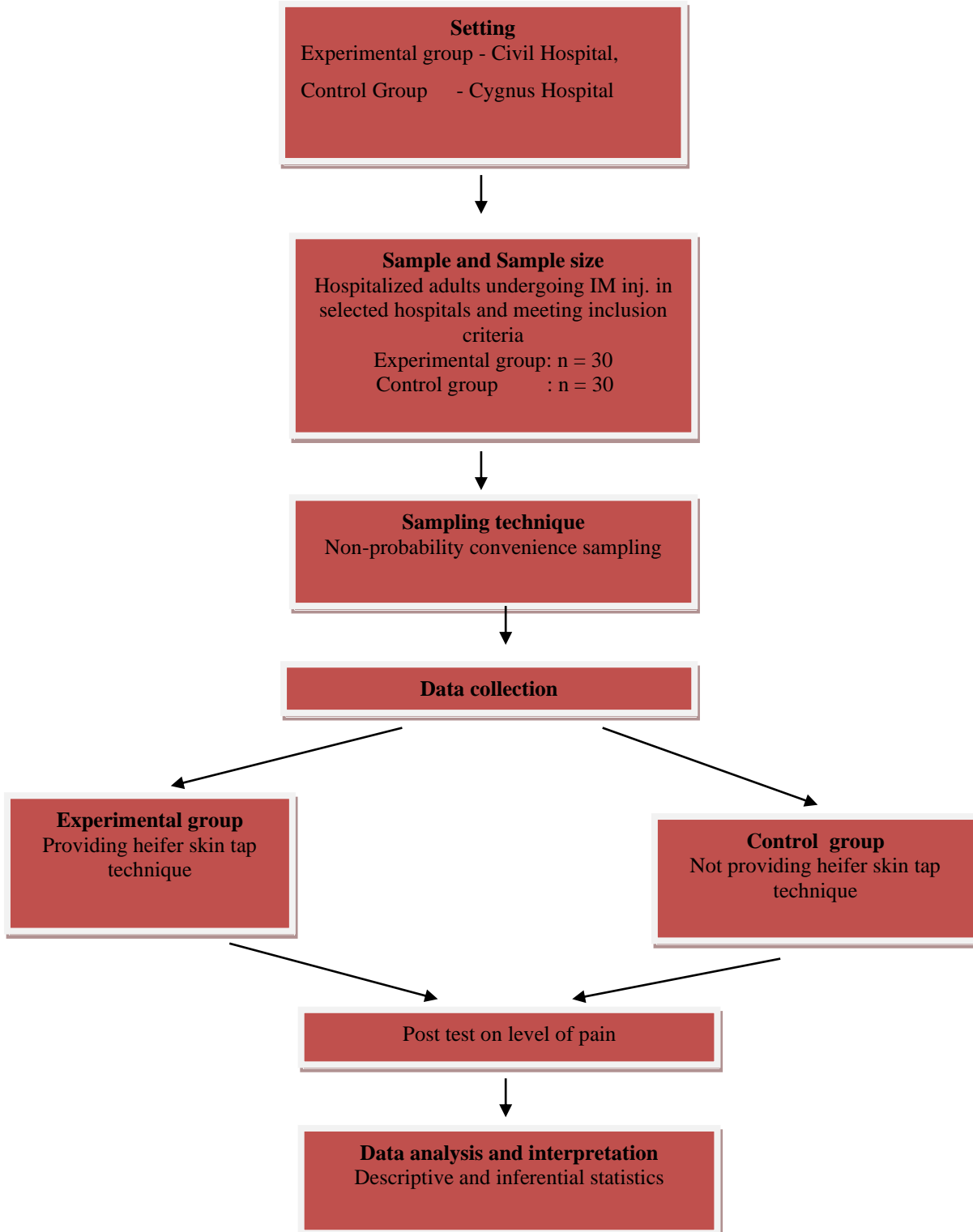**Section A:** Studies related to prevalence of pain associated with intramuscular injection.
Section B: Studies related to effectiveness of Heifer skin tap technique on pain associated with intramuscular injection.

RESEARCH METHODOLOGY
Methodology deals with the research approach, research design, setting of the study, population, criteria for selection of sample, sample size, sampling technique, description of tool, scoring procedure, pilot study, data collection procedure, plan for data analysis and protection of human rights.

Research Approach
Quantitative evaluative approach

Research Design
Quasi experimental research design having posttest only

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Population
Hospitalized adults undergoing IM inj.Paracetamol atPanipat

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Setting
Experimental group - Civil Hospital,

Control Group   - Cygnus Hospital

Sample and Sample size
Hospitalized adults undergoing IM inj. in selected hospitals and meeting inclusion criteria
Experimental group: n = 30
Control group   : n = 30

Sampling technique
Non-probability convenience sampling

Data collection

Experimental group
Providing heifer skin tap technique

Control group
Not providing heifer skin tap technique

Post test on level of pain

Data analysis and interpretation
Descriptive and inferential statistics

TOOL FOR DATA COLLECTION

Tools used for data collection by the investigator consist of 2 sections.

Section A: It consisted of **demographic variables** of hospitalized adults that includes age, gender, religion, educational status, occupation, habit of practicing muscle exercise, form of drug, history of allergic reaction due to intramuscular injection previously, volume of substance injected, previous exposure to intramuscular injection.

Section B: It consisted of standardized 0-10 numerical pain scale.

It is a standardized **numerical rating scale** used to assess the level of pain in adults. It consists of 0 to 10 scores and four categories '0' belong to none. '1, 2, 3' belongs to mild category. '4, 5, 6' belongs to moderate category. '7, 8, 9 belongs to severe category and 10 belongs to worst pain.. The samples given the score according to their pain perception before and after the intervention.
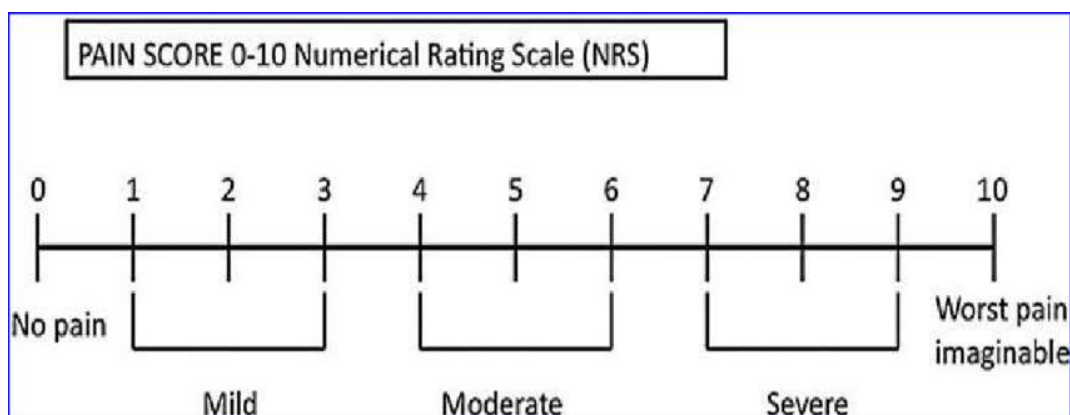
Scoring Procedure

FIGURE: 3.2Numerical Pain Scales

Regarding pain score, the maximum score is 10 and minimum score is 0. The score is given depending upon the 'X' placed by the sample in the pain scale. The score will be divided into the following categories.

0	:	No pain
1-3	:	Mild pain
4-6	:	Moderate pain
7-9	:	Severe pain
10	:	Worst pain imaginable

DATA ANALYSIS & INTERPRETATION

Analysis is a process of organizing and synthesizing data in such a way that research questions can be answered and hypothesis tested.

This chapter represents the analysis of collected data and interpretation of the data according to the objectives of the study. The collected data were analysed with the help of SPSS – version 20. The detailed analyses of the study were presented under various sections according to the objectives.

Section – A: Frequency and Percentage Distribution of Subjects According to Socio-Demographic Variables

Table – 4.1: Frequency and Percentage Distribution of Subjects According to Socio – Demographic Variables among Subjects in Experimental and Control Group.

Section – B: Frequency and Percentage Distribution of Subjects According to Level of Pain
Table – 4.2: Frequency and percentage of Level of Score of Both Group (Experimental and Control Group).

Section –C: Effectiveness of Heifer skin tap technique on Level of Pain.
Table – 4.3:Comparison between Mean, Standard Deviation, Mean Percentage and Mean Difference of post test score on level of pain among patients in Experimental and Control Group.
Table – 4.4: Mean, SD and't' test according to post test score on level of pain among patient in Experimental and Control Group.

Section –D: Level of Association between Level of Pain among subjects with selected Socio-demographic variables in Both Group
Table – 4.5: Chi square test on Level of Pain among hospitalized adults with their selected Socio-demographic variables in ExperimentalGroup.
Table No: 4.6 Chi square test on Level of Pain among hospitalized adults with their selected Socio-demographic variables in Control Group.

Section:-A
Frequency and Percentage Distribution of Subjects According to Socio- Demographic Variables

Table No: 4.1 Frequency and Percentage Distribution of Subjects According to Socio – Demographic Variables among Subjects in Experimental and Control Group.

(n=60)

S. No	Socio Demographic Variables	Experimental Group		Control Group	
		f	%	f	%
1	Age (Years)				
	a. 20 – 29	13	43.3	7	23.3
	b. 30 – 39	10	33.3	16	53.3
	c. 40 – 45	7	23.4	7	23.4
2.	Gender				
	a. Male	15	50	17	56.7
	b. Female	15	50	13	43.3
3.	Religion				
	a. Hindu	27	90	26	86.7
	b. Muslim	1	3.3	1	3.3
	c. Christian	0	0	1	3.3
	d. Sikh	2	6.7	2	6.7
4.	Educational Status	5	16.7	4	13.3
	a. Primary	10	33.3	10	33.3
	b. Secondary	7	23.3	9	30
	c. Higher secondary	8	26.7	7	23.4
	d. Graduate & above				
5.	Occupation				
	a. Heavy worker	4	13.3	8	26.7
	b. Moderate worker	11	36.7	13	43.3
	c. Sedentary worker	15	50	9	30

6.	Habit of practicing muscle exercise				
	a. Yes	12	40	9	30
	b. No	18	60	21	70
7.	History of any allergic reaction due to intramuscular injection previously				
	a. Yes	12	40	13	43.3
	b. No	18	60	17	56.7
8.	Previous exposure to intramuscular injection				
	a. Yes	18	60	19	63.3
	b. No	12	40	11	36.7

The above table shows the frequency and percentage distribution of subjects according to socio-demographic variables in experimental and control group.

With regard to age of the subjects, in experimental group 13 (43.3%) were in the age between 20 – 29 years. In the control group majority of the subjects 16 (53.3%) were in age between 30 – 39 years.Gender of the subjects in the study reveals that equal number of subjects 15 (50%) in experimental group were males and females. But in the control group majority of the subjects 17 (56.7%) were males. Both experimental group and control group 27 (90%) and 26 (86.7%) were Hindus. Both experimental and control group equal number of subjects 10 (33.3%) were studied up to secondary education. In experimental group one half of the subjects 15 (30%) were sedentary workers and in control group majority 13 (43.3%) were moderate workers. Both experimental group and Control Group 18 (60%) and 21 (70%) do not practice it. Both experimental and control group 18 (60%) & 17 (56.7%) were not having any allergies. In both experimental and control group majority 18 (60% and 19 (63.3%) respectively had previous exposure to intramuscular injection.

Section: - B
Frequency and Percentage Distribution of Subjects According to Level of Pain
Table No:4.2Table Showing frequency percentage of Level of Score of Both Group.

(n = 60)

Category Score	Experimental Group (n = 30)		Control Group (n = 30)	
	F	%	F	%
Worst pain	0	0	4	13.3
Severe Pain	0	0	12	40
Moderate Pain	5	16.7	10	33.3
Mild Pain	23	76.7	4	13.3
No Pain	2	6.7	0	0

(Maximum=10 Minimum=0)

In the experimental group, majority of the total subjects 23 (76.7%) had mild pain. Subjects with moderate pain were 5 (16.7%). Few subjects 2 (6.7%) had no pain. Those subjects who were with severe pain and worst pain were 0 (0%).

Whereas in the control group majority of the total subjects 12 (40%) were having severe pain, 10 (33.3%) were with moderate pain. Equal Number of subjects 4 (13.3%) were having mild and worst pain and 0 (0%) had no pain.

Section: - C

Effectiveness of Heifer skin tap technique on Level of Pain.

Table –4.3 Comparison between Mean, Standard Deviation, Mean Percentage and Mean Difference of post test score on level of pain among patients in Experimental and Control Group.

(n = 60)

Group	Mean	SD	Mean Percentage	Mean Difference
Experimental Group	2.10	1.561	21.00	
Control Group	6.47	2.315	64.67	4.37

Table –4.3 depicts the Mean, Standard Deviation,Mean Percentage, Mean difference of Subjects between Experimental and Control Group.

The post-test mean pain score of subjects in experimental group were 2.10 $\pm$ 1.561 and the post-test mean pain score of subjects in control group were 6.47 $\pm$ 2.315. the post-test pain mean percentage was in experimental and control group were 21.00% and 64.67% respectively. The mean difference was 4.37.

These findings reveal the intervention is effective in terms of reduction of pain after intramuscular injection.

Table-4.4 Mean, SD and't' test according to post test score on level of pain among patient in Experimental and Control Group

(n = 60)

Group	Mean	SD	Unpaired 't' test	P value
Experimental Group	2.10	1.561		0.000
Control Group	6.47	2.315	8.564	Significant

Significant at p≤ 0.05level, Table value=2.01

Table-4.4depicts the Mean, Standard Deviation,Unpaired 't' test , P value of Subjects between Experimental and Control Group.

The post-test mean pain score of subjects in experimental group were 2.10 $\pm$ 1.561 and the post-test mean pain score of subjects in control group were 6.47 $\pm$ 2.315. The independent 't' test score was 8.564 which was statistically significant at the 'P' value 0.000.

These findings reveal the intervention is effective in terms of reduction of pain after intramuscular injection.

Section: - D

Level of Association between Level of Pain among subjects with selected Socio-demographic variables in Both Group

Table No:4.5Chi square test on Level of Pain among hospitalized adults with their selected Socio-demographic variables in ExperimentalGroup.

(n = 30)

Demographic Data		Levels			Association with EXPERIMENTAL Score				
Variables	opts	NO PAIN	MILD	MODERATE	χ^2	Table Value	df	P Value	Result
Age (in years)	20-29 years	0	11	2	4.433	9.488	4	0.351	Not Significant
	30-39 years	1	6	3					
	40-45 years	1	6	0					
Gender	Male	1	12	2	0.243	5.991	2	0.885	Not Significant
	Female	1	11	3					
Religion	Hindu	2	21	4	2.039	9.488	4	0.729	Not Significant
	Muslim	0	1	0					
	Christian	0	0	0					
	Other	0	1	1					
Educational Status	Primary education	0	5	0	8.883	12.592	6	0.180	Not Significant
	Secondary education	0	9	1					
	Higher secondary education	0	5	2					
	Graduate and above	2	4	2					
Occupation	Heavy worker	0	4	0	3.300	9.488	4	0.509	Not Significant
	Moderate worker	0	9	2					
	Sedentary worker	2	10	3					
Habit of practicing muscle exercise	Yes	1	9	2	0.091	5.991	2	0.956	Not Significant
	No	1	14	3					
History of any allergic reaction due to intramuscular injection previously	Yes	1	8	3	1.178	5.991	2	0.555	Not Significant
	No	1	15	2					
Previous exposure to intramuscular injection	Yes	1	14	3	0.091	5.991	2	0.956	Not Significant
	No	1	9	2					

*Significant (p<0.05)

In the experimental group there was no significant association between the level of Pain with selected socio-demographic variables. Hence research hypothesis H_2 is rejected.

Table No: 4.6 Chi square test on Level of Pain among hospitalized adults with their selected Socio-demographic variables in Control Group.

(n = 30)

Demographic Data		Levels				Association with CONTROL Score				
Variables	opts	SEVERE	MODERATE	MILD	NO PAIN	χ^2	Table Value	df	P Value	Result
Age (in years)	20-29 years	2	3	2	0	5.321	12.592	6	0.503	Not

	30-39 years	1	6	7	2				Significant
	40-45 years	1	1	3	2				
Gender	Male	4	6	5	2	4.276	7.815	3	0.233	Not Significant
	Female	0	4	7	2				
Religion	Hindu	4	8	10	4	7.231	16.919	9	0.613	Not Significant
	Muslim	0	1	0	0				
	Christian	0	1	0	0				
	Other	0	0	2	0				
Educational Status	Primary education	0	1	0	3	22.465	16.919	9	0.008	Significant
	Secondary education	3	4	3	0				
	Higher secondary education	0	4	4	1				
	Graduate and above	1	1	5	0				
Occupation	Heavy worker	2	3	1	2	7.081	12.592	6	0.313	Not Significant
	Moderate worker	2	3	6	2				
	Sedentary worker	0	4	5	0				
Habit of practicing muscle exercise	Yes	0	4	4	1	2.302	7.815	3	0.512	Not Significant
	No	4	6	8	3				
History of any allergic reaction due to intramuscular injection previously	Yes	1	6	5	1	2.240	7.815	3	0.524	Not Significant
	No	3	4	7	3				
Previous exposure to intramuscular injection	Yes	3	6	8	2	0.646	7.815	3	0.886	Not Significant
	No	1	4	4	2				

*Significant (p<0.05)

In control group there was significant association between the level of pain with educational status at $p \leq 0.05$ level. The research hypothesis H_2 was retained for educational status in control group

DISCUSSION

The chapter deals with the discussion of the data analyzed based on the objective and hypothesis of the study. The problem statement "A study to assess the effectiveness isf Heifer skin tap technique on level of pain associated with intramuscular injection among hospitalized adults in selected hospital, Panipat." The discussion was based on the objectives and hypothesis mentioned in this study.

Distribution of demographic variables of patients receiving intramuscular injection in experimental and control group.

The distribution of demographic variables on patients receiving Intramuscular injection in experimental and control group which 30 patients were in experimental group and 30 patients were in control group.

The demographic profile in experimental group 13(43.3%) belongs to age group of 20-29 years, 15(50%) were male, 27(90%) of them were Hindu,10(33.3%) were studied up to secondary,15(50%) were sedentary workers,18(60%) of them were have no habit of practicing muscle exercise,18(60%) of them were have no history of any allergic reaction due to intramuscular injection and 18(60%) of them were have previous exposure of intramuscular injection.

The demographic profile in control group 16(53.3%) belongs to age group of 30-39 years, 17(56.7%) were male, 26(86.7%) were hindu, 10(33.3%) were studied upto secondary, 13(43.3%) were moderate worker, 21(70%) of them were have no habit of practicing muscle, 17(56.7%) of them were have no history of any allergic reaction due to intramuscular injection and 19(63.3%) of them were have previous exposure of intramuscular injection.

The first objective was to assess the level of pain associated with intramuscular injection among hospitalized adults in experimental and control group.

During post test in the experimental group, majority of the total subjects 23 (76.7%) had mild pain. Subjects with moderate pain were 5 (16.7%). Few subjects 2 (6.7%) had no pain. Those subjects who were with severe pain and worst pain were 0 (0%). Whereas in the control group majority of the total subjects 12 (40%) were having severe pain, 10 (33.3%) were with moderate pain. Equal Number of subjects 4 (13.3%) were having mild and worst pain and 0 (0%) had no pain.

The second objective was to evaluate the effectiveness of heifer skin tap technique on level of pain associated with intramuscular injection among hospitalized adults in experimental and control group.

In the post test, the experimental group showed a mean value of 2.10 with standard deviation of 1.561 and the control group showed a mean value of 6.47 with standard deviation of 2.315. which was significantly at the 'P' value 0.040.

This showed a significant difference in the post test level of pain between experimental and control group. It shows that Heifer skin tap technique was effective in reduced the level of pain. Hence the hypothesis (H_1) was accepted.

The third objective was to associate the post test level of pain in hospitalized adults with their demographic variables in experimental and control group.

It shows that, in experimental group the calculated value of demographic variables such as age, gender, religion, educational status, occupation, habit of practicing muscle exercise, history of any allergic reaction due to intramuscular injection previously and previous exposure to intramuscular injection of the patient is lesser than the 'P' value which indicates there was no significance association with level of pain and the demographic variables.

In control group the calculated value of demographic variables such as age, gender, religion, educational status, occupation, habit of practicing muscle exercise, history of any allergic reaction due to intramuscular injection previously and previous exposure to intramuscular injection of the patient is lesser than the 'P' value which indicates there was no significance

association with level of pain and the demographic variables.

SUMMARY

The study is to assess the effectiveness of Heifer skin tap technique on level of pain associated with intramuscular injection among hospitalized adults in selected hospital, Panipat. A review of related literature enabled the researcher to develop the conceptual framework and methodology for the study. The conceptual framework adopted for this study was based on Gate Control Theory. Quantitative research approach was used. Quasi experimental design was adopted to evaluate the effectiveness of Heifer skin tap technique on level of pain associated with intramuscular injection among hospitalized adults. The study was conducted in Civil Hospital Panipat. The non probability sampling technique was used to select 30 samples for experiment group and 30 samples for control group.

Data collection was done by using demographic variables and numerical rating scale. Data was collected for a period of 4 weeks. Heifer skin tap technique was administered for experiment group. Post test was done after the intramuscular injection in both the group. The data gathered were analyzed by descriptive and inferential statistics method and interpretation were done on the basis of the objectives of the study. The level of significance was assessed by $p<\_0.05$ to test the hypothesis.

CONCLUSION

The study was done to evaluate the effectiveness of heifer skin tap technique on level of pain associated with intramuscular injection among hospitalized adults in selected hospital. The result of the study showed that providing Heifer skin tap technique was very effective in reducing the level of pain. There is a significant difference between the level of pain associated with intramuscular injection with their selected demographic variables in experimental group.

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