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A Study to Assess the Effectiveness of Video Assisted Teaching Method on Knowledge Regarding Helper Skin Tap Technique to Reduce Pain, Anxiety and Fear for Children Undergoing Intramuscular Injection Among GNM Students in Selected Nursing School

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Abstract

A Study to Assess the Effectiveness of Video Assisted Teaching Method on Knowledge Regarding Helper Skin Tap Technique to Reduce Pain, Anxiety and Fear for Children Undergoing Intramuscular Injection among GNM Students in Selected Nursing School.

Objectives

Primary Objective

To assess the pre-test knowledge regarding importance of Helper skin tap technique.

Secondary objective

1. To evaluate the effectiveness of video assisted teaching method on knowledge regarding Helper skin tap technique.
2. To find significant association between sociodemographic variable and knowledge regarding importance Helper skin tap technique.

Material and Methods: The research approach adopted in this study is quantitative research approach. Pre experimental research design one group pre test post test design was chosen for the study. The sample were selected non probability conveniently sampling to suit the study. Sample size was 60.

Results: The data was analyzed by using inferential and descriptive statistics on the basis of objectives.

- At the time of pre-test, none they having Very good knowledge, 5.0% of them had good knowledge, 86.66% of them had average knowledge, and 8.33% of them having neutral knowledge, no one of them had unconcerned knowledge and no one of them had very unconcerned knowledge.
- At the time of post test, 5.0% of them had very concerned knowledge, 86.66% of them had concerned knowledge, and 8.33% of them having neutral knowledge, no one of them had

unconcerned knowledge and no one of them had very unconcerned knowledge.

Average knowledge score at the time of pre test was 16.33 with standard deviation of 2.18 with mean percentage 77.76%. Average knowledge score at the time of post test was 22.2 with standard deviation of 1.37 with mean percentage 85.38%.

The p value less than 0.05, hence reject the null hypothesis and accept the alternative hypothesis.

Conclusion: The study was done to assess the knowledge regarding Helper Skin Tap Technique to reduce pain, anxiety and fear for children undergoing intramuscular injection among GNM students in selected nursing school. The results of this study show that pre-test, 33.3% they having Very good knowledge, 58.3% of them had Good knowledge, and 8.3% of the had Average knowledge. Average knowledge score at the time of pre test was 16.33 with standard deviation of 2.18 with mean percentage 77.76% regarding Helper Skin Tap Technique to reduce pain, anxiety and fear for children undergoing intramuscular injection among GNM students. The pre test average score was 9.51 with standard deviation.

At the time of post test, 5.0% of them had very concerned knowledge, 86.66% of them had concerned knowledge, and 8.33% of them having neutral knowledge, no one of them had unconcerned knowledge and no one of them had very unconcerned knowledge. The post-test average score was 19.9 with standard deviation.

Thus, it was concluded that video assisted teaching method on knowledge regarding Helper Skin Tap Technique to reduce pain, anxiety and fear for children undergoing intramuscular injection among GNM students in selected nursing school was found effective as a teaching strategy.

Keywords: Video Assisted Teaching, Helper Skin Tap Technique (HSTT), Intramuscular (IM) Injections

Introduction /Background

The Helper Skin Tap Technique (HSTT) is a widely studied, non-pharmacological nursing intervention specifically designed to reduce the pain, anxiety, and fear associated with receiving intramuscular (IM) injections. Developer and Origin The technique was developed by Joanne Kieffer Helfer, BSN, RN, in 1998. She refined the technique based on anecdotal clinical experience and a pilot research study to provide a reliable method for administering less painful injections. Primary Purpose: To alleviate

the procedural pain caused by the needle insertion and medication injection into the muscle [1].

Mechanism (The Theory): HSTT is founded on the Gate Control Theory of Pain (introduced by Melzack and Wall in 1965). The rhythmic tapping provides intense mechanical stimulation that activates large, fast-conducting nerve fibers (A-beta fibers), which effectively “closes the gate” in the spinal cord, preventing the slower pain signals from reaching the brain. In clinical practice, the Helper Skin Tap Technique is a simple, cost-effective, and reproducible method that allows healthcare providers to enhance patient comfort during one of the most common invasive procedures. Intramuscular (IM) injections are one of the most common invasive procedures performed by nurses worldwide, used for administering vaccines, antibiotics, analgesics, and various therapeutic agents (Potter & Perry, 2017) [2].

Despite being routine, IM injections often cause significant discomfort, which can negatively impact patient compliance and overall experience. Studies reveal that more than 70% of patients report mild to moderate pain during IM injection, and many express associated anxiety and fear (Kozier et al., 2016). Such emotional and sensory responses may influence vital signs, increase muscular tension, and enhance the perception of pain, thereby making the procedure more difficult for both patient and nurse (McCaffery & Pasero, 1999) [3].

The Helper Skin Tap Technique, introduced by the nurse researcher Vernon T. Helfer, is a behavioral and sensory distraction method designed to minimize pain perception during IM injections. The technique involves tapping the skin lightly and rapidly near the injection site immediately before the needle puncture. This brief and repetitive tactile stimulation activates the large-diameter sensory nerve fibers, which can inhibit the transmission of pain signals through the gate control mechanism of pain. As a result, the patient experiences reduced discomfort or may not perceive the needle prick at all. Over the years, this technique has gained attention due to its simplicity, safety, and applicability across multiple age groups. Unlike pharmacological approaches, it requires no equipment, has no side effects, and can be easily integrated into routine nursing practice. Several studies have indicated that non-pharmacological distraction methods, such as skin tapping, deep breathing, and vibration, can significantly reduce procedural pain. However, there is limited localized evidence on the effectiveness of the Helper Skin Tap Technique in different clinical settings, populations, and types of injections [4].

Given the need for improved patient comfort and the promotion of evidence-based nursing practices, further research on the Helper Skin Tap Technique is essential. Understanding its effectiveness, acceptability, and practical application can help nurses adopt better strategies for pain reduction during IM injections, ultimately enhancing the quality of patient care [5].

Review of Literature

1. Dr. Niyati Das, Paurnima Sahoo (2025) A randomised controlled trial with a post-test control. Design was conducted in the paediatric department of Pradyumna Bal Memorial Hospital (KZWS). A study was mainly

focused on evaluating the effectiveness of HST to reduce pain and fear. The sample size Was 62 infants, with 31 each in the experimental & control groups. Using the control group method. Result of this Study is the mean point score of the Control group (6.55+1.028 & Experimental group 5.52+1.411 years. Concluded that the Helper Skin Tap Technique was successful in lowering pain by 74.2%. of infants [6].

2. AL-Shammary SE, Sadeq AF (2024) A quasi-experimental design with post-test only design in 2024 at Sancheti multi speciality hospital punjab. In their study, they mainly focused on the relaxation of muscles, while Intramuscular injection. The Sample size was 80 adults, using Simple random sampling technique. The result of this study is that findings highlight that 32.5% of the adults in the experimental group had mild pain 67.5% perceived moderate pain during Intramuscular. The study concluded that there is a significant difference in the Severe pain score in t the Intramuscular injection administration [7].

Results

The data was analyzed by using inferential and descriptive statistics on the basis of objectives.

1. Deals with analysis of data related to assessment of the knowledge regarding Helper Skin Tap Technique to Reduce Pain, Anxiety, and Fear for Children Undergoing Intramuscular Injection In GNM Students of Selected Nursing School in terms of frequency and percentage.

Table 8: General assessment of Knowledge – Pre Test

Pre test	Group		Frequency	Percentage
	Very good	21-30	20	33.3%
Good	11-20	35	58.3%	
Average	1-10	05	8.3%	
Knowledge	Minimum		2	
	Maximum		18	
	Average(SD)		9.51	
	Mean percentage		15.8%	

For the assessment purpose the total score of knowledge was divided into three groups Very good (21-30), Good(11-20), Average(1-10).

At the time of pre-test, 33.3% they having Very good knowledge, 58.3% of them had Good knowledge, and 8.3% of the had Average knowledge.

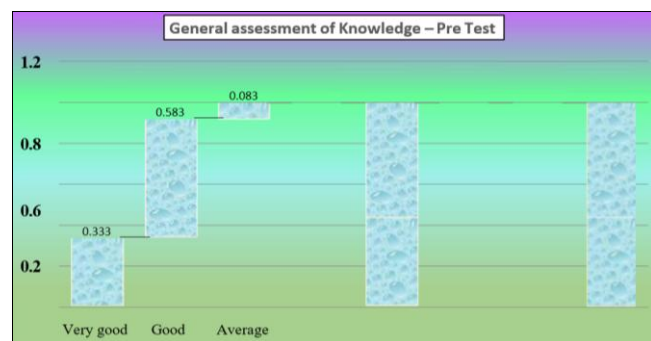


Table 9: General assessment of Knowledge – Post Test

Post test	Group		Frequency	Percentage
	Excellent	26-30	3	5.0%
Very good	20-25	52	86.66%	
Good	14-19	5	8.33%	
Average	7-13	0	0	
Poor	1-6	0	0	
Knowledge	Minimum		14	
	Maximum		26	
	Average(SD)		22.2	
	Mean percentage		85.38%	

At the time of post test, 5.0% of them had excellent knowledge, 86.66% of them had very good knowledge, and 8.33% of them having good knowledge, no one of them had average knowledge and no one of them had poor knowledge.

Average knowledge score at the time of post test was 22.2 with standard deviation of 1.37 with mean percentage 85.38%.

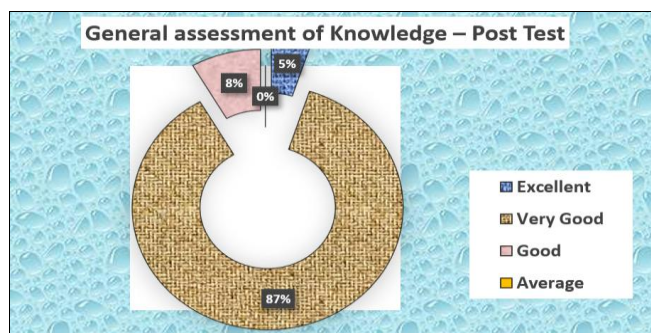


Fig 13: General assessment of Knowledge – Post Test

- Deals with analysis of data related to assessment of the knowledge regarding the importance of outdoor Physical activities among mothers of children age group between 6-12 years in the selected school in terms of frequency and percentage.

Table 14: General assessment of Pre Vs Post Test

Knowledge	Groups	Pre-test		Post-test		
		Frequency	Percentage	Frequency	Percentage	
Knowledge	Very good	21	33.3%	15	43.33%	
	Good	11	58.3%	38	48.33%	
	Average	1	8.3%	07	8.3%	
Knowledge	Minimum		8		14	
	Maximum		21		26	
	Average(SD)		15		19.9	
	Mean percentage		33.3%		15.8%	

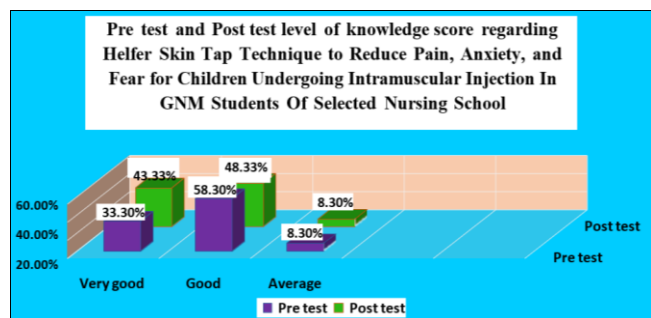


Fig 14: Distribution of Pre test and Post Test Knowledge score regarding Helfer Skin Tap Technique to Reduce Pain, Anxiety, and Fear for Children Undergoing Intramuscular Injection in GNM Students of Selected Nursing School

For assessment purpose the total score of knowledge was divided in to five groups like Very good(21-30), good (11 - 20), Average(1 – 10).

Pre- test

At the time of pre-test, none they having Very good knowledge, 5.0% of them had good knowledge, 86.66% of them had average knowledge, and 8.33% of them having neutral knowledge, no one of them had unconcerned knowledge and no one of them had very unconcerned knowledge.

Average knowledge score at the time of pre test was 16.33 with standard deviation of 2.18 with mean percentage 77.76%.

Post-test

At the time of post test, 5.0% of them had very concerned knowledge, 86.66% of them had concerned knowledge, and 8.33% of them having neutral knowledge, no one of them had unconcerned knowledge and no one of them had very unconcerned knowledge.

Average knowledge score at the time of post test was 22.2 with standard deviation of 1.37 with mean percentage 85.38%.

Table 15: Difference between mean Pre test and post test knowledge score regarding Helfer Skin Tap Technique to Reduce Pain, Anxiety, and Fear for Children Undergoing Intramuscular Injection in GNM Students of Selected Nursing School

	N	Knowledge score		Mean Difference	Paired t test
		Mean	Standard Deviation (SD)		
Pre test	60	8.76	9.51	7.040	t = 2.472, p < 0.0154
Post test	60	15.8	19.9		

The difference between pre-test and post-test means of the knowledge were done by the paired t-test. The pre test average score was 9.51 with standard deviation. The post-test average score was 19.9 with standard deviation. The test statistics value of the paired t test was 2.472 with p value was less than 0.05. The p value is 0.0154 (Significant), hence reject the null hypothesis and accept the alternative hypothesis. Shows that, self structured questionnaire on knowledge regarding Helfer Skin Tap Technique to Reduce Pain, Anxiety, and Fear for Children Undergoing Intramuscular Injection In GNM Students of Selected Nursing School.

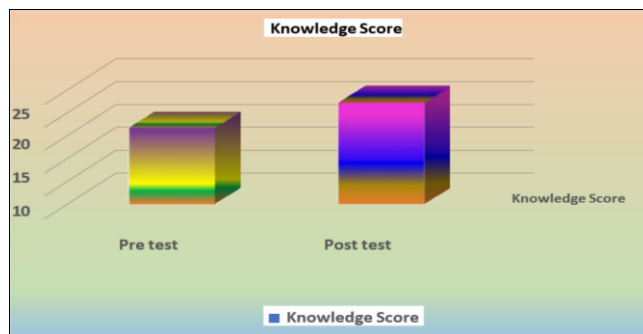


Fig 15: Show that significance of difference between knowledge score in pre test and post test regarding Helfer Skin Tap Technique to Reduce Pain, Anxiety, and Fear for Children Undergoing Intramuscular Injection in GNM Students of Selected Nursing School

Section: III

Table 16: Association between level of Pre-test knowledge score with their selected demographic variables N=60

Demographic variables		Pre-score level of knowledge			Chi square	d. f.	P value	Significance
		Very good	Good	Average				
Age of student	Below 20 years	1	3	4	10.66	4	0.0305	P<0.05 Significant
	21 - 25 years	1	18	2				
	Above 25 years	2	17	1				
Gender	Male	1	5	1	5.81		0.0547	P<0.01 Not Significant
	Female	35	17	8				
Year of nursing course	GNM 1 st year	12	8	5	0.6907	4	0.9525	P<0.01 Not Significant
	GNM 2 nd year	12	6	2				
	GNM 3 rd year	3	1	1				
Family type	Nuclear Family	12	15	10	2.3413	2	0.3102	P<0.01 Not Significant
	Joint Family	12	7	4				
Religion of student	Hindu	22	16	12	2.6623	4	0.6158	P<0.01 Not Significant
	Muslim	03	03	02				
	Other	02	0	0				
Residence	Rural	38	12	8	3.0296	4	0.5529	P<0.01 Not Significant
	Urban	04	2	2				
	Semi Urban	02	2	0				
Source of Information	TV	07	1	1	4.0954	4	0.3932	P<0.01 Not Significant
	Workshop	11	6	4				
	Internet	12	10	8				

The chi square test was conducted to see the association of knowledge regarding Helfer Skin Tap Technique to Reduce Pain, Anxiety, and Fear for Children Undergoing Intramuscular Injection in GNM Students of Selected Nursing School.

The chi-square test was conducted at 0.05% level of significance.

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