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Effectiveness of Distraction Technique on Pain Reduction After Administration Subcutaneous Injection Among Children in Immunization Rooms

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ABSTRACT **-** Pain is described as "an unpleasant, subjective sensory and emotional experience associated with existing or potential tissue damage, or described in terms of such damage," according to the International Association for the Study of Pain (IASP). Suffering results from untreated or ineffectively treated pain. The method of administering medication subcutaneously, which is frequently done by nurses, is associated with discomfort, pain, and injury to the tissue that is being injected. The primary goal of the study was to determine whether using a distraction approach helped children in the immunisation rooms of particular hospitals in Gurugram feel less discomfort after receiving a subcutaneous injection. Materials and Methods: 60 children were chosen by the purposive selection strategy from the hospital Gurugram's immunization rooms. The chosen individuals are then split into two equally sized groups. Results: In the assessment, the experimental group's mean score on the pre-facing rating scale was 6.93, while the control group's was 7.13, with an SD of 1.252. The experimental group's mean score on the post-faces rating scale is 2.00, whereas the control group's is 6.47, with a standard deviation of 1.548. Conclusion : The outcome demonstrates a movement in the sample's level of pain (hurts worse, hurts a lot, hurts a little more, hurts even more, hurts a little, doesn't hurt) in favour of the experimental group. When compared to the control group, it is because of the distraction strategy (an electronic moving toy).

Keywords: Measles Mumps Rubella (MMR), subcutaneous (s c),injection (I j)

I. Introduction

Distraction methods are crucial non-pharmacological options for easing discomfort in young children and infants. Patients find getting an injection to be a painful experience. Giving injections to all patients requires extra vigilance. A range of techniques and pharmaceuticals are routinely used to treat disease in patients with health alterations in order to recover or preserve their health. An essential component of a health professional's job is managing pain.8 The Joint Commission of Health Care Organization (JCAHO) designated pain as the fifth vital sign and released standards for pain treatment in hospitals in 2001. Pain is always present, an awful feeling that leaves the patient exposed. Any technique that could result in real or potential tissue injury could be painful.8

The best method for delivering several medications right now is through injections, says parent rally According to the World Health Organization's 2006 estimate, 16 billion injections are given annually.1 The associated pain is the most important side effect of subcutaneous injection. Patients frequently fear getting injections because they think they will hurt. Subcutaneous injections are one of the most frequent sources of iatrogenic discomfort, therefore pain during an IM injection is typically to be anticipated (1992). Subcutaneous injection pain shouldn't be taken lightly because it could cause a patient to become extremely afraid of getting shots, which could prevent them from getting the care they need. Transduction, transmission, perception, and modulation are the four processes involved in typical pain. A client in pain is unable to distinguish between the processes. However, being aware of each step in the process enables the nurse to identify the causes of pain, the symptoms that go along with it, and to decide which therapies to utilise. 4

To encourage optional pain relief, a pain management strategy must be established. Non-pharmacologic pain management techniques include physical and behavioural measures like touch, massage, the application of heat and cold, acupuncture,

relaxation, hypnosis, and distraction. showed promise in easing pain.

II. Need For Study

A US study comparing the discomfort of using frozen versus room temperature needles found that 76.6 percent of patients reported less discomfort while using frozen needles. Another study that looked at how the temperature of the needle affected people's perceptions of pain during intrascapular injections was carried out in India and found that using a cold needle significantly reduced pain.

Injection pain is a cause of concern for kids, their parents, and vaccine providers; if it is not treated, it can result in future pre-procedural anxiety, medical anxieties, and healthcare avoidance behaviours. Therefore, there is a pressing need to research effective treatments for children's suffering caused by vaccinations. Many children spend the entire appointment worrying about the potential for discomfort from their vaccinations. Every nurse or doctor who treats young patients will come across a child who is frightened and asks, "Am I going to get a shot?" The needle is a potently unfavourable sign for many kids, a source of terror for others, and regrettably has come to symbolise medical and nursing care. Non-pharmacological techniques may be used either alone or in conjunction with medication to ensure proper pain relief, to make pain more bearable, and to give the kids a sense of control over the situation3,7.

By actively immersing the kid in the performance of a diversion task or by passively diverting the child's attention, distraction is a non-pharmacological technique that diverts attention from a noxious stimuli. Commonly utilised child-friendly distractions include picture books, chatting to the child, moving, attractive toys that make sound and light, and music. Regarding the quality of the distraction, Mac Laren and Cohen discovered that regardless of the sort of distraction stimuli, the more children participate in distraction, the less pain they suffer.2,5

The researcher noted that as a result, parents may decide against immunising their child or decide to delay immunisation. Infant procedural distress is substantially understudied in child health nursing literature, hence it was felt that it was necessary to evaluate the effectiveness of diversion during painful procedures.

III. Aim of the study

The main aim of the study was to assess the effectiveness of distraction technique on pain reduction after administration subcutaneous injection among children.

IV. Methodology

Given the nature of the issue chosen for study and the goal to be achieved A quantitative, N-experimental study design was taken into consideration. A quasi-experimental study design was adopted in this investigation. In Budhera, Gurugram, SGT University did the study.

involved youngsters who control the inclusion requirements. Purposive sampling technique was employed for chosen the 60 youngsters (15-24 months) . The development of tools, sociodemographic variables in section A, distraction techniques in section B, and the Wrong-Rating Baker's scale are all used as the method of data collection. The Wrong-Rating Baker's scale is used to measure the pain intensity of children who receive subcutaneous injections. Every child's pain level is measured using The Wrong - Baker's Faces Rating Scale, which has six faces for each pain score. The faces were rated on a scale of 0 to 5, with 0 representing no pain and 1 to 5 representing escalating levels of discomfort. Face 0 did not hurt at all; face 1 hurt little; face 2 hurt more; and face 3 hurt even more. The criteria employed in the study were: face more face 4 hurts a lot face 5 hurts worse. After administering a subcutaneous injection to children, I evaluated the effect of the distraction approach on pain reduction. Each study's specific data collection procedures are determined by the research design and methodology. Formal written authorization was received from the appropriate authority, as well as from the Dean, the head of department, and the Parents of the children. Frequency and percentage were used to describe the sample's characteristics. Kappa agreement was used to evaluate how well the distraction approach reduced pain. The tool's reliability and content validity were assessed, which revealed that it was trustworthy. Using descriptive and inferential statistics, the data were examined in light of the study's goal. The plan for data analysis was created under the good supervision of leading figures in the fields of statistics and nursing.

V. Demographic variables

VI. Major Findings of the study

Table 1: Frequency Distribution of Demographic variables.

SECTION-1 SOCIO DEMOGRAPHIC	Experimental (%)	Control (%)	Experimental (N=30)	Control (N=30)

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PROFORMA					
Age of Child	12-15 Months	46.7%	40.0%	14	12
	16 -18 Months	20.0%	26.7%	6	8
	19-21 Months	23.3%	20.0%	7	6
	22-24 Months	10.0%	13.3%	3	4
Weight of Child	10 .5-10.7 kg.	20.0%	13.3%	6	4
	10.9-11.2 kg	56.7%	43.3%	17	13
	11.3-11.5 kg	20.0%	43.3%	6	13
	Above 12 kg	3.3%	0.0%	1	0
Sex of Child	Male	53.3%	60.0%	16	18
	Female	46.7%	40.0%	14	12
Religion	Hindu	70.0%	63.3%	21	19
	Christian	6.7%	6.7%	2	2
	Muslim	3.3%	16.7%	1	5
	Sikh	20.0%	13.3%	6	4
Child's Past Experiences to Injection	Calm and quiet	0.0%	0.0%	0	0
	Minimal resistance	53.3%	56.7%	16	17
	Rebellious and high resistance	46.7%	43.3%	14	13
Position of the child during immunization	Lying position	26.7%	30.0%	8	9
	Mothers lap	73.3%	70.0%	22	21
Professional qualification of nurse	ANM	0.0%	0.0%	0	0
	GNM	30.0%	30.0%	9	9
	BSc Nursing	50.0%	43.3%	15	13
	MSc Nursing	20.0%	26.7%	6	8
	POST BSc Nursing	0.0%	0.0%	0	0
Professional experience of nurse	1 to 5 Years	40.0%	26.7%	12	8
	5 to 10 Years	43.3%	53.3%	13	16
	10 to 15 Years	16.7%	20.0%	5	6
	15 to 20 Years	0.0%	0.0%	0	0
	>20 Years	0.0%	0.0%	0	0

This table displays the sample's percentage distribution by socio-demographic factors. The majority of children were between the ages of 12 and 15 months (46.7%), followed by 19 to 21 months (23.3%), 16 to 18 months, and 22 to 24 months (10.0 %). According to child weight, the majority of children were between 10.5 and 10.7 kg (20%), followed by 10.9 to 11.2 kg (56.7%), 11.3 to 11.5 kg (20%), and over 12 kg. Male children children make make up 53.3 % of the population and female children make up 46.7%. 70 % of youngsters identified as Hindu, 6.7 % as Christian, 3.3 % as Muslim, and % as Sikh. 0 percent of children who have had injections in the past have been calm and cooperative, 53.3 % have encountered little resistance, and 46.7 % have encountered strong resistance. Distribution based on the child's position during immunisation included lying down position (26.7%) and mother's lap (73.3%). ANM accounted for 0%, GNM 30%, Post Basic Bsc Nursing 0%, Bsc. Nursing 50%, and Msc. Nursing 20% of the distribution of nurses by profession. According to the distribution of a nurse's professional experience, 40% were between 1 and 5 years, followed by 5 to 10 years (43.3%), 10-15 years (16.7%%), 15-20 years (0%), and over 20 years (0%).

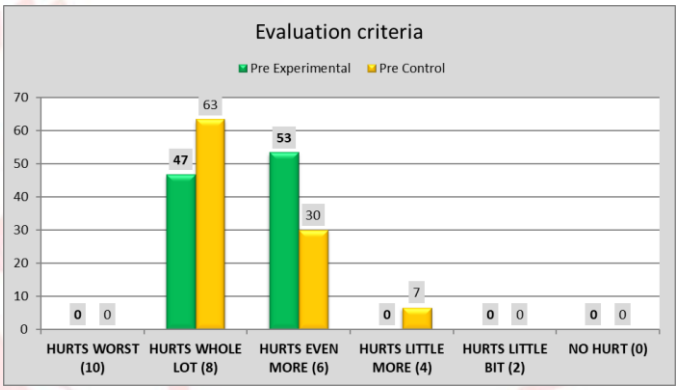

Figure 1: Diagram showing Level of Scores

This Figure displays the sample's pain level before distraction techniques administered in both experimental and control group The majority of children were hurts whole lot (63%) and (30%) hurts even more in control group. 47% children hurts whole lot and 53 % hurts even more in experimental group.

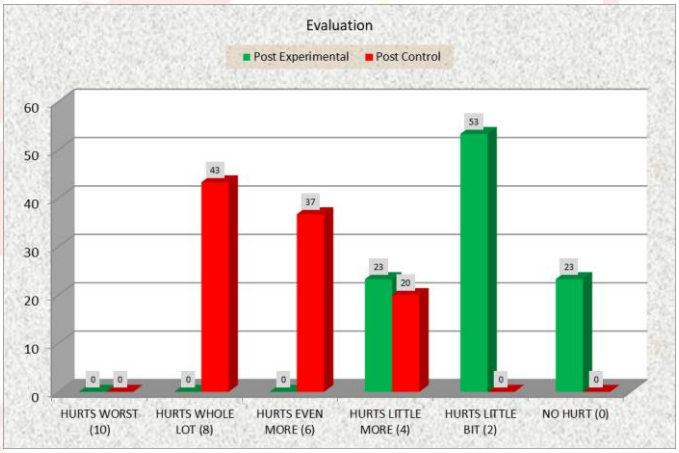

Figure 2: Diagram showing Level of Scores

This Figure displays the sample's pain level after distraction techniques administered in both experimental and control group The majority of children were hurts whole lot (43%), (37%) hurts even more and 20 % hurts little more in control group. 23% children hurts little more, 53 % hurts little bit and 23% no hurts in experimental group.

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Table 2: Showing Level of Scores in control and experimental groups before and after administration of distraction technique .

N=30+30

CRITERIA MEASURE OF FACES PAIN RATING SCALE				
Score Level	**Pre Experimental**	**Pre Control**	**Post Experimental**	**Post Control**
HURTS WORST (10)	0(0%)	0(0%)	0(0%)	0(0%)
HURTS WHOLE LOT (8)	14(46.7%)	19(63.3%)	0(0%)	13(43.3%)
HURTS EVEN MORE (6)	16(53.3%)	9(30%)	0(0%)	11(36.7%)
HURTS LITTLE MORE (4)	0(0%)	2(6.7%)	7(23.3%)	6(20%)
HURTS LITTLE BIT (2)	0(0%)	0(0%)	16(53.3%)	0(0%)
NO HURT (0)	0(0%)	0(0%)	7(23.3%)	0(0%)

Maximum=10
Minimum =0

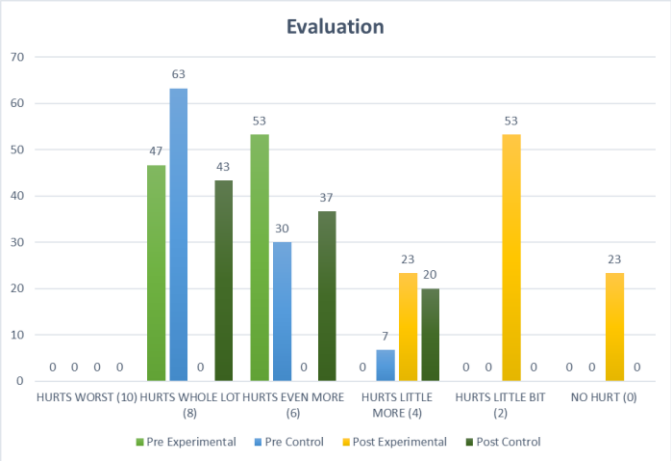

Figure 3: Comparison of level of pain in both control and experimental group after and before administration distraction technique

The chi-square test was used to determine the association between the score levels and selected demographic variables

DEMOGRAPHIC VARIABELS	**PRE EXP FACES PAIN RATING SCALE**	**Association**

Variables	**Opts**	**NO HURT**	**HURTS LITTLE BIT**	**HURTS LITTLE MORE**	**HURTS EVEN MORE**	**HURTS WHOLE LOT**	**HURTS WORST**	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
Age of Child	12-15 Months			0	9	5		8.667	0.034	3	7.815	Significant
	16 - 18 Months			0	0	6						
	19-21 Months			0	5	2						
	22-24 Months			0	2	1						
Weight of Child	10 .5-10.7 kg.			0	0	6		10.108	0.018	3	7.815	Significant
	10.9-11.2 kg			0	10	7						
	11.3-11.5 kg			0	5	1						
	Above 12 kg			0	1	0						
Sex of Child	Male			0	11	5		3.274	0.070	1	3.841	Not Significant
	Female			0	5	9						
Religion	Hindu			0	10	11		2.927	0.403	3	7.815	Not Significant
	Christian			0	2	0						
	Muslim			0	1	0						
	Sikh			0	3	3						
Child's Past Experiences to Injection	Calm and quiet			0	0	0		0.153	0.696	1	3.841	Not Significant
	Minimal resistance			0	8	8						
	Rebellious and high resistance			0	8	6						
Position of the child during immunization	Lying position			0	1	7		7.308	0.007	1	3.841	Significant
	Mothers lap			0	15	7						
Professional qualification of	ANM			0	0	0		3.259	0.196	2	5.991	Not Significant
	GNM			0	7	2						

nurse	BSc Nursing			0	6	9						
	MSc Nursing			0	3	3						
	POST BSc Nursing			0	0	0						
Professional experience of nurse	1 to 5 Years			0	7	5		0.479	0.787	2	5.991	Not Significant
	5 to 10 Years			0	7	6						
	10 to 15 Years			0	2	3						
	15 to 20 Years			0	0	0						
	>20 Years			0	0	0						

The relationship between the level of score and the socio-demographic characteristic is shown in the table. Based on the goals, the PAIN RATING SCALE level and a few chosen demographic characteristics were linked using the Chi-square test. The Chi-square result demonstrates a significant correlation between the score level and the demographic characteristics of children's age. At the 0.05 level of significance, the estimated chi-square values exceeded the table value. The level of scores and other demographic factors like the age of the children do not significantly correlate with one another. At the 0.05 level of significance, the estimated chi-square values were lower than the table value. The study's key finding, which includes a discussion of the demographic factors, Examine the experimental group's pain scores (Mean, SD, and Mean%) for the painful vaccination rooms and the control group's pain scores (Mean, SD, and Mean%) for the painful vaccination rooms. Comparing the experimental group score among toddlers experiencing discomfort in vaccination rooms Describe the relationship between chosen demographic characteristics and the Experimental Group in the Painful Immunization Rooms. The associated control group's sociodemographic characteristics are described, and the hypothesis is tested.

VII. CONCLUSION

With consequences for nursing fields, limitations and delimitations with study designs and techniques, and recommendations for the future, the current research study comes to a close. The measurement of children's pain scores following subcutaneous injection delivery was the main focus of this investigation. This will enable kids to improve in particular areas of the pain threshold following subcutaneous injection administration. After administering a subcutaneous injection, this score will help to prevent complications and enhance the quality of the injection. The research includes To accomplish the goals of the study, a quasi-experimental research design was used. The purposive sampling technique was used to gather the 60 care providers' sample sizes. Participants' information was gathered utilising a two-part instrument. scale and demographic information. The research committee of the faculty of nursing established the validity and reliability of the tool. These are regarded as the most effective methods for evaluating children's pain scores following subcutaneous injection administration.

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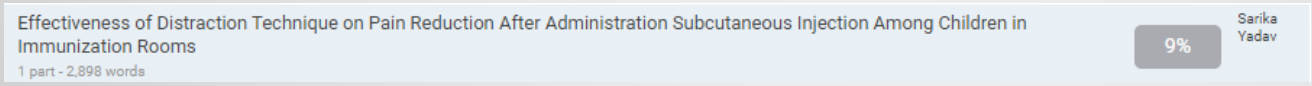

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