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A STUDY TO ASSESS THE EFFECTIVENESS OF HELFER SKIN TAP TECHNIQUE ON PAIN DURING INTRAMUSCULAR INJECTION AMONG NEONATES BORN IN LABOUR ROOM OF A SELECTED TERTIARY LEVEL HOSPITAL, UP.

Nursing

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ABSTRACT

Pain is a common and a ubiquitous sensation for children and adult. Every child has his or her own perception of pain. Routine immunizations are the most frequent painful medical procedure during childhood. A fundamental principle of responsible medical care is 'do not hurt' but 'do not harm' since pain is harmful to children, the care givers are committed in preventing harm to their patients. Pain is a major source of distress for children and their families as well as health care providers. Skin tapping (Helfer skin technique) is one of the methods which keeps the muscles relaxed and thus reduce pain while administering IM injection.

Objectives

1. To assess the pain level of neonate during intramuscular injection with usual standard technique.
2. To assess the pain level of neonate during intra muscular injection with Helfer skin tap technique.
3. To compare the pain level of neonates during intramuscular injection with and without the use of Helfer skin tap technique.

Materials and methods

Study design : True experimental post test control design

Study setting : Labour room in a selected tertiary care hospital

Study population : 100 new born babies

Sampling technique : Purposive sampling to select the eligible population and simple random sampling is used to allocate the subjects into experiment and control group.

Tool : Neonatal Infant Pain Scale (NIPS)

Results: The data collected was analyzed using descriptive and inferential statistics. The study findings high lights that

- 86 % of the neonates in the experimental group had mild pain, only 14% perceived severe pain during IM injection by using helfer skin tap technique.
- 86 % of the neonates in the control group had severe pain, only 14% perceived moderate pain during IM injection by using conventional routine technique
- There is a significant decrease in the pain score between the administration of IM injection with helfer skin tap technique with $p < 0.05$.

This study explored the effect of helfer skin technique (rhythmic tapping) over the skin before and during IM injection in relation to pain. The present study findings supported that there is a significant difference in the pain score in the IM administration with Helfer skin tap technique. This reduction in pain results in the better adaptation of neonates into the extra uterine environment.

KEYWORDS

A fundamental principle of responsible medical care is 'do not hurt' but 'do not harm' since pain is harmful to children, the caregivers are committed in preventing harm to their patients.

Research studies shows that immunization is a stressful experience for children as well as parents. During the clinical experience, the investigator found that vaccine administration causes iatrogenic pain in children. The investigator also felt that there is a paucity of studies in this area in Indian setup.

Considering all the above facts the investigator found that it is very essential to conduct this study to determine the effectiveness of Helfer skin tap technique on reducing intramuscular injection pain in children.

OBJECTIVES OF THE STUDY

1. To assess the pain level of neonate during intramuscular injection with usual standard technique.
2. To assess the pain level of neonate during intra muscular injection with Helfer skin tap technique.
3. To compare the pain level of neonates during intramuscular injection with and without the use of Helfer skin tap technique.

Operational definitions:

Helfer Skin Tap Technique: - It is a technique in which the investigator tapping over the intramuscular injection site with the palmer aspect of fingers 16 times before insertion and 3 counts during the procedure.

Scope of the study

Findings of the study will help to determine the effect of Helfer skin tap technique in reducing pain during IM injection. This can be implemented by the health personnel while administering the injection. Reduction in pain during IM injection would enhance ease of immunization.

Hypothesis

Ho: There is no difference in the pain level between Helfer skin tap technique and usual standard technique during intramuscular injection among children at 0.05 level of significance.

Research approach

Experimental design

Research design

True experimental post test only design

Composed of two randomly assigned groups, i.e., experimental and control, but neither of which is pretested before the implementation of treatment on the experimental group. Treatment is implemented on the experimental group only but post test observation is carried out on both the groups to assess the effect of manipulation. This design can be helpful in situations where it is not possible to pre test the subjects.

Sampling technique

The investigator used purposive sampling to select study subjects who fulfils the inclusion criteria. Simple random sampling technique (Lottery method) was used to allocate the neonates into experimental and control group.

Sample size

Based on previous studies sample size was calculated 100. (50 in experimental and 50 in control group)

Inclusion criteria

1. Neonates born in selected labour room.
2. Neonates available for sampling during data collection period.

Exclusion criteria

1. Preterm neonates
2. Health care professionals
3. Neonates with any complications such as birth asphyxia , IUGR, or any other medical or surgical conditions.

Variables under study

Independent variable : In this study tapping technique (method of administration of IM injection)

Dependent variable

The dependent variables in this study is pain level during IM injection Demographic variables

Tool

Neonatal Infant Pain Scale (NIPS)

The Neonatal Infant Pain Scale (NIPS) is a behavioural assessment tool for measurement of pain in preterm and full-term neonates. This can be used to monitor a neonate before during and after a painful procedure such as veni puncture. It was developed at the Children's Hospital of Eastern Ontario.

Parameter	Finding	Points
Facial expression	relaxed	0
	grimace	1
Cry	no cry	0
	whimper	1
	vigorous crying	2
Breathing patterns	relaxed	0
	change in breathing	1
Arms	restrained	0
	relaxed	0
	flexed	1
	extended	1
Legs	restrained	0
	relaxed	0
	flexed	1
	extended	1
State of arousal	sleeping	0
	awake	0
	fussy	1

Neonatal Infant Pain Scale (NIPS)

Interpretation:
minimum score: 0
maximum score: 7

Analysis & Interpretation of data

Fig 1: Gestational age wise distribution of neonates in experiment and control group

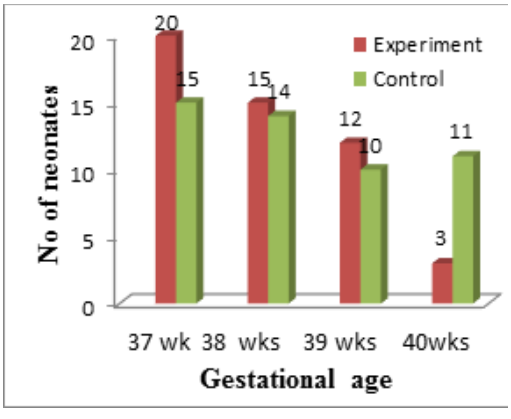


Fig 1 shows that 40% of Experimental group has comleted 37 wks of gestation and 30% , 38 wks of gestation, 24 % 39 wks of gestation and 6% 40 wks of gestation. Among Control group neonates 30% were 37 wks , 30% 38 wks and the 35% were 39 – 40 wks of gestational age.

Table1: Sex wise distribution of neonates in experiment and control group

Sex	Experiment	Control	Total
Male	19	23	42
Female	31	27	58
Total	50	50	100

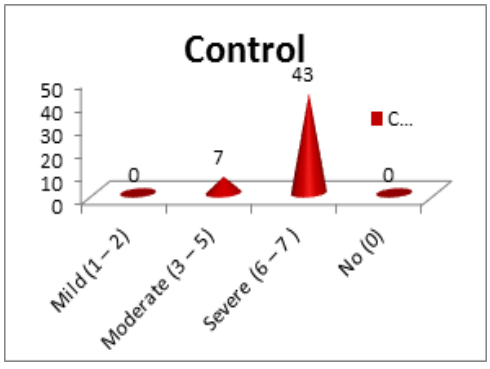
Tab1 shows that majority were female babies in both control and experimental group

Table 2: Assess the pain level during intramuscular injection in experiment group

Pain score	Experiment
Mild (1 – 2)	43
Moderate (3 – 5)	0
Severe (6 – 7)	7
No (0)	0
Total	50

86 % of the neonates in the experimental group had mild pain, only 14% perceived severe pain during IM injection by using helfer skin tap technique.'

Fig 2: Assess the pain level during intramuscular injection in control group



86 % of the neonates in the control group had severe pain, only 14% perceived moderate pain during IM injection by using conventional routine technique.

SECTION III

Table 6: Area wise comparison of pain level in experiment and control group

Area	Experiment (n=50)		Control (n=50)		MW test Z Value	P Value
	Mean	SD	Mean	SD		
Face	0.4	0.5	1	0	3.23	<0.05
Cry	1.15	0.37	1.85	0.37	3.77	<0.05
Breathing	0.15	0.37	0.85	0.37	3.77	<0.05
Arms	0.15	0.37	1	0	4.58	<0.05
Legs	0.15	0.37	1	0	4.58	<0.05
State of arousal	0.15	0.37	1	0	4.58	<0.05

(1.96)

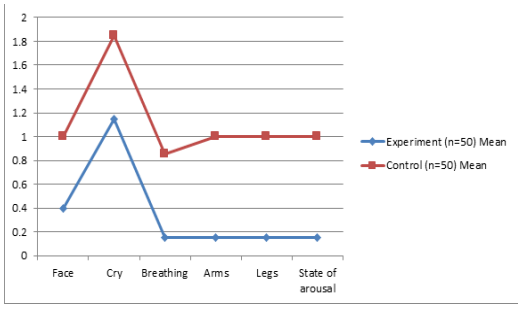


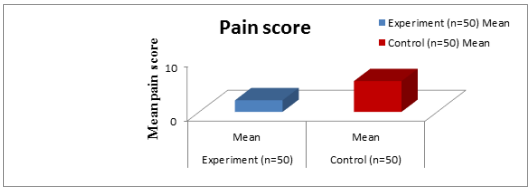
Fig 6: Area wise comparison of pain level in experiment and control group

There is a significant difference in the pain score between the administration of IM injection with or without helfer skin tap technique with $p < 0.05$.

Table 7: Comparison of pain level in experiment and control group

Parameter	Experiment (n=50)		Control (n=50)		MW test Z Value	P Value
	Mean	SD	Mean	SD		
Pain score	2.15	2.01	5.7	0.73	4.003	<0.05

(1.96)



There is a significant difference in the pain score between the administration of IM injection with or without helfer skin tap technique with $p < 0.05$.

Findings of the study

- 40% of Experimental group has comleted 37 wks of gestation and 30% , 38 wks of gestation, 24 % 39 wks of gestation and 6% 40 wks of gestation. Among Control group neonates 30% were 37 wks , 30% 38 wks and the 35% were 39 – 40 wks of gestational age.
- Majority were female babies in both control and experimental group
- 86 % of the neonates in the experimental group had mild pain, only 14% perceived severe pain during IM injection by using helfer skin tap technique.
- 86 % of the neonates in the control group had severe pain, only 14% perceived moderate pain during IM injection by using conventional routine technique
- There is a significant difference in the pain score between the administration of IM injection with or without helfer skin tap technique with $p < 0.05$.

Hypothesis testing

- **Ho (1) :** There is no difference in the pain level between Helfer skin tap technique and usual standard technique during intramuscular injection among children at 0.05 level of significance.
- **Null hypothesis is rejected with 0.05 level of significance**

Implications of the study

The result of this study have several implications for the nursing professionals, including nursing practice, nurse education, nursing research and nursing administration.

Limitations of the study

The present study had the following limitations:

1. The study was conducted on a limited number of neonates (100) only for a period of eight weeks..
2. The study is limited to term neonates without any other complications
3. Broad generalization cannot be made due to limited area of setting and limited sample size.

CONCLUSION

Pain is a major source of distress for children and their families as well as health care providers. It is an accepted fact that there is reduced pain in giving injection into a relaxed muscle. Tapping over the skin is one of the various techniques to keep the muscles relaxed. This study explored the effect of helfer skin technique (rhythmic tapping) over the skin before and during IM injection in relation to pain.

The present study findings supported that there is a significant difference in the pain score in the IM administration with Helfer skin tap technique. This reduction in pain results in the better adaptation of neonates into the extrauterine environment.

In conclusion findings of this study strongly emphasis the importance of making helfer skin technique is a compulsory step in IM injection and thus we can reduce agony of our patients. The standards for nursing care clearly supports a holistic care of our clients.

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