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Assess the effectiveness of Lidocaine spray in reducing pain of intramuscular injection among adults

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Abstract

Introduction: The aim of present study to assess the effectiveness of lidocaine spray by comparing the pain levels without lidocaine spray and with lidocaine spray.

Materials and methods: Quantitative research approach with pre-experimental research design was adopted for the study which was conducted in selected PHC, Saroor nagar, Hyderabad, Ap". 30 adult clients between 18-45 years was recruited in study by purposive sampling technique. Wong baker pain rating scale was used to measure pre and Post Test pain levels. Data was analysed by using descriptive and inferential statistics. Percentages of categorical variable were computed.

Results: In the present study, regarding pretest level of pain is assessed by using standerdised wong baker pain rating scale, and the level of pain categories as Pre Test - no pain – 0%, mild pain – 4(13.33%), moderate pain – 20(66.7%) and severe pain – 6(20%) and regarding Post Test level of pain as no pain – 4(13.33%), mild pain – 20(80.00%), moderate pain – 2(6.67%) and severe pain – 0% . The obtained 't'-test value for pain level is significant. The adult clients Post Test pain levels of intramuscular injection decreased as compared to pre-test and the lidocaine spray has the effectiveness in reducing pain of intramuscular injection.

Conclusion: The findings show that there was a significant difference in pre-test and post-test pain levels. The lidocaine spray is effective in reducing pain of Intramuscular injection.

Keywords: Effectiveness, level of pain, Lidocaine spray intramuscular injection, adults

Introduction

"For all the happiness mankind can gain is not in pleasure but in rest from pain". ---*Johndryden.*

Pain has been defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage. It is initiated by stimulation of nociceptors in the peripheral nervous system or by damage to or malfunction of peripheral or central nervous system. Pain is the most common reason for people to seek health care. Despite being one of the most common symptoms in the medical world, it is one of the least understood phenomenon. The nature of pain is complex, it is much more than a single sensation caused by a specific stimulus (Melzack, 1987)

Objectives

- To assess the intramuscular injection pain level without Lidocaine spray.
- To assess the intramuscular injection pain level with Lidocaine spray.
- To assess the effectiveness of Lidocaine spray by comparing the pain levels without Lidocaine spray and with Lidocaine spray.
- To find out association between pain levels with lidocain spray on selected demographic variables.

Assumptions

- The Lidocaine spray will have some effect on perception of pain when intramuscular injection is given.
- All the clients' pain sensation will not be the same.

Hypothesis

H_1-There will be a significant relationship between Lidocaine spray and level of pain after giving intra muscular injection.
H_2-There will be significant association between level of pain and selected socio demographic variables.

Delimitations

- The study is limited to adult clients (18-45yrs) who are visiting for saroor nagar PHC & receiving B-complex (neurobion) IM injection.
- Clients who were willing to participate in the study.
- The sample size limited to 30 only.

Criteria for sample selection:

Inclusion criteria

- Adult clients attending PHC, Saroor nagar and receiving B-complex (neurobion) intramuscular injection.
- Adult clients who are willing to participate in the study.
- Clients who are available at the time of data collection.
- Clients who are aged between 18 -45 years of age.
- Clients who were able to respond to the pain sensation (both male and female).
- Clients who could understand and speak telugu.

Exclusion Criteria

- Clients who are unconscious.
- Clients who are paralytic.
- Clients who are not available at the time of data collection.
- Clients who are not willing to participate in the study.
- Clients who cannot follow the instructions.

Materials & Methods

The present study was conducted among 30 Adult clients who are coming for receiving intramuscular injection of B-complex at saroor nagar PHC, Hyderabad, Ap, and clients selected by purposive sampling technique. In this study includes who are willing to participate in the study. The adults who are paralytic and allergic to Xylocaine were excluded from the study.

Development & description of the tool

A search of literature is made for the purpose of developing appropriate tool for assessing the effectiveness of Lidocaine spray on pain of intra muscular injection among adults, with the help of related literature from various books, journals and discussion with experts in the field of nursing. Data was collected through a structured interview schedule questionnaire and it consists of the following sections.

- PART-A: It deals with socio demographic data of clients, that includes- Name, gender, religion, marital status, education, occupation, income, diagnosis ect.
- PART-B: It deals with wong baker pain rating scale, it consist of 0-10 degree of pain rating measure.

Method of data collection

The method of data collection is structured interview schedule. It is the method of gathering information from the patient. The interview schedule was selected as it is most appropriate, useful data gathering device in research project to collect desired factual information.

Formal permission was taken from the consent authority to conduct the study. 30 clients will be selected by using purposive sampling technique. Then written consent was obtained from the sample by assuring anonymity. Initially interview schedule was conducted to obtained the demographic data of sample, followed by pre-test score of pain level during I.M injection was obtained by using Wong baker pain rating scale and post test score of pain was obtained following the application of Lidocaine spray for 2-3 minutes before giving IM injection. Both pre test level of pain & post test level of pain was compared to evaluate the effectiveness of Lidocaine Spray in reducing the pain of I.M injection.

Score Interpretation

Score interpretation according to Wong baker face pain rating scale and assessment of pain level will be categorized into-4.

- 0 : no pain
- 1-2 : mild
- 3-6 : moderate
- 7-10 : severe

Plan of data analysis

It was planned to analyse and interpret the data with the help of descriptive and inferential statistics i.e frequency & percentage distribution, mean, standard deviation and standard error, pearson correlation, paired t-test computed from the raw scores obtained in pre and post test. paired t-test was computed by comparing two means of pre and post test. The analysis and interpretation of the data was planned in three parts.

Section-I

Description of sample characteristics according to the socio demographic variables such as age, gender, marital status, education, occupation, income, diagnosis ect., of the clients with the help of frequency and percentage distributions.

Section-II

Comparison of pain level scores of the clients regarding in administering B-complex (neurobion) intramuscular injection in pre and post-test and assessing the effectiveness of Lidocaine spray in reducing the pain of intramuscular injection by comparing the pre-test and post-test pain levels of the clients.

Section-III

Relationship between post-test pain levels of the clients and selected demographic variables such as age, gender, ,marital status, education, occupation, income, diagnosis of the clients by using chi-square test.

Table 1: Frequency and percentage of pre & post-test pain levels of clients receiving I.M injection. (N = 30).

Pain levels	Percentage of pre & post test pain levels								Total
	No pain		Mild		Moderate		Severe		
	Freq	%	Freq	%	Freq	%	Freq	%	
Pre test pain levels	0	0.00	4	13.33	20	66.67	6	20.00	100
Post test pain levels	4	13.33	24	80.00	2	6.67	0	0.00	100
Total	4	7.00	28	47.00	22	36.00	6	10.00	100

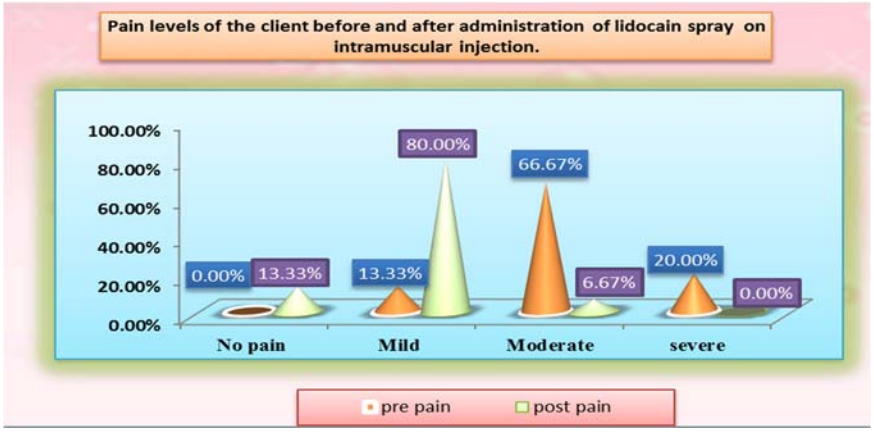

Table 2: Differences in Mean and Standard deviations between the pre and post-test pain levels and paired t- value. (N = 30)

t-Test: Paired Two Sample for Means	Pre Test pain scores	Post Test pain scores
Mean	5.30	1.13
Variance	3.11	0.53
Standard deviation	1.765	0.730
Standed error	0.322	0.133
Observations	30.00	30.00
Pearson Correlation	0.74	
Hypothesized Mean Difference	0.00	
df	29.00	
t –Stat	17.35	
t -Critical two-tail	2.05	

Discussion & findings of the study

The present study assessed the Lidocaine spray has the effectiveness in reducing pain of intramuscular injection. This study was conducted on 30 adult clients who are aged between 18-45 years, and attending Saroor nagar PHC, Hyderabad, A.P, and receiving B-complex (neurobion) injection.

The demographic data collection was collected with the help of structured interview schedule and pre and post test pain levels were obtained by using Wong baker pain rating scale, & the data was analyzed with the help of descriptive and inferential statistics.

- In relation to Demographic data, it was observed that out of 30 respondents none of the clients were in the age group of 18 - 24 years, 46.7% of the clients were from the age group of 25 - 31 years, 36.7% of the clients were from the age group of 32 - 38 years, 16.7% of the clients were from the age group of 39 - 45 years.
- In regard to gender of the clients majority 40.0% of the clients were Males and 60.0% of the clients were Females.
- In regard to Religion of the client's 43.3%of the clients were Hindus and 23.3% of the clients were Muslims, 33.3% of the clients were Christian and none of the clients were in the other Religion group.
- In regard to Marital status of the client's 56.7% of the clients were Married and 43.3% of the clients were unmarried, and none of the clients were in the category of Widow, Divorced and Single parent group.
- In regard to Education none of the clients were in the non-literate group, 40.0% of the clients were in Primary education, 20.0%of the clients were in Secondary education, 16.7% of the clients were in Graduation, 23.3% of the clients were in Post graduation & above.
- In regard to occupation of the clients 26.67% of the clients were Unemployed, 43.33% of the clients were Daily wages, none of the clients were in Government employees , 16.67% of the clients were in Private employees and remaining 13.33% of the clients were in Business.
- In regard to income of the clients 26.7% of the clients were not receiving any Income, 43.3% of the clients Income was Rs. Below 10,000, 30.0% of the clients Income was Rs.10,001-15,000, 30.0% and none of the cliemts were in the Income category of Rs.15,001-20,000, Rs.20,001-25,000, Rs.Above 25,000.
- In regard to Diagnosis of the client's 73.3% of the clients were in General weakness and 26.7% of the clients were in Anaemia.

Analysis of pre and post-test Pain levels the of clients and the effectiveness of Lidocaine spray on pain of intramuscular injection was done, as compared to pre and post test pain levels of the clients, there was a significant difference in pain levels. The pre test Mean score of adult clients is 5.30, and post test Mean score of adult clients is 1.13. paired "t"- test was applied to test the significance difference of pain levels. The calculated value of "t" is 17.35 which is very much greater than tabulated "t"-value 2.0095 at 29 degree of freedom with 5% level of significance. It indicates there is higher significance difference in pretest and post test.

From above the calculated paired "t"- value is higher than table value indicating use of Lidocaine spray is effective in reducing pain of intramuscular injection.

Chi-square association was done on all demographic variables with post test pain levels. It was observed that there is no significant association between post-test pain levels with the Age, Gender, Religion, Education, Marital status, Occupation, Income, Diagnosis.

The findings shows that over all pre-test Mean score was 5.30 and post-test Mean score was 1.13, the obtained "t"-value was 17.35 found greater than the table value. There was significant difference in the pre-test and post-test pain levels. The findings shows that the post-test pain levels were lower than the pre-test pain levels, hence the formulated hypothesis was accepted.

Recommendations

- The study can be replicated on a large sample to validate the findings of the present study.
- A similar study can be conducted in the hospital.
- We can conduct the study as quasi-experimental study with control and treatment group.

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