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Effectiveness of Ice Pack Application on the Level of Pain in Episiotomy Wound

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Abstract: ***Aim: Evaluate the effectiveness of ice pack application on the level of pain in episiotomy wound among postnatal mothers .Methods: A true experimental research design was adopted. Based on inclusion criteria, a simple random technique was used to select the samples of sixty postnatal mothers in to experimental and control groups. The structured interview was used to collect the demographic data from the participants. The obstetric data was collected from hospital records. Pretest was taken by using modified verbal descriptor scale from both experimental and control group on first day morning. After that, the investigator had administered ice pack over the episiotomy wound for 15-20 minutes to the experimental group and routine care was given to the control group. Ice pack application has been carried out twice a day both in morning and the evening at an interval of 10 hours. Results: There was no significant difference between the experimental and control group in their pre test level of pain. In experimental group, the pretest mean score was 4.73 and t value =0.29, P=0.77 DF=58, on the 1 day morning. On the second day evening the post test mean score 0.87 and t value 12.16.In control group, pretest mean score on 1st day morning was 4.77 and t value 0.29, on the 2nd day evening post test score was 2.70 and t value was 12.16, P=0.001*** DF=58.On an average, in experimental group, postnatal mothers had 38.7% pain reduction where as in control group 20.7% pain reduction. It shows the effectiveness of ice pack application on episiotomy wound among the postnatal mothers in the experimental group. It is concluded that the ice pack application was very effective in reduction of pain in episiotomy wound among postnatal mothers.***

Keywords: Effectiveness, Episiotomy, pain, Postnatal Mothers and ice pack application

1. Introduction

Pregnancy and childbirth are the special events in women's life. Labor does not come to an end with childbirth. The mother does suffer with much distress after child birth due to painful perineum resulting from an episiotomy. Though many research studies tell to abandon the episiotomy, it's still prevails in all hospital. The worldwide episiotomy rate is about 27 to 54% in nulliparous and 6% in multiparous women. Use of episiotomy varies across the world. Over 85% of women having a vaginal birth have some form of perineal trauma and 60 - 70% receives stitches, which are equivalent to approximately 4, 00,000 per year in United Kingdom. There are wide variations in rates of episiotomy. In Netherlands, it is 8%, in East European countries and it is 99%, in United States around 25%.The birth rate is very high in India where 56% of Indian women had an episiotomy compared to the 46% of White women. Many research studies found that all mothers with episiotomy, experienced excruciating pain. Most of them remained in the bed in lying position. They cannot sit properly and find difficult in feeding their baby. Cold application is simple and common method used to relieve pain. It is safe, effective, low - cost alternative, available in primary health care settings to Tertiary care settings, and is acceptable to child bearing women.

2. Need for Study

Childbirth and labour are never same for all women, it will different for each women. Even though labour is the fulfillment of her dreams, the suffering due to pain in the perineal area after the delivery is unbearable. Majority of forceps deliveries need episiotomy. 40% reported pain in the first two weeks postpartum, 20% still have pain up to eight weeks and 7% to 9% report pain up to three months. Perineal pain interferes in daily activities of post episiotomy mother and as well as early bonding of mothers and baby. Applying ice pack causes vasoconstriction, decreases capillary permeability, decreases cellular metabolism and relaxes muscles by decreasing muscle contractibility. Cold pack gives immediate pain relief. Ice and cold packs reduces skin temperature by 10ºC and 15ºC within 15 minutes. It slows bacterial growth, decrease inflammation and pain by numbing the area, slowing the pain impulses and by increasing pain threshold. The purpose of using cold therapy is to reduce the period of inflammation and helping the women to return to their normal activities faster. Hence the study has done to evaluate the effect of Ice pack application on level of pain in episiotomy wound among postnatal mothers. (Ice pack refers to a packed ice "in a finger stalk of glove at temperature of 0degree C and a volume of 8-10ml" secured with thread and wrapped with sterile gauze piece) With the increasing trends of nuclear family, it becomes essential to be free from discomfort at beginning of the postnatal period, helps her to concentrate on child care.

3. Statement of Problem

A study to evaluate the effectiveness of ice pack application on the level of pain in episiotomy wound among postnatal mothers.

4. Objectives

1) To assess the pretest level of pain in episiotomy wound in both experimental and control groups.

2) To evaluate the effectiveness of ice pack application on the level of pain in episiotomy wound among experimental group.
3) To compare the pre test and post test level of pain in episiotomy wound between experimental and control group
4) To compare the pre test and post test level of pain in episiotomy wound between experimental and control group.

5. Hypothesis

- **H-1**: The post test level of pain in episiotomy wound will be significantly lesser than pre test level of pain after ice pack application among experimental group.
- **H-2:** The post test level of pain in episiotomy wound among experimental group after ice pack application will be significantly lesser than post test level of pain in episiotomy wound among control group.
- **H 3**: There will be a significant association between post test level of pain in episiotomy wound with selected demographic and obstetric variables among experimental group.

6. Methodology

The Quantitative research approach was used for this study. An experimental research design was adopted. This study was conducted in postnatal ward at Government Rajaji Hospital, Madurai -20, TamilNadu. A simple random sampling technique was used to select the samples of sixty postnatal mothers. The eligible list of mothers who satisfied inclusion criteria were prepared and lottery method was used to select samples for each thirty mothers in control and experimental groups. Necessary Ethical Clearance has been obtained from Institutional Ethics Committee.

6.1 Criteria for Sample Selection

Inclusion Criteria:

- Primi Para mothers with right medio lateral episiotomy within 5 hours after delivery.
- Age between 18-30 years.
- Mothers did not have any obstetrics and medical complications.

Exclusion Criteria: Postnatal mothers who

- Had Multi para mothers
- Had instrumental delivery and operative procedures like Caesarean Section, etc.,
- Had complications like Pre Eclampsia, Eclamptic Fits, and vascular disorder, PPH etc.,

6.2 Description of the Tools

The tool for data collection consisted of three parts
Part – I: Demographic variables such as age, education, religion, occupation, income, dietary pattern, type of family, and living place.
Part – II: Obstetric variables includes maternal height, maternal BMI, gestational age, birth weight, duration of third stage labour, and length of episiotomy
Part – III: It consisted of Modified Verbal Descriptor Scale, according to Agency for Health Care Policy and Research (AHCPR 1997), that was used to assess level of pain in episiotomy wound among postnatal mothers. It consisted of 5 point scale such as No pain, Mild pain, Moderate pain, Severe pain, and Unbearable pain. If the mother response of "No pain" was given a value of zero, whereas a response of the "Unbearable pain" was given a value of four. .

7. Data Collection Procedure

Prior to data collection the necessary administrative permission was obtained .A simple random sampling technique was used to select the samples from Monday to Friday minimum of two or three samples per day. The structured interview was used to collect the demographic data from the participants. The obstetric data was collected from hospital records. Pretest was taken by using modified verbal descriptor scale from both experimental and control group on first day morning. After that, the investigator had administered ice pack over the episiotomy wound for 15-20 minutes to the experimental group and routine care was given to the control group. Ice pack application has been carried out twice a day both in morning and the evening at an interval of 10 hours. The treatment was continued for two consecutive days. The level of pain was assessed 30 minutes after intervention. The level of pain assessment was taken on first day evening after intervention. Second day pain assessment was taken on second day morning, then again intervention given to experimental and routine care to control group. Posttest was done on second day evening.

8. Data Analysis and Interpretation

The data were interpreted under the following sections.
Section I: Description of demographic profile of the postnatal mothers in experimental and control group
Section II: Description of obstetrical Details of the postnatal mothers in experimental and control group
Section III: Data on pre and post test level of pain in experimental and control group
Section IV: Data on comparison of pre test and post test level of pain among experimental group and control group
Section V: Effectiveness of the Pretest and Post test Pain between the experimental and control group.
Section VI: Data on association between the mean difference in pain and selected factors in experimental group.

9. Major Findings of the Study

1. Regarding demographic and obstetrical details of postnatal mothers,
Majority of 53.3% in the age group of 18 to 22 years were in experimental and 50 % were in the control group. Most of the postnatal mothers 46.7 % had primary education in the control group and as well as in experimental group. Majority of 60% in experimental group and 70% in control group had 150-155cm range of maternal height. Major portion of

83.3% in the experimental and control group had 3cm length of episiotomy.

2. Considering with level of pain in episiotomy wound before intervention (pre test)

Table 1 shows pretest pain score of episiotomy wound**.**

	Pain score		Student independent t-test
	Mean	SD	
Experimental	4.73	0.45	t=0.29 P=0.77 DF=58
Control	4.77	0.43	

There was 100% in experimental and control group had moderate pain as a pre test level of pain score. Pre test mean score was 4.73 for the experimental group, 4.77 in control group. So the difference was 0.04. **t=0.29, P=0.77, DF=58.** This difference was very small and it was not statistically significant. There was no significant difference between the experimental and control group in their pre test level of pain.

3. Comparison of mean pain score in experimental and control group in day wise, (post test score)

Table 2: shows mean pain score in experimental and control group**.**

	Mean pain score							
	Day1 Morning		Day1 Evening		Day2 Morning		Day2 Evening	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Experimental	4.73	.450	3.40	.498	2.30	.596	0.87	.681
Control	4.77	.430	4.33	.547	3.50	.509	2.70	.461

Table 2 depicts the pretest and post test Mean pain score. The postnatal mothers in experimental group, on the day 1 morning obtained pre mean pain score was 4.73, at evening post mean pain score was 3.40. On 2nd day morning, pre mean pain score was 2.30 and at evening, post mean pain score was 0.87. In control group, day 1 morning pre mean pain score was 4.77 and at evening post mean pain score 4.33. In 2nd day morning, pre mean pain score 3.50 and at evening post mean pain score was 2.70.

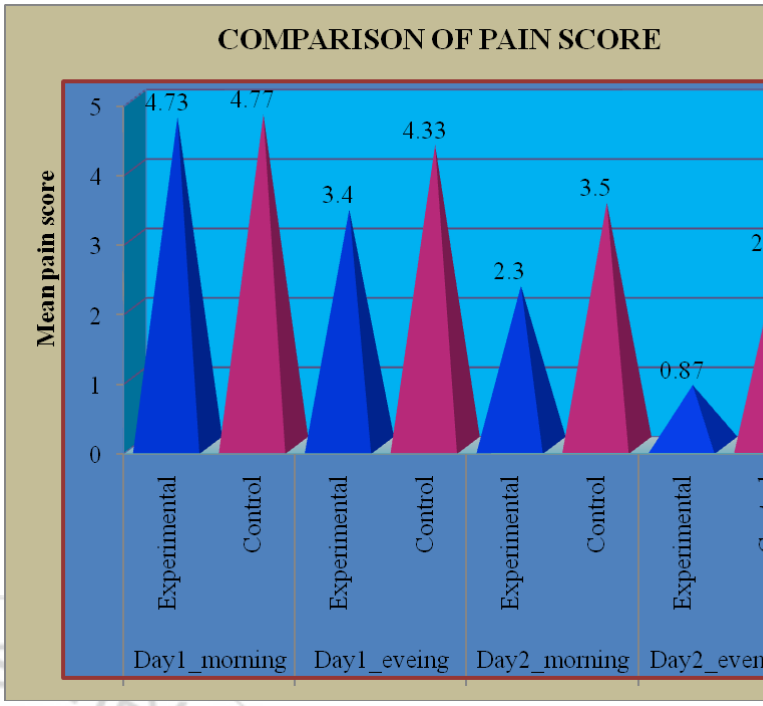

Figure 1: Comparison of day wise pain score among postnatal mothers in experimental and control group4. Comparison of pretest and post test mean pain score in experimental and control group.

Table 3: shows comparison of pretest and posttest mean pain score in experimental and control group.

		Group	**Mean**	**SD**	Student independent t-test
Day1	Pretest	Experimental	4.73	.450	t=0.29 P=0.77 DF=58
		Control	4.77	.430	
	Posttest	Experimental	3.40	.498	t=6.91 P=0.001*** DF=58
		Control	4.33	.547	
Day2	Pretest	Experimental	2.30	.596	t=8.38 P=0.001*** DF=58
		Control	3.50	.509	
	Posttest	Experimental	0.87	.681	t=12.16 P=0.001*** DF=58
		Control	2.70	.461	

Table 3 compares the pretest and posttests Mean pain score. In experimental group of postnatal mothers, the obtained pretest mean score was 4.73 and t value =0.29, P=0.77 DF=58, on the 1 day morning. On the second day evening they have obtained post test mean score 0.87 and t value 12.16.In control group of postnatal mothers obtained pretest mean score on 1st day morning was 4.77 and t value 0.29, on the 2nd day evening post test score was 2.70 and t value was 12.16, **P=0.001*** DF=58**. Experimental and control group pain score differences were assessed using student independent t-test. Thus the hypothesis H1, which states that the post test level of pain in episiotomy wound will be significantly lesser than pre test level of pain after Ice pack application among experimental group is accepted

5. Effectiveness of ice pack application on the level of pain in episiotomy wound among postnatal mothers.

Table 4: Shows effectiveness of ice pack application on the level of pain in episiotomy wound among postnatal mothers.

	Max score	Mean pain score		Mean Difference in pain with 95% Confidence interval	Percentage Difference in pain with 95% Confidence interval
		Pretest(1st day morning)	Posttest(2nd day Evening)		
Experimental	10	4.73	0.87	3.87 (3.61-4.12)	↓38.7 % (36.1%-41.2%)
Control	10	4.77	2.70	2.07 (1.85-2.28)	↓20.7 % (1.85%-22.8%)

Table 4 shows that the effectiveness of ice pack application on the experimental group and the control group of postnatal mothers in comparison of pre-test and post test Reduction in pain score. On an average, in experimental group, postnatal mothers had 38.7% pain reduction where as in control group, had 20.7% pain reduction. It shows the effectiveness of ice pack application on episiotomy wound in experimental group. Differences between pre test and post test score was analyzed using mean difference with 95% confidence interval and proportion difference with 95% confidence interval. Thus the hypothesis H2 which states that the post test level of pain in episiotomy wound among experimental group after Ice pack application will be significantly lesser than post test level of pain in episiotomy wound among control group is accepted.

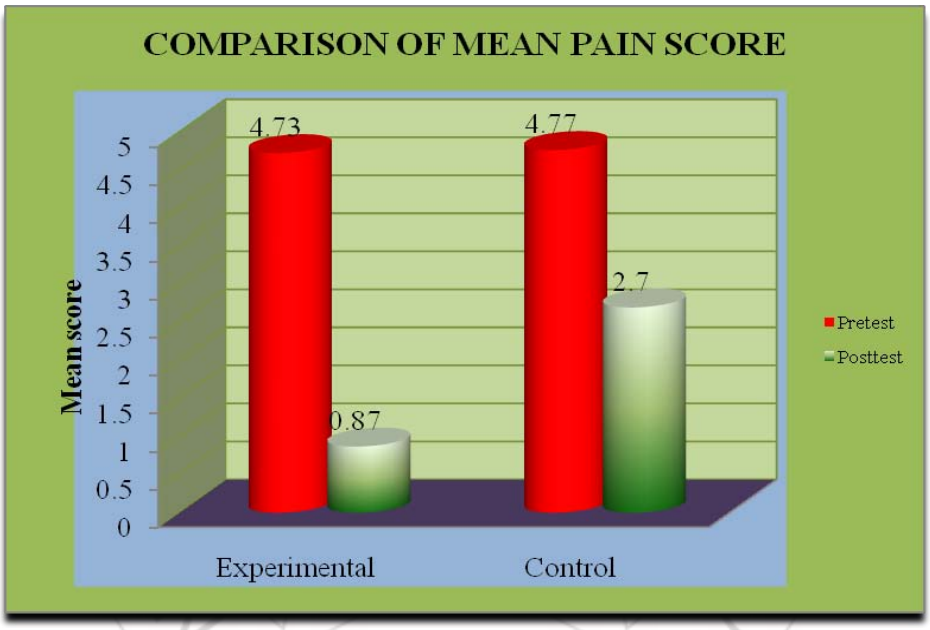

Figure 2: shows comparison of mean pain score of postnatal mothers in experimental and control group.

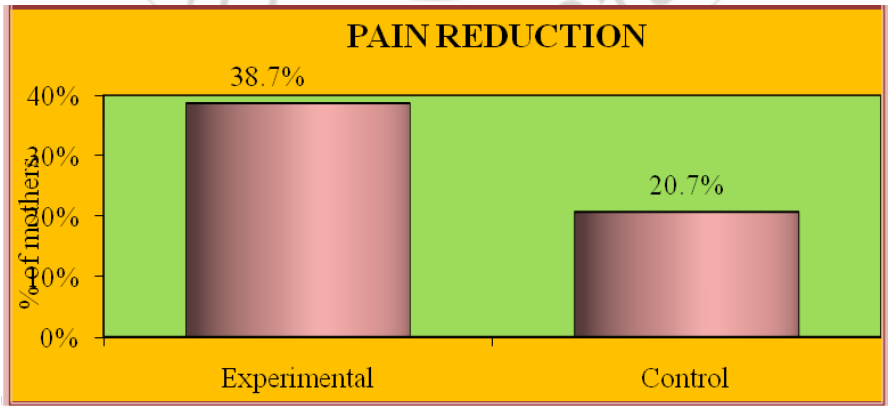

Figure 3: Shows Level of pain reduction in experimental and control group of postnatal mothers shows the effectiveness of ice pack application.

1. **Regarding association with post test level of episiotomy pain with their selected demographic and obstetric variables among experimental group**.

The association of the pain reduction score and the age of the mother (18-22) is significant in experimental group. The significance of F variance = 3.28, p=0.05 in experimental group. This finding was consistent with the study done by Karacam Z et al, reported that age group 20-22 had more pain reduction. But there was no significant association between the pain reduction score with religion, education status, occupation, and monthly income, type of family, residence and dietary pattern.

In the association between pain reduction score and the obstetric variable, the ideal BMI (18.6-25.0) dif mean score was 0.72. t= 2.00, p=0.05 and 3 cm length of episiotomy mothers, dif mean score 4.51. t value was 2.22, p=0.03 were having more reduced pain score than other obstetric variables. These findings were supported by Lam. K, reported that pain depends upon of the length, type and material which had been used for episiotomy. But there was no association between the pain reduction score and other obstetric variables of maternal height, gestational age, duration of second stage of labour and birth weight. Thus the hypothesis H-3-There will be a significant association between post test level of pain in episiotomy wound with selected demographic and obstetric variables among experimental group is accepted.

10. Conclusion

Episiotomy wound causes a lot of pain and discomfort in early puerperium. The study findings statistically proved that the Ice pack application reduces pain effectively in episiotomy wound. It is concluded that the ice pack application was very effective in reduction of pain in episiotomy wound among postnatal mothers. It relieved discomfort related to perineal episiotomy which interferes with women's daily activities postpartum, such as walking, sitting, standing and during urination. It is very safe, cost effective and easily available for reducing episiotomy pain. As the nurses are having a vital role in caring of postnatal mothers during postpartum period in accordance with post partum pain and episiotomy pain. Nurses should make the mothers to be comfort, initiate early breast feeding and increase health care utilization.

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