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Original Article

A Study to Evaluate the Effectiveness of Ice Pack Application On Episiotomy Wound Among Postnatal Mothers in Rajindra Hospital of Distt. Patiala, Punjab

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Introduction: Postpartum discomfort is common among women, particularly in the initial days following childbirth. Perineal trauma can significantly impact a woman's physical, emotional, and social well-being during this period. An episiotomy, a surgical incision made in the perineum and posterior vaginal wall during the second stage of labor, is a type of second-degree perineal injury.

Materials & Methods: This study employed a quantitative approach, utilizing a randomized control trial design. The research setting was Rajindra Hospital in Patiala, Punjab. The population consisted of postnatal mothers with episiotomy wounds. A purposive sampling technique was used, followed by random assignment to experimental and control groups through the chit method. The sample comprised 60 postnatal mothers with episiotomy wounds. Data collection tools included demographic variables, the Numeric Rating Pain Scale, and the REEDA scale.

Results: The study found significant differences in post-test REEDA scores between the experimental and control groups, with the experimental group showing lower mean scores ($p < 0.05$). This indicates the intervention effectively reduced episiotomy wound complications.

Conclusions: The result revealed that there is significant improvement in the post test score of episiotomy wound in experimental group as compared to control group which shows that ice pack application was effective on episiotomy wound.

Keywords: Evaluate; Effectiveness; Ice Pack; Application On Episiotomy; Wound; Post-natal mother

Introduction

Most women have some degree of discomfort during the first few postpartum days.[1] Perineal trauma affects women's physical, psychological and social wellbeing in the immediate postpartum period. [2]

Episiotomy is a surgically planned incision on the perineum and the posterior vaginal wall during the second stage of labor. It is in fact an inflicted second-degree perineal injury. It is the most common obstetric operation performed. Among these medio-laterals episiotomy is done commonly.[3]

Some experts believe that an episiotomy speeds up the birthing process, making it easier for the baby to be delivered. Speed can be important if there is any sign of distress that may harm the mother or baby. Episiotomies are sometimes described as protecting the pelvic muscles and possibly preventing future problems with urinary incontinence.[4]

Perineum is a very sensitive area, in which there are muscles involved in sitting, walking, bending down, squatting, urination, defecation (any incision in this area cause pain and disorder). The perineal pain resulting from episiotomy is a stressful factor in mothers, which interferes with their ability of nursing and doing their duties as a mother and may interfere

with urination and defecation.[5]

The mother undergoing episiotomy is characterized by greater blood loss with risk of improper wound healing and increased pain during early puerperium.[6] Several other problems of episiotomy have been reported including infection, increased pain, increased bleeding, muscle spasm, prolonged healing time and hematoma formation. Some observational studies revealed that much greater infection rate 5 times more after mediolateral episiotomy.[7]

Nursing interventions are intended to reduce the discomfort and allow the woman to take care of herself and her baby. Simple interventions that can decrease the discomfort associated with perineal trauma is applying an ice pack, moist or dry or topical applications, cleansing the perineum with a squeeze bottle and taking a warm shower or a sitz bath.[8]

When cold is applied to an area, the skin gets tightened; arterio-venous anaestamosis is closed, causing constriction of blood vessels and reduction of blood supply to the area. When the cold stimuli has been removed, there is a reaction which is slow, prolonged and much bigger than the action, the skin gradually gets warmed up, the circulation of the blood increases, to the skin.[9]

Ice applications also promote vasoconstriction, which reduces the incidence of edema, inflammation and the possibility of hematoma formation, thereby reducing pain and promoting healing and comfort.[10]

Objectives

1. To assess the episiotomy wound among postnatal mothers.
2. To evaluate the effectiveness of ice pack application on episiotomy wound among postnatal mothers in experimental group.
3. To determine the association between episiotomy wound and selected socio demographic variables.

Materials & Methods:

Research Approach: Quantitative approach used for this study

Research Design: Randomized Control Trial were used in this study

Research Setting: For this current study setting were Rajindra Hospital of Distt. Patiala, Punjab

Population: Postnatal mothers with episiotomy wound

Sampling Technique: Purposive sampling followed by random assignment to experimental and control group (chit method)

Sample: Postnatal mothers with episiotomy wound

Sample Size: 60

Tools for data collection: Demographic variables, Numeric rating pain scale and REEDA scale

Data analysis: - The collected data was analyzed using descriptive and inferential statistics. Descriptive statistics include range, mean, and standard deviation and inferential statistics include paired and unpaired't' test, Fisher's exact test, Yate's corrected test.

Results: SECTION – A: Description of Socio Demographic & Obstetrical Variables

This section describes the socio demographic and obstetrical variables in terms of frequency and percentage. This section also deals with homogeneity of experimental and control group.

Table 1: Frequency, percentage distribution and homogeneity of socio demographic and obstetrical variables

S.N	VARIABLES	EXP. GROUP f (%)	CONTROL GROUP f (%)	χ^2
A.)	**SOCIO DEMOGRAPHIC VARIABLES**			
1	**Age (in years)**			
1.1	18-20	10(33.3)	7(23.3)	
1.2	21-23	9(30.3)	5(16.7)	7.064^{NS}
1.3	24-26	9(30.3)	8(26.7)	
1.4	27 – 29	2(6.7)	10(33.3)	
2	**Religion**			

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S.N	VARIABLES	EXP. GROUP f (%)	CONTROL GROUP f (%)	χ^2
2.1	Hindu	7(23.3)	12(40.0)	
2.2	Sikh	23(76.7)	18(60.0)	1.926^{NS}
2.3	Muslim	0(00.0)	0(00.0)	
3	**Qualification**			
3.1	Under matric	7(23.3)	13(43.3)	
3.2	Matric	10(33.3)	1(36.7)	4.519^{NS}
3.3	10+2	7(23.3)	4(13.3)	
3.4	Graduate and above	6(20.0)	2(6.7)	
4	**Dietary system**			
4.1	Vegetarian	17(56.7)	11(36.7)	
4.2	Non vegetarian	7(23.3)	9(30.0)	2.536^{NS}
4.3	Eggetarian	6(20.0)	10(33.3)	
5	**Living place**			
5.1	Rural	27(90.0)	22(73.3)	2.783^{NS}
5.2	Urban	3(10.0)	8(26.7)	
B.)	**OBSTETRICAL VARIABLES**			
1	**Parity**			
1.1	Primiparous	26(86.7)	17(56.7)	6.648*
1.2	Multiparous	4(13.3)	13(43.3)	
2	**Length of episiotomy**			
2.1	2-3cm	25(83.3)	25(83.3)	0.000^{NS}
2.2	3-4cm	5(16.7)	5(16.7)	
2.3	4-5cm	0(00.0)	0(00.0)	
3	**Birth weight(kg)**			
3.1	2-3	4(13.3)	9(30.0)	
3.2	3-3.5	25(83.3)	18(60.0)	3.917^{NS}
3.3	>3.5	1(3.3)	3(10.0)	
Mean age (in years) = 25.11				

***= Significant NS= Not Significant**

Section – B: Assessment of preexisting Pain and REEDA score of episiotomy wound among postnatal mothers in both experimental and control group.

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Table 2: Comparison of preexisting Pain and REEDA score of episiotomy wound among postnatal mothers in both experimental and control group

N= 60(30+30)

Group	Pain score		REEDA score	
	Range	Mean ± SD	Range	Mean ± SD
Experimental	6-8	7.3 ± 0.6	9-12	10.3 ± 0.7
Control	6-8	7.1 ± 0.7	9-12	10.3 ± 0.6

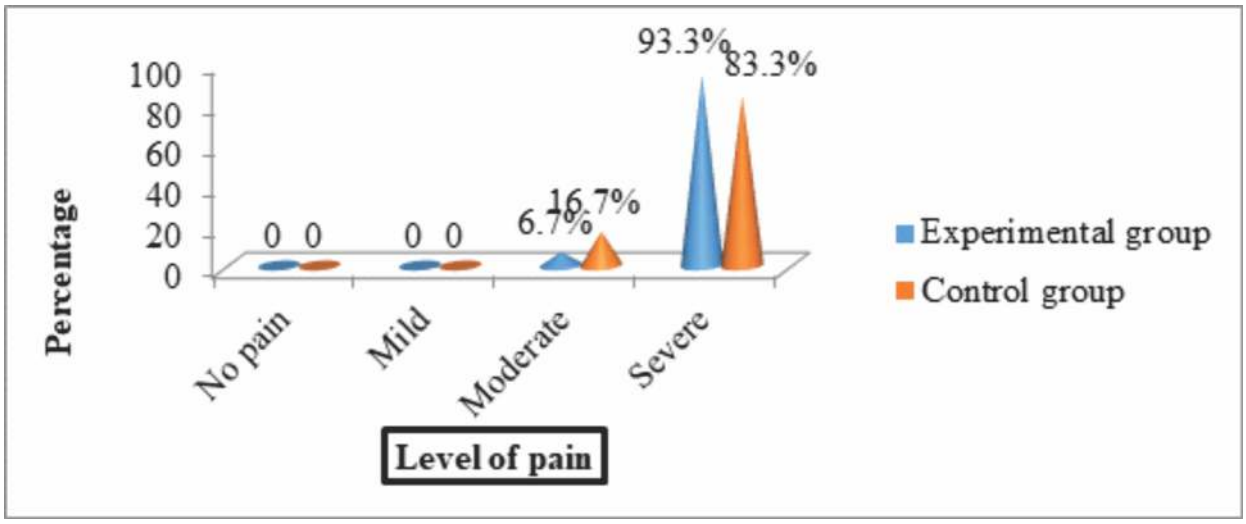

Figure 1 Percentage Distribution of Postnatal Mothers as per their level of Pain

Table 3: Frequency and percentage distribution of pain level of postnatal mothers in experimental and control group as measured through Numeric rating pain scale.

Pain Level	Pre test		Post test 1		Post test 2	
	Exp. Group f(%)	Control group f(%)	Exp. group f(%)	Control group f(%)	Exp. Group f(%)	Control group f(%)
No Pain	0 (0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)	0(0.00)
Mild Pain	0(0.00)	0(0.00)	1(3.33)	2(6.66)	30(100)	20(66.6)
Moderate Pain	2(6.7)	5(16.6)	28(93.3)	25(83.3)	0(0.00)	10(33.3)
Severe Pain	28(93.3)	25(83.3)	1(3.33)	3(10)	0(0.00)	0(0.00)

Table 4: Frequency and percentage distribution of REEDA score of postnatal mothers in experimental and control group as measured through REEDA scale.

REEDA SCORE	Pre test		Post test 1		Post test 2	
	Exp. group f(%)	Control group f(%)	Exp. group f(%)	Control group f(%)	Exp. Group f(%)	Control group f(%)
Good wound healing	0(0.00)	0(0.00)	3(10)	0(0.00)	25(83.3)	19(63.3)
Average wound healing	18(60)	21(70)	27(90)	30(100)	5(16.6)	11(36.6)
Poor wound healing	12(40)	9(30)	0(0.00)	0(0.00)	0(0.00)	0(0.00)

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Section C: Effectiveness of ice pack application on episiotomy wound among postnatal mothers in experimental and control group.

Table: 5 Comparisons of mean pre and post-test level of pain score of experimental group.

S.N	Test	Mean ± SD	Mean difference	"t" value
a.	Pre test	7.3 ± 0.6	2.7(a+b)	15.837* (a+b)
b.	Post-test 1	4.6 ± 0.9	3.1(b+c)	21.145* (b+c)
c.	Post-test 2	1.5 ± 0.7	5.8 (c+a)	36.797*(c+a)

df=29 *= significant at p<0.05 level

Table: 6: Comparisons of mean pre and post-test REEDA score of experimental group.

S.N	Test	Mean ± SD	Mean difference	"t" value
a.	Pre test	10.3 ± 0.7	3.9(a+b)	28.404* (a+b)
b.	Post-test 1	6.4 ± 0.8	3.6 (b+c)	19.650* (b+c)
c.	Post-test 2	2.8 ± 0.9	7.5(c+a)	46.171*(c+a)

df=29 *= significant at p<0.05 level

Table 7: Comparisons of post test score of level of pain in both experimental and control group.

Test	Experimental group		Control group		Mean difference	"t" value
	Range	Mean + SD	Range	Mean + SD		
Post test 1	3-7	4.6 ± 0.9	3-7	7.0 ± 0.7	2.4	20.766*
Post test 2	1-3	1.5 ± 0.7	1-5	6.9 ± 0.6	5.4	36.275*

Table 8: Comparisons of post test score of REEDA in both experimental and control

Test	Experimental group		Control group		Mean difference	"t" value
	Range	Mean + SD	Range	Mean + SD		
Post test 1	5-8	6.4 ± 0.8	6-9	10.2 ± 0.6	3.8	20.766*
Post test 2	1-4	2.8 ± 0.9	3-6	10.1 ± 0.6	7.3	36.275*

df = 58*= Significant at p<0.05 level

The comparison of post-test REEDA scores between the experimental and control groups revealed significant differences. The experimental group showed a lower mean score (6.4 ± 0.8 in post-test 1 and 2.8 ± 0.9 in post-test 2) compared to the control group (10.2 ± 0.6 in post-test 1 and 10.1 ± 0.6 in post-test 2). The mean differences (3.8 and 7.3) were statistically significant, with t-values of 20.766 and 36.275, respectively ($p < 0.05$). This indicates that the intervention had a positive effect on reducing episiotomy wound complications in the experimental group.

Discussion: The study demonstrated that ice pack application significantly reduced pain and promoted healing of episiotomy wounds among postnatal mothers. The mean post-test scores for pain and REEDA (Redness, Edema, Ecchymosis, Discharge, and Approximation) were lower in the experimental group compared to the control group, with statistically significant differences ($p < 0.05$). These findings are consistent with previous studies, supporting the effectiveness of ice pack application in reducing pain and promoting wound healing.

Conclusions: The study concluded that ice pack application is effective in reducing pain and promoting healing of episiotomy wounds among postnatal mothers. Significant differences were found in mean post-test scores of pain and REEDA between experimental and control groups. The computed 't' values were greater than the table values at p<0.05 level of significance, rejecting the null hypotheses. Ice pack application was found to be effective in

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reducing pain and promoting wound healing. A significant association was found between parity and episiotomy wound healing. Overall, ice pack application is a beneficial intervention for postnatal mothers with episiotomy wounds.

Recommendation:

- A similar study can be replicated on a similar setting with a larger sample size.
- Similar study can be replicated in another setting.
- Study can be done in comparison with hot application.
- Study can be done for longer period of time.

Copyright: No conflict of interest

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