

EFFECTIVENESS OF INFRARED LAMP THERAPY ON EPISIOTOMY WOUND HEALING AMONG POSTNATAL MOTHERS

Sandeep Kaur

Lecturer, Khalsa College of Nursing, Amritsar (Punjab)

ABSTRACT

A surgical planned incision on the perineum and on the posterior vaginal wall during the second stage of labour is called episiotomy.(Perineotomy). The purpose is to enlarge the vaginal orifice so as to facilitate easy and safe delivery of the foetus & to minimise overstretching and rupture of the perineal muscles & fascia; to reduce stress & strain on foetal head. The objective of the study is to assess the effectiveness of Infrared Lamp Therapy on Episiotomy Wound Healing among postnatal mothers admitted in selected hospitals of Amritsar. The study was carried out on 60 postnatal mothers admitted in Dhingra Maternity Hospital and Aggarwal Nursing home, Amritsar. (Punjab). According to sample Characteristics, majority was in age group 23-27 years, had family income between Rs.10,001- Rs.15,000 per month and were Primipara. Majority of them had 3 cm length of episiotomy wound and number of sutures was 4-5. Most of the postnatal mothers performed self perineal care while changing perineal pad. All variables in experimental group and control group were homogenous in characteristics except Frequency of Self perineal care which is well proved with chi-square and was non-significant at $p < 0.05$. In pre-interventional episiotomy wound healing, all (100%) postnatal mothers in the control group and experimental group had mild infection i.e. (Slow episiotomy wound healing). According to post-interventional episiotomy wound healing, majority (80%) of the postnatal mothers in experimental group had no infection, (10%) had mild infection and remaining (10%) had moderate infection, whereas in the control group (50%) had no infection and (50%) had mild infection. There was a significant difference between the 't' values of pre-interventional & post-interventional episiotomy wound healing among postnatal mothers of control and experimental group at $p < 0.05$ level of significance. Hence, it was concluded that infrared lamp facilitates episiotomy wound healing.

Key words: Infrared lamp therapy, Episiotomy wound healing, postnatal mothers.

About the Author:



Mrs. Sandeep Kaur is Lecturer, Khalsa College of Nursing, Amritsar. She has seven years of teaching experience. She has participated in various National and International conferences & workshops.

INTRODUCTION

Labour is a wondrous act of nature and unique to every childbearing woman. It is a transformative event in a women's life. The onset of motherhood presents a unique set of physical, emotional and psychological challenges. The post-partum phase can become even more challenging when the new mother experiences perineal or genital tract trauma as a result of child birth.¹ Episiotomy is the surgical incision made under the effect of anaesthesia to enlarge the vulval outlet during delivery and to minimise the risk of severe spontaneous, maternal trauma and to expedite the birth when there is evidence of foetal compromise.² In India, the overall rate of episiotomy was 40.6%. Among that midwives performed episiotomies at a lower rate (21.4%) than the hospital faculty (33.3%) and private providers (55.6%).³ Episiotomy is used widely today because it prevents lacerations, heals better, easier to repair than a ragged tear, allows for easier and safer regression of the head thereby preventing possible brain damage reduced incidence of uterine prolapse in subsequent deliveries.⁴ Mothers suffer much distress after child birth due to painful perineum. Various interventions are found to aid the healing process, which include cleanliness, applying ice pack, topical application by dry heat (infrared therapy), sitz bath, performance of Kegels' exercise and perineal care.⁵ Doctors recommend that infra-red lamp is a simple and effective treatment for pains and healing of episiotomy. The waves penetrate upto 3 inches into the body, increasing circulation and loosening tight muscles. This warming feels good, helps in relaxation, it also aids in healing damaged tissue. The infra-red lamp requires the voltage of 220V/ 250V and should be kept 50 cm away from the affected area. The suggested time of heating is 15 to 30 minutes twice a day for three days. Infrared lamp is very safe and provides pain relief within 10-15 minutes without medications and facilitates early healing of episiotomy with minimum side effects.⁶ The aim of study is to assess the effectiveness of Infrared Lamp Therapy on Episiotomy Wound Healing among postnatal mothers with a view to speed up wound healing of episiotomy and prevent perineal infections and other complications.

MATERIAL & METHODS

Setting: The study was conducted in the two Maternity Hospitals of Amritsar, Punjab. Among these, Control group was selected from Dhingra Maternity Hospital, Amritsar and the Experimental group from Aggarwal Nursing home, Amritsar.

Sample & Sampling technique: The researcher selected 60 samples by using purposive sampling technique.

Data collection procedure: A total of 60 postnatal mothers who have undergone normal vaginal delivery with episiotomy and are hospitalised up to 3rd postnatal day irrespective of their parity were included in the study. Postnatal mothers who had perineal tear & Diabetes mellitus were excluded in the study. Purposive sampling technique was used to select the sample from the population. Prior to the data collection procedure, formal permission was obtained from the directors of both the Maternity Hospitals of Amritsar. The researcher first introduced herself to the respondents and explained the purpose of the study to the

respondents and obtained verbal consent. After Six hours of delivery, perineal care was given to the postnatal mothers (both experimental & control group) and the pre-interventional episiotomy wound healing score was assessed by using "REEDA scale" (Nancy Davidson 1970). In experimental group, after providing perineal care, infrared radiations were applied over the episiotomy wound by using an infrared lamp of 230V, placed at a distance of 50cm (from the area of exposure) for a period of 15-20 minutes, twice a day for three consecutive days. On the other hand, in control group conventional method (routine hospital based care – two time perineal care with 'Savlon' solution) was provided to the postnatal mothers twice a day for three consecutive days by the researcher. On the 3rd postnatal day, post interventional episiotomy wound healing score was assessed in both the groups using the same tool. The time taken for performing the whole procedure was 25-30 minutes.

DESCRIPTION OF TOOLS

Part 1- Socio-demographic profile.

Part 2- REEDA scale (Nancy Davidson 1970):-It was a rating scale for assessment of wound healing. It consists of five parameters i.e. Redness, Oedema, Ecchymosis, Discharge and Approximation. Each item is scored as 0 to 3. Minimum score was 0 & Maximum score 15.

Criterion measures

Infection / Episiotomy Wound Healing Score

- No infection (Normal healing) Score 0
- Mild infection (Slow healing) Score 1-5
- Moderate infection (Delayed healing) Score 6-10
- Severe infection (Absence of healing) Score 11-15

RESULTS

Table 1: Frequency and percentage distribution of sample characteristics

Demographic Variables	Experimental Group		Control Group		df	χ^2
	n	%	N	%		
Age						
19-22	0	0	0	0		
23-27	13	43.3	16	53.3	1	0.671 ^{NS}
28-32	17	56.7	14	46.7		
33 and above	0	0	0	0		
Parity						
Primipara	16	53	18	60		
Multipara	14	47	12	40	1	1.64 ^{NS}
Family income (Rupees Per						

month)						
Less than 5000	0	0	0	0		
5001- 10,000	2	6.6	1	3.3		
10,001- 15000	23	76.7	28	93.3	2	3.49 ^{NS}
More than 15000	5	16.7	1	3.3		
Length of episiotomy wound						
2 cm	4	13.3	5	16.7		
3 cm	18	60	16	53.3	2	0.288 ^{NS}
4 cm	8	26.7	9	30		
Number of sutures						
2-3	5	16.7	7	23.3		
4-5	14	46.7	14	46.7	2	2.032 ^{NS}
6-7	11	36.7	9	30		
Frequency of Self perineal care						
While taking bath	3	10	7	23.3		
After each voiding	15	50	0	0	2	6*
While changing perineal pad	12	40	23	76.7		

NS - Non significant at $p < 0.05$

*Significant at $p < 0.05$

Table 1 depicts the sample characteristics. It shows that of a total of 60 postnatal mothers selected for the study, majority was in age group 23-27 years, had family income between Rs.10, 001- Rs.15, 000 per month and were Primipara. Majority of them had 3 cm length of episiotomy wound and number of sutures was 4-5. Most of the postnatal mothers performed self perineal care while changing perineal pad. The above description showed that the sample in experimental group and control group were homogenous in characteristics except frequency of Self perineal care which is well proved with chi-square & was non-significant at $p < 0.05$.

Table 2: Frequency, percentage and mean distribution of postnatal mothers in experimental and control group according to Pre-interventional episiotomy wound healing.

		Experimental Group				Control Group			
		n=30				n=30			
Pre-interventional Episiotomy Healing	Wound	n	%	Mean	SD	n	%	Mean	SD
N=60									

No infection (0)	0	0	0	0	0	0	0	0
Mild infection (1-5)	30	100	0.76	0.42	30	100	0.73	0.44
Moderate infection(6-10)	0	0	0	0	0	0	0	0
Severe infection (11-15)	0	0	0	0	0	0	0	0

Maximum Score =15

Minimum Score=0

Table 2 depicts the frequency, percentage and mean distribution of postnatal mothers in experimental and control group according to pre-interventional scores of episiotomy wound healing. The findings revealed (100%) postnatal mothers in the control group and experimental group had mild infection i.e. (Slow episiotomy wound healing).

Table 3: Frequency, percentage and mean distribution of postnatal mothers in experimental and control group according to Post-interventional episiotomy wound healing

N=60

Post-interventional Episiotomy Wound Healing	Experimental Group n=30				Control Group n=30			
	n	%	Mean	SD	n	%	Mean	SD
No infection (0)	24	80	-	-	15	50	-	-
Mild infection (1-5)	3	10	4.86	1.23	15	50	3.63	0.44
Moderate infection(6-10)	3	10	-	-	0	0	-	-
Severe infection (11-15)	0	0	-	-	0	0	-	-

Maximum Score =15

Minimum Score=0

Table 3 depicts the frequency, percentage and mean distribution of postnatal mothers in experimental and control group according to post-interventional episiotomy wound healing. Majority (80%) of the postnatal mothers in experimental group had no infection, (10%) had mild infection & remaining (10%) had moderate infection, whereas in the control group (50%) had no infection & (50%) had mild infection. Hence, it was concluded that most of the postnatal mothers in experimental group had undergone normal episiotomy wound healing after intervention.

Table 4: To compare the Pre-interventional and Post-interventional episiotomy wound healing of experimental and control group among postnatal mothers

N=60

Episiotomy Healing	Wound	Experimental Group n=30	Control Group n=30	df	t
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	Mea n	SD	Mea n	SD		
Pre interventional Score	0.76	0.42	0.73	0.44	58	0.27 ^N _s
Post interventional Score	4.86	1.23	3.63	0.70	58	4.87
	df	t	df	t		
	29	19.64 *	29	13.25*		

Maximum Score =15

Minimum Score=0

Non significant at p<0.05

***Significant at p<0.05**

The analysis of data regarding pre-interventional and post-interventional episiotomy wound healing of experimental and control group among postnatal mothers revealed that there was a significant difference between the 't' values of pre-interventional and post-interventional episiotomy wound healing among postnatal mothers of control and experimental group at p<0.05 level of significance. Hence, it was concluded that infrared lamp facilitates episiotomy wound healing. So, null hypothesis was rejected.

DISCUSSION

1. The analysis of data regarding the pre-interventional episiotomy wound healing of experimental and control group among postnatal mothers revealed that majority of the postnatal mothers in control and experimental group showed mild infection (slow episiotomy wound healing) before the intervention. Similar study on effectiveness of infrared lamp therapy on episiotomy wound healing among 60 primipara in Mangalore by **Graham et al (2010)**³ revealed that there was no significant difference in the pre-interventional comparison of episiotomy wound healing in control group and experimental group which was consistent with the present study.
2. In the present study, post-interventional episiotomy wound healing of experimental and control group among postnatal mothers revealed that in control group, equal percentage of the postnatal mothers had mild & moderate infection (normal & slow wound healing) whereas in experimental group majority of the postnatal mothers had no infection (normal wound healing). Similar study on effectiveness of infrared lamp therapy on episiotomy wound healing among 50 postnatal mothers in maternity wards by **Chacko et al (2012)**⁷ revealed that the all the postnatal mothers in control group had slow episiotomy wound healing whereas in experimental group, 75% postnatal mothers had normal wound healing and only 25% of them had slow episiotomy wound healing.
3. The analysis of data regarding pre-interventional and post-interventional episiotomy wound healing of experimental and control group among postnatal mothers revealed that there was a significant difference between the 't' values of pre-interventional & post-interventional episiotomy wound healing among postnatal mothers of control and experimental group at p<0.001 level of significance. Hence, it was concludes that infrared lamp facilitates episiotomy wound healing.

- Similar study on effectiveness of infrared lamp therapy and Sitz bath on episiotomy wound healing among 60 postnatal mothers by **Yashashri Pore (2014)**⁸ revealed that the application of infrared lamp therapy is statistically highly effective for healing of episiotomy at $p < 0.05$ level of significance.
- It is supported by finding of **Ms. Chaitali Biswas's (2009)**⁹ study in which she studied the effectiveness of infrared lamp therapy on episiotomy wound healing. Finding of the study shows that mothers treated with infrared lamp therapy experienced lower discomfort & better healing of episiotomy wound.

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