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A study to assess the effectiveness of infrared radiation therapy on pain perception and wound healing among primi postnatal women with episiotomy

Elizebeth Rani

elsam82@ymail.com

MA Chidambaram College of Nursing,
Chennai, Tamil Nadu

ABSTRACT

Motherhood has true nobility and unique capacities. Pregnancy and childbirth are special events in women's lives. This study aimed to assess the effectiveness of Infra-red radiation therapy on pain perception and wound healing among primi postnatal women with episiotomy in Christian mission hospital, Madurai. The study was conducted among 60 postnatal women, 30 in experimental group and 30 in control group, who were selected by using purposive sampling technique. Data collection was done as planned 6 weeks were taken for data collection procedure. The data gathered were analyzed and the interpretation was made on the study objectives. The paired 't' test and independent 't' test were used to find out the effectiveness of infrared radiation therapy. Comparison of pain perception and wound healing status values between pre-test and post-test, experimental and control group showed a significant difference at 0.05 levels. The study concluded that the infrared radiation therapy was effective in reducing episiotomy pain and wound healing. Therefore, infra-red radiation therapy should be used to augment the therapy of episiotomy.

Keywords: Pain perception, Wound healing, Episiotomy, Infrared lamp.

1. INTRODUCTION

Motherhood is a beautiful process whereby the mother safely delivers a child. It is the magic of creation. Care must be given to ensure safe childbirth. The mother has a right to avail to proper medical care and treatment. Safe motherhood can be only reached if complete care is given to young mothers. Safe motherhood initiative announced in 1987 had set targets to reduce maternal mortality by 50% in one decade. The safe motherhood aims at enhancing the quality of life, and women through the adoption of a combination of health and non-health strategies

Women during the postnatal period are subjected to a higher risk of morbidity and mortality from various causes like Perineal pain and discomfort, episiotomy infections, puerperal sepsis etc. Perineal pain in the early postnatal period is one of the most common causes of maternal morbidity. (Sleep, 1990 as cited by Steen et al., 2000).

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According to the estimates by WHO (maternal Health and safe motherhood program, 1996), the major causes of maternal deaths were due to puerperal sepsis which accounts for 15% of all maternal deaths in developing countries. If it does not cause death, puerperal sepsis can cause long-term health problems such as chronic pelvic inflammatory disease and infertility. Apart from blood loss, episiotomy leads to possible morbidities in the form of pain and discomfort, healing complications, wound infections, disruption and increased risk of anal incontinence. (Thacker, Banta. 1983, as cited by parikh, 2002).

2. OBJECTIVES

- To assess the level of episiotomy pain perception of primi postnatal women with episiotomy before and after infrared radiation therapy in the experimental group.
- To assess the level of episiotomy wound healing of experimental and control group after infrared radiation therapy.
- To find out the effectiveness of infrared radiation therapy in the experimental group in terms of reduction in pain perception and the effectiveness of wound healing.
- To find out the association between the level of pain perception after infrared radiation therapy and selected demographic variables (Age, education, occupation, admission)
- To find out the association between the episiotomy wound healing score and selected perinatal variables. [Hours of leaking, hemoglobin level, vaginal examination done at outside, duration of labor, placental delivery).

3. HYPOTHESIS

H₁ -The mean post-test pain perception score of experimental group will be significantly lower than the mean pre-test score.

H₂ -The mean post-test episiotomy pain perception score of experimental group will be significantly lower than the mean post-test episiotomy pain perception score of the control group.

H₃ -The mean post-test pain perception score of experimental group will be significantly lower than the mean pre-test score.

H₄ -The mean post-test episiotomy wound healing score of experimental group will be significantly lower than the mean post-test episiotomy wound healing Score of the control group.

H₅ -There will be a significant association between the levels of pain perception and the level of wound healing with selected demographic and perinatal variables among the primi postnatal women in the experimental group.

4. MATERIALS AND METHODS

Pre-test post-test control group design was used. The study was conducted in Christian Mission Hospital, Madurai. The population selected for this study was primi mothers who had a vaginal delivery with episiotomy at Christian Mission Hospital, Madurai. The sample size for this study was arbitrarily decided to be sixty, 30 experimental groups and 30 control groups. In this study, purposive sampling technique was used to select subjects.

The tool was a written device that a researcher used to collect the data. After a careful review of the literature, the investigator identified a standardized tool to assess the pain perception and wound healing, which is called numerical rating scale (NRS) and REEDA scale.

Data were collected in 2 spells. During the first spell, data were collected among the experimental group with the intervention through infrared radiation therapy. Then, data were collected among the control group, without the infrared radiation therapy. Using inferential and descriptive statistics based on the objectives of the study did the computation of the data. The level of significance was determined at 0.05 levels.

5. RESULT

- In this study, 60 postnatal mothers were selected. In demographic variables majority 17 (56.7%) in experimental group and 21 (70%) in control group belong to the age group of 20-25 years of age, 10 (33.3%) in experimental group and 9 (30%) control group had collegiate education above, 26 (86.7%) in experimental group and 21 (70%) in control group were unemployed, 21 (70%) in experimental group and 22 (73.3%) in control group were booked.
- Regarding perinatal variables majority of postnatal women with episiotomy 22 (73.3%) in experimental group and 23 (76.7%) in control group had < 12 hours of leaking, 18 (60%) in experimental group and 20 (66.7%) in control group were > 10 gms % hemoglobin level, 27 (90%) in experimental group and 24 (80%) in control group are not done vaginal examination outside, 19 (63.3%) in experimental group and 15 (50%) in control group underwent 6-12 hours of labour and 30 (100%) in experimental group and 30 (100%) in control group had spontaneous placental delivery.
- There was a significant reduction in pain perception after infrared radiation therapy in experimental group $t = 25.26$ ($P < 0.05$)

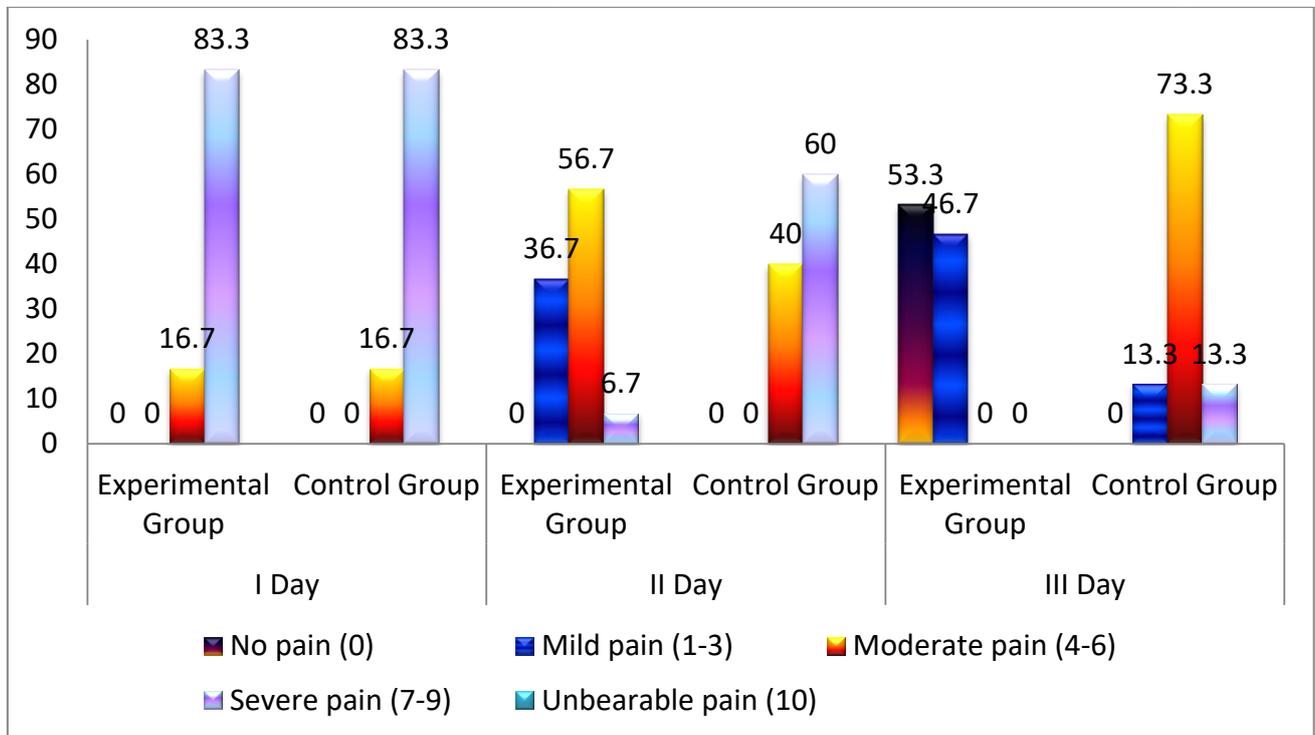


Figure 1. Comparison of episiotomy pain perception in experimental group and control group

- Episiotomy wound healing was significantly effective in the experimental group, $t = 47.5$ ($P < 0.05$), then the control group regarding infrared radiation therapy.

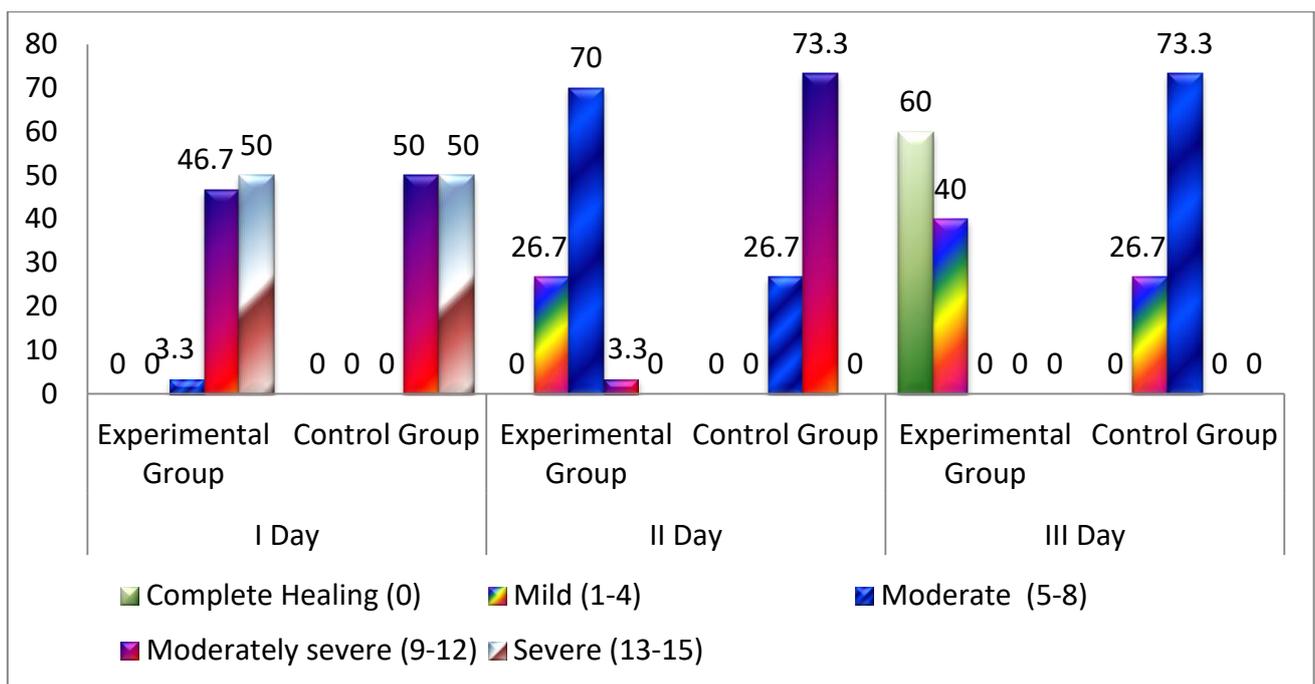


Figure 2. Comparison of episiotomy wound healing in experimental group and control group

Table 1: Pain scores before and after infrared radiation in the experimental group

Experimental group	Mean	SD	't' value
Pre-test	7.5	1.02	t = 25.26 s P < 0.05
Post-test	2.8	1.33	

It is inferred that postnatal women with episiotomy in the experimental group had significantly reduced episiotomy pain after infrared radiation therapy and it was found to be very effective.

Table 2: level of episiotomy pain among experimental and control group after infrared radiation therapy

Group	Level of pain After IRRT		
	Mean	Standard Deviation	't' test
Experimental	2.8	1.02	t = 44.28
Control	5.9	1.09	

It is inferred that episiotomy wound healing was effective after exposure to infrared radiation therapy. Therefore, the infrared radiation therapy was found to be effective.

Table 3: wound healing scores before and after infrared radiation in the experimental group

Experimental group	Mean		SD	't' Value
	Pre-test	Post test		
	12.6	3.6	1.7	t = 32.96
			1.59	

It is inferred that episiotomy wound healing was effective after exposure to infrared radiation therapy. Therefore, the infrared radiation therapy was found to be effective.

Table 4: level of episiotomy wound healing among experimental and control group after infrared radiation therapy

Group	Level of wound healing After IRRT		't' Test
	Mean	SD	
Experimental	3.6	1.59	t = 47.5
Control	7.5	1.18	

There was significant that episiotomy wound healing was effective in the experimental group. Hence, the infrared radiation therapy was found to be effective.

- There was no significant association in the effectiveness of infrared radiation therapy with regard to age, education, occupation, admission and the episiotomy pain perception among postnatal women with episiotomy.
- There was no significant association in the effectiveness of infrared radiation therapy with regard to perinatal variables like hours of leaking, hemoglobin level, vaginal examination, duration of labor and the episiotomy wound healing among postnatal women with episiotomy.

6. DISCUSSION

- Majority of postnatal women with episiotomy in experimental group 25 (83.3%) had severe pain before infrared radiation therapy and the majority of a postnatal woman with episiotomy on the 3rd day 16 (53.3%) in the experimental group had no pain after infrared radiation therapy.
- The mean pain score after infrared radiation therapy was significantly less than the mean pain scores before infrared radiation therapy in the experimental group, t = 25.26 (p < 0.05).
- Majority of postnatal women with episiotomy wound healing 15 (50%) in the experimental group and 15 (50%) in control group had severe wound healing before infrared radiation therapy.
- Majority of postnatal women with episiotomy on the 3rd day 18 (60%) in the experimental group had complete healing and 22 (73.3%) in control group had a moderate degree of wound healing after infrared radiation therapy.
- There was significant that episiotomy wound healing was effective in the experimental group, t = 47.5 (p < 0.05), then the control group regarding infrared radiation therapy.
- The mean pain score after infrared radiation therapy was significantly less than the mean pain scores before infrared radiation therapy in the experimental group, t = 25.26 (p < 0.05).
- There was a significant reduction in episiotomy pain score in the experimental group, t = 44.28 (p < 0.05), then the control group regarding infrared radiation therapy.
- The mean wound healing score after infrared radiation therapy was significantly less than the mean wound healing score before infrared radiation therapy in the experimental group, t = 32.96 (p < 0.05).
- The episiotomy wound healing was significant in the experimental group, t = 47.5 (p < 0.05), then the control group.
- There was no significant association in the effectiveness of infrared radiation therapy with regard to age, education, occupation, admission and the episiotomy pain perception among postnatal women with episiotomy.

- There was no significant association in the effectiveness of infrared radiation therapy with regard to perinatal variables like hours of leaking, hemoglobin level, vaginal examination, duration of labor and the episiotomy wound healing among postnatal women with episiotomy.

7. CONCLUSION

The following conclusion was drawn from this study,

- The infrared radiation therapy is effective in reduction of pain and wound healing. Therefore, infrared radiation therapy should be used to augment the therapy of episiotomy pain perception and wound healing.
- There was no significant association between the episiotomy pain perception and wound healing in relation to the age, occupation, admission, hours of leaking, vaginal examination done at outside etc.

8. RECOMMENDATIONS

- This study could be replicated using a large sample size.
- A comparative study also can be done to determine the effect of infrared radiation therapy on episiotomy pain perception of urban primi Para mothers and rural primi Para mothers.
- The same study can be carried out to look into the other aspects of pain-relieving interventions such as time management and cost-effectiveness.
- A comparative study also can be done to determine the effect of infrared radiation therapy on episiotomy pain perception among primi Para and multi Para women.
- A comparative study can be done to determine the effect of hot application versus cold application on episiotomy wound.
- A study may be carried out to evaluate the various treatment modalities for episiotomy care.

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BIOGRAPHY



Mrs.V. Elizebeth Rani M.Sc. Nursing

Reader in Nursing, M.A.Chidambaram College of Nursing, Chennai, Tamil Nadu, India.

I Completed my Bsc Nursing & Msc nursing in C. S. I. Jeyaraj Annappaikiam College of Nursing, Madurai. I have total 15 year of Teaching Experience in Nursing.