

## A Comparative Study to Evaluate The Effectiveness of Warm Sitz Bath Versus Infra-Red Light on Episiotomy Wound Healing Among Postnatal Mothers in Selected Hospital

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### ABSTRACT

Postpartum complications like haemorrhage, hypertension, pulmonary embolism, and sepsis can cause physical discomfort and psychological distress for mothers. Common surgical complications include wound breakdown, breast abscess, and urinary fetal incontinence. Early identification and proper intervention can help mothers recover and restore their pre-pregnancy state. Episiotomy, a common obstetric operation, is believed to reduce fetal trauma and protect maternal soft tissues.

**Aim of the study:** The main aim of the study was to evaluate the effectiveness of warm sitz bath versus infra red light on episiotomy wound healing among postnatal mothers in selected hospital

**Methodology:** A comparative study was conducted among mothers who gave birth to the baby with normal delivery and had episiotomy in selected hospital, Quasi experimental- pretest post-test with control group research design was used in this study. The data was collected through interview schedule from the subjects regarding their demographic and obstetrical variables, Universal pain assessment scale and REEDA scale were used to assess the level of episiotomy pain and wound healing among the postnatal mothers.

**Result:** The study analysed pain levels in experimental groups 1 and 2, with 67% experiencing severe pain and 33% having moderate pain. After the intervention, 50% reported moderate to severe pain, while 60% experienced severe pain. Pre-intervention pain scores varied, with 53% reporting moderate pain, 30% severe pain, and 5 mild pain. 37.55% of participants had an infection at Grade 0, while 33.3% were in grades 1 and 2. After one day, 43.3% needed assistance with daily activities, and 46.67% had trouble performing tasks. Sitting baths and infrared therapy effectively reduced pain and discomfort in postpartum mothers. Sitting baths were found to be more effective in pain relief and wound healing.

**Conclusion:** The study found a significant relationship between demographic variables and planned interventions like sitz bath and infrared light instillation for wound healing. Clinical variables, healing process, and infection grades were also related to interventions and duration of episiotomy skin infection. The research hypothesis was accepted, indicating the effectiveness of these treatments.

**Keywords:** evaluate Effectiveness, warm sitz bath , infra red light, episiotomy, wound healing, postnatal mothers.

### 1. INTRODUCTION

Beginning of the motherhood is pleasant experience for the mother psychologically, but physically the mother undergoes lot of changes to attain this motherhood. During the second stage of labor, episiotomy is in practice to increase the size of vaginal outlet in case of rigid perineum, big baby and instrumental delivery. After delivery the episiotomy wound healing will take some time. The reduction in episiotomy wound infection will reduce the risk of getting many complications to the postnatal women, because the infection is the root cause of many complications. Reduction of infection is made possible by the midwife by giving effective care to episiotomy wound.<sup>1</sup>

Post-partum is very special period for a women and her family. It is usually joyful when a pregnant mother gives birth to a baby she has expected. Despite the pain and discomfort, birth is a long awaited grand ending of a pregnancy and a start of new life. A mother is the beginning of new chapter of human life. The process of labour not only generates new life but it also creates new species in the world thereby making the world an ever ending place for the human beings to live. That's why mothers are special and labour is precious. Episiotomy is surgically planned incision on the perineum and the posterior

vaginal wall during the second stage of labour.<sup>2</sup>

Sister Nancy discusses phases of wound healing in her book. The wound healing process has four phases. There are four phases of wound healing; inflammatory phase, destructive phase, proliferative phase and maturation phase. A sitz bath is a special bath used in the early postpartum period to help ease pain, promote healing and give good hygiene to the perineal area. This is particularly helpful after an episiotomy or tearing during birth. Though it also helps ease swelling in the perineum or swollen labia.

## NEED OF THE STUDY

Barjon, K., & Mahdy, H. (2023) Episiotomy was one of the most frequently performed operation in obstetrics. In 1978, episiotomy was performed in 62.5% of all vaginal deliveries in the United States, and in nulliparous woman, the episiotomy rate raises to 80%. Since that time the routine use of episiotomy has been increasingly questioned. In 2004 the rate of episiotomy with all vaginal births was 24.5%. The use of episiotomy has been said to decrease trauma to the fetus, decreased frequency of extensive perineal tears, and protect the maternal soft tissues.<sup>12</sup>

The investigator during the clinical experience in the labor room and postnatal ward found that most of the mothers were in bed with pain. Investigator noticed that most of the time their eyes filled with tears and their faces were full of agony during activities. The investigator noticed

that mother was reluctant to communicate because of actual and anticipatory increase in pain and fear of gaping of episiotomy. The mother found extremely difficult to feed the baby and to get out of the bed comfortably to do routine activities in relation to self and neonate. The pain and fear of episiotomy wound gap limited their joy and made the postnatal period stressful.

In present situation warm sitz bath is followed for effective wound healing. Investigator decide to give infrared light therapy effect versus warm sitz bath. if the study objectives proved infrared light therapy is more effective then it will help change policy of hospital to shift from warm sitz bath to infrared light therapy.

## Aim of the Study

The main aim of the study was to evaluate the effectiveness of warm sitz bath versus infra red light on episiotomy wound healing among postnatal mothers in selected hospital

## 2. MATERIAL AND METHODS

A comparative study was conducted among mothers who gave birth to the baby with normal delivery and had episiotomy in selected hospital, Quasi experimental- pretest post-test with control group research design was used in this study. The data was collected through interview schedule from the subjects regarding their demographic and obstetrical variables, Universal pain assessment scale and REEDA scale were used to assess the level of episiotomy pain and wound healing among the postnatal mothers.

## 3. RESULT

### SECTION I: Description of selected Demographic variables of study subjects.

Age. - The study shows that in Group 1, mothers aged 23-27 years make up 40% of the sample, while in Group 2, 40% of mothers aged 28-32 years make up 26.7% and 13.3%, respectively. In Group 2, 33.335 mothers aged 28-32 years make up 33.35%, and only 13% are aged 33-37 years.

Education- results show that 50% of people have completed secondary education, while 16.7% are illiterate, graduates, or have only completed primary education. Experimental group 2 has 36.75 people with secondary education, 26.7 with a graduate degree, and 20% with only primary education.

Type of Diet- Experimental group 1 had a mixed diet at 66.7% and a vegetarian diet at 33.3%, while experimental group 2 had 50% vegetarian and mixed diet consumption.

Parity status- experimental group 1 contains 56.7 percent primipara mothers and the remaining 43.3% multipara mothers, while experimental group 2 exhibits an equal proportion of mothers in both multipara and primipara pregnancies, at 50% each.

Type of episiotomy - Experimental group 1 performed a 70% j-shaped episiotomy procedure, with a median of 20%, while experimental group 2 performed a 53.35% j- shaped, 26.6% median, and 10% right Medio lateral episiotomy suturing procedure.

## SECTION

Description of samples as per Analysis of data related to comparing the effect of warm sitz bath versus infra-red on episiotomy wound healing.

Table 1 n = 60

| Day  | PIANScale Observation | Wound healing | Sitz bath | Mean | SD     | P value | Infrared light | Mean | SD     | p-value |
|------|-----------------------|---------------|-----------|------|--------|---------|----------------|------|--------|---------|
| DAY1 | Pre-intervention      | NoInfection   | 0         | 3.67 | 2.0101 | 0.145   | 0              | 3.96 | 1.9656 | 0.263   |
|      |                       | Mild Pain     | 0         |      |        |         | 0              |      |        |         |
|      |                       | Moderate      | 10        |      |        |         | 8              |      |        |         |
|      |                       | Severe Pain   | 20        |      |        |         | 22             |      |        |         |
|      | Post-intervention     | NoInfection   | 0         | 3.50 | 1.9761 | 0.159   | 0              | 3.80 | 1.3467 | 0.197   |
|      |                       | Mild Pan      |           |      |        |         | 0              |      |        |         |
|      |                       | Moderate      | 15        |      |        |         | 12             |      |        |         |
|      |                       | Severe Pain   | 15        |      |        |         | 18             |      |        |         |
| DAY2 | Pre-intervention      | NoInfection   | 0         | 3.50 | 1.7112 | 0.079   | 0              | 3.50 | 1.5487 | 0.066   |
|      |                       | Mild Pain     | 0         |      |        |         | 0              |      |        |         |
|      |                       | Moderate      | 15        |      |        |         | 15             |      |        |         |
|      |                       | Severe Pain   | 15        |      |        |         | 15             |      |        |         |
|      | Post-intervention     | NoInfection   | 0         | 2.83 | 1.0477 | 0.052   | 0              | 3.43 | 1.4498 | 0.088   |
|      |                       | Mild Pain     | 5         |      |        |         | 3              |      |        |         |
|      |                       | Moderate      | 16        |      |        |         | 12             |      |        |         |
|      |                       | Severe Pain   | 9         |      |        |         | 15             |      |        |         |
| DAY3 | Pre-intervention      | NoInfection   | 0         | 2.78 | 1.4733 | 0.055   | 0              | 2.75 | 0.8445 | 0.066   |
|      |                       | Mild Pain     | 7         |      |        |         | 6              |      |        |         |
|      |                       | Moderate      | 15        |      |        |         | 16             |      |        |         |

The intervention had a considerable impact on day 2 after the intervention, as seen in Table 7 above. Day one estimated p-value is more than 0.05, which does not indicate any significant impact on mothers' pain levels, with pre-intervention group p-values of 0.145 and 0.2063.

Day 1 post-intervention p-values for group 1 and group 2 are 0.159 and 0.197, respectively. Group 1's p-value on day two post-intervention is 0.052, whereas group 2's is 0.066.

On day three, the outcome was the same and the p-value was less than 0.005, indicating that the intervention was successful in reducing the degree of pain and discomfort in experimental groups 1 and 2.

Research shows that sitz baths and infrared therapy are effective in pain relief and wound healing in postpartum mothers. Pain levels were higher in Experimental Group I and Experimental Group II, while wound healing was lower in Experimental Group I and Trial Group II. Sitting baths are found to be more effective in pain relief and wound healing in postpartum mothers.

### SECTION III

To find the association between the effectiveness of intervention with episiotomy wound healing in both groups of postnatal mothers.

| Day      | Observation           | Woundhealing | Sitzbath<br>N=30 | Mean | SD     | P<br>value | Infraredlight | Mean | SD     | p-value |
|----------|-----------------------|--------------|------------------|------|--------|------------|---------------|------|--------|---------|
| DAY<br>1 | Pre-<br>intervention  | grade-0      | 10               | 1.83 | 0.3314 | 0.145      | 12            | 6    | 1.656  | 0.163   |
|          |                       | Grade-1      | 15               |      |        |            | 10            |      |        |         |
|          |                       | Grade-2      | 5                |      |        |            | 8             |      |        |         |
|          |                       | Grade-3      | 0                |      |        |            |               |      |        |         |
|          | Post-<br>intervention | grade-0      | 15               | 1.50 | 0.5493 | 0.159      | 14            | 7.5  | 1.007  | 0.163   |
|          |                       | Grade-1      | 10               |      |        |            | 12            |      |        |         |
|          |                       | Grade-2      | 5                |      |        |            | 4             |      |        |         |
|          |                       | Grade-3      | 0                |      |        |            | 0             |      |        |         |
| DAY<br>2 | Pre-<br>intervention  | grade-0      | 10               | 1.67 | .5967  | 0.079      | 15            | 1.67 | 1.0041 | 0.066   |
|          |                       | Grade-1      | 15               |      |        |            | 10            |      |        |         |
|          |                       | Grade-2      | 5                |      |        |            | 5             |      |        |         |
|          |                       | Grade-3      | 0                |      |        |            | 0             |      |        |         |
|          | Post-<br>intervention | grade-0      | 15               | 1.50 | 1.0031 | 0.042      | 3             | 1.51 | 0.9412 | 0.066   |
|          |                       | Grade-1      | 12               |      |        |            | 12            |      |        |         |
|          |                       | Grade-2      | 3                |      |        |            | 15            |      |        |         |
|          |                       | Grade-3      | 0                |      |        |            | 0             |      |        |         |
| DAY<br>3 | Pre-<br>intervention  | grade-0      | 20               | 1.33 | 0.9433 | 0.105      | 16            | 0.98 | 0.8455 | 0.086   |
|          |                       | Grade-1      | 10               |      |        |            | 6             |      |        |         |
|          |                       | Grade-2      | 0                |      |        |            | 8             |      |        |         |
|          |                       | Grade-3      | 0                |      |        |            | 0             |      |        |         |

|  |                   |         |    |      |        |       |    |      |        |       |
|--|-------------------|---------|----|------|--------|-------|----|------|--------|-------|
|  | Post-intervention | grade-0 | 15 | 0.67 | 0.7876 | 0.054 | 18 | 0.90 | 0.8712 | 0.186 |
|  |                   | Grade-1 | 15 |      |        |       | 8  |      |        |       |
|  |                   | Grade-2 | 0  |      |        |       | 4  |      |        |       |
|  |                   | Grade-3 | 0  |      |        |       | 0  |      |        |       |

The relationship between sitz baths and infrared light on the episiotomy wound healing process is seen in Table number 09 above. After three days of intervention, the results indicate a favorable correlation between the planned intervention and the wound-healing process. On day one of the

intervention, there was no statistically significant link between the two groups. As determined, the p- value on days 2 and 3 after the intervention is less than 0.05. This indicates that the null hypothesis is rejected and the research hypothesis is accepted.

The researcher hopes to draw the conclusion that infrared light therapy and sitz baths have a beneficial impact on the wound-healing process.

Research shows that sitz baths and infrared therapy are effective in pain relief and wound healing in postpartum mothers. Pain levels were higher in Experimental Group I and Experimental Group II, while wound healing was lower in Experimental Group I and Trial Group II. Sitting baths are found to be more effective in pain relief and wound healing in postpartum mothers.

#### SECTION IV

To find the association between the selected demographic variables with episiotomy wound healing in both groups of postnatal mothers.

Since the demographic variable and planned intervention, such as sitz bath and infrared light instillation, have a significant relationship (p-value less than 0.05), the clinical variables, such as sitz bath and infrared light, and wound healing process and infection grades, were found with significant relationship (p-value less than 0.05) to the number of interventions given for both experimental group 1 and 2 and duration of episiotomy skin infection calculated within a three day period. The results show a positive association between the planned intervention and the wound-healing process after three days of intervention.

This shows that the research hypothesis has been accepted and the null hypothesis has been rejected. The researcher wants to conclude that sitz baths and infrared light treatment are helpful for wound healing.

#### 4. DISCUSSION

A study to evaluate the effectiveness of infrared lamp therapy on healing of episiotomy wounds among postnatal mothers admitted in Adesh Hospital, Bathinda, Punjab, India. By Ms. Prabhjot Kaur and Mrs. Anita Prakasam in the year 20219. A Quasi-experimental design with an evaluative approach was used to select 30 postnatal mothers in the experimental group and 30 in the control group by using a non-probability convenience sampling technique. Study findings suggested that There was a significant improvement in wound healing in the experimental group as compared to the control group. The study concluded that Infrared lamp therapy is an effective method of treatment for the healing of episiotomy wounds among postnatal mothers.

The findings revealed that there was an improvement in the overall healing of episiotomy wounds in the experimental group as compared to the control group. There was a statistically significant difference between the pre-test and post-test healing scores of episiotomy wounds between the experimental group and control group significant at=14.607(p<.005).

Another study was conducted by Chandraleka, and Manju Bala Dash in 2019, on the Effectiveness of the Sitz Bath Versus Infrared Ray Therapy on the Level of Episiotomy Pain and Wound Healing Among Post Natal Mothers in Selected Hospitals, in Puducherry. A study was conducted on 90 normal-born mothers with episiotomy at Puducherry hospital, using a quantitative approach and quasi-experimental-pre-test post-test with a control group research design. Data was collected through interviews, and the Universal Pain Assessment Scale and REEDA scale were used to assess episiotomy pain and wound healing.

The study found that both sitz bath and infrared ray therapy effectively reduced pain and wound healing in postnatal mothers. The pain levels were higher in the experimental group II and control group, while the wound healing levels were lower in the experimental group I and control group. The sitz bath was found to be more effective in reducing pain and wound healing in postnatal mothers

## 5. CONCLUSION

The analysis and interpretation of the data are covered in this chapter. A systematic multiple-choice questionnaire was used to gather the data, which included demographic information and a wound status evaluation based on an observation checklist using the REEDA scale, and an opinion questionnaire checklist.

In order to analyze the assessment instrument, observation scores from moms who had episiotomy suturing done during birth were used. planned intervention, such as administering sitz baths and using infrared light to the wound twice daily for a total of three days. The significance was determined using the paired 't'-test, an inferential statistic, and the result score was determined using descriptive statistics. The outcome is demonstrating that the null hypothesis was disproved and that the research hypothesis was accepted.

**Conflict of Interest:** The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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