

Efficacy of Warm Compression vs Mustard Oil Massage on Back Pain during First Stage of Labour among Intranatal Mothers Admitted in Selected Hospital, Lucknow, UP

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Abstract—This study evaluates the efficacy of warm compression versus mustard oil massage on back pain relief during the first stage of labour among intranatal mothers admitted to a selected hospital in Lucknow. The research employed a quantitative approach using a quasi-experimental design. A total of 80 participants were divided into two groups: Group 1 received mustard oil massage, while Group 2 received warm compression. Pain levels were assessed using the Numerical Pain Intensity Scale before and after the interventions. The statistical analysis demonstrated significant pain reduction in both groups post-intervention. The mean post-test pain scores were 2.88 for mustard oil massage and 2.65 for warm compression, indicating both interventions were effective. However, the unpaired t-test revealed no significant difference in pain relief between the two methods ($p > 0.05$). These findings suggest that both warm compression and mustard oil massage are viable non-pharmacological options for managing back pain during labour, offering a cost-effective and accessible solution, particularly in settings with limited access to pharmacological pain relief. The study underscores the potential of integrating such techniques into standard labour care protocols to enhance maternal comfort and satisfaction.

Index Terms— Labour pain, warm compression, mustard oil massage, intranatal mothers, pain management.

INTRODUCTION

Motherhood is a significant and transformative experience. Labor pain, an integral part of childbirth, can affect a woman's labor experience. This study investigates the effects of warm compression and mustard oil massage as non-pharmacological methods for relieving back pain during the first stage of labor.

Pain management during labor is crucial as it affects the overall childbirth experience. Traditionally, various non-pharmacological techniques have been used to alleviate labor pain, including massage, compresses, and aromatherapy. The focus of this study is to compare the efficacy of warm compression and mustard oil massage in reducing back pain during labor, a common discomfort experienced by many women.

Back pain during labor, especially in the first stage, is often attributed to the position of the fetus and the pressure exerted on the spine. Effective pain management can enhance the labor experience, reduce anxiety, and potentially shorten the duration of labor. By exploring alternative methods like warm compression and mustard oil massage, this study aims to provide evidence-based practices for midwives and healthcare providers.

The physiological processes of labor involve significant uterine contractions, which can cause intense discomfort. Back pain is frequently exacerbated by the fetus's position, particularly if the fetus is in the occiput posterior position. Non-pharmacological pain relief methods are increasingly favored due to their minimal side effects and the empowerment they provide to laboring women. This study seeks to further validate these methods, offering insights into their practical application in clinical settings.

OBJECTIVES

- 1) To assess the level of back pain during first stage of labour in both the groups.
- 2) To assess the level of back pain after application of mustard oil massage & warm compression
- 3) To compare the effectiveness of warm compression & mustard oil massage on back pain during first stage of labour
- 4) To associate the level of pain perception during first stage of labour among intranatal mothers of experimental group 1st (mustard oil massage) and experimental group 2nd (warm compression) with selected demographic variables.

METHODOLOGY

This study employed a quantitative, quasi-experimental design to evaluate the effectiveness of warm compression and mustard oil massage on back pain during the first stage of labor. A total of 80 intranatal mothers in the active phase of labor were randomly assigned to two groups: one receiving warm compression and the other mustard oil massage. Each intervention was administered for 8-10 minutes at 30-minute intervals until 8 cm cervical dilation was achieved. Pain levels were measured before and after each session using the Numerical Pain Intensity Scale. Data were analyzed using descriptive and inferential statistics, including paired t-tests and chi-square tests, to determine the significance of pain reduction in both groups.

Participants were recruited from Veerangana Avanti Bai Mahila Chikitsalaya, Lucknow. Inclusion criteria included intranatal mothers in active labor, aged 18-35 years, with no known complications. Exclusion criteria were high-risk pregnancies and any contraindications for massage or heat application. Ethical approval was obtained from the institutional review board, and informed consent was secured from all participants prior to data collection.

The interventions were designed to be simple, cost-effective, and easy to implement in clinical practice. Warm compression involved the application of a hot water bag, while the mustard oil massage was administered using gentle circular motions on the lower back. Both techniques aimed to provide comfort and reduce pain perception during labor. The study's outcome measures focused on the change in pain intensity scores pre- and post-intervention.

RESULTS

Group	Mean Pre-Test Pain Score	Mean Post-Test Pain Score	Percentage
Warm Compression	6.50	2.65	85%
Mustard Oil Massage	6.45	2.88	77.5%

N=80

The data indicated a significant reduction in pain

levels in both groups post-intervention. In the warm compression group, 85% of participants reported mild pain, while 77.5% in the mustard oil massage group reported similar levels. The mean post-intervention pain scores were 2.65 for warm compression and 2.88 for mustard oil massage.

The comparison of warm compression and mustard oil massage on back pain among intranatal mothers. The mean (2.88) of experimental group 1st was slight more than the mean score (2.65) of the experimental group 2nd. The comparison of both the group had non-significant difference with unpaired 't' test value (1.31) at $p < 0.01$ level of significance. Hence, it was concluded that there is no significant difference in reducing pain level in both the group. Therefore the null hypothesis (H_0) is accepted. However, the difference was not statistically significant, indicating both methods are equally viable for pain management during labor.

Figure No.1: Pre-interventional level of pain Scores in experimental group 1st and experimental group 2nd.



Figure No.2: Showing level of pain Scores after intervention in experimental group 1st and experimental group 2nd



The chart illustrates the decrease in pain levels for both groups, highlighting the efficacy of both interventions. Qualitative feedback from participants suggested high satisfaction levels with both techniques, with many noting the soothing and calming effects of the interventions.

The statistical analysis confirmed the efficacy of both interventions, with a significant p-value (< 0.001) for pain reduction in both groups. This supports the hypothesis that non-pharmacological methods like warm compression and mustard oil massage are effective in managing labor pain.

CONCLUSION

The findings revealed that both warm compression and mustard oil massage effectively reduced back pain during the first stage of labor. Although both methods were equally effective, the slight variation in mean pain scores suggests individual preferences may influence outcomes. These non-pharmacological methods offer valuable alternatives for labor pain management, particularly in settings with limited access to pharmacological interventions.

The study highlights the importance of incorporating such techniques into standard labor care protocols to enhance maternal comfort and satisfaction. Future research could explore the long-term effects of these interventions and their impact on overall labor outcomes, including labor duration and delivery mode.

ACKNOWLEDGMENT

I extend my gratitude to Prof. Dr. Priscilla Samson, Prof. Roseline Soren, Mrs. Sonia Agnes Singh, and all participants and faculty members of Era's College of Nursing for their support and guidance throughout this research. Special thanks to the administrative staff of Veerangana Avanti Bai Mahila Chikitsalaya, Lucknow, for facilitating the research process.

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