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Effectiveness of *Aloe vera* ice cube application on episiotomy pain and wound healing among postnatal mothers

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Abstract
Motherhood is a creative, productive, and joyful experience in a woman's life. The study aimed to determine the effect of *Aloe vera* ice cube application on episiotomy pain and wound healing among postnatal mothers. A quasi-experimental pre and post-test with a control group design study was conducted on 50 postnatal mothers selected by purposive sampling method from the postnatal ward. Among 50 postnatal mothers, 25 were in the experimental group and 25 in the control group with episiotomy pain. In the experimental group, *Aloe vera* ice cubes were applied to the episiotomy wound 4 hours after normal vaginal delivery, followed by two more applications at 4-hour intervals on the same day. Pain levels and wound healing status were recorded on Day 1, Day 2, and Day 3. On Day 1, after 4 hours of delivery, immediately before the first intervention; on Day 2, after the 24th hour of the first intervention and on Day 3, after the 48th hour of the first intervention, observed wound healing status using REEDA scale and level of pain was assessed using Numerical pain scale. The result revealed that before the intervention on day 1, both the experimental and control groups had similar pain scores (Experimental: 9.36±0.57; control: 9.60±0.50) and wound healing scores (Experimental: 13.08±0.76; control: 13.40±0.50). After the intervention, the experimental group demonstrated significant reductions in pain and improved wound healing compared to the control group. By day 3, mean pain scores dropped to 2.52±1.33 in the experimental group versus 6.68±0.85 in the control group, and mean wound healing scores decreased to 3.68±1.28 in the experimental group versus 9.00±0.96 in the control group. Repeated measures ANOVA and t-tests showed significant differences in both pain and wound healing between groups after the intervention (p<0.001), while no differences were observed before the intervention. The findings confirm the effectiveness of *Aloe vera* ice cube application in reducing episiotomy pain and enhancing wound healing among postnatal mothers. The findings recommended that the *Aloe vera* ice cube application as an effective, non-pharmacological intervention for reducing episiotomy pain and enhancing wound healing in postnatal care and can be integrated into standard care procedures to enhance patient comfort and recovery.

Keywords: Postnatal mothers, *Aloe vera* ice cubes, episiotomy wound, pain

Introduction
Motherhood is a transformative and joyful experience, bringing profound physical and emotional changes to a woman's life. Pregnancy and childbirth mark the beginning of this unique journey, creating an intimate bond between mother and child. In 2024, the fertility rate in India is 2.122 births per woman, and the birth rate is 16.750 births per 1,000 people (India fertility rate Macrotrends, 2024). 60% of deliveries are normal deliveries in India (NFHS-6 2024). Episiotomy is a common surgical intervention during childbirth, but it can lead to significant postnatal discomfort, impacting a mother's ability to care for her newborn. H Bai (2021) conducted a global study on episiotomy rates and found significant variations across different countries. Denmark reported the lowest rate of episiotomy at 3.7%, while Taiwan had the highest rate at 100% among primiparous mothers. Other countries showed the following rates such as Sweden (9.7%), the UK (12-15%), and the USA (11.6%). In developing countries, the rates were notably higher in Saudi Arabia (45%), India (60%), Jordan (67%), Yemen (75.1%), and Cambodia (94.5%).
The postnatal mothers with episiotomy wounds often struggled with pain and delayed healing, affecting their daily activities and caregiving responsibilities observed by the research during the clinical postings. This highlighted the need for effective, non-pharmacological interventions to alleviate pain and promote wound recovery.

Aloe vera, known for its anti-inflammatory and healing properties, presents a promising solution. This study aims to evaluate the effectiveness of *Aloe vera* ice cube application on episiotomy pain and wound healing among postnatal mothers, providing evidence-based insights to improve maternal care practices.

Statement of the problem

A study to assess the effectiveness of *Aloe vera* ice cube application on episiotomy pain and wound healing among postnatal mothers in a selected hospital at Coimbatore.

Objectives

- To assess the level of episiotomy pain before and after *Aloe vera* ice cube application in the experimental group and control group.
- To assess the wound healing status before and after *Aloe vera* ice cube application in the experimental group and control group.
- To assess and compare the effectiveness of *Aloe vera* ice cube application on episiotomy pain in the experimental group and control group before and after intervention.
- To assess and compare the effectiveness of *Aloe vera* ice cube application on wound healing status in the experimental group and control group before and after intervention.
- To find out the association between the post-test level of pain and wound healing status with selected demographic variables in the experimental group.

Assumptions

- Episiotomy wounds cause pain and discomfort among postnatal mothers.
- The perception of episiotomy pain may vary from person to person.

Delimitation

- The study was delimited to a selected hospital
- The study was delimited to the postnatal mothers who had undergone normal vaginal delivery.

Methodology

The conceptual framework used in the study was based on Ernestine Wiedenbach's Helping Art of Clinical Nursing Theory, emphasizing goal-directed nursing actions. The research design used was a quasi-experimental pre-test, post-test control group design, with 50 participants divided equally into experimental and control groups. The sampling technique adopted was non-probability purposive sampling. Data collection tools comprised a structured interview schedule, the Numerical Pain Rating Scale, and the REEDA scale, validated by experts. *Aloe vera* ice cubes were prepared and applied to the experimental group every four hours, three times a day for two days. Data were analyzed using descriptive and inferential statistics, and ethical considerations were maintained throughout the study, including post-demonstration about intervention for the control group

Results

The study findings revealed that in both groups, the majority (Experimental: 52%, control: 56%) were aged 23-26 years. More than half were graduates (Experimental: 52%, control: 64%), Hindus (Experimental: 68%, control: 76%), and lived in rural areas (Experimental: 60%, control: 52%). A majority (Experimental: 72%, control: 68%) came from nuclear families, and 92% in both groups were non-vegetarian. Regarding socioeconomic status, 56% in the experimental group and 44% in the control group were working women. Most had a family income of ₹15,000-₹20,000 (Experimental: 56%, control: 68%). Health-wise, 60% in the experimental group and 64% in the control group had normal BMI. Hemoglobin levels varied, with 52% in the experimental group having 9-10 g/dl and 64% in the control group having 11-12 g/dl. Nearly half (Experimental: 44%, control: 72%) had no medical disorders during pregnancy, and 60% in the experimental group and 72% in the control group were first-time mothers. None in either group had a history of ectopic pregnancy or abortion. For obstetrical characteristics, 36% in the experimental group and 64% in the control group had labor durations of 8-12 hours. Baby weights of 2500-3000 grams were observed in 64% of the experimental group and 52% of the control group. All participants (100%) in both groups underwent mediolateral episiotomies, had mattress sutures, and experienced perineal pain during urination and defecation. Analgesics were used by all, with 40% in the experimental group having 6 sutures and 40% in the control group having 5 sutures. Most (Experimental: 92%, control: 100%) had no perineal tears.

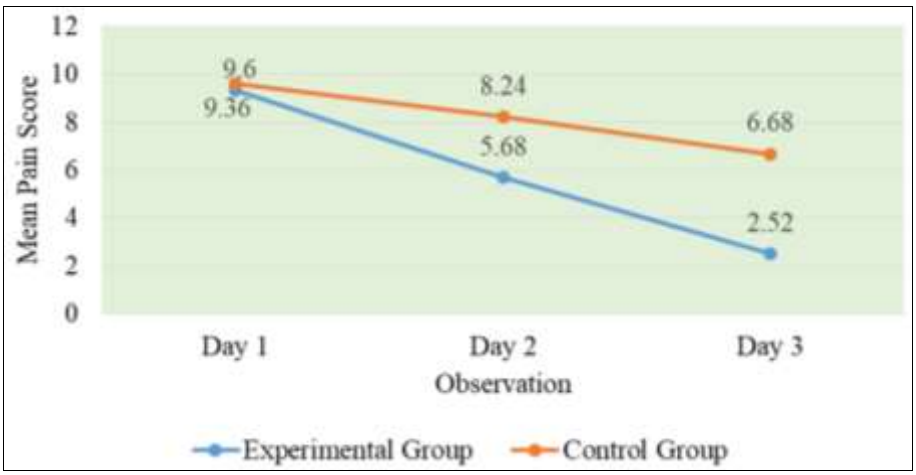

Fig 1: Presents the mean episiotomy pain before and after intervention in the experimental and control groups

Table 1: Presents the comparison of mean episiotomy pain between experimental and control groups before and after intervention

Observation		Experimental group Mean ± SD	Control group Mean ± SD	Unpaired 't' value df=48	p<0.05 Significant value
Before	Day 1	9.36±0.57	9.60±0.50	1.585	8.120 NS
After	Day 2	5.68±1.22	8.24±0.52	9.676	0.000 *
	Day 3	2.52±1.33	6.68±0.85	13.190	0.000 *

NS- Not significant at p< 0.05, *significant at p<0.05, df-degrees of freedom

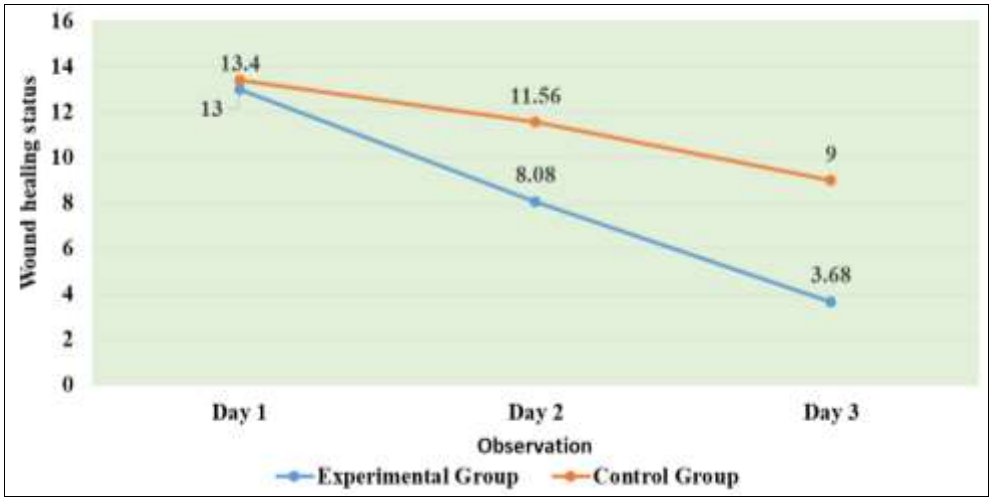

Fig 2: Presents mean wound healing status score before and after intervention in experimental and control group

Table 2: Presents the comparison of mean episiotomy wound healing status, standard between the experimental and control groups before and after the intervention

Observation		Experimental group Mean ± SD	Control group Mean ± SD	Unpaired 't' value df=48	Significant value
Before	Day 1	13.0 ±0.76	13.40±0.50	1.76NS	0.085
After	Day 2	8.08±1.26	11.56±0.65	12.304*	0.000
	Day 3	3.68±1.28	9.00±0.96	16.625*	0.000

NS- Not significant at p<0.05, *significant at p<0.05, df- degrees of freedom

The findings from the graphs and tables revealed that hypothesis H_1, H_2, H_3 and H_4 was accepted. Also, there was no significant association between episiotomy pain and wound healing status with selected demographic and obstetric variables.

Discussion

The findings support with the study conducted by Manjinder Kaur *et al*. (2022) [16], which assessed the effects of *Aloe vera* gel application on episiotomy pain and wound healing status. Their study found significant improvements in pain and wound healing status in the experimental group, supporting the current study's results. Additionally, a study by S. Jayasree (2022) [17] also supports the present findings, demonstrating significant t-values for wound healing (20.888) and pain (27.109), indicating that *Aloe vera* gel application was effective in reducing pain and promoting wound healing.

Conclusion

The findings of the study indicate that the experimental group, which received the *Aloe vera* intervention, demonstrated a substantial decrease in pain levels and enhanced wound healing compared to the control group. These improvements were evident from the second day of intervention and continued through the third day. The study concluded that the application of *Aloe vera* ice cubes significantly reduced episiotomy pain and improved wound healing among postnatal mothers. Also, the findings support the effectiveness of *Aloe vera* ice cube application as a beneficial and non-invasive nursing intervention for managing episiotomy pain and promoting wound healing in postnatal mothers

Limitation

The limitations of this study are

- Being the sample size was small, and the results cannot be generalized.
- The samples were selected using a purposive sampling technique introduce selection bias
- The data on pain perception was based on self- report, potentially affecting the accuracy of the results.

Implication

The study highlights significant implications across nursing practice, education, administration, and research. In practice, *Aloe vera* ice cube application offers a natural, cost-effective method to reduce episiotomy pain and enhance wound healing, which can be integrated into standard care to improve postnatal recovery. For education, it emphasizes the need for training programs on non-pharmacological interventions, equipping nurses and students with evidence-based skills to support postnatal mothers. Administratively, the findings encourage the organization of teaching sessions and allocation of resources to implement this intervention effectively. In research, the study lays a foundation for future exploration into non-pharmacological approaches for postnatal care, bridging the gap between evidence and clinical practice while fostering innovation in maternal health care.

Recommendation

- A similar study can be replicated with larger sample sizes across diverse settings and populations to validate and generalize the findings.
- A comparative study can be conducted to evaluate the effectiveness of different non-pharmacological treatments for episiotomy pain and wound healing.
- A similar study should be conducted to evaluate the impact of *Aloe vera* ice cube application on other postpartum recovery parameters, such as overall comfort, mobility, and quality of life.
- A qualitative study can be conducted to understand the experiences and satisfaction levels of postnatal mothers using *Aloe vera* ice cubes for episiotomy care.

Conflict of interest

This study was carried out independently, without any external influences or biases that could impact the research process or its outcomes.

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References

1. Mane AA. A study to assess the effectiveness of *Aloe vera* gel application on episiotomy pain among postnatal mothers in selected hospitals, Mumbai. Obstetrics and Gynaecology Forum. 2024 May 13;34(2):804-810.
2. Kartal B. Retrospective analysis of episiotomy prevalence. J Turk Ger Gynecol Assoc. 2017 Dec 15;18(4).
3. Ononuju CN. Review of episiotomy and the effect of its risk factors on post-episiotomy complications at the University of Port Harcourt Teaching Hospital. Niger Med J. 2020 May 7, 61(2).
4. Dainty Maternity. *Aloe vera* effectiveness for perineal wound healing for postpartum mothers. Women, Midwives and Midwifery. 2022 Jun 28, 2(2).
5. Augustio J. Dataset comparing the effectiveness of perineal cold pack application over oral paracetamol 1000 mg on postpartum perineal pain among women after spontaneous vaginal delivery in Dodoma region. Data Brief. 2023 Nov 7, 51.
6. Cesar JA. Episiotomy in southern Brazil: prevalence, trend, and associated factors. Rev Saude Publica. 2022 Apr 11, 56.
7. Chellappan K. A systemic review on impact of *Aloe vera* gel in episiotomy pain and wound healing. J ReAttach Ther Dev Divers. 2023 Aug 21;6(9):1493-1500.
8. Limbachiya N. Evaluate the effectiveness of perineal care on episiotomy pain and wound healing among postpartum women. J Pharm Negat Results. 2022 Jul 10;13(6):509-518.
9. Pebalo PF. Episiotomy-related morbidities measured using redness, edema, ecchymosis, discharge, and apposition scale and numerical pain scale among primiparous women in Mulago National Referral Hospital, Kampala, Uganda. Pan Afr Med J. 2020 Aug 26, 36(347).
10. Suvarna RR. Effect of ice pack on pain and activities of daily living after episiotomy: A randomized controlled trial. J Clin Diagn Res. 2024, 17(10).
11. Zahra S. Comparative efficacy of *Aloe vera* gel versus normal saline in accelerating episiotomy wound healing: A randomized controlled trial. J Health Rehabil Res. 2024 Apr-Jun;4(2).
12. Mousavi SHS. Episiotomy and its complications. Zahedan J Res Med Sci. 2021 Apr 3, 23.
13. Singh S. Pattern of episiotomy use and its immediate complications among vaginal deliveries in 18 tertiary care hospitals in India. Indian J Med Res. 2016 Apr;143:474-480.
14. El-Saidy TMK. Effect of applying crushed ice gel pads on episiotomy pain and wound healing among postpartum primiparous women. Int J Nurs Didact. 2018 Jul 11;8(7):19-29.
15. Yang J, Bai H. Knowledge, attitude, and experience of episiotomy practice among obstetricians and midwives: a cross-sectional study from China. BMJ Open. 2021 Apr 12, 11(4).
16. Singh J, Kaur S, Kaur M, Kaur M. A comparative study of detection of serum total and direct bilirubin by manual and automated methods. International Journal of Scientific Research in Science and Technology. 2022 Jul;9(4):209-12.
17. Nair RV, Puthiyaparambath MF, Chatanathodi R, Nair LV, Jayasree RS. A nanoarchitecture of a gold cluster conjugated gold nanorod hybrid system and its application in fluorescence imaging and plasmonic photothermal therapy. Nanoscale. 2022;14(37):13561-9.

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