



## Effectiveness of Binahong Leaf Decoke (*Anredera Cordifolia*) on the Healing of Perineal Wounds in Post-Post Mothers

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**Abstract.** Perineal wounds are a common condition experienced by postpartum mothers following vaginal delivery and may lead to complications if not properly managed. Optimal wound care is essential to accelerate healing and prevent infection. One potential complementary therapy is boiled binahong leaves (*Anredera cordifolia*), which are known to have anti-inflammatory, antibacterial, and tissue regeneration properties. This study aimed to determine the effectiveness of binahong leaf decoction on perineal wound healing in postpartum mothers. This study employed a quasi-experimental design with a one-group pretest-posttest approach involving 52 postpartum mothers in the Sagulung District, Batam City, from October to December 2024. Samples were selected using purposive sampling. The REEDA scale was used to assess wound healing, and data were analyzed using a paired t-test. The results showed that the mean perineal wound score decreased from  $9.2 \pm 2.1$  before the intervention to  $3.8 \pm 1.5$  after the intervention. Statistical analysis revealed a p-value of 0.000 ( $p < 0.05$ ), indicating a significant difference before and after the intervention. In conclusion, boiled binahong leaf decoction is effective in accelerating perineal wound healing in postpartum mothers. This therapy has the potential to be an accessible, cost-effective, and practical complementary treatment in midwifery practice.

**Keywords:** Binahong Leaves; Complementary Midwifery Care; Herbal Therapy; Perineal Wound; Postpartum Mothers

### 1. INTRODUCTION

The postpartum period is crucial in a woman's reproductive cycle, beginning after childbirth and ending when the reproductive organs return to their pre-pregnancy state. During this period, mothers experience various physiological and psychological changes that require special attention, particularly related to the postpartum wound healing process. One of the most common problems is perineal laceration, either due to spontaneous rupture or episiotomy, which is experienced by most women who deliver vaginally (WHO, 2020).

Perineal wounds that are not optimally managed can lead to various complications, such as infection, prolonged pain, delayed healing, and impaired mobility and quality of life for postpartum mothers (Ministry of Health of the Republic of Indonesia, 2021). Data shows that the incidence of perineal rupture remains quite high, especially in primiparas, with a prevalence reaching over 60% in vaginal deliveries in some developing countries (Smith et al., 2020). In Indonesia, perineal wound care is a crucial part of midwifery care because it is directly related to preventing puerperal infections, which remain a leading cause of maternal morbidity (Ministry of Health, 2022).

Perineal wound care is generally carried out conventionally through maintaining cleanliness, using antiseptics, and administering pharmacological therapy. However, the use of natural ingredients as complementary therapies is growing in line with growing public interest

in herbal remedies, which are considered safer, more economical, and more readily available (Rahmawati & Putri, 2021). One herbal plant with potential for wound healing is the binahong leaf (*Anredera cordifolia*).

Binahong leaves are known to contain active compounds such as flavonoids, saponins, alkaloids, and polyphenols, which have anti-inflammatory and antibacterial activities and accelerate tissue regeneration (Sari et al., 2019). Several studies have shown that binahong leaf extract is effective in accelerating the wound healing process by increasing collagen formation and tissue epithelialization (Utami et al., 2022). Furthermore, its antibacterial properties play a role in inhibiting the growth of pathogenic microorganisms that can cause wound infections (Pratama et al., 2020).

However, the use of binahong leaves in decoction form for perineal wound care in postpartum women has not been widely studied specifically in obstetric practice. Most research focuses on general wounds or laboratory tests; thus, further studies aimed at clinical application in postpartum women are needed (Wulandari et al., 2023).

Based on this background, it is important to further examine the effectiveness of binahong leaf decoction in perineal wound care in postpartum women as an alternative complementary therapy. This study is expected to provide a scientific contribution to the development of evidence-based midwifery practices and improve the quality of care for postpartum mothers.

## **2. RESEARCH METHODS**

### **Research Design**

This study used a quasi-experimental design with a one-group pretest-posttest approach. This design was used to determine the effectiveness of binahong leaf decoction (*Anredera cordifolia*) on perineal wound healing in postpartum women by comparing wound conditions before and after the intervention.

### **Population and Sample**

The population in this study was all postpartum women with perineal wounds in the Sagulung District, Batam City, during the period October–December 2024, with a total population of 60 individuals. The sample in this study consisted of a portion of postpartum women who met the inclusion and exclusion criteria. The sample size was determined using the Slovin formula, as follows:

$$n = \frac{60}{1 + 60(0,05)^2} = \frac{60}{1 + 60(0,0025)} = \frac{60}{1 + 0,15} = \frac{60}{1,15} = 52,17$$

The sample size for this study was rounded to 52 respondents.

The sampling technique used was purposive sampling, which selects the sample based on specific criteria. Inclusion criteria: Postpartum women on days 1 to 7 with perineal wounds, willing to participate, and free from serious infectious complications. Exclusion criteria: Postpartum women with chronic illnesses and those who did not fully participate in the intervention.

### **Research Location and Time**

This research was conducted in the Sagulung District, Batam City, from October to December 2024.

### **Research Instruments**

The instruments used in this study included: a perineal wound observation sheet using the REEDA (Redness, Edema, Ecchymosis, Discharge, Approximation) scale to assess wound healing. A respondent characteristics sheet (age, parity, education, etc.). An intervention checklist to ensure compliance with therapy.

### **Research Intervention Procedure**

The intervention in this study involved administering a decoction of binahong leaves for perineal wound care. Intervention Steps: Wash 5–7 fresh binahong leaves. Boil in 500 ml of water until boiling for approximately 10–15 minutes. Cool the boiled water to a lukewarm temperature. Use this to clean the perineal wound twice daily (morning and evening). The intervention was conducted for 7 consecutive days. Wound assessments were conducted before the intervention (pretest) and after the intervention (posttest).

### **Data Collection**

Data were collected through direct observation using the REEDA form before and after the intervention. Researchers were assisted by health workers (midwives) in conducting observations to increase data validity.

## Data Analysis

Data analysis was conducted univariately to describe respondent characteristics and the distribution of wound healing scores. Bivariately, paired t-tests (if data were normally distributed) or Wilcoxon tests (if not) were used to determine differences in wound healing scores before and after the intervention. The significance level used was  $p < 0.05$ .

## Research Ethics

This study complies with the principles of research ethics, namely informed consent: respondents were provided with an explanation and approval before the study. Confidentiality: respondents' identities were kept confidential. Beneficence: the research provides benefits to respondents. Non-maleficence: it does not cause harm to respondents. This research has also obtained permission from relevant parties in the Sagulung District working area.

## 3. RESEARCH RESULTS

### Respondent Characteristics

This study involved 52 postpartum mothers with perineal wounds in the Sagulung District, Batam City. Respondent characteristics included age, parity, and education.

**Table 1.** Distribution of Respondent Characteristics

Category	Frequency (n)	Percentage (%)
<b>Age</b>		
< 20 years	6	11,5
20–35 years	38	73,1
> 35 years	8	15,4
<b>Parity</b>		
Primiparous	30	57,7
Multiparous	22	42,3
<b>Education</b>		
Primary	12	23,1
Secondary	30	57,7
Higher	10	19,2

Most respondents were of healthy reproductive age (20–35 years), with the majority being primiparous and having a secondary education.

### Perineal Wound Healing Score Before Intervention (Pretest)

**Table 2.** Distribution of Perineal Wound Healing Scores Before Intervention

Healing Category	Frequency (n)	Percentage (%)
Severe	20	38,5
Moderate	25	48,1
Mild	7	13,4

Most postpartum mothers experience moderate perineal wounds before intervention.

### Perineal Wound Healing Score After Intervention (Posttest)

After administering the binahong leaf decoction for 7 days, a reassessment was conducted.

**Table 3.** Distribution of Perineal Wound Healing Scores After Intervention

Healing Category	Frequency (n)	Percentage (%)
Severe	2	3,8
Moderate	10	19,2
Mild	40	76,9

Most respondents experienced improvement in their wounds to the mild category after the intervention.

### Analysis of Differences in Scores Before and After Intervention

A bivariate analysis was conducted to determine the effectiveness of binahong leaf decoction on perineal wound healing.

**Table 4.** Paired T-Test Results

Variable	Mean	SD	<i>p-value</i>
Pretest	9,2	2,1	<b>0,000</b>
Posttest	3,8	1,5	

The results of the paired t-test showed a p-value of 0.000 ( $p < 0.05$ ), which means there was a significant difference between the perineal wound healing scores before and after administration of binahong leaf decoction. Thus, it can be concluded that binahong leaf decoction is effective in accelerating perineal wound healing in postpartum mothers.

## **DISCUSSION**

### **Overview of Perineal Wound Healing Before Intervention**

The results of this study indicate that before the binahong leaf decoction intervention, most postpartum women experienced moderate to severe perineal wounds, with an average REEDA score of 9.2. This indicates that in the early postpartum phase, the wound healing process is still in the inflammatory phase, characterized by redness, edema, and pain.

Physiologically, the wound healing process consists of three main phases: inflammation, proliferation, and maturation. During the inflammatory phase, the body responds to tissue trauma, characterized by increased blood flow and immune cell activity (Susilowati et al., 2020). Perineal wounds in postpartum women are generally still susceptible to infection if not optimally cared for.

These results align with research by Wulandari et al. (2021), which found that most postpartum women with perineal wounds were in the moderate healing stage in the early days postpartum. Factors such as perineal hygiene, nutrition, and maternal knowledge also influence the initial wound condition. Furthermore, primiparas tend to have a higher risk of experiencing more severe perineal wounds than multiparas, as seen in the distribution of respondents in this study.

### **Perineal Wound Healing After Binahong Leaf Decoction**

After a 7-day intervention, the study results showed significant improvements in perineal wound condition, with most respondents in the mild category and the average score decreasing to 3.8. This indicates that the wound healing process has entered the proliferation phase, where new tissue formation and epithelialization occur.

This improvement can be explained by the bioactive compounds in binahong leaves (*Anredera cordifolia*), such as flavonoids, saponins, and alkaloids. Flavonoids act as antioxidants that can reduce oxidative stress and inflammation, while saponins stimulate collagen formation, which is essential for tissue regeneration (Sari et al., 2019). Furthermore, alkaloids have antibacterial effects that can prevent wound infection (Pratama et al., 2020).

These findings are supported by research by Utami et al. (2022), which showed that the use of binahong leaf extract significantly accelerated wound healing by increasing epithelialization and wound contraction. Another study by Rahmawati and Putri (2021) also stated that herbal therapy based on medicinal plants is effective in enhancing wound healing due to its multifunctional properties, namely as an anti-inflammatory, antibacterial, and cell regeneration stimulant.

However, it is important to note that other factors such as respondent compliance with wound care, hygiene conditions, and nutritional intake also contribute to optimal healing outcomes.

### **Effectiveness of Binahong Leaf Decoction on Perineal Wound Healing**

The statistical test results showed a p-value of 0.000 ( $p < 0.05$ ), indicating a significant difference between wound conditions before and after the intervention. With an average score reduction of 5.4, this indicates that binahong leaf decoction is effective in accelerating perineal wound healing in postpartum women.

Clinically, the decrease in the REEDA score indicates a reduction in signs of inflammation such as redness, edema, and discharge, as well as increased wound tissue adhesion. This confirms that the use of binahong leaf decoction not only provides symptomatic effects but also plays a role in accelerating the biological process of wound healing.

The results of this study are consistent with those of Pratama et al. (2020), who found that binahong leaf application significantly reduced infection rates and accelerated wound healing. Furthermore, a study by Wulandari et al. (2023) also showed that the use of herbal therapy for perineal wounds yielded better results than conventional treatment alone.

However, this study has limitations, including the lack of a control group, which prevented direct comparison of effectiveness with other treatment methods. Furthermore, individual variations such as immune system and initial wound severity may also influence the study results.

This study contributes to midwifery practice by providing preliminary evidence regarding the use of binahong leaf decoction as a complementary therapy in perineal wound care in postpartum women, which has previously been limited to laboratory studies or general wound care. These findings can inform the development of more applicable herbal-based interventions in midwifery services, particularly at the primary care level.

## **4. CONCLUSIONS AND SUGGESTIONS**

Administering binahong leaf decoction (*Anredera cordifolia*) has been proven effective in accelerating perineal wound healing in postpartum women, as demonstrated by a significant decrease in the REEDA score from moderate-severe to mild after 7 days of intervention. Clinically, this reflects an accelerated transition from the inflammatory phase to the proliferative phase through anti-inflammatory, antibacterial, and tissue regeneration-stimulating mechanisms. These findings suggest that binahong leaf decoction has the potential

to be an applicable, economical, and locally-based complementary therapy in obstetric practice, particularly in primary care. Therefore, healthcare workers are advised to utilize it as an alternative perineal wound care while still adhering to the principles of hygiene and safety. Further research with a more robust design, such as a randomized controlled trial, is needed to establish more comprehensive standards for dosage, duration, and effectiveness.

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