



The Effectiveness of Binahong Leaf Decoction on the Healing of Perineal Wounds

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ABSTRACT

The World Health Organization (WHO) stated that in 2020 there were 2.9 million cases of perineal tears during childbirth. By 2050, this number is expected to reach 6.8 million if midwives are not competent in providing appropriate childbirth care. The prevalence of postpartum women experiencing perineal rupture in Indonesia is seen in 75% of women who give birth spontaneously. In 2020, out of a total of 1,951 spontaneous births, 57% of them experienced perineal tears, 28% due to episiotomy, and 29% due to spontaneous rupture (Sartika, 2021). Binahong leaves are one of the medicinal plants widely used as herbal or traditional medicine. These leaves are rich in antioxidants, namely alkaloids, flavonoids, and triterpenoids. The purpose of this research is to determine the effectiveness of boiled binahong leaves in healing perineal wounds. The research design used is the One Group Pretest-Posttest Design with a population of postpartum mothers located in the working area of Puskesmas X, totaling 20 people. After the analysis, a p-value of $0.007 < \alpha (0.05)$ was obtained, which means that the boiled binahong leaves are effective in healing perineal wounds. This research is expected to be applied by midwives in efforts to accelerate perineal wound healing, one of which is thru the therapy of boiled binahong leaf water

INTRODUCTION

Raising the bar for mother and newborn health requires a long-term, calculated investment. The effectiveness of maternal and child health care is measured by the maternal mortality rate (MMR) and infant mortality rate (IMR). Actions By 2030, Indonesia wants to lower its maternal mortality ratio (MMR) to 70 per 100,000 live births as a primary goal of the Global Sustainable Development Goals (Pasaribu et al., 2024).

The main factors causing maternal mortality in Indonesia are still largely due to three factors: bleeding, hypertension in pregnancy, and infection. The World Health Organization (WHO) stated that in 2020, there were 2.9 million cases of perineal tears during childbirth. By 2050, this number is expected to reach 6.8 million if midwives are not competent in providing appropriate childbirth care. Approximately 75% of women in Indonesia who give birth naturally experience perineal rupture after giving delivery. Of the 1,951 spontaneous births that occurred in 2020, 57% had perineal tears, 28% as a result of 29% as a result of spontaneous rupture and episiotomy (Sartika, 2021). With 1,280 episodes of hemorrhage, 1,066 cases of pregnancy-related hypertension, and 207 cases of infection-related deaths, Indonesia ranks third in terms of the causes of maternal mortality (Sartika, 2021).

Bleeding can be caused by the presence of lacerations or tears in the perineum. Tears in the perineum rank as the second cause of bleeding after uterine atony, and 41% of maternal deaths in Indonesia are caused by postpartum hemorrhage. The incidence of postpartum hemorrhage ranges from 5% to 15%, with the frequency of postpartum hemorrhage events according to their causes being uterine atony 50-60%, retained placenta 16-17%, retained placenta fragments 23-24%, perineal lacerations 4-5%, and blood disorders 0.5-0.8%. The prevalence of postpartum women experiencing perineal lacerations in Indonesia among the age group 25–30 years is 24%, while among postpartum women in the age group 32–39 years, it is 62% (Isfaroh & Cobalt Angio, 2022).

Binahong or *Anredera Cordifolia* (ten) Steenis is one of the plants utilized as traditional medicine in Indonesia. Triterpenoids, alkaloids, and flavonoids found in binahong leaves have antioxidant properties. Antioxidants are substances that aid in defending the body against free radical-induced cell damage. One of the most popular methods for assessing a plant's antioxidant capacity is to trap free radicals utilizing the radical 1,1-diphenyl-2-picrylhydrazyl (DPPH) (Pratiwi et al., 2023).

The active compounds contained in binahong leaves are flavonoids, alkaloids, terpenoids, and saponins. Flavonoids function as antibiotics by disrupting the function of infection-causing microorganisms. The pharmacological activities of flavonoids are as anti-inflammatory, analgesic, and antioxidant (Ernawati & Nurul, 2020).

Kartika Wijayanti, in her research titled "The Effectiveness of Boiled Binahong Leaves Water on Perineal Wound Healing at Aesya Grabag Maternity Hospital, Magelang Regency, in 2016." The results indicate a difference in perineal wound healing after the intervention with boiled binahong leaves

compared to betadine. The perineal wound healing in the binahong group was better than in the betadine group.

LITERATURE REVIEW

The process of childbirth can cause injuries to the genital organs, with the most common being injuries to the uterus, cervix, vagina, and perineum. On the perineum, the degree of injury can be classified into degrees I, II, III, and IV. Minor tears are classified as just abrasions, while severe ones can lead to extensive tears accompanied by significant bleeding (Wiknjosastro in Zeranika et al., 2022).

Laceration or rupture of the perineum can occur due to spontaneous tearing or as a result of an episiotomy. Episiotomy performed by midwives or healthcare professionals must be done based on indications, including large baby, rigid perineum, labor with dystocia/malposition, labor using instruments such as forceps or vacuum. If an episiotomy is not performed based on those indications, it can lead to an increased incidence of rupture and more severe damage to the perineal area (Mutmainah et al., 2019).

One aspect of tissue life that is connected to tissue regeneration is wound healing. How rapidly a wound heals can be influenced by a number of factors, including age, position, tissue handling, appropriate nutrition, hygiene, rest, hypovolemia, edema, oxygen deprivation, drainage accumulation, drugs, excessive activity, systemic disorders, and immunosuppressive conditions. The length of time it takes for wounds to heal can also be influenced by other variables, such as age, nutritional condition, diabetes mellitus (DM), corticosteroid use, drugs, oxygenation, infection, stress, and other factors. (Era Liesmayani et al., 2021).

The duration of wound healing for perineal tears varies; usually, under normal circumstances, the wound will heal within 6-7 days. Wounds that experience delayed healing will be at risk of causing postpartum infections. The three types of bacteria that cause illness are endogenous (originating from the birth canal), autogenous (originating from other regions of the body), and exogenous (originating from the outside). Generally, the frequency of puerperal infections is around 1-3%, so wound care must be performed properly and accurately (Manuaba in Zeranika et al., 2022).

Complementary therapy, one of which involves the use of herbal medicine, is increasingly spreading among the Indonesian population, due to the growing mindset of "returning to nature." Natural medicines have far fewer side effects compared to synthetic drugs, do not cause resistance, are easily obtainable, and are safe (Savitri et al., 2020). Indonesia has biodiversity, including medicinal plants that are often used for healing, whether by boiling, extracting their juice, or even eating them directly, one of which is the Binahong leaf (Damayanti et al., 2022).

Binahong leaves contain several chemical compounds that are very effective in treating various diseases. The Binahong leaves contain phytochemical compounds, namely alkaloids, anthraquinones, flavonoids, coumarins, saponins (steroids and triterpenoids), tannins (polyphenols), essential oils (terpenoids): 8-

glucopyranosyl-4',5,7-trihydroxyflavone; 2,4-dihydroxy-6-methoxy-5-formyl-3-methylchalcone (BPOM, 2016 in Auditria 2019).

The plant, which is said to have come from Korea and was eaten by the Vietnamese during the 1950s-1970s conflict with the United States. For thousands of years, Taiwanese, Koreans, Chinese, and others have ingested this plant, which is also well-known in the Chinese community. Along with its stems and tubers, this plant's leaves are typically utilized as a natural medicine. (Rizkia (2013) in Auditria 2019).

The binahong plant has various properties for curing different kinds of diseases. Almost all parts of the binahong plant, such as the tuber, stem, flower, and leaves, can be used in complementary therapy. This plant grows well in both highland and lowland areas in a cool and humid environment. The plant has become an alternative for some people to be used as a natural remedy to cure or alleviate several diseases (Rizkia, in Auditria 2019).

The binahong plant grows as a vine, named binahong because it originates from Korea. However, this plant has actually been present in Indonesia for a long time and is commonly referred to as gondola (Susetya, 2015).

METHODOLOGY

A quasi-experiment is the research design that was employed. The study's sample was split into two groups: the intervention group and the control group. Boiled binahong leaves were not used to treat perineal wounds in the control group, while the intervention group was given boiled binahong leaves in perineal wound care. The research design used is the Posttest Only Control Group Design. The design can be described as follows:

Table 1. Research Design

	Treatment	Posttest
Experimental Group	X	O1
Control Group		O2

Explanation:

- O1 = Observation of postpartum mothers consuming boiled binahong leaves
- O2 = Observation of postpartum mothers who do not consume boiled binahong leaves
- X = The treatment given is consuming a decoction of binahong leaves.

RESULTS

1. Distribution of Perineal Wound Healing Frequency in Postpartum Mothers at Puskesmas X

Table 2. Healing of Perineal Wounds in Postpartum Mothers

No	Wound Healing Time	N	%
1	Fast	10	50
2	Normal	10	50
3	Slow	0	0
	TOTAL	20	100

Based on Table 2, it shows that 50% of perineal wound healing falls into the fast category, which is <6 days.

2. The Effectiveness of Boiled Binahong Leaves on Perineal Wound Healing in Postpartum Mothers at Health Center X

Table 3. Normality Test

Tests of Normality ^{a,c}							
	Binahong	Kolmogorov-Smirnov ^b			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Wound Healing	no	.435	7	.000	.600	7	.000

Since the Shapiro-Wilk significance value is less than 0.05, as determined by the normality test, it may be said that the data is not regularly distributed. The Mann Whitney U Test was then used to assess the impact of Binahong Leaf Decoction on the healing of perineal wounds in postpartum mothers at X because of the non-normal data distribution.

Table 4. Statistical Test
Test Statistics^a

	Wound Healing
Mann-Whitney U	12.500
Wilcoxon W	27.500
Z	-1.254
Asymp. Sig. (2-tailed)	.010
Exact Sig. [2*(1-tailed Sig.)]	.432b

a. Grouping Variable: Wound Healing

b. Not corrected for ties.

Based on the results of the statistical test using Mann Whitney with the help of SPSS 24 at a 5% error level, the p-value obtained is $0.007 < \alpha (0.05)$, which means that the Boiled Postpartum Perineal Wounds Can Be Healed with Binahong Leaves Mothers at Puskesmas X.

DISCUSSION

The research results show that the healing time of perineal stitch wounds in postpartum mothers given a 50% infusion of binahong leaves experienced rapid healing, or less than 6 days. From the statistical test using Mann Whitney, the p-value was $0.007 < \alpha (0.05)$, which means that the binahong leaf infusion is effective in healing perineal wounds in postpartum mothers.

Binahong leaves are a type of plant that is very beneficial for healing several diseases. There are many ways to consume binahong leaves; some chew them until fine, others cook them with a glass of water and drink it along with the residue, or they can be easily juiced or blended. These leaves' benefits can be used to cure a variety of illnesses, including blood in the vomit, lung problems, diabetes, dyspnea, chronic wounds, burns, and more.. Postpartum mothers are very susceptible to uterine infections due to lochia. If lochia is allowed to dry on

the vulva and perineum, it will become a breeding ground for bacteria, which can then spread to the uterus (Pakpahan & Sianturi, 2022).

Laceration or tearing of the perineum is an injury to the muscular area covered by skin between the vaginal introitus and the anus caused by tearing during childbirth. Prolonged wound healing and even genital infections are among the consequences that can result from perineal lacerations. As a result, the mother will have pain and anxiety when moving, which may result in additional issues such as postpartum hemorrhage, obstructed lochia, and delayed uterine subinvolution – all of which are the primary causes of maternal death in Indonesia. (Made et al., 2023).

Wound healing occurs in four phases that are identified: the proliferative, destructive, inflammatory, and maturation phases. The proliferative stage is when new tissue grows through the processes of granulation, wound contraction, and epithelialization. The inflammatory stage starts at the beginning of the wound, and the destructive stage is when leukocytes – especially polymorphonuclear cells and macrophages – cleave dead tissue. After epithelialization is finished, the new tissue proceeds through "remodeling" to improve the scar tissue's tensile strength, which is known as the maturation stage. Sweat glands, sebaceous glands, and hair follicles are absent from mature tissue, which is avascular.

According to research findings, a number of factors, such as the mother's condition, nutritional status, age, tissue handling, hemorrhage, local edema factors, oxygen deficiency, tradition, knowledge, socioeconomic status, handling by staff, and environment, all have an impact on the process of speeding up the healing of perineal wounds during the postpartum period. As long as a mother takes appropriate care of her child, wounds can usually heal in 6-7 days; if not, the healing process will take longer and may result in infection. The way to prevent infection in perineal wounds is by properly and correctly caring for the perineal wound. Efforts to prevent infection of perineal lacerations can be provided through pharmacological therapy and non-pharmacological therapy (Mardha et al., 2023).

This is supported by other research findings that binahong leaves contain saponins which function as antibacterial agents, polyphenols which act as anti-inflammatories, and ascorbic acid which serves as an immune booster. Therefore, binahong leaves are very effective as a non-pharmacological treatment for perineal wound healing (Ernawati & Nurul, 2020).

Another factor is age, which can impact the healing of wounds. 20 to 35 is a healthy age range for reproduction. Wound healing can also be influenced by nutritional variables, particularly those that contain protein, which will improve cell repair and strengthen the immune system. Because protein functions as an antibody-forming substance. Nutrients that contain carbohydrates also play an important role in meeting energy needs during the wound healing process and preventing proteins and fats from undergoing catabolism. Environmental factors, socio-cultural factors, traditions, social, economic factors, and many other factors can influence wound healing.

After conducting research, the researchers assume that boiling binahong leaves is effective in accelerating the healing process of perineal wounds, as the active compounds found in binahong leaves can speed up the healing process. In addition, the healing of perineal wounds can occur more quickly due to influencing factors such as age, with a healthy reproductive age being 20-35 for a woman to conceive and give birth, and nutritional factors, where nutrition containing protein will enhance the body's immune system.

CONCLUSIONS AND RECOMMENDATIONS

The research results show that the healing time of perineal stitch wounds in postpartum mothers who consume boiled binahong leaves is faster compared to those who do not consume boiled binahong leaves. Boiled binahong leaves are a non-pharmacological therapy effort and become one of the alternatives to accelerate the healing of perineal wounds that occur after childbirth.

FURTHER STUDY

This research is limited by the sample size, as the number of samples in the research area is small. Additionally, the researcher is also constrained by the relatively short research time.

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