

The Effect of Red Betel Leaves (*Piper Crocatum*) Boiled Water On The Perineal Wounds Healing In Public Health Center Of Karangpawitan Of Garut Regency In 2021

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ABSTRACT

Background: Based on the annual report of the Karangpawitan Health Center in 2020 there were 231 cases of postpartum women (29.3%) who experienced perineal injuries from 786 mothers who gave birth. In the first trimester of 2021, there were 56 cases of postpartum women (21.2%) who experienced perineal injuries from 263 women who gave birth. Meanwhile, cases of perineal wound infection in the first trimester of 2021 were 3 cases. Perineal wound care is expected to prevent infection, increase comfort and accelerate healing.

Purpose: This study aimed to determine the effect of giving boiled red betel leaf water on perineal wound healing at the Karangpawitan Health Center, Garut Regency.

Methods: This study was a quasi-experimental pretest posttest with control group design. The population in this study was 44 pregnant women in June 2021 who were divided into two groups, 22 experimental people and 22 controls, the sample technique used total sampling. The instrument used was a wound measurement questionnaire with the REEDA scale. Data analysis using Wilcoxon test.

Results: the average perineal wound healing in the control group before the intervention was 6.86 and after the intervention was 1.86. While the experimental group before the intervention was 6.95 and after the intervention was 0.64. Bivariate results showed a p-value of 0.000 < 0.05, meaning that there was an effect of using boiled red betel leaf water on perineal wound healing.

Conclusion: There was an effect of using boiled red betel leaf water on perineal wound healing.

Keywords: Perineal Wound, Post Partum, Red Betel.

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BACKGROUND

Maternal death is caused by several direct causes, one of them is postpartum infection which is caused by perineal wound emerged due to the lack of perineal hygiene. In this case, efforts are needed to prevent the perineal infection by treating the wound. The treatment can be done by squatting or sitting using a bath seat and then washing the perineal wound using antiseptic liquid (Satriani & ST, 2021).

According to the World Health Organization (WHO) there were 830 women died every day due to complications suffered during pregnancy or childbirth in 2017. Therefore, the global maternal mortality risk needs to be reduced from 216,100,000 live births in 2015 to 70/100,000 live births in 2030 (Hanum & Liesmayani, 2020). In this case, the Sustainable Development Goals (SDGs) needs a global annual reduction rate of at least 7.5%, which is more than three times the annual rate, achieved between 1990 and 2015. Furthermore, the world maternal mortality rate in 2014 was 289,000, of which there were 9,300 people in the United States, 179,000 people in the North Africa, and 16,000 in the countries of Southeast Asia. Most maternal deaths can actually be prevented through medical intervention, which is actually well known. Therefore, it is very important to increase women's access to quality care before, during, and after pregnancy (Ministry of Health of the Republic of Indonesia, 2017).

Indonesian Demographic and Population Survey (IDHS) has been conducted in 2016 and revealed that the Maternal Mortality Rate in Indonesia was 412 per 100,000 live births. This rate is directly caused by bleeding by 22%, preeclampsia and eclampsia by 45%, prolonged labor by 26%, and abortion complications by 18% (HERIANI, 2019).

Furthermore, in West Java Province, there were 416 maternal death cases in 2020. This rate is similar to the case that occurred in 2019 which is 417 cases and mostly caused by preeclampsia cases by 29%, bleeding by 28%, infection by 4%, metabolic disorders by 3%, blood disorders by 12%, and others by 24%. Garut Regency, particularly, is the third most contributor to maternal mortality cases in West Java in 2020 with 31 cases after Bogor Regency and Karawang Regency (Health Office of West Java, 2020).

Red betel leaf or piper crocatum extract, in this case, can be utilized since it contains antiseptic and anti-bacterial chemicals. Red betel leaf contains twice higher the antiseptic effect than the green betel leaf since the chemical contained by red betel leaf includes essential oils, hydroxykavikol, chavicol, chavibetol, allylpyrocatechol, carvacol, eugenole, p-cymene, cineole, caryophyllene, codimen estragole, terpene, and phenyl propanol (Damarini, Eliana, & Mariati, 2013).

METHODS

This research was conducted through Quasy-Experimental Research using Pretest - Posttest with control group design. Furthermore, the research population involved is 44 postpartum mothers who have perineal wounds and give birth in Public Health Center of Karangpawitan of Garut Regency in July-August 2021. In this case, the sampling was carried out through total sampling.

RESULT

Univariate Analysis

Table 1.1.
Mean of Perineal Wounds Healing Before and After Intervention in Public Health Center of Karangpawitan of Garut Regency in 2021

	Experimental Group				Mean Difference	Control Group				Mean Difference
	N	Min	Max	Mean		N	Min	Max	Mean	
Pre-Test	22	5	9	6.95	6.31	22	5	9	6.86	5
Post-Test	22	0	2	0.64		22	0	5	1.86	

Based on table 1.1 above, before the intervention in the forms of red betel leaves boiled water was given to the 22 respondents in the experimental group, the lowest score is 5, the highest score is 9, and the average score is 6.95. Meanwhile, after the intervention was carried out, the lowest score is 0, the highest score is 2, and the average score is 0.64 with an average difference of 6.31. Furthermore, in the case of the control group before intervention was carried out, the lowest score is 5, the highest score is 9, and the average score is 6.86. Meanwhile, after the intervention was carried out in the control group, the lowest score is 70, the highest score is 5, and the average score is 1.86 with an average difference of 5.

Bivariate Analysis

Table 1.2. Normality Test Results

Results	Experimental Group		Control Group	
	N	p-value	N	p-value
Pre-Test	22	0.003	22	0.002
Post-Test	22	0.000	22	0.000

Table 1.2 above shows that the significance level of all data is < 0.05 , indicating that the research data were not distributed normally. Thus, the data analysis technique used was non-parametric test, which is *Wilcoxon Signed Ranks Test* and *Mann-Whitney Test* with the following analysis results:

Table 1.3.
Difference on the Provision of Red Betel Leaves Boiled Water on Perineal Wound Healing between Experimental and Control Groups

Groups	Post-Test		p-value	N
	Mean	Std. Dev		
Experimental	0.64	0.902	0.005	22
Control	1.86	1.612		

Based on table 1.3, the p-value obtained is $0.005 < 0.05$, indicating that there is a difference in the mean results of the perineal wound examination between those who obtained the intervention in the form of giving red betel leaves boiled water and those who did not obtain the intervention. Therefore, it can be concluded that the red betel leaves boiled water affected the perineal wound healing at the Public Health Center of Karangpawitan, Garut Regency in 2021.

DISCUSSION

Based on the results of the current research, it was revealed that in the case of the experimental groups, which contained 22 respondents before obtaining intervention in the form of red betel leaves boiled water, the lowest score is 5, the highest score is 9, and the average score is 6.95. Meanwhile, after the group obtained intervention, the lowest score is 0, the highest score is 2, and the average score is 0.64 with an average difference of 6.31. Furthermore, in the case of the control group before obtaining the intervention, the lowest score is 5, the highest score is 9 and the average score is 6.86. Meanwhile, after the control group obtained intervention, the lowest score is 70, the highest score is 5, and the average score is 1.86 with an average difference of 5.

The perineal wound is a condition where the continuity of body tissue is damaged, causing disruption on body functions and trauma which causes skin wounds, thus disturbing the daily activities (Puspita Fitriana, 2019). Wounds are divided into two types, those are intentional wounds and unintentional wounds. Intentional wounds are injuries exposed to radiation or surgery, while unintentional injuries are divided into closed wounds and open wounds (Morison, 2004). In the field of midwifery, the wounds that often occur are episiotomy wounds, surgical wounds due to cesarean section, or wounds during the delivery process (Rofiah, 2020).

Statistical test was also conducted in the current research in the forms of the Wilcoxon Signed Ranks Test, in which a p-value of $0.000 < 0.05$ was obtained. This indicates that the provision of red betel leaves boiled water on perineal wound healing at the Public Health Center of Karangpawitan, Garut Regency in 2021. Furthermore, in the case of the control group, the p-value obtained is $0.000 < 0.05$. Therefore, it can also be concluded that there is a difference in the mean results of the respondent's perineal wound examination for both pre-test and post-test of the control group.

In this case, midwives need to master wound treatment. The main principle in wound care management is infection control because infection inhibits the wound healing process, increasing the morbidity and mortality risk. Postoperative wound infection is one of the main problems in surgical practice (Puspitasari & Sumarsih, 2011).

Based on the results discovered in the current research, these results are in line with the theory proposed that perineal wounds healing care can be done through both pharmacological and non-pharmacological methods (Susilawati & Ilda, 2019). In pharmacological method, it can be carried out by giving antiseptic drugs. However, antiseptic or antibiotic treatment for perineal wound care currently tends to be avoided. The reason is that some antibiotics should be avoided during lactation because the amount is very significant and risky (Rostika, Choirunissa, & Rifiana, 2020). Therefore, in this case, midwives advise postpartum mothers to use betel leaves as a medicine to accelerate the healing of perineal wounds (Elisabet, 2017). Betel leaf contains chavicol, which has the function of killing germs, as antioxidants, as fungicides, and as antifungals. Moreover, the chavicol contained in betel leaves contains antiseptic which can accelerate the healing of perineal wounds (Pratiwi Kusuma, 2020). In addition, red betel leaves (*piper crocatum*) have a distinctive smell due to its content of 1-4.2% essential oil, water, protein, fat, carbohydrates, calcium, phosphorus, vitamins A, B, C, iodine, sugar, and starch. Among these contents, there are natural phenols contained in essential oils whose antiseptic content is 5 times stronger than ordinary phenols (bactericidal and fungicidal). Essential oils are volatile oils and contain a distinctive smell or fragrance. The essential oil of betel leaf contains 30% phenol and some of its derivatives. Essential oils consist of hydroxyl chavicol, chavibetol, estragole, eugenol, methyl eugenol, carbachol, terpene, sesquiterpene, phenylpropane, and tannins. In this case, chavicol is the most abundant component in the

essential oil which has a distinctive smell of betel. According to Manoi (2017) chavicol is easily oxidized and can cause color changes (Ernawati, 2018).

Furthermore, the alkaloid compounds in red betel leaves have a function as antibacterial through the mechanism of peptidoglycan components in bacterial cells. Therefore, it can cause the bacterial cell wall layer is not entirely formed and cause bacterial cell death. Furthermore, tannin compounds are beneficial as an antibacterial with a tannin mechanism that can damage bacterial cell membranes. Tannin astringent compounds can induce the formation of complex compounds binding to enzymes or microbial substrates. Meanwhile, saponin compounds can trigger the formation of collagen by forming new tissue, namely structural proteins that take a role in the wound healing process. Since saponin compounds are beneficial as an antiseptic, it is very effective for healing open wounds. Therefore, it can be proven that red betel leaf can be used as an antibacterial to heal wound in rats infected with *Staphylococcus aureus*.

The results obtained in this research is in line with previous research conducted by Mulyati (2017), showing that almost all postpartum mothers who did not use betel leaf extract experienced slow healing by 90% on their perineal sutures. Meanwhile, those who used betel leaf extract were mostly experienced fast healing by 85% with a P value (0.000) < (0.05)

Based on the results of research in the field, researchers concluded that respondents who obtained red betel leaves boiled water had faster perineal wounds faster healing than those who did not obtain the red betel leaves boiled water. This is due to the chemical content of red betel leaf which can accelerate the wound healing process.

CONCLUSION

The mean of perineal wounds healing on experimental group before obtained intervention is 6.95, while after the intervention is 0.64. Meanwhile, on the control group, the value is 6.86 before obtaining the intervention, while after the intervention is 1.86.

There is an effect of the use of red betel leaves boiled water on the perineal wound healing in Public Health Center of Karangpawitan of Garut Regency in 2020.

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