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The Effectiveness of Virgin Coconut Oil (VCO) and Red Betel Leaf Infusion on The Healing Time of Second-Degree Perineal Lacerations in Postpartum

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ABSTRACT

The cause of infection in postpartum women is due to the perineal wound. Data released from Purbalingga district health office in 2022, Kutawis Health Center ranked second in the incidence of perineal wound infection. Virgin Coconut Oil (VCO) and red betel leaf are known contains chemicals that are antiseptic and antibacterial. The purpose of this study was to determine the effectiveness of VCO and red betel leaf water decoction on the healing time of perineal lacerations of grade II postpartum women in the Kutawis Health Center working area of Purbalingga Regency. This type of research uses quasy experimental design, two group pretest posttest design. The sample of this study are 34 people taken using accidental sampling. The sample was divided into 2 groups. Data analysis using Mann Whitney test. The results of the intervention group obtained p value <0.025. (p-value <0.05). It can be concluded that there is a significant difference between groups using VCO and red betel leaf water decoction. An average wound healing using VCO 6.17 days and the group using red betel leaf decoction on average healed 5.58 days. Based on the research, it is known that there is a difference in the healing time of perineal wounds between treatments using VCO and red betel leaf water decoction. Treatment using red betel leaf is faster wound healing than treatment using VCO. From the results of this study it is hoped that it can be applied independently so that it can accelerate the healing of lacerations.
Keyword: Virgin Coconut Oil (VCO); Red Betel Leaf; Perineal Wound Healing Duration

Introduction

"The maternal mortality rate during pregnancy, childbirth, and postpartum period is relatively high in Indonesia. Every month, the Indonesian government seeks ways to reduce the maternal mortality rate in the country. One of these efforts includes testing the Sustainable Development Goals' (SDGs) program. The Sustainable Development Goals comprise 17 objectives for the next 15 years until 2030. The third goal of sustainable development is to reduce the maternal mortality rate to below 70/100,000 live births [2].

With the implementation of the Family Health Program by the Ministry of Health from 2019 to 2021, the cases of maternal mortality in Indonesia continue to rise. In 2020, the total number of maternal deaths was 4,627 cases, and in 2021, the total maternal deaths increased drastically to 7,389 cases. In 2021, there were 2,982 cases due to COVID-19, 1,330 due to bleeding, 1,077 due to gestational hypertension, and 207 due to infections resulting in maternal deaths. In 2021, maternal mortality increased due to the presence of COVID-19 [13].

In Central Java, the maternal mortality rate almost doubled in 2021, with 55.2% of maternal deaths caused by COVID-19 infections. The total number of maternal deaths in Central Java in 2021 was 1,030. The second highest cause was high blood pressure during pregnancy at 16.0%, followed by bleeding at 11.5%, and infections at 10.7 [6].

In 2021, there were 27 maternal deaths in Purbalingga Regency. This year saw an increase from 12 cases in 2020 to 81.04 cases. 18 mothers died during pregnancy, 3 during childbirth, and 6 during the postpartum period [6].

Infections are common after childbirth. According to reports from the Ministry of Health of Indonesia from 2019 to 2021, transmission still ranks first among the 5 most common causes of maternal mortality in Indonesia [6].

Mothers can experience infections during pregnancy and childbirth. Postpartum infections are caused by bacterial infections originating from the reproductive tract during delivery [15]. These infections are characterized by a body temperature increase of 38°C or higher for more than 2 days during the first 10 days after birth, excluding the first 24 hours [18]. Untreated infections can lead to sepsis, resulting in organ dysfunction due to weakened body response to infection. Sepsis is a life-threatening condition. Septic shock is a blood circulation and cellular metabolism disorder [21].

One of the causes of postpartum infections in mothers is perineal wounds. The incidence of perineal infections increases when mothers do not maintain personal hygiene and do not meet the criteria for treating second-degree perineal lacerations. Some mothers experience perineal rupture either through natural tearing or episiotomy [31].

Minister of Health Regulation Number 28 of 2017 regarding midwife practice permits and activities in Article 19 outlines the authority of midwives. Midwives are authorized to perform episiotomy and stitching for first and second-degree perineal lacerations. For cases of third and fourth-degree perineal lacerations, stitching is done in conjunction with a doctor [4].

Information from the Ministry of Health Indonesia (2017) states that 75% of perineal tears in Indonesia occur during vaginal delivery. In 2017, out of 1951 spontaneous vaginal deliveries, 57% of mothers had a history of perineal stitching (28% episiotomy and 29% spontaneous rupture). Research conducted by the Bandung Research and Development Center (Puslitbang) in the Indonesian Province shows that one in five mothers with perineal rupture experiences a mortality rate of 21.74% [20].

Postpartum mothers with a history of perineal rupture must maintain good personal hygiene to avoid infections during the postpartum period. Appropriate antiseptic measures are also necessary because various bacteria and germs enter the body exogenously (from outside), autogenously (from elsewhere in the body), and endogenously (from the birth canal) [21].

The treatment of perineal tears in the latest Normal Childbirth Care (NCC) system no longer recommends treating perineal tears with povidone iodine [22]. The latest NCC treatment regulates perineal wound care, emphasizing clean and dry principles. However, in practice, povidone iodine is often used to treat perineal tears [16]. On perineal tears can be treated with complementary treatment. Complementary treatment is often referred to as conventional treatment. The use of traditional medicine in healthcare is practiced in several developed countries and its effectiveness is recognized through various studies supported by the World Health Organization [16].

The use of herbal medicine to improve the health of mothers giving birth in Indonesia has expanded, and the culture holds firmly to traditions passed down through generations. Article 1 Paragraph 16 of the Indonesian Health Law No. 36 of 2009 states: "Traditional health services are treatments and/or medications related to experiences and skills passed down empirically that can be considered and applied in accordance with prevailing standards in society" [11].

A literature review on the use of herbs in perineal wound healing by healthcare experts concludes that traditional or complementary therapy using natural ingredients is effective in treating perineal wounds [19]. For example, the use of virgin coconut oil (VCO), betel leaves, aloe vera, cinnamon, gotu kola, and green tea has been proven effective in relieving perineal pain and speeding up perineal tear healing.

Various recent developments and insights into perineal care and evidence-based practice allow midwives to provide appropriate and evidence-based midwifery care [28]. More research is needed to generalize efforts to improve comfort for postpartum mothers, reduce perineal pain, and accelerate proper healing [10].

These findings are supported by studies [22], and [8], which show that healing time for perineal wounds with virgin coconut oil (VCO) results in faster drying compared to standard wound care [1]. Show in their research that treating perineal wounds with red betel leaf infusion is usually faster in perineal laceration healing.

The effectiveness of healing time for perineal wounds using virgin coconut oil (VCO) [8]. Found that virgin coconut oil (VCO) can accelerate

The purpose of this study was to determine the effectiveness of VCO and red betel leaf water decoction on the healing time of perineal lacerations

of grade II postpartum women in the Kutawis Health Center working area of Purbalingga Regency.

Methods

This study was conducted from February to April 2023 in the Kutawis Community Health Center area of Purbalingga Regency. The research design used in this study is quasi-experimental, employing a two-group post-test only design without a control group. The sample size for this research was 34 individuals selected using accidental sampling. Data analysis was conducted using the Mann-Whitney test. Data assessment in this study was done using a checklist scoring scale called the REEDA scale**.** Ethical clearance No. 0160/EA/KEPK/2023.

Results and Discussion

Tabel 1. Distribution of Respondent Characteristics

Respondents Characteristic	Category	Group			
		VCO		The Red Betel Leaf	
		F	%	F	%
Age	Health Reproductive Organs	17	100	17	100
	High Righ	0	0	0	0
BMI	Underweight				
	Normal	5	29,4	5	29,4
	Overweight	12	70,6	12	70,6
Education	Basic Education	7	41,2	7	41,2
	Secondary Education	6	35,3	6	35,3
	High Education	4	23,5	4	23,5
Parity	Primigravida	7	41,2	7	41,2
	Mulitgravida	10	58,8	10	58,8

Table 2. Healing Time for Perineal Wounds (Days)

Kelompok	N	Min	Max	Mean
Virgin Coconut Oil (VCO)	17	5	7	6,17
The Red Betel Leaf	17	5	7	5,58

Table 3. Difference in Healing Time of Perineal Wounds between Treatment Using Virgin Coconut Oil (VCO) and Red Betel Leaf Infusion

Dependent Variable	Intervention	N	Mean	Median	Nilai p
Healing Time of Perineal Wounds	VCO	17	6,17	6	0,025
	The Red Betel Leaf	17	5,58	5	

*Mann Whitney U Test

Table 1 shows the characteristics of respondents in the VCO group, where the majority have healthy reproductive age, overweight nutritional status, basic education level, and a history of multigravida. The number of respondents with healthy reproductive age is 17 respondents (100%), with overweight nutritional status being 12 respondents (70.6%), basic education level being 7 respondents (41.2%), and a history of multigravida being 10 respondents (58.8%).

The results table 3 of the difference test for the healing time of perineal wounds based on the Mann-Whitney test analysis show a p-value of 0.025 (p <0.05) between the virgin coconut oil (VCO) group and the red betel leaf infusion group. This indicates a significant difference between the treatment groups using virgin coconut oil (VCO) and red betel leaf infusion for perineal wounds. This is supported by the average healing time of perineal wounds in the red betel leaf infusion group being 5.58 days, while the average healing time in the VCO group is 6.17 days.

The characteristics of respondents in the red betel leaf infusion group mostly include healthy reproductive age, overweight nutritional status, secondary education, and a history of multigravida. The number of respondents with healthy reproductive age is 17 respondents (100%), with overweight nutritional status being 12 respondents (70.6%), secondary education level being 8 respondents (47.0%), and a history of multigravida being 11 respondents (64.7%).

Table 2 shows that respondents in the group using virgin coconut oil (VCO) and red betel leaf infusion had the fastest recovery on day 5 and the

longest recovery on day 7. The average recovery time for the virgin coconut oil (VCO) group was 6.17 days, while the red betel leaf infusion group had an average recovery time of 5.58 days.

Difference in Healing Time of Perineal Wounds between Treatment Using Virgin Coconut Oil (VCO) and Red Betel Leaf Infusion. The bivariate analysis aims to use statistical tests to determine the difference in healing time of perineal wounds in postpartum mothers using treatment with virgin coconut oil (VCO) and red betel leaf infusion. In this study, a normality test was conducted using Shapiro-Wilk due to the sample size being 34 respondents (less than 50 respondents).

After conducting the normality test, the p-value obtained was 0.003 for the treatment group with virgin coconut oil (VCO) and 0.001 for the treatment group with red betel leaf infusion. Both the VCO group and the red betel leaf infusion group had p-values<0.05, indicating non-normal distribution of data, thus analyzed using the Mann-Whitney U test.

Data analysis using the Mann-Whitney U test at a significance level of 5% resulted in a p-value of 0.025 (p-value<0.05), indicating a significant difference in healing time of perineal wounds between the VCO and red betel leaf infusion groups. This is evidenced by the average healing time of perineal wounds in the red betel leaf infusion group being 5.58 days, while the average healing time in the VCO group is 6.17 days, indicating that perineal wounds heal faster when treated with red betel leaf infusion compared to virgin coconut oil (VCO).

This study shows that the treatment of perineal lacerations is not limited to medical treatments alone but can also include traditional treatments [17]. In medical treatment, antibiotics are more commonly used orally to minimize antibiotic resistance [7].

One traditional treatment for perineal lacerations is using red betel leaf infusion. This is done by washing in the morning and evening. Besides accelerating wound healing, red betel leaf infusion can also eliminate the unpleasant odor of blood during the postpartum period. Red betel leaf consists of several chemical compounds including flavonoids, alkaloids, tannins, and essential oils that have antimicrobial properties [24].

According to the research [3], red betel leaf infusion also removes unpleasant odors in the genital area for mothers with postpartum perineal wounds.

A study found that red betel leaf extract in ethanol form has antibacterial properties against Staphylococcus aureus and Escherichia coli [25]. Red betel leaf also contains phytochemicals.

Conclusion

Based on the analysis and discussion by the researchers, the following conclusions can be drawn: The healing time for wounds in the virgin coconut oil (VCO) group ranges from 5 to 7 days, with an average perineal wound healing time of 6.17 days. The healing time for wounds in the red betel leaf infusion group also ranges from 5 to 7 days, with an average perineal wound healing time of 5.58 days. It can be concluded that there is a significant difference in the healing time of perineal wounds between treatment using virgin coconut oil (VCO) and red betel leaf infusion, with an average healing time of 6.17 days for VCO treatment and 5.58 days for red betel leaf infusion treatment. Therefore, it is concluded that treatment with red betel leaf infusion leads to faster wound healing compared to treatment with virgin coconut oil (VCO).

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