Original Research

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The Effectiveness of Betel Leaf Water on Perineal Wound Healing among Post-partum Mothers: A Literature Review

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Abstract

Background: Perineal injury is an injury on a urogenital diaphragm or levator ani muscle, which occurs during vaginal delivery and can occur without perineal skin or vagina injury, so it is not visible from the outside. Perineal wound healing can be done pharmacologically and non-pharmacological. Non-pharmacological therapy can be done by using betel leaf water. **Objective**: This study aims to determine the effectiveness of using betel leaf water in healing perineal wounds in post-partum mothers. **Method**: This literature review used the PRISMA flow chart 2020 to describe the efficacy of betel leaf water on perineal wound healing in post-partum mothers. **Result**: A review of eight articles showed that using betel leaf water significantly improved the perineal wound healing process in post-partum women with an average P-Value of <0.05. **Conclusion**: Giving betel leaf boiled water is effective in healing the perineal wound among post-partum mothers. **Recommendation**: Betel leaf water can be recommended as one of the interventions in healing perineal wounds post-partum.

Keywords: post-partum, betel leaf water, perineal wound

INTRODUCTION

Childbirth is the exit of the fetus, placenta, and amniotic membrane from the uterus through the birth canal (1) Normal labor consists of a regular progression of uterine contractions, progressive thinning and dilatation of the cervix, and advancement of presentation degradation. When the birth canal is inelastic during labor, it will trigger a wound in the birth canal. The perineal wound occurs in almost all the first childbirth, and it is not uncommon to appear in subsequent labor. Perineal wounds generally occur in the midline and can become widespread if the head of the fetus is born too quickly, the angle of the pubic arch is smaller than usual, and the head of the fetus passes through the upper door of the pelvis with a size larger than the suboccipital-bregmatic circumference (2).

Perineal wounds are injuries to the urogenital diaphragm and levator ani muscles, which occur at the time of everyday labor or childbirth with a tool and can occur without injury to the skin of the perineum or vagina so that it is not visible from the outside (2). Perineal injuries are a reasonably big problem in Asian countries because 50% of perineal injuries in the world occur in Asian countries (3). Perineal wounds are one of the causes of the high maternal mortality rate in Indonesia. The results of the Indonesian Demographic and Population Survey (SDKI) in 2016 show that the Maternal Mortality Rate in Indonesia reaches 412 per 100,000 live births. This figure is directly due to bleeding (22%), preeclampsia and eclampsia (45%), postmature (26%), and complications of abortion (18%) (SDKI, 2016). One of the causes of bleeding during childbirth is the occurrence of perineal wounds, with complications that can occur, namely bleeding, fistulas, and infections (4). Treatment of perineal wounds can be carried out by pharmacological and non-pharmacological means. Pharmacological therapy can be done by giving antiseptic drugs; however, antiseptic medicines or antibiotics for treating perineal wounds tend to be avoided. Some antibiotics should be avoided during breastfeeding, as their amount is significant and risky. This is one of the causes of using betel leaves to accelerate the healing process of perineal wounds in post-partum mothers.

Betel leaf in Latin, or Piper Betel, is a plant native to Indonesia that grows vines. Betel leaves have chemical content that acts as an antiseptic and antibacterial drug. The antibacterial effect of the green betel plant is due to the essential oil content of green betel leaves, whose main components consist of phenols and several derivatives, including eugenol and chavicol, which are efficacious as antibacterial (5). In addition, betel leaves also contain chemicals as an excellent anti-inflammatory to be used in mothers with wounds, especially perineal wounds, that can help accelerate wound healing.

In a study conducted by Sitepu, Hutabarat & Natalia (5), it was found that there was a difference in the degree of wound healing before and after being given the intervention of betel leaf water decoction, namely before the degree 0 intervention as many as 16 people with a percentage of 51.6% and after the degree 0 intervention as many as 26 people with a rate of 83.9%. Another study conducted by Supadmi, Farich, Putri & Lathifah (6) showed that there was a difference in the average duration of perineal wound healing in the group given betel leaf soaking intervention, i.e., the average period of perineal wound healing in the intervention group was 8.87 with a minimum value of 8 days and a maximum of 9 days, with a REEDA scale of less than 5. Meanwhile, in the control group, the average duration of perineal wound healing in the intervention group respondents was 8.87, with a minimum value of 8 days and a maximum of 9 days, with a REEDA scale of less than 5 (6). Many

factors can influence wound healing, even though getting the same intervention. So it is essential to carry out a literature-based identification to determine the supporting and inhibiting factors of intervention and wound healing.

Based on the description above, researchers are interested in conducting a literature review of the effectiveness of betel leaf water in healing perineal wounds in post-partum mothers. In addition, the results of this study are expected to be used as a source of information for health workers and the public in carrying out perineal wound treatment so that it can accelerate the healing of perineal wounds in post-partum mothers. Therefore, this study aims to determine the effectiveness of using betel leaf water in healing perineal wounds in post-partum mothers.

METHODS

Eligibility Criteria

The author used a quasi-experiment research article to describe the effectiveness of betel leaf water on perineal wound healing in post-partum mothers. Article inclusion criteria: 1) Articles published in 2018-2022; 2) Articles in English or Indonesian; 3) Full-text articles; 4) Samples of post-partum mothers; 5) Intervention: Use boiled betel leaf water; 6) Outcome: Post-partum perineal wound healing; 7) Primary research articles, not reviews; 8) Experimental research methods (RCT or Quasi-Experiment).

Information Sources

The author uses four databases: Pub Med, EBSCO-host ASC, ScienceDirect, and Google Scholar. The author also looked for articles that used English, and after selection, several relevant articles were obtained.

Searching Strategy

The author carried out several processes to obtain relevant articles regarding the effectiveness of betel leaf water on perineal wound healing in post-partum mothers. As a result, the author uses several keywords, including "Post-Partum Mother, "Betel Leaf Water," and "Perineal Wound Healing."

Table 1. PICO's Search Strategy

Picos Framework	Search Strategy
Populations	Post-Partum Mother OR Post-Partum Mother
Intervention	Betel Leaf Water Feeding
Comparison	-
Outcomes	Perineal Wound Healing
	RCTs, Quasi-Experimental,

Article Screening

This literature used the PRISMA flow chart 2020 to describe the effectiveness of betel leaf water on perineal wound healing in post-partum mothers, which can be seen in figure 1

RESULT

Characteristic of articles

The results table shows the characteristics of each article; it was found that all the articles reviewed came from Indonesia with a quasi-experimental research design.

Effectiveness of using betel leaf water for healing perineal wounds

The eight articles reviewed discussed the effectiveness of using betel leaf water for healing perineal wounds in post-partum mothers. The frequency and length of time for intervention varied in each article. Six of the articles mentioned the frequency and

duration of intervention, namely 5 and 10 days for 5 to approximately 90 days (3 months) (3, 7, 8, 9, 10, 11), with two of them providing intervention twice a day for 5 and 7 days (11, 7). Then two other articles only mentioned the time the intervention was given, namely 1 and 7 months (1, 6). So if it is concluded, in all articles, the frequency of interventions is 5-10 days, it can be done 1-2 times per day, the longest time for administration is 5 days, and the longest is 7 months.

Table 2. Study Included with JBI Critical Appraisal Tool

Author, Published Year	JBI Critical Appraisal Tool	Study Design
Rahayu et al., 2021 (1).	77,7% (7/9)	Quasi Experiment
Supadmi et al., 2021 (2).	88,8% (8/9)	Quasi Experiment
Siregar et al., 2020 (10).	77,7%	Quasi Experiment
Siagian et al, 2020 (3).	77,7%	Quasi Experiment
Harini et al, 2019 (8).	77,7%	Quasi Experiment
Rostika et al, 2020 (9).	77,7%	Quasi Experiment
Wanti & Sitanggang, 2018 (11)	66,6%	Quasi Experiment
Agustina, Noviyani, & Ciptiasrini, 2022 (7)	77,7%	Quasi Experiment

Length of time for perineal wound healing

Each article presents the results in calculating the length of time for perineal wound healing in the two study groups. Two articles only mention the overall wound healing time, namely 3 months 2 days from the intervention time of 3 months (8), and 5.8 days from the length of the intervention was 3 months (9). In the control group of six articles, the fastest perineal wound healing time was 3 days out of 5 intervention days (3), and the slowest was 10.87, rounded up to 11 days out of a total of 1 month of intervention time (6). Then in the intervention group or the group that received detailed treatment. It was found that the fastest time in the wound healing process was 2 days of the length of the intervention 5 days, 7 days, and 7 months (1, 3, 10), while the slowest was 8.87 rounded up to 9 days with a duration of intervention for 1 month

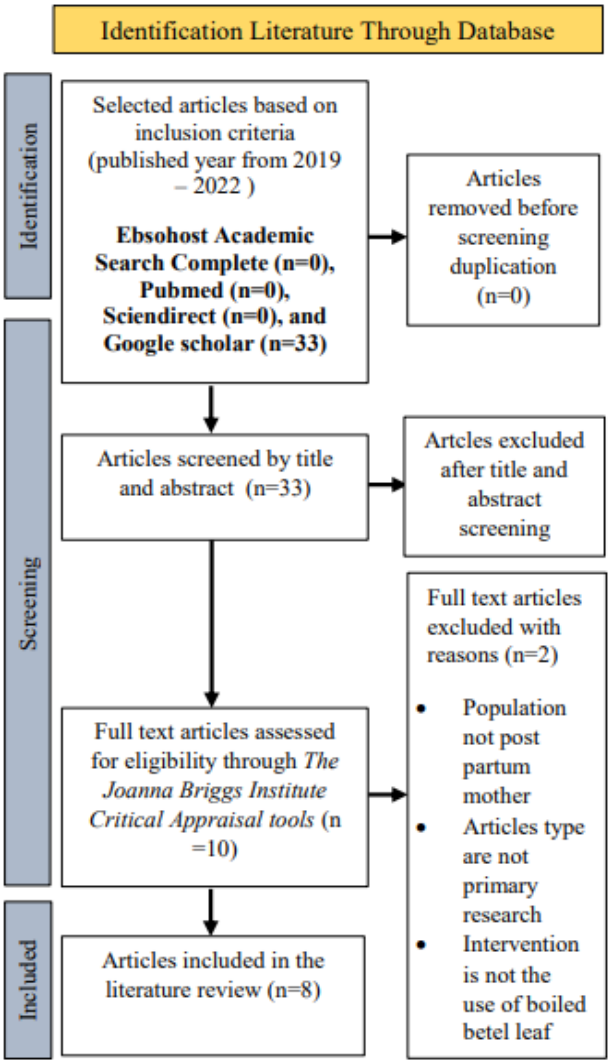

Figure 1. The Study Selection Process Adapted from PRISMA 2020

The frequency and duration of the intervention

The intervention's frequency, duration, and duration influence the wound healing process. However, it is essential to note that the condition of the wound, such as the severity of the wound, how to give betel leaf boiled water to post-partum mothers, and the mixture in betel leaf boiled water are also

influencing factors. In full, each research article regarding the effectiveness of betel leaf water for healing perineal wounds in post-partum women is discussed in the following paragraphs.

In the first article, the intervention given was to wash the perineal wound area with boiled water of green betel leaves for post-partum mothers who had perineal wounds. The evaluation used a guide sheet for examining perineal wounds and the REEDA scale (Redness, Odema, Ecchymosis, Discharge, Approximation). The results were obtained before the intervention of respondents who experienced moderate perineal injuries (81.2%) and severe perineal injuries (18.8%). After the intervention, respondents experienced moderate perineal injuries (81.2%) and mild perineal injuries (18.8%). The average perineal wound healing speed in the intervention group was 2.13 days, and in the control group was 4.19 days. In Article 1, the intervention proved effective (p-value = 0.000 <0.05).

In the second article, the intervention provided was sitting soaking using betel leaf soaking water. Sitting betel leaf soaking is done by immersing the pelvic area of the intervention subject in warm water containing betel leaf soaking. Control subjects sat on a unique chair or a basin the same size as a toilet seat so that their legs and feet remained out of the water. It was found that the average speed of perineal wound healing in the intervention group was 8.87 days, and in the control group was 10.87 days. In article 2, the intervention proved effective with a p-value of 0.00 (<0.05).

In the third article, the intervention provided was giving red betel leaf decoction to the respondent to use as cleansing water or vulva hygiene for five consecutive days. Betel leaf cooking water is obtained by boiling 20 red betel leaves for 10 minutes at 36°C and 500 cc of boiling water and then using it 4 times a day as cleansing water or vulva hygiene. It was found that the average speed of perineal wound healing in the intervention group was 2-3 days, and in the control respondents was 5 days. In article 3, the intervention proved effective with a p-value of 0.000 (<0.05).

In the fourth article, the intervention was given as boiled water of red betel leaves for post-partum women as much as 200 ml 2 times a day, namely morning and evening, for 7 days. The control group was given an antiseptic fluid. It was found that the average speed of perineal wound healing in the intervention group was 2-5 days, and in control, respondents were 3-6 days. In article 4, the intervention proved effective with a p-value of 0.001 (<0.05).

In the fifth article, the intervention was given by giving betel leaf boiled water to the perineal wound of post-partum mothers for five days. The control group was assigned betadine antiseptic. It was found that treating wounds with betel leaves was more effective than with betadine in healing perineal wounds in post-partum mothers. Wound care with betadine takes longer (+ 2 days) when compared to using betel leaf water. In article 5, the intervention proved effective with t-count (10.085) > t-table (2.201).

In the sixth article, the intervention gave red betel leaf boiled water to the

perineal wound of post-partum mothers. It was found that the average healing time for perineal wounds after using boiled water was 5.80 days, while in the control group, it was 7.80 days. Perineal wound healing in the intervention group was 2 days faster than in the control group. In article 6, the intervention proved effective with a p-value of 0.001 (<0.05).

In the seventh article, the intervention given is giving betel leaf boiled water to the perineal wound of post-partum mothers. The average perineal wound healing time in the intervention group was ≤ 5 days, while in the control group, it was > 5 days. In article 7, the intervention proved effective with a p-value of 0.000 (<0.05).

In the eighth article, the intervention was given by giving betel leaf boiled water to the intervention group and sterile gauze with 0.9% NaCl solution to the control group. It was found that the perineal wound healing time in the intervention group was faster than in the control group. In article 8, the intervention proved effective with a p-value of 0.000 (<0.05).

DISCUSSION

This literature review reviews the Effectiveness of Betel Leaf Water Use on Perineal Wound Healing in post-partum Mothers. The main findings revealed that: (i) Boiled water and soaking water of green and red betel leaves were used as herbal remedies to heal perineal wounds in post-partum mothers; (ii) To heal the perineal wound, intervention is given through washing the perineal wound area, sitting soaking, splattering, and *vulva hygiene* using betel leaf water; (iii) The use of betel leaf water has been shown to have a significant effect on the healing of perineal wounds in post-partum mothers, can increase the average speed of perineal wound healing, and can reduce the degree of perineal wounds in post-partum mothers(1,3,6,8–12).

Each delivery often gives rise to a birth canal that can be a *port de entry* of the pathogen. This causes the risk of infection in puerperal mothers will increase due to perineal wounds due to episiotomy, spontaneous rupture, or trauma by the fetus. Although perineal wounds are local, proper care must be taken to avoid infection and the systemic spread of disease (2). Perineal and lochea wounds that come out during the post-partum period cause the environment of the vulva, vagina, and perineum to become moist, which supports the proliferation of bacteria. Therefore, appropriate treatment efforts are needed to overcome the perineal wound in the post-partum mother so that infection can be avoided.

Treatment of perineal wounds can be carried out pharmacologically as well as non-pharmacological. Pharmacological treatment can use antiseptic drugs and antibiotics. People have begun to reduce the use of medical drugs such as antiseptics because some people complain of experiencing allergies (2). In addition, the use of antibiotics in nursing mothers tends to be avoided because some groups of antibiotics can cause side effects in breastfed babies, such as *arthropathy*. On the other hand, non-pharmacological treatment can be an alternative to pharmacological treatment that can be done in various ways. One uses betel leaf boiled water because it has been proven to have a good healing effect.

Betel leaf has a chemical content that acts as an antiseptic, antibacterial, and anti-inflammatory that is good for mothers with perineal wounds because it can help speed up the wound healing process (2). In addition, in a study by Gong et., al (15), betel leaf is also known to function as an anti-allergy with catechaldehyde content as an active component in betel leaves as hypo-allergenic and anti-inflammatory. Several other studies also state that betel leaf contains active substances that can be

antioxidants and anticancer, especially in cervical cancer and breast cancer (16). Betel leaf is a plant that has a therapeutic effect and contains essential oils, *alkaloids, saponins, triterpenoids steroids, quinones, polyphenolics hydroxychavicol, clavicula, chavicol, allypyrokatekol, cineole, caryophyllene, cadinene, estragole, terpenes, sesquiterpene, phenylpropane, tannin, diastase,* and *arecoline* (16). A third of essential oils are composed of phenols, most of which are chavicol which gives betel leaf aroma and has the power to kill bacteria five times that of ordinary phenols. The content of betel leaves, such as chavicol, and essential oils, is anti-fungal and antibacterial, and saponins trigger collagen formation as a structural protein that plays a role in the wound-healing process (12). Betel also contains *arecoline which* helps facilitate blood circulation so that blood flow in the wound area becomes smooth, oxygen supply becomes adequate, and wound healing becomes faster. Based on these therapeutic effects, betel can heal wounds (13).

The way to process betel leaves to be washed on wounds around the genital or vaginal area is to boil four betel leaves using 400 ml of water and then boil. When it boils, the boiled water of betel leaves is filtered and then cooled. After that, the boiled water of betel leaves can be used to wash the wounded area of the perineum or around the genital area. This treatment is recommended to be carried out when bathing twice a day and during bowel movements (14). Betel leaves are used to heal or stop bleeding. In addition, betel leaves are used to cure, wipe or clean the pubic area of women with perineal wounds (2).

In addition to betel leaf boiled water, betel leaf soaking water can heal perineal wounds in post-partum mothers through the sitting soak method. Wash the betel sit by soaking the pelvic area in warm water and filling the betel leaf bath. The subject sits on a unique chair or a basin the same size as the toilet seat so that the legs and feet remain out of the water (2). Soaking the body in warm water can cause widespread vasodilation, resulting in relaxation and a decrease in the intensity of pain. In addition, wash sit cleans and reduces inflammation of the perineal and anal areas of clients who have given birth or have local rectal irritation of hemorrhoids or fissures. Soaking can also reduce pain and swelling from the surface of inflamed or irritated skin. According to Permenkes No. 8 of 2014, the warm temperature for a sitting bath that functions as an absorber for herbal soaking is 36.6 – 37.7 °C with a bath duration of 15-30 minutes. In addition, it works to reduce edema, can improve circulation, and increase muscle relaxation (2).

After analyzing the eight experimental studies the authors reviewed, all showed that using betel leaf water could significantly improve the perineal wound healing process in post-partum women, with an average P-Value <0.05 in each article. Betel leaf water has been shown to increase the average speed of perineal wound healing and reduce the degree of perineal wounds in post-partum mothers. There was a significant difference in the average rate of perineal wound healing between the control group given antiseptic (betadine) and the intervention group assigned betel leaf boiled water. The findings show that using boiled water and soaking green and red betel leaves can improve the healing process of perineal wounds in post-partum mothers. Therefore, using betel leaf water is promising to be applied in maternity nursing settings because it effectively enhances the healing process of perineal wounds in post-partum mothers

CONCLUSION

Based on the results of a literature review from 8 research journals, it can be concluded that the effectiveness of giving betel leaf boiled water on perineal wound

healing in post-partum mothers is significant. From the results of the literature review, it is known that the boiled water of betel leaf contains chemicals that act as antiseptic and antibacterial drugs. The healing time ranges from 2 to 3 days in post-partum maternal perineal wounds. The antibacterial effect of the green betel plant is due to the essential oil content of the green betel leaf, whose main component consists of phenol, and several of its derivatives, including eugenol and chavicol, have antibacterial properties.

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Table 3. Summary of Findings

No	Title	Author	Method	Location	Purpose	Intervention	Result
1	The Effectiveness of Green Betel Leaf Decoction on Perineal Wounds Healing in The Work Area of The Puskesmas Siak Hulu II, Kampar Regency	Rahayu et al., 2021	Quasi Experiment	Puskesmas Siak Hulu II, Kampar, Pekanbaru, Indonesia	To determine the effectiveness of the use of green betel leaf water decoction against perineal wound healing in the working area of the Siak Hulu II Health Center	The population in the study was 122 people. A sample of 16 people (moderately injured 13; seriously injured 3) was obtained using the Purposive Sampling technique. The intervention involved washing the perineal wound area with boiled water of green betel leaves in post-partum mothers who had perineal wounds. The evaluation used a perineal wound examination guide sheet and a REEDA sheet.	1. Most respondents, before being given a decoction of green betel water in the working area of the Siak Hulu II Health Center, Kampar Regency, suffered moderate perineal injuries, as much as 81.2%. The rest sustained severe perineal injuries, as much as 18.8%. 2. After being given a decoction of green betel water, most respondents experienced moderate perineal injuries, as much as 81.2%. The rest suffered minor perineal injuries, as much as 18.8%. 3. The effectiveness of green betel boiled water on perineal wound healing in the working area of the Siak Hulu II Health Center, Kampar Regency, is significant (p-value = 0.000 < 0.05).
2	The Effectiveness of Betel Leave Soaking to Perineum Wound Recovery Speed of Post-partum Mothers	Supadmi et al., 2021	Quasi Experiment	PMB Wirahayu, S.Tr.Keb., Panjang, Bandar Lampung, Indonesia	To determine the effectiveness of betel leaf baths on the speed of perineal wound healing in post-partum mothers at PMB Wirahayu, S.Tr.Keb.	In this study, 30 samples were divided into two groups, namely 15 for the control group and 15 for the intervention group. The intervention is in the form of a sitting bath using betel leaf-soaking water. Betel leaf seating is done by soaking the intervention subject's pelvic area in warm water containing betel leaf baths.	The average rate of perineal wound healing in the intervention group was 8.87 days, and the control respondents were 10.87 days. The effectiveness of Betel Leaf Baths on the Speed of Perineal Wound Healing in Post Partum Mothers is significant, with a P-value of 0.00 (< 0.05).

						The control subject sits on a unique chair or a basin the same size as the toilet seat so that the legs and feet remain out of the water.	
3	The Effectiveness of Red Betel Leaves Decoction on Healing Perineal Wounds on perineal wound healing.	Siregar et al, 2020	Quasi Experiment	Environment II Tanjung Gusta Medan was held from August 10 to August 25, 2020	This study aimed to determine the effectiveness of red betel leaf decoction on perineal wound healing.	The sample is 30 respondents. This research was carried out experimentally by giving boiled red betel leaves to respondents to be used as wipe water or vulva hygiene for five consecutive days, boiling as many as 20 red betels leaves for 10 minutes at a temperature of 36 ° C and the amount of boiled water as much as 500 ccs. Then, it is used four times daily for water or vulva hygiene.	The results of the Wilcoxon test before (pre-test) and after (post-test) giving red betel leaf decoction to all respondents were 30, Z value = -4460b and p-value = 0.000 with a significant level of p <0.05, indicating that the effectiveness of leaf decoction red betel to perineal wounds in the environment II Tanjung Gusta Medan in 2020.
4	The Effect of Decoction of Red Betel Leaves (Piper Crocatum) on the Healing of Perineal Wounds in Post-partum Mothers in Tanjung Jati Village, Binjai District,	Siagian et al., 2020.	Quasi Experiment	Held in Tanjung Ja Village, Kec. Binjai Kab. Langkat in April-July 2020	This study aimed to assess the healing time of post-partum maternal perineal wounds using red betel leaf decoction and antiseptic drugs in Tanjung Village, Binjai District, Langkat Regency.	The control group was given an antiseptic, and the intervention group was assigned 4-5 pieces of red betel leaves boiled using 500 ml of water and then given to post-partum mothers as much as 200 ml 2 times a day, in the morning and evening for seven days.	In the control and intervention groups, there were 15 negative ranks and zero positive ranks, while in the Ess, there were three people who stated that using the Wilcoxon test, the p-value 0.001 <α 0.005 showed that there was an effect of red betel leaf decoction on perineal wound healing

	Langkat Regency						
5	Efforts to Accelerate The Healing of Perineal Wounds in Post Partum Mothers With Betel Leaf Antiseptic at the Wagir Health Center, Malang Regency	Harini, 2019	Quasy Experiment	Puskesmas Wagir, Malang Regency, Indonesia	To determine the difference in perineal wound healing in post-partum mothers with betel leaf antiseptic.	Using observation sheets on mothers with perineal wounds treated with betadine antiseptic and betel leaves and observed for five days starting on the first day of post-partum with the Bourbonnais instrument	From the results of the t-test analysis obtained with the design "Pre and Post test design, according to the research hypothesis that the researcher has set. Because the t-value is calculated (10.085) and the table value (2.201), Ho is rejected because the t-value is located outside the Ho admission area. It can be interpreted that treating wounds with leaves betel is more effective than with betadine against healing perineal wounds in post-partum mothers. The results of the implementation of wound treatment with betadine show that the duration of the healing process of perineal wounds in post-partum mothers is longer (+ 2 days) compared to using antiseptics betel leaves.
6	The Effect of Giving Red Betel Leaf Decoction on the Healing Time of Perineal Wounds at the Aster Clinic, Karawang Regency, West Java,	Rostika et al, 2020	Quasi Experiment	Aster Clinic, Karawang Regency, West Java	To find out the effect of the use of red betel leaf boiled water on the healing time of perineal wounds at the Aster Clinic, Karawang Regency, in 2020	Monitoring was conducted on all samples, namely 30 puerperal mothers at the Aster clinic, Karawang Regency.	Of the 15 respondents from the experimental group studied, the average healing time of perineal wounds after using boiled water was 5.80 days. In contrast, in the control group, 7.80 means that the average healing time of perineal wounds after using boiled water was 5.80 days, while in the control group, 7.80 means that the experimental group was two days compared to the control group. The results of statistical tests with an independent t-test with $\alpha = 0.05$ obtained a p-value = 0.001, which means a p-value < 0.05; thus, there is an effect of the use of red betel leaf boiled water on the time healing perineal wounds at the Aster Clinic, Karawang Regency in 2020.

7	Effect of Betel Leaf Water Boiled On The Duration of Healing Perineal Wounds in Post-partum Mothers in Hospitals. Sariningsih Year 2017.	Dida Wanti, Tantri Wenny Sitanggang (2018)	Quasy Experiment	Sariningsih Hospital, Indonesia	To determine the effect of betel leaf water decoction on the duration of healing perineal wounds in post-partum mothers at Sariningsih Hospital	The sample in this study was 30 respondents who were divided into two groups, namely the experimental group and the control group. The experimental group in this study is treatment groups using a decoction betel leaf water on the perineal wounds every morning and in the afternoon, from the 0th day to the day of- Five post-partum. Whereas in the control group, only observing wound healing perineum on the 0th day, the 3rd day, and the 5th day post-partum.	Healing perineal wounds ≤ 5 days in the treatment group of 15 people, four people of the control group, while the recovery of > 5 the day occurred in the control group of 11 people. The p-value is 0.000. There is an influence on using a decoction of leaf water betel against the long healing of perineal wounds in post-partum mothers.
8	The Effectiveness of Betel Leaf Water Administration Against Healing Speed Perineal Wounds In Post-partum Mothers	Nanda Agustina, Ernita Prima Noviyani, Uci Ciptiasrini (2022)	Quasi Experiment	PMB X Bandar Lampung	This study aims to determine the effectiveness of betel leaf water administration of perineal wounds in post-partum mothers in PMB X Bandar Lampung in 2021	30 post-partum mothers who had perineal injuries were 15 group respondents control is then given counseling to perform treatment on the perineal wound with use sterile Kassa 2 times a day after bathing. Water feeding betel leaf in post-partum mothers totaling 15 respondents with the given	Based on the results of the statistical test of this study using the Man Whitney U Test obtained p-value = 0.000 with a value of α = 005 (p> α), meaning that there is an average difference between perineal wound healing intersection in post-partum mothers between the control group and groups are given betel leaf water. In the intervention group, accelerated wound healing of the perineum is faster than in the control group that is not given betel leaf water.

						group Betel leaf water is provided counseling on how to treat wounds using leaf water betel is to always wash your hands first before touching the wound when you have urinated and big ai, wash the pubic using clean water, then wash the betel leaf water after that do not wash it using betel leaf water again after giving counseling wound care, the mother is expected to do the wound treatment on her own at home until the wound heals then the wound will be observed on day 2,3,4,5,6,7 after being treated with water feeding of betel leaves to the wounds of the mother's perineum.	

Table 4. Article Characteristics

No	Author	Country	Types of Research	Population and Sample	Frequency of Interventions	Length of Time for Intervention Administration	Duration of Healing of Perineal Wounds
1	Rahayu et al., 2021	Indonesia	Quasi Experiment	Population: 122 Sample: 16	-	7 months	Control: 4.19 Intervention: 2.13
2	Supadmi et al., 2021	Indonesia	Quasi Experiment	Population: 45 Sample: 30	-	1 month	Control: 10.87 days Intervention: 8.87 days

3	Siregar et al., 2020	Indonesia	Quasi Experiment	Populasi : post-partum mother Sample : 30	5 days	5 days	Control: 5 days intervention: 2-3 days
4	Siagian et al., 2020.	Indonesia	Quasi Experiment	Population: post-partum mother Sample: 36	7 days	7 days	Control : 3-6 days Intervention: 2-5 days
5	Harini, 2019	Indonesia	Quasi-Experimental	Population: a post-partum mother who is controlling her perineal wounds at the Wagir Health Center, Malang Regency Sample: 20 people	5 days	3 months	(+ 2 days)
6	Rostika et al., 2020	Indonesia	Quasi Experiment	Population: all puerperal mothers at Aster Clinic Karawang Regency Sample: 30 people	Ten days	3 months	5.8 days
7	Wanti & Sitanggang, 2018	Indonesia	Quasi Experiment	Population:- Samples: 30	2x/day	5 days	Control: > 5 days Intervention: ≤ 5 days
8	Agustina, Noviyani, & Ciptiasrini, 2022	Indonesia	Quasi Experiment	Population:- Sample: 30	2x/day	7 days	Control: 7-8 days Intervention: 4-7 days