

## Utilization of Herbal Medicine and Boiled Water (*Areca Catechu*, *Piper Betle* and *Garcinia Xanthochymus*) To Accelerate Recovery During Early Puerperium

Nurul Arriza, Windiyati, Melyani, Luluk Handayani, Gloria Fortunata BE, Erviana Liza, Evi  
DIII Midwifery Study Program, STIKES Panca Bhakti Pontianak

Corresponding Author: [ini.nurularriza@gmail.com](mailto:ini.nurularriza@gmail.com)

### Abstract

Postnatal herbal medicine and boiled water are herbs are usually given to postpartum mothers to strengthen the body and speed up the recovery period of the uterus, speed up the cessation blood and healing perineal wounds. Method: Quasi Experimental research type Pretest-Posttest Nonequivalent Control Group Design. Held at PMB Nuripah Kubu Raya on 21-27 November 2023. Total sample was 34 respondents, the respondents were divided randomly into 2 groups, postpartum mothers in intervention group were given 1x1 multivitamin and postnatal healthy herbal medicine test ingredients at a dose of 1x1 sachet (25 grams) and Postpartum mothers in control group were given 1x1 multivitamin as a comparison, the research was carried out for 7 days. Results: The intervention group had an effect on changes in uterine involution based on anteroposterior diameter (p. 0.005), changes in uterine involution based on longitudinal length (p. 0.002), the amount of locheal discharge (p. 0.003), the smell of locheal discharge (p. 0.002), reducing the pain scale (p. 0.000) and perineal wound healing (0.003). Conclusion: Healthy postpartum herbal medicine and perineal wound fluid effective accelerating early puerperium period (uterine involution, lochea and perineal wounds) with the fastest start of action compared to the control group (multivitamin).

**Keywords:** *Areca catechu*, Early Puerperium, *Garcinia xanthochymus*, Herbal Medicine, *Piper betle*.

### 1. Introduction

Indonesia is a sub-tropical country that has a wealth of biodiversity, such as herbal plants which have health benefits. Currently, there has been a lot of research on the use of herbs in everyday life, both to increase the body's endurance and to treat sick body conditions. (Pattinasarany et al., 2020). Medicine in Indonesia has for generations still believed in the efficacy of plants as traditional therapy for all health problems including postpartum recovery/ postpartum. Postpartum/postpartum period is a period of recovery of the reproductive organs to what they were before pregnancy (Wardhina et al., 2019). *Back to nature* has become a lifestyle trend again today. People are returning to using various natural ingredients, including treatment with medicinal plants (herbs) (Baequny & Hidayati, 2020). *Jamu* is a form of traditional medicine passed down by the community's ancestors. People think that herbal medicine as a traditional treatment is safer than chemical treatment. The use of herbal medicine is often found in society, both during pregnancy, the birthing process and the postpartum period (Prastiwi, 2018). *Jamu*

( *herbal medicine* ) still plays an important role in treatment in society. It is estimated that around 70-80% of the population in developing countries are dependent on traditional medicines that are sourced from plants with medicinal potential from nature. In general, herbal medicine is considered non-toxic and does not cause side effects, the efficacy of herbal medicine has been tested by time, time and history, as well as direct empirical evidence by humans for hundreds of years.

Postnatal herbal medicine and boiled water are herbs that are usually given to postpartum mothers with the aim of strengthening the body and speeding up the recovery period of the uterus ( *promote uterine involution* ), speeding up the cessation of blood ( *lochea absruption* ) and healing of perineal wounds. Postpartum herbal medicine and boiled water are usually given for 40 days after giving birth in the form of a care package. The types of concoctions in traditional postnatal medicine consist of several herbal remedies (liquid concoctions, brewed powders, pills) and external medicines (stomach medicine, param powder). The benefits felt from treatment include increasing stamina, increasing breast milk, eliminating post-natal fatigue, cleaning dirty blood, cleansing the skin, warming the body and preventing colds (Zumaidar et al., 2019).

The characteristics of the people in Kuala Dua village are that they have the habit of consuming traditional herbal medicine for postpartum mothers, and boiled water is empirically useful for increasing stamina and speeding up the postpartum recovery period. The benefits of using herbal plants as an effort to speed up the recovery period for postpartum mothers have been widely studied. However, no one has conducted research on the proximate content of healthy postpartum (young betel nuts, green betel leaves and kandis acid) for the process of uterine recovery (promoting *uterine involution*), accelerating the cessation of blood ( *lochea absruption* ) and healing perineal wounds.

The difference from previous research is that the development of preparations from young areca palm plants, green betel leaves and kandis acid in herbal concoctions and boiled water has special implications for postpartum mothers. Health scientists say that the existence of medicinal plants for postpartum mothers cannot be equated with modern medicine if they have not been tested and only empirical data is passed down from generation to generation (Kristian, 2013). The implication of this research for midwifery practice is to develop and prove the safety of traditional medicines (young betel nuts, green betel leaves and kandis acid) in responding to the needs of postpartum mothers in an effort to speed up the recovery period based on science through research. Therefore, it is important in this research to test the use of young areca nut, green betel leaves and tamarind kandis (healthy postpartum herbal medicine) in accelerating recovery during the *puerperium era*.

## 2. Material and Method

This type of research is *Quasi Experimental* with a *Pretest-Posttest Nonequivalent Control Group Design*. Held at PMB Nuripah Jl. Kuala Dua District. Kubu Raya on 21-27

November 2023. The research population was postpartum mothers at the Independent Practice of Midwife Nuripah , the sample used was postpartum mothers and randomly divided into 2 intervention groups, then determining the sample size using the Federer formula, there were 17 respondents/ group. So the total number of postpartum mothers used was 34 respondents with inclusion criteria, namely postpartum mothers in the early postpartum period and giving birth normally at PMB Nuripah and exclusion criteria, namely postpartum mothers with complications or complications, giving birth by *cesarean section* and those who received other traditional herbal medicine. Random sampling technique, namely dividing respondents randomly into 2 groups, postpartum mothers in the intervention group were given 1x1 multivitamin and postnatal healthy herbal medicine test material at a dose of 1x1 suchet (25 grams) and postpartum mothers in the control group were given 1x1 multivitamin comparison material, the research was carried out for for 7 days. Data collection was carried out by direct observation of uterine changes using the *ultrasound method* and removal of *lochea* and the condition of the perineal wound. The data was tested using the *Shappiro-Wilk method* followed by homogeneity variance analysis between groups as a requirement for parametric analysis of unidirectional pattern variations or analysis of variance (one way ANOVA) presented in the form of diagrams and tables.

### 3. Results and Discussion

#### 3.1 Results

**Table 1.** Distribution of Changes in Uterine Involution Based on Anteroposterior Diameter Before and After Intervention

Group	Uterine Diameter								P-Value	
	Pre-Test		Mean ± SD	Post Test (3 days)		Mean ± SD	Post Test (7 days)			Mean ± SD
	>10 cm	<10cm		>8 cm	<8cm		>7 cm	<7cm		
I	17 (100%)	0 (0%)	15.23 ± 1.087	8 (47%)	9 (53%)	7.56 ± 1.088	0 (0%)	17 (100%)	6.78 ± 1,345	0.005
C	17 (100%)	0 (0%)	14.98 ± 1.855	9 (53%)	8 (47%)	8.67 ± 1,278	3 (18%)	14 (82%)	6.98 ± 1,102	

Note: Data I=intervention; C=Control

Table 1 shows that all respondents before being given treatment had an anteroposterior uterine diameter >10 cm in both the intervention and control groups, namely 17 respondents (100%). Some respondents in the intervention group after being given 3 days of treatment had an anteroposterior uterine diameter <8 cm, namely 9 respondents (53%) and in the control group an anteroposterior uterine diameter >8 cm, namely 9 respondents (53%). Meanwhile, after being given treatment for 7 days, all respondents in

the intervention group had an anteroposterior diameter of the uterus <7 cm, namely 17 respondents (100%) and almost all respondents in the control group had an anteroposterior diameter of the uterus <7 cm, namely 14 respondents (82%).

**Table 2. Distribution of Changes in Uterine Involution Based on Longitudinal Length Before and After Intervention**

Group	Uterine Length								P-Value	
	Pre-Test		Mean ± SD	Post Test (3 days)		Mean ± SD	Post Test (7 days)			Mean ± SD
	>20 cm	<20cm		>18 cm	<18cm		>15 cm	<15cm		
I	17 (100%)	0 (0%)	23.53 ± 1.067	4 (24%)	13 (76%)	18.33 ± 1.207	0 (0%)	17 (100%)	13.93 ± 1.287	0.002
C	17 (100%)	0 (0%)	23.67 ± 1.955	9 (53%)	8 (47%)	20.97 ± 1.955	7 (41%)	10 (59%)	15.74 ± 1.865	

Note: Data I=intervention; C=Control

Table 2 shows that all respondents before being given treatment had a longitudinal uterine diameter >20 cm in both the intervention and control groups, namely 17 respondents (100%). Most of the respondents in the intervention group after being given 3 days of treatment had a longitudinal uterine diameter <18 cm, namely 13 respondents (76%) and in the control group, a longitudinal uterine diameter >18 cm, namely 9 respondents (53%). Meanwhile, after being given treatment for 7 days, all respondents in the intervention group had anteroposterior uterine diameter <15 cm, namely 17 respondents (100%) and some respondents in the control group had a longitudinal diameter of the uterus <15 cm, namely 10 respondents (59%).

**Table 3. Distribution of the amount of Lochea discharge before and after intervention**

Group	Locheal Discharge						P-Value
	Pre-Test		Mean ± SD	Post Test (7 days)		Mean ± SD	
	>100 ml	<100ml		>50 ml	<50 ml		
I	17 (100%)	0 (0%)	110.23 ± 1.987	0 (0%)	17 (100%)	48.213 ± 1.755	0.003
C	17 (100%)	0 (0%)	112,34 ± 1,988	3 (18%)	14 (82%)	55,437 ± 1,994	

Note: Data I=intervention; C=Control

Table 3 shows that all respondents before being given treatment had a total lochea output of >100 ml in both the intervention and control groups, namely 17 respondents (100%). All respondents in the intervention group after being given 7 days of treatment had a total lochea discharge of <50 ml, namely 17 respondents (100%) and almost all respondents in the control group had a total lochea discharge of <50 ml, namely 14 respondents (82%).

**Table 4.** Distribution of *Locheal* Smell Before and After Intervention

Group	<i>Lochea</i> Discharge				P-Value
	Pre-Test		Post Test (7 days)		
	Fishy	Not fishy	Fishy	Not fishy	
I	17 (100%)	0 (0%)	3 (18%)	14 (82%)	0.002
C	17 (100%)	0 (0%)	17 (100%)	0 (0%)	

Note: Data I=intervention; C=Control

Table 4 shows that all respondents before being given treatment had fishy-smelling lochea discharge in both the intervention group and the control group, namely 17 respondents (100%). Almost all respondents in the intervention group after being given 7 days of treatment had non-fishy smelling lochea discharge, namely 14 respondents (82%) and all respondents in the control group had fishy-smelling lochea discharge, namely 17 respondents (100%).

**Table 5.** Middle Value of Pain Scale and Perineal Wound Healing Before and After Intervention

Variable	Group	Measurement	Median	Min-max	Mean ± SD	P value
Scale Perineal Pain	Intervention	Before	7	3-8	6.543 ± 1.555	0,000
		After	1	0-1	1.367 ± 0.002	
	Control	Before	6	3-8	5.73 ± 1.555	0.070
		After	5	4-5	3.27 ± 1.009	
Healing Perineal Wounds	Intervention	Before	7	3-9	6.36 ± 2.378	0.003
		After	0	0	0.00 ± 0.000	
	Control	Before	9	8-9	8.36 ± 0.924	0.060
		After	8	7-9	8.18 ± 1.079	

Based on table 5, the highest pain scale before being given therapy with boiled water from young betel nuts and kandis acid was 8. Then after being given therapy there was a change in the pain scale to 1. This means that there was a decrease in the pain scale in the intervention group with the difference in the pain scale being 7. Then the results of the pain scale The highest in the control group before being given povidone iodine was 8. Then after being given povidone iodine the pain scale became 5. This means that there was a change in the pain scale in control group with the difference in the pain scale before and after being 3.

Wound healing variables were explained in the intervention group before being given boiled water therapy from young areca nut seeds, betel leaves and kandis acid. The highest wound healing score was 9. Meanwhile, after being given water therapy from boiled young areca nut seeds and kandis acid, the wound healing score was 0. This means there was improvement. The difference between perineal wound healing in the intervention group was 9. Meanwhile, perineal wound healing in the control group before being given povidone iodine had the highest wound healing score of 9, whereas after being given povidone iodine the wound healing score changed to 6. This means there was

improvement. perineal wound healing in the control group with the difference before and after being given povidone iodine was 3.

### 3.2 Discussion

#### ***The Effect of Giving Healthy Herbal Medicine for Postpartum on Uterine Involution and Locheal Expenditure***

Based on the research results, it was found that healthy postpartum herbal medicine (exploration of young areca nut, betel leaves and kandis acid) significantly affected uterine involution more quickly than the control group (multivitamin). This is due to the composition of herbal medicine which is mixed from 3 types of plants which have the potential to be used as medicine during the postpartum recovery period, areca nut (*Areca catechu L.*) is a type of palm, areca nut as a medicinal plant is better known as *betel nut* because 90% of what is used is the seeds. Young areca nut seeds contain *lactogogous* substances which have an effect on increasing the production of the hormones prolactin and oxytocin. These two hormones strengthen and regulate uterine contractions, compress blood vessels and help the hemostasis process. Contraction and relaxation of the uterine muscles reduces the blood supply to the uterus, this process helps reduce bleeding so that the postpartum mother's lochea will quickly decrease and reduce the height of the uterine fundus (Shauma Ramadhan & Natosba, 2022).

Green betel leaves are one of the most efficacious herbs because they are rich in saponins, tannins, eugenol and various types of essential oils, these contents make betel leaves beneficial for body health. If you eat or drink the boiled water, the benefits of betel leaves will also be felt for the body's organs. Betel leaves (Puspita Angraeni & Idealistiana, 2022).are classified as plants that have many therapeutic effects such as *essential oils, hydroxycavicol, kavicol, cavibetol, allylpyrocatekol, cyneole, caryophyllene, cadinene, estragol, terpenne, sesquiterpene, phenyl propane, tannin, diastase, sugar, and starch* (Aprita & Husanah, 2022).

Meanwhile, kandis acid (*Garcinia cowa Roxb*) morphologically, if the stem is injured, a yellowish liquid will flow. This liquid can be used as a coloring treatment. The *Garcinia* genus is known to be rich in secondary metabolites which function as traditional medicines, namely antibacterial, antifungal, anti-inflammatory, antioxidant and cytotoxic. This makes it sustainable both in chemical content and biological activity. Kandis acid is known as a secondary metabolite because it contains compounds such as xanthones, benzophenones, flavonoids, steroids, terpenoids which function as antioxidants, antimicrobials, cytotoxics and antimalarials (Darwati et al., 2018).

#### ***The Effect of Providing Healthy Postpartum Herbal Medicine on Perineal Wounds***

##### **a. Pain Intensity in the Intervention Group (Postpartum Healthy Herbal Medicine)**

The reduction in pain intensity in the intervention group occurred due to the provision of therapy using boiled water from young areca nut seeds and kandis acid,

because postpartum mothers will get two benefits from a combination of non-pharmacological therapy, namely a *sitz bath* with warm water and herbal therapy using young areca nut seeds and betel leaves. and kandis acid. Young areca nut seeds contain catechins which are a subclass of flavonoids in areca nut seeds which act as anti-inflammatory, catechins work by inhibiting COX-2 and the formation of prostaglandin E2 so that prolonged inflammatory processes can be prevented and inflammatory responses such as pain and swelling can be stopped. (Kolifah et al., 2022) . The flavonoid content in areca nuts is also useful for improving blood circulation and helping reduce pain if swelling or bleeding occurs (Zumaidar et al., 2019) . Apart from that, the antioxidant content in kandis acid also helps in inhibiting the oxidation process so that the wound healing process takes place more quickly (Kurniati & Azizah, 2021) . The use of the *sitz bath* method to apply boiled water from young betel nuts and kandis acid functions to increase blood circulation in the local area (soaking area) which is carried out specifically on the perineum of postpartum mothers using cold or warm water (Andanawarih & Ulya, 2021) . The use of warm water therapy provides benefits in widening blood vessels (vasodilation) so that oxygenation will increase and flow smoothly to the tissues. Apart from that, this warm water therapy causes a temperature sensation in the *nerve endings* (nerve endings) in the external urogenital organs, stimulates the nerve pathways, and reduces pain due to an increase in beta endorphin in the blood which has endogenous pain properties thereby providing relaxation (Harismayanti & Gratitude, 2019).

#### **b. Pain Intensity in the Control Group (Povidone Iodine)**

Respondents in the control group applied povidone iodine using cotton wool to the perineal wound after bathing once a day. Respondents also experienced changes in pain intensity with a scale of 2-5 from previously 3-8 and the median pain scale value before 6 and after 3. The results of this study showed a decrease in the pain scale in the control group. Povidone iodine 10% is an antiseptic whose use is well known to the public. Based on the results of other research, it is stated that povidone iodine 10% can accelerate the healing of perineal wounds by inhibiting the proliferation of bacteria or fungi that are close to the wound. So it can reduce the pain felt by respondents (Nichter et al., 2020) .

#### **c. Healing of Perineal Wounds in the Intervention Group (Jamu Sehat Postpartum)**

Inflammation in the suture wound stopped as indicated by changes in the respondent's perineal suture wound, namely the wound appeared dry, there was no swelling and redness. Young areca nut and kandis acid are herbal plants that can help speed up wound healing. According to research results, areca nut contains phytochemical compounds which have anti-inflammatory, antioxidant and antibacterial roles which are useful in accelerating wound healing (Prastiwi, 2018) . The tannins in areca nuts act as an antibacterial and astringent which can shrink skin tissue, so that bleeding in wounds stops more quickly and wounds dry quickly (Sayuti & Atikah, 2022) . Flavonoids have the benefit of improving blood circulation throughout the body and preventing blockages.

Apart from that, the saponin content in areca nuts acts as an antiseptic which is able to kill germs and prevent the growth of microorganisms that usually appear in wounds so that the wound does not become infected (Christine Aden, 2020). Kandis acid is known for its rich content in secondary metabolites such as xanthenes, benzophenones, flavonoids, steroids, terpenoids which function as antioxidants, antimicrobials, cytotoxics and antimalarials (Sari, 2017). Antioxidants are needed to inhibit oxidation so as to speed up the wound healing process by protecting cells, proteins and other body organs from free radicals. The flavonoids in kandis acid work by inhibiting bacterial growth, inhibiting the synthesis of nucleic acids, rings A and B and forming DNA and RNA which results in damage to the permeability of bacterial cell walls. Apart from that, the tannins in kandis acid also function as inhibitors of bacterial growth by deactivating microbial cell adhesins and inactivating enzymes (Christine Aden, 2020). Using a sitz bath using warm water also provides moist heat to the pelvic area so that it can reduce pain, increase circulation, and help heal perineal wounds (Sari, 2017). After being given therapy using boiled water from young areca nut seeds and kandis acid in the intervention group, the perineal wounds began to dry up.

#### **d. Healing of Perineal Wounds in the Control Group (Povidone Iodine)**

Povidone iodine is an antimicrobial that is effective against bacteria and has toxicity compared to other antiseptics such as octenidine, chlorhexidine, and hydrogen peroxide (Kolifah et al., 2022). Povidone iodine also does not cause irritation, bacterial resistance, and does not interfere with the healing process. Iodophors (such as povidone iodine 10%) are bactericidal and can fight gram-positive and gram-negative bacteria. Povidone iodine is a good antibacterial because it has phenol compounds and their derivatives which can denature bacterial cell proteins and styptic content to stop bleeding and also has a vulvenary effect which can heal wounds on the skin.

Povidone iodine, which is a bond between iodine and polynyl pyrrolidone, is much more effective than iodine, has a broad spectrum, can be used for all skin and mucosa, washing dirty wounds, irrigating infected areas of the body, and preventing infections as it is known that iodine has properties antiseptic (kills germs) (Runjati, Ida Ariyanti, 2021). This is in line with research by Sayuti, et al (2022) which shows that healing perineal wounds using betadine gauze has a faster healing time than dry clean wound treatment, namely 4-7 days (Sayuti & Atikah, 2022).

Supported by research (Nurfifah, 2021) giving antiseptics (povidone iodine) because it can restore general health and maintain the cleanliness of perineal wounds, as well as prevent infection, so the healing process does not take long. because povidone iodine 10% can accelerate the healing of perineal wounds by inhibiting the growth of bacteria or fungi that are close to the wound. This is in accordance with the theoretical opinion (Rita Rahmawati, 2013) which states that antiseptics are chemicals that prevent, slow down or stop the growth of microorganisms (germs) on the outer surface of the body

and help prevent infection. Meanwhile, the antiseptic Povidone iodine itself is an antiseptic that can play a role in killing or inhibiting the growth of germs. However, according to (Runjati, Ida Ariyanti, 2021) excessive use of betadine in wound care, apart from speeding up wound healing, also has an unfavorable effect on wounds. Betadine has a reddening effect around the wound due to the presence of iodine which can change skin pigmentation to dark red and also in wounds given betadine the wound will become very dry, thereby slowing down the tissue growth process and can cause irritating and toxic properties if it enters the blood vessels.

## Conclusion

It can be concluded that healthy postpartum herbal medicine (exploration of young areca nut, green betel and kandis acid) is effective in accelerating the early puerperium period (uterine involution, lochea and perineal wounds) with the fastest start of action compared to the control group (multivitamin). It is recommended that health workers provide education to women during postpartum recovery focusing on the use of medicinal plants and herbal medicinal products that are science-based, accountable and risk-free, and future researchers can continue this research by testing phytochemicals and biopharmaceuticals as well as using broader and more complex variables regarding the properties of other plants that have the same potential.

## References

- Andanawarih, P., & Ulya, N. (2021). The Effectivity Of Tamarind Turmeric Jamu To Cure Perineal Lacerations In Pekalongan City. *Journal Of Tscners*, 6(1), 2503–2453. [Http://Ejournal.Annurpurwodadi.Ac.Id/Index.Php/Tscners](http://Ejournal.Annurpurwodadi.Ac.Id/Index.Php/Tscners)
- Christine Aden, Marselinus Heriteluna. (2020). Efektivitas Makanan Berbasis Lokal Tawas Ut ( Ampelocissus Rubuginosa L ) Terhadap Status Kesehatan Ibu Post Partum Di Kota Palangka Raya The Effectiveness Of Local-Based Foods Of Tawas Ut ( Ampelocissus Rubuginosa L ) On The Health Status Of Post Partum. *Jurnal Surya Medika*, 6(1), 143–156.
- Ernawati, S., Studi Diii Kebidanan, P., & Penulis, K. (2020). Efektifitas Pemberian Obat Tradisional Lancau Wolio Terhadap Involusi Uterus Dan Estetika Kecantikan Pada Ibu Nifas Di Kota Baubau Effectiveness Of Giving Lancau Wolio Toward Uterus Involution And Beautyaesthetic Of Postpartum Mothersin Baubau. *Journal Of Healthcare Technology And Medicine*, 6(2), 2615–109.
- Harismayanti, & Syukur, S. B. (2019). *Analisis Pemanfaatan Jamu Dan Obat Herbal Dan Dampaknya Pada Masa Childbearing Di Wilayah Kerja Puskesmas Tibawa*. November, 12.

[https://lppm.umgo.ac.id/php\\_assets/uploads/2021/03/laporan\\_akhir\\_harisma\\_yanti\\_s\\_kep\\_m\\_kep-1.pdf](https://lppm.umgo.ac.id/php_assets/uploads/2021/03/laporan_akhir_harisma_yanti_s_kep_m_kep-1.pdf)

- Kolifah, Dwi Srirahandayani, Ana Dyah Aliza, & Ferry Ruslia K. (2022). Efektivitas Rebusan Daun Sirih Hijau Terhadap Penyembuhan Luka Perineum Pada Ibu Nifas Di Desa Mojongapit Jombang. *Jurnal Ilmiah Kebidanan (Scientific Journal Of Midwifery)*, 8(3), 173–183. <https://doi.org/10.33023/jikeb.v8i3.1362>
- Kurniati, C. H., & Azizah, A. N. (2021). Identifikasi Pemanfaatan Obat Herbal Pada Ibu Nifas. *Jidan (Jurnal Ilmiah Bidan)*, 8(2), 59–65. <https://doi.org/10.47718/jib.v8i2.1380>
- Nichter, M., Bhat, S. J. S., Blank, M. D., Balster, R. L., & Nichter, M. (2020). Areca Nut Dependence Among Chewers In A South Indian Community Who Do Not Also Use Tobacco. *Addiction*, 105(7), 1303–1310. <https://doi.org/10.1111/j.1360-0443.2010.02952.x>
- Nurfifah, D. (2021). Influence Of Povidone Iodine 10% To The Acceleration Of Perineum Wound Healing On Post Partum Mother In Bpm Ani Mahmudah Lamongan. *Jurnal Kebidanan Stikes Muhammadiyah Lamongan*.
- Peli, Linda, R., & Wardoyo, E. R. P. (2020). Pemanfaatan Tumbuhan Obat Bagi Ibu Sebelum Dan Sesudah Melahirkan Pada Masyarakat Suku Melayu Di Desa Sekura Kabupaten Sambas. *Jurnal Protobiont*, 9(3), 236–245. <https://jurnal.untan.ac.id/index.php/jprb/article/download/49944/75676590852>
- Prastiwi, Ratih Sakti. (2018). Pengobatan Tradisional (Jamu) Dalam Perawatan Kesehatan Ibu Nifas Dan Menyusui Di Kabupaten Tegal. *Siklus: Journal Research Midwifery Politeknik Tegal*, 7(1), 263–267. <https://doi.org/10.30591/siklus.v7i1.745>
- Rita Rahmawati, H. R. (2013). (The Effectiveness Of Povidone Iodine 10% (Betadine) And Piper Bettle L In Quickening Clean Wound's Healing Process). *Journals Of Ners Community Vol 4 No 1 Pku Karangasem Muhammadiyah Paciran Jl. Raya Deandles No. 170 Lamongan*, 4(1).
- Runjati, Ida Ariyanti, L. U. (2021). *Perawatan Luka Bersih Kering, Kassa Betadin Serta Lama Kesembuhan Luka Perineum Pada Ibu Postpartum*.
- Sari, Y. (2017). Perbandingan Antara Penyembuhan Luka Perineum Yang Menggunakan Air Rebusan Daun Sirih Dan Yang Tidak Menggunakan Air Rebusan Daun Sirih Di Bpm Lismarini Tahun 2016. *Journal Of Chemical Information And Modeling*, 2(2), 77–87.
- Sayuti, N. A., & Atikah, N. (2022). Uyup-Uyup Untuk Kesehatan Ibu Menyusui: Kajian Pustaka. *Jurnal Jamu Kusuma*, 2(2), 115–128. <https://doi.org/10.37341/jurnaljamukusuma.v2i2.41>

Zumaidar, Z., Saudah, S., Rasnovi, S., & Harnelly, E. (2019). Tumbuhan Sebagai Obat Tradisional Pasca Melahirkan Oleh Suku Aceh Di Kabupaten Pidie. *Al-Kaunyah: Jurnal Biologi*, 12(2), 157–163. <https://doi.org/10.15408/Kaunyah.V12i2.9991>