

The Effect of Giving Cinnamon Decoated on Perineal Wound Pain in Post-Postpartum Women

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ABSTRACT

Every mother who has undergone the birth process with a perineal wound will feel pain, the pain felt causes unpleasant impacts such as pain and fear. Cases of this infection (25 - 55%) are caused by infection of the birth canal due to episiotomy or spontaneous tearing, mostly with complaints of pain in the area or for fear of the stitches falling out. To reduce perineal pain, one of them is consuming Cinnamon decoction. To see whether there is an effect of giving Cinnamon decoction on perineal wound pain in postpartum women at the Deby Cyntia Medan practice in 2023. Method research design using pre-experiment, with a One Group Pretest Posttest design. The research population was 10 postpartum mothers who experienced a second degree tear in the birth canal who experienced pain. The sampling technique for this research used purposive sampling of 10 people, data analysis used univariate and bivariate analysis using the Willcoxon test. The results is value is ($p = 0.004 < 0.050$), so it can be concluded that there is an effect of giving Cinnamon decoction on perineal wound pain in postpartum women at the practice. There is an effect of giving Cinnamon decoction on perineal wound pain in postpartum women at the Medan Deby Chyntia Midwife Practice in 2023. It is recommended for research sites, especially health workers, to encourage postpartum mothers to consume Cinnamon decoction as an alternative for non-pharmacological treatment of perineal wounds.

Keywords: postpartum, cinnamon, perineal, wound, pain

INTRODUCTION

The postpartum period (*puerperium*) begins after the birth of the placenta and ends when the uterine organs have returned to their pre-pregnancy state. The postpartum period (*puerperium*) begins 2 hours like before pregnancy. The postpartum period or puerperium starts from 2 hours after the birth of the placenta to 6 weeks or 42 days (Reinissa & Indrawati, 2017). Every mother who has undergone the birth process with a perineal wound will feel pain. The pain felt by every mother with a perineal wound causes unpleasant impacts such as pain and fear of moving so that many mothers with perineal wounds rarely want to move after giving birth, which can result in there are many problems including sub-involution, poor lochea discharge, and postpartum bleeding. Mothers giving birth with perineal wounds will experience pain and discomfort (Romadhon et al., 2021).

Based on WHO (World Health Organization), in 2018 the maternal mortality rate (MMR) in the world was 304.000. WHO estimates that there are 500.000 maternal deaths worldwide every

year. The largest contributor to the maternal mortality rate is developing countries with 280 maternal deaths per 100.000 live births, compared to the maternal mortality rate (MMR) in developed countries, namely 14 maternal deaths per 100.000 live births. The maternal mortality rate in the world decreased by around 44% compared to 2018. One of the causes of mortality is infection due to perineal rupture. Data from WHO (2019) states that the incidence of perineal rupture in Indonesia is 67.2%, an increase from the previous year, namely 60% in 2019 with an incidence of puerperium infection of 7% (Kementerian Kesehatan RI, 2020).

According to the Ministry of Health, the maternal mortality rate (MMR) is very high, around 295,000 women died during and after pregnancy or childbirth in 2017, 94% of all maternal deaths which often occur in low and lower middle income countries. Sub-Saharan Africa and South Asia accounted for around 86% (245.000) of the estimated global maternal deaths in 2017, and according to UNICEF (2019) from 2000 to 2017, the ratio of global maternal deaths decreased by 38 percent from 342 deaths and to 211 deaths per 100,000 live births, according to UN inter-agency estimates. This means that the average annual rate of decline is 2.9 percent (Kementerian Kesehatan RI, 2022).

Based on data from the Indonesian Health Demographic Survey (SDKI), it shows that in Indonesia perineal tears or ruptures are experienced by 75% of mothers who give birth. The prevalence of mothers experiencing perineal tears in Indonesia in the 25 to 30 year age group is 24% and in mothers aged 32 to 39 years is 62%. In 2017 it was found that of a total of 1951 spontaneous vaginal births, 57% of mothers received perineal sutures, 28% due to episiotomy and 29% due to spontaneous tears (Kementerian Kesehatan RI, 2020).

In 2022, the number of maternal deaths in North Sumatra Province was 131 cases out of 278,350 live births, so that if converted, the MMR in North Sumatra Province was 47.06 per 100.000 live births. This figure shows a decrease compared to the MMR in 2021, which was 89.18 per 100.000 live births (248 maternal deaths out of 278.100 live birth targets. The MMR in North Sumatra Province was 2.19 per 1.000 live births. This figure shows a decrease compared to the MMR in 2021, which was 2.28 per 1,000 live births (633 infant deaths out of 278.100 live birth targets) (North Sumatra 2019). The Maternal Mortality Rate (MMR) of North Sumatra is the 2nd in Indonesia, which is 195 MMR after Aceh 201 MMR (Kementerian Kesehatan RI, 2020). Postpartum infections still play a role as the main cause of maternal death, especially in developing countries like Indonesia. This problem occurs as a result of midwifery services which are still far from perfect. Other factors causing postpartum infections include poor immune system, poor postpartum care, malnutrition /malnutrition, anemia, poor hygiene, and fatigue (BKKBN, 2018).

Cases of this infection (25-55%) are caused by infection of the birth canal due to episiotomy, mostly with complaints of pain in the episiotomy area or for fear of the stitches falling out. A mother after giving birth is afraid to carry out good personal hygiene care such as bathing, washing and changing sanitary napkins for wounds in the birth canal which are good media for the growth of germs. This is caused by the mother's low immune system after giving birth, poor care and poor hygiene (Fatmawati, 2015).

Perineal lacerations have the potential to trigger complications due to long or delayed wound healing and even have an impact on infection. The impacts that occur if wound healing is hampered include other pain and fear of moving, which can cause many problems such as bleeding, and early mobilization disorders that can slow down the release of lochia, increasing the risk of infection in the wound (Zakiyah & Dini, 2022). There are several methods that can reduce pain and speed up the healing of suture wounds. The use of non-steroidal anti-inflammatory drugs (NSAIDs) is a drug that is commonly used to reduce pain and speed up the healing of suture wounds, but some of these drugs can cause side effects such as stomach ulcers (Ghassani et al., 2020).

The pain felt by postpartum mothers in the perineum is caused by stitching wounds during childbirth due to severed tissue. The pain felt by postpartum mothers will affect mobilization, sleep patterns, mood, ability to defecate or urinate, and daily activities (Romadhon et al., 2021). Pain in postpartum mothers can cause dangerous risks. Immediate, gradual mobilization is very useful for the wound healing process and preventing infection and venous thrombosis (thrombophlebitis). Thrombophlebitis that occurs in deeper veins or *deep vein thrombophlebitis* (DVT) is more dangerous because blood clots can enter the bloodstream to the arteries in the lungs and obstruct blood flow. This condition can result in death (Zakiyah & Dini, 2022).

Cinnamon has anti-inflammatory and analgesic effects so it is very effective in reducing pain in perineal wounds and accelerating the healing process. The average healing of perineal wounds before the intervention was 6.08, while after the intervention it became 0.60. The p-value obtained was 0.001, which shows that the administration of Cinnamon has a significant effect on healing perineal wounds (Ghassani et al., 2020).

Several management strategies for healing perineal wound pain include pharmacological and non-pharmacological approaches. Pharmacological therapy is the administration of antibiotics and antiseptic drugs to treat perineal wounds, however these drugs and materials have side effects such as allergies, the production of collagen which functions for wound (Yuliana, 2022). Cinnamon's main anti-inflammatory compound, cinnamaldehyde and eugenol, has been found to reduce menstrual pain due to its anti-inflammatory properties (Maloto et al., 2022) .

Cinnamon is one of the many herbal spices that has long been used by people throughout the world. In vivo and in vitro studies show that the active compounds contained in Cinnamon have pharmacological effects, including antifungal, antiulcer, anticonvulsant, anticancer, antiinflammatory, analgesic, antidiabetic and cholesterol. The side effects of Cinnamon are swollen gums, skin irritation, dizziness, and causing blood sugar to rise too much. However, these side effects can occur if Cinnamon is consumed in excess of the recommended dose (Romadhon et al., 2021). Based on Romadhon et al. (2021), there was an effect of giving Cinnamon on perineal wound pain in postpartum mothers with a p-value <0.05. This shows that there is an effect of giving Cinnamon on perineal wound pain in postpartum mothers in the PMB Work Area, Gedong Air Village, Bandar Lampung.

Based on an initial survey conducted in April 2023 at Deby Cyntia Midwife Practice, there were 10 mothers who gave birth in April 2023, with 7 mothers who gave birth who experienced tearing of the birth canal or perineum stitches either due to episiotomy or tearing themselves and the mother stated that she felt pain after being stitched and some even cried so that in the 2 hours of the postpartum period they tended to still not want to mobilize, sleep patterns, moods, ability to defecate and urinate, and daily activities so that they tend to cause infections in the birth canal. With a different research concept from previous studies, then from the results of the interview which stated that many mothers felt pain after perineal wound suturing, and Cinnamon has many positive benefits, one of which is as an analgesic (reduces pain) and accelerates wound healing, the researcher is interested in researching “The Effect of Giving Cinnamon Decoction” on Perineal Wound Pain in Postpartum Mothers at Deby Cyntia Midwife Practice, Medan.

METHODS

This research uses the Pre-experiment method with one group pretest posttest design, where the subject group undergoes intervention, then observes before the intervention and observes after the intervention. The one group pretest posttest design does not have a comparison group (Control).

This research was conducted at the Deby Cyntia Midwife Practice, Address Jalan Garu 1 Gg. Independent No. 96, Medan Amplas District, Medan City, North Sumatra 20226. The research will be conducted from April 2023 to August 2023.

The population in this study were all post partum mothers from day 1 who experienced grade II perineal tears, totaling 10 people. In this research the researcher used a purposive sampling

technique . The sample for this study was postpartum mothers starting from day 1 at the Medan Deby Cyntia Midwife Practice in 2023, as many as 10 people who experienced Grade II perineal rupture.

Data analysis in this research is univariate and bivariate analysis. Univariate analysis is used to describe the data that will be carried out on each variable and research results. Bivariate analysis is analysis used to connect two variables, namely the independent variable and the dependent variable. The data obtained based on the research instrument will then be processed and analyzed with the aim that the results can answer the questions of researchers and hypothesis testers. The data is processed and analyzed using statistics, namely the Wilcoxon test .

RESULT

The research findings can be found in the table provided.

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	Amount	
	f	%
Age (Year)		
<20	2	20
20-35	6	60
>35	2	20
Parity		
Primipara	6	60
Multiparous	4	40
Work		
Work	3	30
Doesn't work	7	70
Education		
Junior High School	5	50
Senior High School	3	30
Bachelor	2	20

Based on the Table above, it can be seen that the frequency of 10 people (100%) of respondents aged <20 years was 2 people (20%), those aged 20 - 35 years were 6 people (60%), while those aged >35 years were 2 people (20%). It is known that the frequency of 10 people (100%), primiparous mothers is 6 people (60%), and multiparous mothers are 4 people (40%). It is known that the frequency of 10 people (100%), working mothers is 3 people (30%), and mothers who do not work are 7 people (70%). It is known that the frequency is 10 (100%),

mothers with junior high school education are 5 people (50%), mothers with high school education are 3 people (30%), and mothers with BA graduate education are 2 people (20%).

Table 2. Frequency Distribution of Perineal Wound Pain Before Giving Cinnamon Decoction

Variable	Amount	
	f	%
Pre-Test		
Mild Pain	5	50
Moderate Pain	4	40
Severe Pain	1	10
Post-Test		
No Pain	6	60
Mild Pain	3	30
Moderate Pain	1	10

It is known that the frequency of *pre-test results* was 10 (100%), 5 mothers experienced mild pain (50%), 4 mothers experienced moderate pain (40%), and 1 mother experienced severe pain (10%). It is known that *the post test results* frequency was 10 (100%), 6 mothers experienced no pain (60%), 3 mothers experienced mild pain (30%), and 1 mother experienced moderate pain (10%).

Table 3. T-Test Sample Test Results Based on the Effect of Giving Cinnamon Decoction on Perineal Wound Pain in Postpartum Women

Test of Normality

	Shapiro Wilk		
	Statistics	df	Sig
<i>Pretest</i>	0,916	10	0,325
<i>Posttest</i>	0,737	10	0,002

Based on the Table above, the Shapiro Wilk normality test has a sig value ($p < 0.05$), so the data is not normally distributed. If the data is not normally distributed, the next step is to use the Wilcoxon test.

Table 4. Non-Parametric Test Results Based on the Effect of Giving Cinnamon Decoction on Perineal Wound Pain in Postpartum Women

<i>Posttest - pretest</i> Cinnamon decoction intervention	
Z	-2,859 ^a
<i>Asymp. Sig. (2-tailed)</i>	0,004

Based on the Table above in the Wilcoxon test, it can be seen that the table above obtained $p = 0.004$, so it can be concluded that there is an effect of giving Cinnamon decoction on perineal wound pain in postpartum women at the practice of midwife Deby Cyntia in 2023.

DISCUSSION

Based on research conducted at before being given Cinnamon decoction, 100% of mothers experienced pain from stitches with a pain level of 50% mild pain, 40% moderate pain, and 10% severe pain. There were 10 respondents who experienced moderate pain from stitches, with details of 2 respondents aged < 20 years, 6 respondents aged 20 - 35 years, and 2 respondents aged > 35 years, 6 respondents were primiparas, and 4 other respondents were multiparas. Meanwhile, there was 1 respondent who experienced severe stitching pain, with details of 1 respondent being > 35 years old, and the respondent being a primipara.

One factor that influences the pain threshold is age. The older a person is, the threshold for pain stimulation is higher than that of younger people. Postpartum mothers of older age who experience perineal tears will have a higher pain threshold compared to postpartum mothers of younger age (Mulati, 2017). Age has an important role in perceiving pain intensity. The older a person gets, the more complex their perception of pain becomes. Children and adults certainly differ in how they express pain, children tend to be confused and find it difficult to express the pain they experience. Based on research that has been conducted, respondents aged < 20 years experience lower pain intensity than respondents who are older.

A person's previous experience of pain will determine the pain threshold they experience now. If someone has experienced the same pain, then that person's pain threshold tends to be lower than the pain threshold that was felt the first time. In postpartum mothers, experience can be related to the mother's experience in the birthing process. Multiparous postpartum mothers will of course have a lower pain threshold than primiparous postpartum mothers, because multiparous mothers have more experience in adapting to pain than primiparous mothers (Mulati, 2017).

The way a person responds to pain is also influenced by previous pain experiences. The more incidents of the same pain during a lifetime, the different the pain response will be from the person who felt the pain for the first time. In postpartum mothers, previous experience can be determined through parity. In primiparas, the intensity of pain felt will be greater than in multiparas, because multiparas already have pain experience and adaptation processes in dealing with this pain. Based on research that has been conducted, the intensity of pain in

multiparous postpartum mothers tends to be smaller than the intensity of pain in primiparous postpartum mothers.

After Giving Cinnamon Decoction to Perineal Wound Pain in Postpartum Women at the Practice of Midwife Deby Cyntia Medan in 2023

Based on the research, the results obtained that after being given Cinnamon decoction, it was found that 100% of mothers experienced stabbing pain with a pain level of 60% no pain, 30% mild pain, and 10% moderate pain. All mothers were given Cinnamon decoction regularly for 4 consecutive days. Each respondent had a different response when given Cinnamon decoction. Some respondents said the pain from the stitching wound decreased on the 3rd day and several other respondents said the pain from the stitching wound decreased on the 4th day. This situation occurred because the respondents were very enthusiastic when they were given Cinnamon decoction and an explanation of the analgesic benefits of Cinnamon. Some of the respondents' parents were also very enthusiastic when given explanations and supported the respondents in order to speed up the respondents' recovery.

Giving Cinnamon decoction to postpartum mothers, on the first day the researcher gave an observation sheet and a letter of consent to consume Cinnamon decoction to postpartum mothers, distributed the Cinnamon decoction to 10 postpartum mothers. On the second day, the researchers gave Cinnamon decoction to postpartum women, and there was no change. On the third day, the researchers gave Cinnamon, where 4 mothers said that there had been changes in pain.

On the 4th day of the researcher's activities, distributing Cinnamon decoction to postpartum mothers, as many as 6 people said that the pain they experienced had started to increase. After conducting the research for 4 days, the mothers began to do their normal activities because they felt that the pain they felt had decreased. It can be seen from the statistical test showing that the value ($p = 0.004 < 0.050$), then it can be concluded that there is an Effect of Giving Cinnamon Decoction on Perineal Wound Pain in Postpartum Mothers.

The Effect of Giving Cinnamon Decoction on Perineal Wound Pain in Postpartum Women at the Practice of Midwife Deby Cyntia Medan in 2023

The results of the Wilcoxon Signed Rank Test show p value = 0.004 so the p value = 0.004 $> \alpha = 0.05$, meaning that there is an influence before and after giving Cinnamon decoction on perineal wound pain in postpartum women at midwife Deby Cyntia's practice in 2023. It can be seen that before being given Cinnamon decoction, all respondents felt stitching pain, 50% of mothers experienced mild stitching pain, 40% of mothers experienced moderate stitching

pain and 10% of mothers experienced severe stitching pain. After being given Cinnamon decoction once a day for 4 days with a dose of 1.5 grams per administration, 60% of mothers did not experience pain from stitches, 30% experienced mild pain from stitches and 10% of mothers experienced moderate pain from stitches.

Every mother who has undergone the birth process with a perineal wound will feel pain. The pain felt by every mother with a perineal wound causes unpleasant impacts such as pain and fear of moving so that many mothers with perineal wounds rarely want to move after giving birth, which can result in there are many problems including sub involution, poor lochea expulsion, and postpartum hemorrhage. Mothers giving birth with perineal wounds will experience pain and discomfort (Romadhon et al., 2021).

The pain felt by postpartum mothers in the perineum is caused by stitching wounds during childbirth due to severed tissue. The pain felt by postpartum mothers will affect mobilization, sleep patterns, mood, ability to defecate or urinate, and daily activities (Romadhon et al., 2021). Pain in postpartum mothers can cause dangerous risks. Immediate, gradual mobilization is very useful for the wound healing process and preventing infection and venous thrombosis (thrombophlebitis). Thrombophlebitis that occurs in deeper veins or deep vein thrombophlebitis (DVT) is more dangerous because blood clots can enter the bloodstream to the arteries in the lungs and obstruct blood flow. This condition can result in death (Zakiyah & Dini, 2022).

Several studies have examined herbal medicines for treating stitch wounds such as lavender, turmeric, olive oil and Cinnamon. Cinnamon has anti-inflammatory and analgesic effects so it is very effective in reducing pain in perineal wounds (Ghassani et al., 2020). Cinnamon contains health substances that are beneficial for health, such as resin, eugenol 59.56%, calcium oxalate, essential oils 9.5%, safrole, cinnamaldehyde, tannin, tanning substances (Suparni & Wulandari, 2017). Eugenol will work to inhibit the risk of cyclooxygenase (COX-2) or reduce the occurrence of inflammation so that it will reduce pain, and eugenol as an analgesic will inhibit excessive release of prostaglandins through the uterine epithelial tissue and will reduce pain and inhibit uterine contractions (Dyawayapur et al., 2018).

Cinnamon extracts, rich in biologically active compounds like Cinnamon aldehyde, cinnamic alcohol, cinnamic acid, and cinnamate, possess antioxidant, anti-inflammatory, and antibacterial properties, aiding in the treatment of diabetes and cardiovascular diseases (Błaszczuk et al., 2021). The study Mohammadi et al. (2014) found that using 2% Cinnamon ointment can reduce perineal pain and speed up the healing process of episiotomy wounds. The research involved 114 postpartum mothers who were divided into two groups. The intervention

was carried out one hour after the episiotomy process was completed, and participants received 2 ml of Cinnamon ointment and placebo ointment treatment every 12 hours for 10 days. Perineal pain was measured using VAS (Visual Analog Scale) with a scale of 1-10, while the episiotomy wound healing process was measured with REEDA (Redness, Edema, Ecchymosis, Discharge, Approximation) with a scale of 0-15. The results showed that the Cinnamon ointment group had significantly lower scores for pain and wound healing compared to the placebo group.

The difference between this research and previous research conducted by Mohammadi et al. (2014), study Suparni and Wulandari (2017) is the use of Cinnamon, the dependent variable, the duration of Cinnamon administration, and pain observation. Cinnamon was used as an ointment, there were dependent variables, namely perineal pain and the healing process of episiotomy wounds, the duration of administration of Cinnamon was 10 days, and was observed using a VAS (Visual Analog Scale). Meanwhile, in this study, Cinnamon was boiled as a drink, the dependent variable focused on pain from stitches, the duration of administration of the Cinnamon boil was 4 days, and was observed using the NRS (Numeric Rating Scale).

Based on research carried out at the Deby Cyntia Midwife, after being given Cinnamon decoction once a day for 4 days with a dose of 1.5 grams, the results showed that 60% of postpartum mothers did not experience stitching pain. 30% of postpartum mothers experience mild pain, and 10% of postpartum mothers experience moderate pain. This shows a decrease in the intensity of stitching wound pain before being given Cinnamon decoction, where 50% of postpartum mothers experienced mild pain, 40% of postpartum mothers experienced moderate pain, and 10% of postpartum mothers experienced severe pain.

According to assumptions based on the research results above, respondents consuming Cinnamon decoction can reduce perineal pain and speed up the healing of birth canal wounds. This is because before the mother consumed the Cinnamon decoction, the postpartum mother complained of pain in the birth canal wound. After consuming the Cinnamon decoction, the postpartum mother's complaints decreased.

CONCLUSION

After conducting a study on the effect of giving Cinnamon decoction on perineal wound pain in postpartum mothers at the Deby Cyntia Medan Midwife Practice in 2023, it can be concluded that stitching pain in postpartum mothers before being given Cinnamon decoction, 5 mothers experienced mild pain, 4 mothers experienced moderate pain, and 1 mother experienced severe pain. Then stitching pain in postpartum mothers after being given Cinnamon decoction, 6

mothers experienced no pain, 3 mothers experienced mild pain, and 1 mother experienced moderate pain.

Based on the results of the study, it can be seen that the sig value (2-tailed) is 0.004 <0.050, so that the results of perineal wound pain in postpartum mothers before being given Cinnamon decoction (pretest) and the results of perineal wound pain after being given Cinnamon decoction (posttest) are different. Thus, it can be concluded that there is an effect of giving Cinnamon decoction on perineal wound pain in postpartum mothers at the Deby Cyntia Medan Midwife practice in 2023.

LIMITATION

This research has limitations because it still uses a pre-experimental research design with a one group pretest posttest design plan.

REFERENCES

- BKKBN. (2018). *Laporan Kinerja BKKBN 2018*. Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN).
- Błaszczyk, N., Rosiak, A., & Kałużna-Czaplińska, J. (2021). The potential role of Cinnamon in human health. *Forests*, 12(5). <https://doi.org/10.3390/f12050648>
- Dyawapur, A., Patil, N. G., & Metri, L. (2018). Effectiveness of Cinnamon Tea and Turmeric Water for reducing dysmenorrhoea among degree girls. *International Journal of Science and Healthcare Research*, 3(1), 96.
- Fatmawati, D. A. (2015). Faktor risiko yang berpengaruh terhadap kejadian postpartum blues. *Jurnal EduHealth*, 5(2).
- Ghassani, M., Martini, N., Susanti, A. I., Nirmala, S. A., & Handayani, D. S. (2020). Pengetahuan ibu nifas mengenai penyembuhan luka perineum dengan menggunakan media booklet. *Jurnal Kebidanan Malahayati*, 6(3), 368–375. <https://doi.org/10.33024/jkm.v6i3.2676>
- Kementerian Kesehatan RI. (2020). *Profil Kesehatan Indonesia Tahun 2019*.
- Kementerian Kesehatan RI. (2022). Profil Kesehatan Indonesia Tahun 2021. In *Badan Pusat Statistik*.
- Maloto, R. A. H., Hadi, S. P. I., & Sari, F. (2022). The effect of giving Cinnamon on reducing menstrual pain in adolescent girl: Systematic literature review. *Manuju: Malahayati Nursing Journal*, 4(7), 1672–1688. [http://download.garuda.kemdikbud.go.id/article.php?article=2823225&val=13791&title=Pengaruh pemberian Kayu Manis terhadap Penurunan Nyeri Haid Pada Remaja Putri](http://download.garuda.kemdikbud.go.id/article.php?article=2823225&val=13791&title=Pengaruh%20pemberian%20Kayu%20Manis%20terhadap%20Penurunan%20Nyeri%20Haid%20Pada%20Remaja%20Putri) Systematic Literature review
- Mohammadi, A., Mohammad-Alizadeh-Charandabi, S., Mirghafourvand, M., Javadzadeh, Y., Fardiazar, Z., & Effati-Daryani, F. (2014). Effects of Cinnamon on perineal pain and healing of episiotomy: A randomized placebo-controlled trial. *Journal of Integrative Medicine*, 12(4). [https://doi.org/10.1016/S2095-4964\(14\)60025-X](https://doi.org/10.1016/S2095-4964(14)60025-X)
- Mulati, T. S. (2017). Nyeri perineum berdasarkan karakteristik pada ibu postpartum. *Jurnal Involusi Kebidanan*, 7.

- Reinissa, A., & Indrawati, F. (2017). Persepsi ibu nifas tentang mutu pelayanan postnatal care dengan kunjungan ulang. *HIGEIA (Journal of Public Health Research and Development)*, 1(3), 33–42.
- Romadhon, F. N., Putri, R. D., Evayanti, Y., & H., Z. (2021). Pemberian ekstrak kayu manis terhadap nyeri luka perineum pada ibu postpartum. *Jurnal Kebidanan Malahayati*, 7(4), 757–765.
- Suparni, & Wulandari, A. (2017). *Herbal Bali*. Rapha Publishing.
- Yuliana, D. (2022). *Perawatan luka perineum setelah melahirkan dengan menggunakan daun Binahong (Anredera cordifolia (Tenore) Steen)*. Penerbit NEM.
- Zakiah, Z., & Dini, K. (2022). Pengaruh pemberian cream binahong terhadap penyembuhan luka perineum pada ibu postpartum. *Pengembangan Ilmu dan Praktik Kesehatan*, 1(1), 64–75. <https://doi.org/10.56586/pipk.v1i1.189>