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# The Effect of the Application of Aloe Vera Gel Compresses on Breast Swelling Pain in Postpartum Mothers at Sumber Waras Hospital

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## *ABSTRACT*

*Breast engorgement is a common problem among postpartum mothers that often causes pain, disrupts comfort, and interferes with the success of exclusive breastfeeding. Non-pharmacological management using aloe vera gel compresses is believed to help reduce pain due to its active compounds with analgesic and anti-inflammatory properties. This study aimed to determine the effect of aloe vera gel compresses on breast engorgement pain in postpartum mothers at Sumber Waras Hospital in 2025. The study employed a pre-experimental one-group pretest–posttest design. The sample consisted of 10 postpartum mothers selected through purposive sampling. Pain intensity was measured using the Numeric Rating Scale (NRS), and data were analyzed using a dependent t-test. The results showed a decrease in the mean pain score after the application of aloe vera gel compresses: from 4 to 3 on the first day, from 3 to 2.10 on the second day, and from 2.20 to 1 on the third day. Statistical analysis revealed a p-value < 0.05 on all treatment days, indicating a significant effect of aloe vera gel compresses in reducing breast engorgement pain. In conclusion, aloe vera gel compresses are effective in reducing breast engorgement pain in postpartum mothers. This intervention can be applied as a safe, inexpensive, and practical non-pharmacological therapy to support the success of exclusive breastfeeding.*

*Keywords: Aloe vera, pain, breast engorgement, postpartum mothers*

## ABSTRAK

Pembengkakan payudara merupakan masalah umum pada ibu postpartum yang sering menimbulkan nyeri sehingga mengganggu kenyamanan dan keberhasilan pemberian ASI eksklusif. Penatalaksanaan nonfarmakologis dengan kompres gel aloe vera dipercaya dapat membantu mengurangi nyeri karena kandungan aktifnya yang bersifat analgesik dan antiinflamasi. Tujuan penelitian ini mengetahui pengaruh penerapan kompres gel aloe vera terhadap nyeri pembengkakan payudara pada ibu postpartum di Rumah Sakit Sumber Waras tahun 2025. Penelitian ini menggunakan desain pre-experimental one group pretest-posttest. Sampel berjumlah 10 ibu postpartum yang dipilih dengan teknik purposive sampling. Instrumen pengukuran menggunakan Numeric Rating Scale (NRS) dan data dianalisis dengan uji t dependen. Hasil penelitian menunjukkan adanya penurunan rata-rata skala nyeri setelah diberikan kompres gel aloe vera, yaitu pada hari pertama dari 4 menjadi 3, pada hari kedua dari 3 menjadi 2,10, dan pada hari ketiga dari 2,20 menjadi 1. Uji statistik menunjukkan nilai p < 0,05 pada seluruh hari perlakuan, yang berarti terdapat pengaruh signifikan pemberian kompres gel aloe vera terhadap penurunan nyeri pembengkakan payudara. Kesimpulan dari penelitian ini adalah kompres gel aloe vera efektif menurunkan nyeri pembengkakan payudara pada ibu postpartum. Intervensi ini dapat dijadikan salah satu terapi nonfarmakologis yang aman, murah, dan mudah diterapkan untuk mendukung keberhasilan menyusui eksklusif.
Kata kunci: Aloe vera, nyeri, pembengkakan payudara, ibu postpartum

## INTRODUCTION

### Background

Breast swelling is one of the common problems experienced by postpartum mothers in the first weeks after giving birth. This condition is characterized by pain, breasts feel full, hardened, and cause discomfort that can hinder the breastfeeding process. If not treated properly, breast swelling can lead to complications in the form of mastitis or breast abscesses which risks worsening maternal health. According to World Health Organization (WHO) data, more than 30% of breastfeeding mothers worldwide experience lactation problems, including nipple pain, mastitis, and Swelling breast which is one of the factors causing the low achievement of exclusive breastfeeding. In the Southeast Asian region, the rate of exclusive breastfeeding coverage still varies, with Indonesia reporting a decline in breastfeeding adherence due to various constraints, one of which is pain due to swollen breasts. Demographic Survey

and Health Indonesia (SDKI) in 2022 showed that most postpartum mothers stopped breastfeeding early due to problems with the breasts, including painful swelling and breast milk dam. This has an impact on the fulfillment of infant nutrition, increases the risk of infection, and interferes with children's growth and development.

Management of breast swelling can be done through pharmacological and non-pharmacological therapies. Pharmacological therapies such as analgesics can indeed reduce pain, but their use is not always recommended because it has the potential to cause side effects for both mother and baby. Therefore, nonpharmacological interventions are increasingly being chosen as a safer, cheaper, and easier to apply approach. Various methods have been developed, including warm compresses, cold compresses, cabbage leaf compresses, and the use of natural ingredients such as aloe vera.

Aloe vera (*Aloe barbadensis Miller*) is a widely known herbal plant in the medical and cosmetic world. This plant has active ingredients in the form of anthraquinones, aloin, emodin, lignin, saponins, and bradykinase enzymes which are analgesic and anti-inflammatory. The cooling effect of aloe vera gel also gives the taste comfortable Relieve Swelling and accelerate blood circulation in the tissues that experiencing inflammation. Thus, the application of aloe vera gel compresses in postpartum mothers who experience breast swelling is believed to reduce pain, increase comfort, and support the success of exclusive breastfeeding.

Some previous studies support the use of aloe vera in pain management. Studies by Dita et al. (2022) and Nurus et al. (2023) showed a significant reduction in breast swelling pain after aloe vera compresses. Similar results were also reported by Indah et al. (2023), who confirmed that this intervention is effective as a complementary nursing measure. However, the number of studies that specifically assess the effectiveness of aloe vera gel compresses in postpartum mothers is still limited, so additional scientific evidence is needed to strengthen the basis for its application in maternity nursing practice.

Based on this description, this study was conducted to analyze the effect of the application of aloe vera gel compress on breast swelling pain in postpartum mothers at Sumber Waras Hospital in 2025.

## RESEARCH METHODS

This study used a pre-experimental design of one group pretest–posttest to evaluate the effect of aloe vera gel compress on breast swelling pain in postpartum mothers. The study was conducted at Sumber Waras Hospital, Jakarta, in September 2025 with a sample of 10 respondents selected using purposive sampling according to inclusion criteria (postpartum mothers on days 2 to 7 with breast swelling pain, willing to be respondents, and do not have aloe vera allergy).

The intervention was in the form of applying aloe vera gel compresses to the swollen breast area for ±15 minutes, 2 times a day, for 3 consecutive days. Pain levels were measured using the Numeric Rating Scale (NRS) before and after the intervention. Data analysis used a paired t-test with a significance level of $p < 0.05$. The study has received ethical approval, and all respondents signed informed consent before participating.

## RESULT

**Table 4.1 Distribution of Average Age of Postpartum Mothers at Sumber Sanas Hospital in 2025**

| Variable | Mean | SD | Minimum-Maximum | 95%CI |
|---|---|---|---|---|
| Age | 28,80 | 7,642 | 19-40 | 23,33-34,27 |

Based on table 4.1, it shows that the average age of postpartum mothers at Sumber Waras Hospital is 28.80 years with a standard deviation = 7.642. The youngest age is 19 years old and the oldest is 40 years old. The results of this study are in line with a study conducted by Dita et al. (2022) which found that the majority of postpartum mothers with breast swelling are in the age range of 20–35 years. This is associated with high milk production at reproductive age, increasing the risk of breast milk dams if not managed properly. Thus, the mother's age has an influence on the tendency to develop breast swelling pain due to relatively higher milk production (Dita et al., 2022).

Another study by Nurus et al. (2023) also showed similar results, namely that most of the respondents with breast swelling pain were of productive age. The study states that the younger the mother, the better the physiological adaptability to the breastfeeding process, but lack of experience can affect breastfeeding techniques so that

increase the risk of breast milk dams. In contrast, in elderly mothers (>35 years), the risk of breast swelling pain is higher due to decreased elasticity of breast tissue and limited hormone production (Nurus et al., 2023). Meanwhile, research by Indah et al. (2023) found that the age of postpartum mothers affects the severity of breast swelling pain. Mothers aged <20 years are more susceptible to lactation problems due to the condition of the breasts that are not fully physiologically mature, while mothers aged >35 years tend to experience obstacles in the process of milk production due to decreased hormonal function. This confirms that age is one of the risk factors associated with breast swelling pain in postpartum mothers (Indah et al., 2023).

According to the theory, age affects the physiological functioning of the reproductive organs and breasts. Mothers of reproductive age (20–35 years) are at an ideal time to breastfeed because the production of the hormones prolactin and oxytocin is in optimal conditions. Beyond this age range, there is a tendency to increase the risk of lactation problems, including breast swelling, due to hormonal imbalances and inability to perform effective breastfeeding techniques (Zakiyah & Ana, 2016; McCaffery & Pasero, 2023).

The researcher's assumption is that the respondents with an average age of 28.8 years in this study are a group that is at a healthy reproductive age, so that physiologically they actually have good readiness in breastfeeding. However, the appearance of breast swelling pain is more influenced by breastfeeding behavioral factors, baby attachment techniques, and inadequate frequency of breast emptying. Thus, even though the age of the respondents is in the ideal range, maternal behavioral factors and knowledge remain the main keys in preventing the onset of breast swelling pain.

**Table 4.2 Distribution of Respondents Based on Postpartum Maternal Education at Sumber Waras Hospital in 2025**

| Education | Frequency (n) | Percentage (%) |
|---|---|---|
| No School | 0 | 0,0% |
| SD | 0 | 0,0% |
| JUNIOR | 3 | 30,0% |
| SMA | 7 | 70,0% |
| College | 0 | 0,0% |
| **Total** | **10** | **100** |

Based on table 4.2 shows that some

The largest respondents were postpartum mothers with a high school education, namely 7 people (70%). These results show that the majority of respondents have a secondary level of education. Education is one of the important factors that affect the knowledge, attitudes, and health behaviors of postpartum mothers, including in terms of prevention and treatment of breast swelling. Mothers with secondary education tend to have better access to information compared to mothers with low education, but still have the potential to experience limitations in understanding more complex medical information (Notoatmodjo, 2018).

Research by Sari et al. (2022) shows that the level of education is related to the mother's ability to perform breast care and the correct application of breastfeeding techniques. Mothers with higher education are more likely to receive education, understand the importance of exclusive breastfeeding, and are more skilled in preventing breast milk dams. In contrast, mothers with low education tend to rely more on personal experience or information from the surrounding environment, so they are at greater risk of lactation problems. The same thing was conveyed by Wulandari & Putri (2023) who found that education affects maternal readiness in facing breastfeeding problems. A better level of education provides a broader understanding of breast swelling pain management, as well as improves the mother's ability to utilize nonpharmacological interventions such as aloe vera gel compresses.

According to the theory, education influences the process of adopting health behaviors because it relates to an individual's cognitive ability to understand new information. The higher a person's level of education, the more likely it is that the individual is able to access, analyze, and apply health information in daily practice (Notoatmodjo, 2018). The researcher assumes that respondents with a high school education in this study are quite able to understand the intervention instructions given, but still need educational support from health workers in order to be able to apply breast care techniques correctly. Thus, even though the respondents' level of education is in the middle category, the role of nurses in providing simple, clear, and practical education is still indispensable to prevent and overcome breast swelling pain.

**Table 4.3 Distribution of Respondents Based on Postpartum Mother's Employment at Sumber Waras Hospital in 2025**

| Work | Frequency (n) | Percentage (%) |
|---|---|---|
| Housewives | 9 | 90,0% |
| Private employees | 1 | 10,0% |
| CIVIL SERVANT/TNI/POLRI | 0 | 0,0% |
| **Total** | **10** | **100** |

Based on table 4.3 shows that almost
All respondents have jobs as housewives, namely 9 people (90%). Mother's work is closely related to activities
daily routine, rest patterns, and time availability
to breastfeed and care for the baby. Housewives Ladders generally have more opportunities to breastfeed directly than working mothers, so the frequency of breastfeeding is more regular. However, on the other hand, housewives have the potential to experience breast swelling if there is no good lactation management, especially if the baby does not breastfeed effectively or if the mother does not understand the correct breastfeeding technique (Hidayati et al., 2021).

Research by Lestari et al. (2022) shows that mothers who do not work tend to spend more time with their babies, making it easier to breastfeed exclusively. However, they also reported that breast milk dams were more common in housewives who were less educated on how to optimally empty their breasts. On the other hand, working mothers are more at risk of facing obstacles in providing exclusive breastfeeding due to time constraints, although some of them have been helped by lactation room facilities. This is in line with Kurniawati's research &

Suryani (2023) who found that the mother's employment status affects the regularity of breastfeeding. Working mothers often face obstacles in maintaining the continuity of breastfeeding, but are more motivated to find solutions such as expressing and storing breast milk. Meanwhile, housewives are more flexible in breastfeeding, but sometimes they do not pay attention to breastfeeding techniques, increasing the risk of breast pain and swelling. According to the theory, a mother's job can affect lifestyle, stress levels, and breastfeeding practices. Housewives tend to have lower levels of work stress than working mothers, but still need guidance to make breastfeeding practices more effective (Notoatmodjo, 2018). The researchers' assumption is that the high proportion of housewives in this study is one of the factors that support the success of exclusive breastfeeding, because

They have more free time to breastfeed directly. However, a lack of knowledge and skills about lactation management can cause breast swelling pain to persist. Therefore, education and assistance from health workers are still needed so that mothers can breastfeed effectively and avoid lactation complications.

**Table 4.4 Average Distribution of Postpartum Maternal Parity at Sumber Sanas Hospital in 2025**

| Variable | N. | SD | Minimum - Maximum | 95%CI |
|---|---|---|---|---|
| Parity | 2,30 | 1,252 | 1-5 | 1,40-3,20 |

Based on table 4.4, it shows that the average postpartum maternal parity at Sumber Waras Hospital is 2.30 with a standard deviation = 1.252. The least parity is as many as 1 person and the most parity is 5 people. Parity is an important factor that affects the readiness of mothers to breastfeed as well as the risk of breast swelling. Mothers with multipara parity (≥2 children) generally had a better experience in breastfeeding than primipara. They tend to be more skilled in doing breast care, understand the signs of breast milk dams, and have higher confidence in the lactation process. However, even though multipara is more experienced, the problem of breast swelling pain can still occur if the practice of breastfeeding is not carried out with the correct technique (Rahayu et al., 2021).

Research by Sulastri et al. (2022) found that mothers with low parity (primipara) are more at risk of breast swelling pain than multipara. This is due to a lack of experience, skills in baby attachment, and knowledge about breast milk management. In contrast, multipara mothers have better physiological adaptations, but the fatigue factor from raising more than one child can also increase the risk of lactation problems. Similar results were conveyed by Fitriani & Putri (2023) who reported a relationship between parity and the incidence of breast milk dams. Primers often face anxiety, lack of confidence, and difficulties in breastfeeding techniques, while multipars are more mentally and physically prepared, although they can still experience swollen pain if they do not maintain regular breastfeeding. According to the theory, parity affects the psychological and physiological readiness of mothers in breastfeeding. Multipara is usually easier to adjust to because they already have previous experience, while

Pripipara still needs a lot of support from health workers and families (Notoatmodjo, 2018). The researchers' assumption is that the average respondent parity of 2.30 in this study shows that most mothers have experience breastfeeding their children before. This should be a positive capital in preventing breast swelling. However, the results of the study still show the presence of swelling pain, which indicates that breastfeeding techniques, frequency of breast emptying, and health education still play a major role, regardless of the amount of maternal birth experience.

**Table 4.5 Average Distribution of Breast Swelling Pain Scale in Postpartum Mothers at Sumber Sanas Hospital in 2025**

| Pain | Mean | SD | Minimum-Maximum | 95%CI |
|---|---|---|---|---|
| Day 1 Pretest | 4,00 | 0,667 | 3-5 | 3,52-4.48 |
| Day 1 Posttest | 3,00 | 0,816 | 2-4 | 2,42-3,58 |
| Pretest day 2 | 3,00 | 0,816 | 2-5 | 2,42-3,58 |
| Posttest Day 2 | 2,10 | 0,568 | 1-3 | 1,69-2,51 |
| Pretest day 3 | 2,20 | 0,632 | 1-3 | 1,75-2,65 |
| Posttest Day 3 | 1,00 | 0,816 | 0-2 | 0,42-1,58 |

Based on table 4.5, it shows that the average scale of breast swelling pain in postpartum mothers before being given aloe vera gel compresses on the first day is 4 with a standard deviation = 0.667. The lowest pain scale is 3 and the highest pain scale is 5. The scale of breast swelling pain after being given aloe vera gel compress on the first day was 3 with a standard deviation = 0.816. The lowest pain scale is 2 and the highest pain scale is 4.

The average distribution of breast swelling pain scale in postpartum mothers on the second day before being given aloe vera gel compress was 3 with a standard deviation = 0.816. The lowest pain scale is 2 and the highest pain scale is 5. The scale of breast swelling pain after being given aloe vera gel compress on the second day was 2.10 with a standard deviation = 0.568. The lowest pain scale = 1 and the highest pain scale is 3.

The average distribution of breast swelling pain scale in postpartum mothers on the third day before giving aloe vera gel compresses was 2.20 with a standard deviation = 0.632. The lowest pain scale is 1 and the highest pain scale is 3. The scale of breast swelling pain after being given aloe vera gel compress on the third day was 1 with a standard deviation = 0.816. The lowest pain scale = 0 and the highest pain scale is 2. Based on the results of the study, the average scale of breast swelling pain in postpartum mothers before being given aloe vera gel compress on the first day was 4 (moderate-severe pain category) and decreased to 3 after being given intervention. On the second day, the pain scale dropped from 3 to 2.10, while on the third day it decreased from 2.20 to 1. These results show that the intensity of pain decreases after the application of aloe vera gel compresses.

This study is in line with Zakiyya et al. (2024) who stated that breast swelling pain is a common problem in postpartum mothers due to poorly treated breast milk dams. Their research

shows that non-pharmacological actions in the form of compresses can reduce pain levels and improve maternal comfort. Aloe vera was chosen because its natural content is able to reduce
inflammatory and provides a cooling effect that soothing (Zakiyya et al., 2024). Similar results were shown by Febriayanti et al. (2022) who examined the effects of aloe vera on pain
breasts in postpartum mothers. They report that
The use of aloe vera gel compresses can significantly lower the pain scale after three days of treatment. The main mechanism comes from
from the content of the enzymes carboxypeptidase and bradykinase which work as natural analgesics to reduce pain responses in breast tissue (Febriayanti et al., 2022).

In addition, research by Martini et al. (2022) found that aloe vera is not only effective as pain therapy, but also improves smooth circulation in swollen breast tissue. The results showed a significant decrease in the pain scale in postpartum mothers who experienced breast milk dams after being given aloe vera gel compress therapy compared to the control group. This proves that aloe vera can be used as a complementary therapy in postpartum mothers (Martini et al., 2022). According to the theory, breast swelling pain arises due to the accumulation of milk in the duct lactiverus that is not optimally expelled, causing increased tissue pressure and stimulating the nociceptor. Aloe vera contains anthraquinone, aloin, and emodin which are analgesic, as well as bradykinase enzymes that function to inhibit pain mediators. The cooling effect of aloe vera gel also helps reduce inflammation and provide a comfortable sensation (McCaffery & Pasero, 2023; Runi et al.,

2025). The researchers' assumption is that the reduction in breast swelling pain in respondents occurs due to the combined effect of the active content of aloe vera which acts as an analgesic and anti-inflammatory as well as the support of the physiological effects of cold compresses. This therapy is safe for breastfeeding mothers, easy to apply, and can support the success of exclusive breastfeeding.

**Table 4.8 Effect of Aloe Vera Gel Compress Application on Breast Swelling Pain in Postpartum Mothers in Hospital Sumber Sanas in 2025**

| | | | Pain Scale | | n | |
|---|---|---|---|---|---|---|
| | | Mean | | SD | t | P Value |
| Day 1st | Before | 10 | 4 | 0,667 | 4,743 | 0,001 |
| | After | 10 | 3 | 0,816 | | |
| Day 2nd | Before | 10 | 3 | 0,816 | 5,014 | 0,001 |
| | After | 10 | 2,10 | 0,568 | | |
| Day 3rd | Before | 10 | 2,20 | 0,632 | 9,000 | 0,000 |
| | After | 10 | 1 | 0,816 | | |

Based on the results of data analysis as stated in table 4.8, it is known that the average scale of pain of breast swelling in postpartum mothers before being given aloe vera gel compress on the first day is 4 with a standard deviation of 0.667 while the average pain scale after being given aloe vera gel compress on the first day is 3 with a standard deviation of 0.816. The results of the t test were obtained with a value of $p = 0.001$ ($p < 0.05$), this means that there is an effect of the application of aloe vera gel compress on breast swelling pain in Postpartum Mothers at Sumber Waras Hospital. The average distribution of breast swelling pain scale in postpartum mothers before being given aloe vera gel compress on the second day was 3 with a standard deviation of 0.816 while the average pain scale after giving aloe vera gel compress on the second day was 2.10 with a standard deviation of 0.568.

The results of the t test were obtained with a value of $p = 0.001$ ($p < 0.05$), this means that there is an effect of the application of aloe vera gel compress on breast swelling pain in Postpartum Mothers at Sumber Waras Hospital. The average distribution of breast swelling pain scale in postpartum mothers before being given aloe vera gel compress on the third day was 2.20 with a standard deviation of 0.632 while the average pain scale after being given aloe vera gel compress on the third day was 1 with a standard deviation of 0.816. The results of the t test were obtained with a value of $p = 0.000$ ($p < 0.05$), this means that there is an effect of the application of aloe vera gel compress on breast swelling pain in Postpartum Mothers at Sumber Waras Hospital.

Based on the results of the study, there was a significant difference between the pain scale before and after the aloe vera gel compress was given. On the first day the average pain decreases from 4 to 3, on the second day from 3 to 2.10, and on the third day from 2.20 to 1. The dependent t-test shows a value of p < 0.05 on all treatment days, which means that there is an effect of aloe vera gel compress in reducing breast swelling pain in postpartum mothers. The results of this study are in line with the study of Holidah et al. (2021) which found that the use of aloe vera was effective in reducing the level of breast pain in postpartum mothers with breast milk dams. The decrease in pain occurs due to the content of anthraquinone, emodin, and aloin in aloe vera which function as natural analgesics. This effect has been shown to be significant in improving maternal comfort during the breastfeeding process (Holidah et al., 2021).

Research by Desyi & Harismayati (2025) also supports this result, where the administration of aloe vera compresses to postpartum mothers is able to reduce pain and prevent further complications such as mastitis. They concluded that aloe vera can be used as a complementary therapy that is safe, cheap, and effective compared to the use of pharmacological drugs that have side effects (Desyi & Harismayati, 2025). In addition, Mwale & Masika's research in Indah et al. (2023) reported that aloe vera plays a role in managing pain due to various postpartum breast problems, including breast milk dams, mild mastitis, and abscesses. The analgesic and anti-inflammatory effects of aloe vera speed up recovery and help mothers resume exclusive breastfeeding (Indah et al., 2023).

According to the theory, the mechanism of aloe vera in reducing pain comes from the content of the enzymes carboxypeptidase and bradykinase which are able to inhibit inflammatory mediators that cause pain. The cooling effect of aloe vera gel also provides local vasoconstriction, reduces tissue edema, and suppresses nociceptor stimulation. Thus, the application of aloe vera gel compresses works biologically and physiologically to reduce breast swelling pain (McCaffery & Pasero, 2023; Runi et al., 2025) According to pain theory, the experience of pain is a complex response due to nociceptor activation by mechanical, chemical, or inflammatory stimuli (McCaffery & Pasero, 2023). In postpartum mothers, breast swelling causes increased intraductal pressure due to the accumulation of breast milk, thus triggering tissue distension, inflammation, and causing pain sensations (Zakiyah & Ana, 2016). This pain usually appears at the beginning of the lactation period, especially when the breast emptying process is not optimal (Pipih et al., 2023). In terms of lactation theory, the hormone prolactin functions in the production of breast milk, while oxytocin

plays a role in the breast milk excretion reflex. Imbalances in this process, such as delayed breastfeeding or improper attachment of the baby, can lead to a dam of breast milk that causes pain (Vera et al., 2024). Aloe vera works through the content of bradykinase and carboxypeptidase which function to inhibit inflammatory mediators that cause pain, as well as anthraquinone (aloin, emodin) which is an analgesic. The cooling effect of aloe vera compresses also provides local vasoconstriction, reduces edema, improves blood circulation, and lowers pain (Runi et al., 2025).

The researchers assumed that the decrease in breast swelling pain in the respondents was due to the synergistic effects of aloe vera which acts as a natural analgesic and anti-inflammatory. In addition, the cooling effect of the gel compress increases the comfort of the mother, thereby gradually reducing the sensation of pain. Thus, this non-pharmacological intervention can be used as an alternative complementary therapy that supports the success of exclusive breastfeeding and improves the quality of life of postpartum mothers. The effectiveness of aloe vera in lowering breast swelling pain is influenced by its analgesic, anti-inflammatory, and cooling properties that work synergistically In addition, the mother's compliance factor in performing routine interventions also affects the results of pain reduction. Thus, aloe vera compresses can be one of the nonpharmacological intervention options that support exclusive breastfeeding success and improve the quality of life of postpartum mothers.

## CONCLUSION

The average age of the respondents was 28.8 years old (range 19–40 years), the majority had a high school education (70%), most worked as housewives (90%), and had an average parity of 2.3 children. This shows that the respondents are of healthy reproductive age with a background in secondary education and experience of giving birth more than once.

Before the intervention, postpartum mothers experienced pain with an average scale of 4 (moderate-severe) on the first day, 3 on the second day, and 2.20 on the third day. After the aloe vera gel compress was done, the pain scale gradually decreased to 3, 2, 10, and 1. This indicates a gradual decrease in pain intensity.

The results of the statistical test showed a p value of $< 0.05$ on the entire day of treatment, which means that there was a significant effect of giving aloe gel compresses Vera against a reduction in breast swelling pain in postpartum mothers. Overall, it can be concluded that aloe vera gel compresses are effective as a nonpharmacological intervention to reduce pain while reducing breast swelling in postpartum mothers. This intervention is safe, easy to apply, inexpensive, and can be used as one of the complementary therapies in supporting the success of exclusive breastfeeding and improving maternal comfort during the postpartum period.

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