Lowering Breast Pain Postpartum Cabbage (Brassica Var Capitata) and *Aloe vera* Compress

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Abstract

BACKGROUND: Pain was the body's way of telling us that something was wrong. Breast engorgement caused pain which affected the breastfeeding process. In the Kamonji Health Center area, there were 47 postpartum mothers who experienced breast pain

AIM: The purpose of this study was to determine the difference in the effectiveness of giving cabbage compresses (brassica oleracea var capitata) with *Aloe vera* compresses to reduce breast swelling pain in postpartum mothers in the Kamonji Health Center area

METHODS: This type of research was quasi-experimental with a two-group pretest–posttest design. The sampling technique was consecutive sampling with samples $n1 = n2 = 15$ for each group of cabbage compresses and *A. vera* compresses. Data processing used the paired sample t-test.

RESULTS: The results showed that the reduction of breast pain in postpartum mothers by giving cabbage compresses (brassica oleracea var capitata) was more effective than *A. vera* compresses with an average difference of 0.267. However, the second intervention has the same effectiveness in reducing breast pain in postpartum mothers, this can be assumed by the significant value of the second intervention is $0.000\ p < 0.05$

CONCLUSIONS: This study concluded that postpartum mothers who experienced breast swelling pain could apply cabbage compresses with *A. vera* compresses as a non-pharmacological therapy to reduce breast swelling.

Introduction

According to the WHO data in 2020, it was estimated that 10% of live births experienced complications, including morbidity. Maternal pain consists of mild-to-severe complications in the form of permanent or chronic complications that occur after the puerperium [1]. Infection is also an important cause of maternal mortality and morbidity. Pain following indirect causes, such as anemia and engorgement of breast milk. Breast milk dams that are not fed adequately will cause mastitis [2].

The percentage coverage of cases of breastfeeding dams in postpartum mothers in 10, namely Indonesia, Thailand, Malaysia, Singapore, the Philippines, Brunei Darussalam, Vietnam, Laos, Myanmar, and Cambodia recorded 107,654 postpartum mothers, in 2015, there were 95,689 postpartum mothers who experienced breast milk dams (66, 87%) postpartum mothers, and in 2016, there were 76,543 mothers (71.10%) with breast milk dams, with the highest number in Indonesia (37.12%). According to the 2018 Ministry of Health, in Indonesia, postpartum mothers experience breast swelling by 5% [3].

The main factors or causes of breast milk dams in Indonesia are tired or sick mothers as much as 2%, sick babies as much as 5%, babies not being breastfed at night as much as 9%, breastfeeding positions not good as much as 10%, flat nipples 24%, babies suckling not often or not for long as much as 47%. Breast dams in postpartum mothers can also be caused by several factors, namely the age factor showing 27.7%, the level of education which also affects the understanding of breast dams as much as 27.7%, the factor from mothers who work or prefers formula as much as 44.6%. Parity factor and previous experience in breastfeeding [4].

Statistically, data regarding breast swelling pain does not yet exist at the level of Central Sulawesi Province, in the city of Palu, and even at the public health. However, these events exist and have an effect on the well-being of babies and mothers. Based on a hospital survey, breast swelling pain occurs in the 1st week after giving birth, and the initial survey conducted by researchers on December 23-30 2020 at the Kamonji health Center, There were 18 mothers who experienced swollen breast pain due to swelling of the breasts breast milk dams from 35 postpartum mothers who breastfed their babies in the first week

after delivery. Six mothers said that it was their first time giving birth, 2 mothers said that their nipples were sinking, 4 mothers said their nipples were blistered, 6 mothers said that they gave birth more than twice and they still feel pain due to breast swelling. Swelling of the breast if left unchecked can cause mastitis and even breast abscess can occur. Treatment of breast pain can be done pharmacologically and nonpharmacologically. Pharmacologically, symptomatic therapy can be given to reduce the pain (analgesic) such as paracetamol, ibuprofen, and nonpharmacologically can be given acupuncture, traditional breast care (hot compresses or cold compresses combined with massage), *Aloe vera* compresses, cabbage leaf compresses, alternating hot and cold compresses, and ultrasound therapy [5].

The provision of nonpharmacological methods is a control that is cheaper, simpler, effective, and without adverse side effects. One of the nonpharmacological therapies that can be given in reducing breast swelling pain is giving tongue compresses and cabbage leaf compresses. Based on research, *A. vera* has anti-inflammatory properties that work to damage, destroy, reduce, or localize (sekuster) both damaged agents and damaged tissues. There is a liquid on the *A. vera* leaf in the form of a clear liquid like jelly (mucus). This liquid contains anti-bacterial and anti-fungal properties, as well as salicylate which can trigger fibroblasts (skin cells that function to heal wounds). Therefore, *A. vera* is believed to be able to heal wounds, reduce pain, and is efficacious as an anti-swelling [6]. Astuti, dkk research, *A. vera* compresses are proven to reduce pain in areas of the body that experience swelling. The decrease in the pain scale of breast swelling after being given an *A. vera* compress [7], according to Green, occurs due to the high content of amino acids, minerals, polysaccharides in *A. vera* leaves which function to reduce swelling pain and breast inflammation [8].

In addition to giving *A. vera* compresses, giving cabbage compresses is also effective in reducing breast pain, based on Sharma's research (2018) showing the use of cabbage leaves can reduce pain (85.9% to 13%), breast pain (80% to 10%), redness (75% to 11%) [9]. Where cabbage leaves contain the amino acid glutamine which can treat all types of inflammation, one of which is breast inflammation [10]. Cabbage leaves contain the amino acid methionine which acts as an antibiotic and other ingredients such as sinigrin (Allylisothiocyanate), mustard oil, magnesium, sulfur oxylate heterosides which can help widen the capillaries, thereby increasing blood flow in and out of the area and allowing the body to reabsorb it fluid that is blocked in the breast so that it can reduce breast swelling [11].

Based on this background, researchers are interested in researching "Reducing Postpartum Breast Pain with the use of Cabbage (Brassica Var Capitata) and *A. vera* Compresses in the Kamonji Health Center area." breasts in postpartum mothers in the Kamonji Health Center area.

Methods

This type of research uses a quasi-experimental design with a two-group pretest–posttest design. The study was carried out from April 1 to May 29, 2021. The population in this study were postpartum mothers who experienced breast pain in the Kamonji Health Center area as many as 47 people, with a total sample of $n1 = n2 = 15$ for each group of cabbage compresses and *A. vera* compress groups. The sampling technique used consecutive sampling. The data collection in this study is primary data by conducting a direct assessment of the incidence of breast pain using the Numeric Rating Scale (NRS) pain observation sheet and secondary data from related agencies. Data processing used the paired sample t-test.

Results

Based on the characteristics of the respondents in Table 1, it shows that the highest cauliflower group respondents were in primiparas as many as 9 people (60.0%), highly educated as many as 7 people (46.7%), respondents aged 20−35 years as many as 11 people (73, 3%), mothers who do not work as many as 10 people (66.7%). While the respondents in the experimental group of *A. vera* compresses were the highest in primiparas as many as 7 people (46.7%), with basic education as many as 7 people (46.7%), respondents aged 20−35 years as many as 11 people (73.3%), and mothers who do not work as many as 14 people (93.3%).

Table 1: Characteristics of postpartum mothers with breast pain in the kamonji community health center

Characteristics	Experimental group			
	Kol compress		*Aloe vera* compress	
	N	%	N	%
Parity				
Primipara	9	60,0	7	46,7
Multipara	4	26,7	6	40,0
Grande	2	13,3	2	13,3
Total	15	100,0	15	100,0
Education				
Basic (Elementary/junior high)	2	13,3	7	46,7
Intermediate (high school/equivalent)	7	46,7	7	46,7
Higher Education (D1-S3)	6	40,0	1	6,7
Total	15	100,0	15	100,0
Age (Years)				
<20	1	6,7	3	20,0
20−35	11	73,3	11	73,3
>35	3	20,0	1	6,7
Total	15	100,0	15	100,0
Job				
Does not work	10	66,7	14	93,3
Work	5	33,3	1	6,7
Total	15	100,0	15	100,0

Primary Data Source 2021.

Table 2 shows that the level of pain of the experimental group respondents before the cabbage compress was mostly found in moderate pain as many as 9 people (60.0%), after the cabbage compress there

was a decrease in the level of pain that was not painful by 4 people (26.7%), 10 people (66.7%) mild pain and no severe pain. The level of pain of the experimental group respondents before the *A. vera* compress was mostly found in moderate pain as many as 10 people (66.7%). After the *A. vera* compress, there was a decrease in the level of pain that was not painful by 3 people (20.0%), mild pain 9 people (60.0%), and no severe pain.

Table 2: Presentation of pain levels before and after administration of cabbage compresses and *Aloe vera* to postpartum mothers with breast pain in the Kamonji Health Center area

Pain Level	Kol Compress				*Aloe vera* Compress			
	Pre test		Post test		Pre test		Post test	
	N	%	N	%	N	%	N	%
No Pain	0	0	4	26.7	0	0	3	20,0
Light	5	33.3	10	66.7	2	13,3	9	60.0
Currently	9	60.0	1	6.6	10	66.7	3	20.0
Heavy	1	6.7	0	0	3	20.0	0	0
Total	15	100.0	15	100.0	15	100.0	15	100.0

Primary Data Source 2021.

Based on Table 3, it can be seen that the statistical score in the pretest group of the cabbage compress experiment had an average score of 4.27, after giving the cabbage compress the average score was 1.60, with an average difference of 2.67 and p value of 0.000 <0.05. From the statistical results above, it is known that there is a decrease in the level of pain after giving cabbage compresses to postpartum mothers who experience breast pain. The statistical score in the pretest group of the *A. vera* compress experiment had an average score of 4.67, after giving the *A. vera* compress the average score was 2.27, with an average difference of 2.4 and p value of 0.000 <0.05. From the statistical results above, it is known that there is a decrease in the level of pain after giving *A. vera* compresses to postpartum mothers who experience breast pain.

Table 3: The average level of pain before and before giving cabbage compresses to postpartum mothers who experience breast pain in the Kamonji Health Center area

Variable	N	Minimum	Maximum	Mean	SD	p value
Kol Compress						,000
Pre test	15	2	8	4,27	1,624	
Post test		0	5	1,60	1,454	
Aloe vera compress						,000
Pre test	15	2	7	4,67	1,543	
Post test		0	5	2,27	1,751	

Primary Data Source 2021.

Based on Table 4 shows the comparison of the average pain level of the cabbage compress group and the *A. vera* group. Based on the paired sample t-test, the average level of pain before and after the cabbage compress was 2,667. While the average level of pain before and after the *A. vera* compress was 2,400, so that the Sig value = 0.00 <0.05. Based on these results, it can be concluded that H0 is rejected and Ha is accepted, namely that there is a difference in the effectiveness

Table 4: The effectiveness of cabbage compresses with *Aloe vera* compresses on reducing breast pain in postpartum mothers in the Kamonji Health Center area

Group	Mean	Sig.
Pre test–post test Kol Compress	2,667	0.000
Pre test–post test *Aloe vera* Compress	2,400	0.000

Primary Data Source 2021.

of cabbage compresses with *A. vera* compresses on reducing breast pain in postpartum mothers in the Kamonji Health Center area in 2021. Where cabbage compresses are more effective than *A. vera* compresses with a difference in average value (Average 0.267).

Discussion

The results showed that before the pain was given the cabbage compress there was a decrease in the intensity of breast pain, the change in the level of postpartum mothers became lighter and even there was no pain with an average difference of 2.67. The pain felt by the respondents is a physiological thing in postpartum mothers. Breast engorgement occurs due to an increase in the volume of breast milk, and lymphatic and vascular congestion and interstitial edema for 2 weeks after birth, breast milk is not sucked in adequately, so it collects in the ductal system resulting in swelling and pain [12].

Cabbage (Barssica Oleracea Var capitata) is rich in sulfur content which can reduce breast swelling and inflammation. contains the amino acid methionine which functions as an antibiotic and other ingredients such as sinigrin (Allylisothiocyanate), mustard oil, magnesium, sulfur oxylate heterosides which can help widen capillary blood vessels, thereby increasing blood flow in and out of the area and allowing the body to reabsorb fluids blocked in the breast so that it can reduce breast swelling [11]. Research by A-Reum Lim, Ji-Ah Song which compared Cabbage Compression Early Breast Care (CCEBC), early breast care (EBC), and General Nursing Breast Care GNBC to reduce breast pain and swelling in primiparous mothers and results showed that The results obtained are that CCEBC is effective in reducing breast pain and breast swelling compared to EBC and GNBC in primiparous mothers after cesarean delivery [3].

The steps for doing a good cabbage compress are breast compresses with cold cabbage that have been washed and affixed to the breasts for 20 min or until the cabbage withers is placed in a bra which is done two times a day for 3 days [4]. This is in line with the research conducted by Damayanti *et al*., which showed that the analysis of cold cabbage leaf compresses had a significant effect on decreasing the swelling scale, the intensity of breast pain, and increasing the amount of breast milk with a p-value of 0.000 each ($\alpha < 0.05$) [13], [14].

The administration of *A. vera* compresses also showed effective results in reducing the intensity of breast pain, changing the postpartum mother's pain level to be lighter and even painless with an average difference of 2.4. *A. vera* is a functional plant because all parts of the plant can be used, both for body care and to treat various diseases. *A. vera* contains carboxypeptidase and bradykinase enzymes that inhibit

the cyclooxygenase enzyme or inhibit the synthesis of prostaglandin E2 (PGE2) from arachidonic acid so that it can reduce or relieve breast swelling pain. Research conducted by Sari *et al*, showed that *A. vera* compresses were effective in reducing the intensity of breast swelling pain in nursing mothers [15].

Provision of cabbage compresses and *A. vera* compresses is effective in reducing breast pain in postpartum mothers. However, the Cabbage Compress was more effective than the *A. vera* compress with an average difference of 0.267. Cabbage Compress is one of the nonpharmacological therapies that can be used in reducing pain due to breast swelling in postpartum mothers and is easy to obtain. The drawback of this cabbage leaf can not be stored for a long time. Cabbage which is usually used as vegetables or fresh vegetables is used to overcome and relieve pain and swelling experienced because it has anti-oxidant substances that are high in vitamin C [4].

Conclusion

Based on the theoretical description and discussion above, it can be concluded as follows: the average level of pain before and after cabbage compresses in postpartum mothers who experience breast pain in the Kamonji Health Center area in 2021 has decreased pain levels. The average level of pain before and after *A. vera* compresses in postpartum mothers who experienced breast pain in the Kamonji Health Center area in 2021 experienced a decrease in pain levels. There is a difference in the effectiveness of cabbage compresses with *A. vera* compresses on reducing breast pain in postpartum mothers in the Kamonji Health Center area in 2021. For health centers, it is hoped that when health workers provide postpartum counseling they can add a discussion about how to overcome breast swelling pain, namely by applying cabbage compresses. For postpartum, it is hoped that with this research, mothers can play an active role in preventing breast pain by using cabbage compresses as a nonpharmacological therapy. Moreover can teach to family and relatives who experience the same problem. For further researchers, it is hoped that they can develop research by adding variables and directly observing cases of mothers who experience breast pain.

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