



UTILIZATION OF BOILED MORINGA LEAF WATER TO INCREASE BREAST MILK PRODUCTION POSTPARTUM MOTHERS AT TANJUNG LEIDONG PUBLIC HEALTH CENTER

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ABSTRACT

Low breast milk production is a challenge for postpartum mothers in meeting their babies' nutritional needs, especially in the first six months of life. Various efforts have been made to increase breast milk production, one of which is through the consumption of boiled water from *Moringa oleifera* leaves, known as a natural galactagogue. Objective: To determine the effectiveness of using boiled water from *Moringa* leaves on increasing breast milk production in postpartum mothers. Method: This study used a pre-experimental design with a one-group pretest-posttest approach. A sample of 20 postpartum mothers who met the inclusion criteria were given an intervention of boiled water from *Moringa* leaves twice daily for seven days. Breast milk production was measured before and after the intervention using a breast milk volume observation sheet. Results: A paired t-test showed significant results with a p-value of 0.000. Conclusion: Boiled water from *Moringa* leaves is effective in increasing breast milk production in postpartum mothers.

Keywords: Breast milk, postpartum mothers, *Moringa* leaf

Introduction

Exclusive breastfeeding is defined as breastfeeding without any other food or drink supplementation except medication. Exclusive breastfeeding for the first six months of a baby's life is a global recommendation for optimal health. Exclusive breastfeeding is one of the most effective health interventions in achieving Sustainable Development Goals (SDGs) Goal 3: A Healthy and Well-Being Life. Breast milk contains complete nutrition optimal for infant growth and development and provides protection against various infectious diseases. Increasing the practice of exclusive breastfeeding can contribute to the health and well-being of future generations. Indonesia, as a member of the

SDGs, also supports exclusive breastfeeding, as evidenced by Article 21 of the Minister of Health Regulation Number 25 of 2014 (M. of H. of the R. of Indonesia, 2014) concerning Health Services for Infants, Toddlers, and Preschoolers. Health services for infants, toddlers, and preschoolers are provided through exclusive breastfeeding until the age of six months and breastfeeding until the age of two years. Furthermore, in 2012, Government Regulation (PP) No. 33 (G. of the R. of Indonesia, 2012) concerning Exclusive Breastfeeding was issued, followed by two Ministerial Regulations: Minister of Health Regulation No. 15 of 2013 (M. of H. of the R. of Indonesia, 2013) concerning Procedures for Providing



Special Facilities for Breastfeeding and/or Expressing Breast Milk and Minister of Health Regulation No. 39 of 2013(M. of H. of the R. of Indonesia, 2013b) concerning Infant Formula and Other Baby Products (Ningrum, 2018) Based on research by the Indonesian Pediatrician Association (IDAI) (Association, 2018) , the number of mothers who have ever breastfed their children in Indonesia is high, at 90%, but those who exclusively breastfeed for 6 months are still low, at 20%. The reason breastfeeding is continued after the baby is 6 months old is because 65% of a baby's energy needs at 6-8 months are still met by breast milk. At 9-12 months, approximately 50% of their needs come from breast milk, and at 1-2 years, only about 20% comes from breast milk (Sembiring.T, 2022) Exclusive breastfeeding plays a significant role in a child's growth and development and immune system. In fact, breast milk can make the world healthier, smarter, and more equal. Breastfeeding is not just about meeting their nutritional needs; it is also a highly profitable investment for their future. Nationwide, exclusive breastfeeding rates remain far below the national target of 80%. Based on the 2023 Indonesian Health Survey (SKI), only 55.5% of infants aged 0-6 months received exclusive breastfeeding(Yusuf, 2024) .North Sumatra is one province that has not yet reached the national target of 49.77%. One district in North Sumatra(Health, 2023) that still falls short of the target is North Labuhanbatu Regency, with an exclusive breastfeeding rate of 41.90% (Tanjung.B.Y, 2023) One of the factors inhibiting exclusive breastfeeding is low milk production. This can be caused by the process of breast milk formation, which is often affected by factors from the mother, the baby, or by disruptions in the transfer of breast milk

from mother to baby (Farah, 2024).One alternative that is increasingly being researched and utilized is the consumption of natural ingredients with galactagogue properties, substances that can stimulate or increase breast milk production. Moringa leaves (*Moringa oleifera*) are widely known as a plant rich in nutrients, such as vitamins A and C, calcium, iron, and protein, which play a vital role in breast milk production. Besides being consumed in food or capsule form, boiled moringa leaf water is a simple, inexpensive, and easy-to-make daily drink that has the potential to support lactation. Villages in North Labuhanbatu Regency, particularly Kualuh Leidong District, have great potential for utilizing the abundant, naturally occurring moringa plant. However, the use of boiled moringa leaves by postpartum mothers has not yet become common practice due to limited knowledge and the lack of local scientific evidence to convince the public and healthcare professionals of its effectiveness. Given the importance of supporting exclusive breastfeeding and the potential of local resources, research is needed on the use of boiled moringa leaves to increase breast milk production in postpartum mothers. This research is expected to provide a scientific basis for simple, herbal-based interventions that significantly impact maternal and infant health. Based on the above description, the author will conduct research on the Use of Boiled Moringa Leaves to Increase Breast Milk Production in Postpartum Mothers at the Tanjung Leidong Community Health Center in North Labuhanbatu Regency, North Sumatra Province in 2025.

Research Method

This type of research is a quantitative study with a Quasi-experimental design with a pre-test post-test one group design. The study was conducted at the Tanjung Leidong Community Health Center, North Labuhanbatu Regency, North Sumatra Province from May 2025 to July 2025. The sample is part of the number and characteristics of the population. The sample size in the study was 20 postpartum mothers (purposive sampling with inclusion criteria: postpartum age 0–7 days, willing to participate in the study, not allergic to moringa). The sampling technique used in this study was purposive

sampling. Bivariate analysis is an analysis carried out with more than two variables. Bivariate analysis serves to determine the relationship between variables (Sujarwini, 2014). Bivariate analysis uses a paired t-test (if the data is normally distributed) or Wilcoxon test (if the data is not normal) with a 95% confidence level, then the results are narrated.

Result

This study involved 20 postpartum mothers who met the inclusion criteria: postpartum age 0–7 days, no Moringa allergy, and willingness to participate. Respondent characteristics are shown in the following table.

Table 1 Respondent Characteristics Based on Age and Parity

Characteristics	Category	Number (n)	Percentage (%)
Age	20–25	9	45%
	26–30	7	35%
	>30	4	20%
Paritas	Primipara	12	60%
	Multipara	8	40%

The table above shows that the majority of respondents, 9 people (45%), were aged 20–25 years. Based on parity, the majority of respondents were primiparous, 12

people (60%).

Table 2 Comparison of Breast Milk Production Before and After Giving Boiled Moringa Leaves to Postpartum Mothers (n=20)

Breast Milk Production Categories	Pre test		Post test	
	n	%	n	%
Not increasing	16 people	80%	3 people	15%
Increasing	4 people	20%	17 orang	85%
Total	20 people	100%	20 people	100%

From the table above, it is known that there was an increase in breast milk production after being given boiled

moringa leaves for 13 people, where before the intervention there were 4 people

who increased, but after the intervention it became 17 people.

Table 3 Results of the Wilcoxon Signed Rank Test analysis

Variable	Z-value	p-value
Before and after giving boiled moringa leaves	-3.901	0,000

From the table above, it can be seen that the p-value is $0.000 < 0.05$, which shows that there is a significant difference in increasing breast milk production after being given boiled moringa leaves.

Discussion

This study aimed to determine the effect of Moringa leaf decoction on increasing breast milk production in postpartum mothers. Based on data obtained from 20 respondents, it was found that before the intervention, only 4 (20%) postpartum mothers experienced increased breast milk production, while after the intervention, this figure increased to 17 (85%). This indicates a significant increase in breast milk production after administering Moringa leaf decoction for 7 consecutive days. This increase was further supported by the results of statistical tests using the Wilcoxon Signed Rank Test, with a Z-value of -3.901 and a p-value of 0.000 (< 0.05). These results indicate a significant difference between breast milk production before and after the Moringa leaf decoction intervention. Therefore, the alternative hypothesis (H_1) is accepted and the null hypothesis (H_0) is rejected. This increase in breast milk production can be explained through physiological and pharmacological approaches. Moringa leaves (*Moringa oleifera*) are known as galactagogues, natural substances that can stimulate or increase breast milk production. The active ingredients in moringa leaves, such as flavonoids, saponins, and polyphenols,

play a role in stimulating prolactin and oxytocin, two hormones essential for lactation. Prolactin functions to produce breast milk in the breast alveoli, while oxytocin triggers the let-down reflex, or milk ejection (Okinarum, 2020). Furthermore, moringa leaves also contain macro- and micronutrients essential for breast milk production, such as vitamin A, vitamin C, calcium, iron, and protein. According to (Winarno, 2018), adequate nutritional intake affects the quantity and quality of breast milk produced. The nutrients contained in boiled moringa leaves contribute to improving the nutritional status of breastfeeding mothers, thus ensuring optimal lactation. The iron and protein in moringa leaves also support the formation of hemoglobin and maternal body tissue, which are crucial during the postpartum period for recovery and breast milk production. The results of this study also align with previous research conducted by (Hardian, 2019), which stated that consuming boiled moringa leaves can significantly increase breast milk production, even in less than a week. Similar findings were obtained by (Ma et al., 2018) who reported that breastfeeding mothers who consumed moringa-based products experienced increased breast milk volume within 4–7 days of the intervention. Beyond biochemical factors, psychological factors also play a crucial role in breast milk production. Postpartum mothers who receive support and feel calm are more likely to experience smooth

breastfeeding. In this study, almost all respondents reported no side effects or discomfort while consuming boiled moringa leaves. In fact, most expressed a willingness to continue consumption beyond the study period. This indicates that this intervention is well-accepted by the community, in terms of taste, safety, and comfort. The success of increasing breast milk production is also supported by observations using physiological indicators in mothers and babies. These indicators include breast fullness before breastfeeding and tenderness after breastfeeding, indicating effective milk production and removal. Breastfeeding frequency ≥ 8 times per day, which indicates that there is sufficient breastfeeding stimulation to trigger the lactation reflex; The baby urinates ≥ 6 times per day, as an indicator that the baby is getting adequate fluid intake; The baby looks satisfied and sleeps soundly, as a sign of adequate nutrition from breast milk; The baby's weight increases during the intervention period, as objective evidence that the baby is getting enough energy and nutrition from breast milk.

According to (Wahyuni, 2018) and (Pinem, 2020) these indicators are standard assessments for determining whether a mother is producing sufficient breast milk. Therefore, an increase in scores on these indicators after the intervention indicates the success of the therapy with boiled moringa leaves. From a public health perspective, this intervention has added value because it uses natural ingredients that are inexpensive, readily available, and well-known to the community. Moringa leaves grow abundantly in North Labuhanbatu Regency and do not require complex processing, so the use of this local plant aligns with the promotive and preventive approach in the primary

healthcare system. In the context of midwifery services, the results of this study can form the basis for developing lactation education modules based on local herbs. Midwives can recommend the consumption of boiled moringa leaves as part of lactation support, especially in rural areas or areas with limited access to professional lactation counselors. In addition to boiled form, moringa leaves can also be utilized in other ways, such as making moringa leaf juice (Simamora, 2023). Overall, this study demonstrates that boiled moringa leaf water has significant potential to increase breast milk production in postpartum mothers. This intervention could be an alternative solution to support the national exclusive breastfeeding program, particularly in areas with low exclusive breastfeeding rates (Sari, 2023).

Conclusion and Suggestion

Conclusion

1) Breast milk production increased significantly after administering boiled moringa leaves. Before the intervention, only 20% of postpartum mothers experienced an increase in breast milk production, while after the intervention, this increased to 85%. This indicates that boiled moringa leaves are effective in stimulating and increasing breast milk production.

2) The increase in breast milk production was statistically confirmed. The analysis using the Wilcoxon Signed Rank Test showed a p-value of 0.000 (<0.05), indicating a significant difference between breast milk production before and after the boiled moringa leaves intervention.

Suggestion

1) For Postpartum Mothers Consuming boiled moringa leaves is recommended as

a natural alternative to increase breast milk production. Postpartum mothers should consume it regularly according to the recommended dosage, which is one glass (200 ml) per day during breastfeeding, especially in the first weeks postpartum. 2) For Health Workers (Midwives, Nurses, Lactation Counselors) It is hoped that the benefits of boiled moringa leaves as a natural galactagogue can be disseminated in counseling sessions or classes for pregnant and breastfeeding mothers. This intervention can be part of locally-based and easily accessible lactation education programs. 3) For Community Health Centers Community health centers can develop community empowerment programs through the use of moringa plants as part of maternal and child health promotion programs. This plant is easy to cultivate and has the potential to increase exclusive breastfeeding rates in the region. 4) For Future Researchers Further research using a Randomized Controlled Trial (RCT) is recommended, involving a control group and a larger sample size, as well as a longer intervention duration. Further research can also explore other forms of processed moringa leaves (such as capsules, tea bags, or biscuits) as more varied delivery methods.

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