



The Impact of Banana Heart Vegetable Consumption on Enhancing Breast Milk Production in Postpartum Mothers at Werdhi Agung Health Center

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Abstract. Inadequate breast milk supply during the postpartum phase can impede the efficacy of exclusive breastfeeding. One effective method to enhance breast milk production is the incorporation of local foods, such as banana heart, which is traditionally recognized as a lactogenic food. This study is to assess the impact of banana heart vegetable consumption on the enhancement of breast milk production in postpartum moms at Puskesmas Berdi Agung. This research used a quasi-experimental design with a one-group pretest-posttest methodology. The sample comprised 27 postpartum women chosen through a purposive sampling method. Breast milk production was assessed prior to and during the intervention utilizing an observation sheet for breast milk production. The data were evaluated using univariate and bivariate statistical tests based on their distribution. The research findings indicate that the mean breast milk production score prior to the intervention was 4.37, which rose to 7.26 post-intervention, reflecting an average increase of 2.89. The majority of respondents reported an enhancement in breast milk production, with 25 individuals (92.6%) demonstrating improvement, whilst 2 individuals (7.4%) exhibited no change. The statistical test yielded a p-value of 0.000 or $p < 0.05$, indicating a significant effect of banana heart vegetable consumption on the enhancement of breast milk production. This study concludes that the consumption of banana heart vegetables enhances breast milk production in postpartum moms and can act as a local food resource to support effective breastfeeding.

Keywords: Banana Blossom; Indigenous Cuisine; Lactation; Milk Synthesis; Postpartum Women.

1. Introduction

Breast milk (ASI) is the optimal source of nutrition for newborns, as it comprises essential nutrients, antibodies, enzymes, and bioactive elements that facilitate the growth, development, and immune function of the child. The WHO and UNICEF advocate for initiating nursing within the first hour post-delivery, maintaining exclusive breastfeeding for the initial six months, and introducing supplementary foods alongside breastfeeding until the age of two years or longer (WHO, 2025). In Indonesia, exclusive breastfeeding is described as the administration of breast milk solely, without any supplementary food or beverages, except for vitamins, minerals, or medications, from birth until six months of age (Ministry of Health of the Republic of Indonesia, 2024).

The postpartum period is essential for successful nursing, while the mother recuperates from childbirth and adapts to the breastfeeding role. A common issue faced by postpartum women is the insufficient supply of breast milk to satisfy the baby's need. This syndrome may induce maternal anxiety, result in infant irritability, diminish nursing frequency, and eventually compromise the efficacy of exclusive breastfeeding. The Ministry of Health elucidates that the quantity of breast milk will augment during the transition to mature breast milk, with this rise being contingent upon the process and duration of nursing (Ministry of Health of the Republic of Indonesia, 2022).

The efficacy of breastfeeding is determined not only by biological variables but also by psychological influences, maternal education, familial support, nursing frequency, sufficient rest, and nutritional intake during the postpartum phase. Postpartum mothers require nutritious sustenance to facilitate bodily healing and aid lactation. Consequently, the use of locally sourced, affordable, and widely endorsed food emerges as a pertinent strategy to enhance breast milk supply. The local food-centric strategy aligns with promotional and preventive initiatives in primary healthcare facilities. The banana heart is a regionally recognized culinary component that may enhance breast milk production. The banana heart is a component of the banana blossom that can be utilized in

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several culinary preparations, including vegetables, and is frequently employed by lactating mothers in traditional practices. The nutritional composition of banana hearts, including fiber, minerals, and bioactive substances, is thought to contribute to the health of postpartum moms and facilitate lactation. Moreover, banana hearts are readily accessible within the community, presenting a viable local food option to promote breastfeeding.

Numerous studies indicate that the intake of banana hearts correlates with enhanced breast milk production in postpartum and lactating moms. Saida's research (2025) indicates that the eating of banana hearts significantly enhances breast milk production in postpartum moms, with statistically significant results ($p = 0.000$). A separate trial on banana heart beverages shown a galactagogue effect, enhancing the flow and volume of breast milk with minimal negative effects (Yimyam et al., 2022). These findings underscore the need of researching banana heart as a local dietary intervention to mitigate low breast milk production in postpartum women.

Puskesmas Berdi Agung, as a primary healthcare institution, significantly contributes to maternity and child health services, encompassing breastfeeding instruction, postpartum surveillance, and assistance for the successful implementation of exclusive breastfeeding. The use of banana heart vegetable in community-based programs may serve as a straightforward alternative to assist postpartum moms in enhancing breast milk supply. This research is crucial for assessing the impact of banana heart vegetable consumption on breast milk production enhancement in postpartum moms at Puskesmas Berdi Agung.

2. Methods

This study used a quasi-experimental design with a one-group pretest-posttest methodology to assess the breast milk production of postpartum moms prior to and following the intervention of consuming banana heart vegetables. The study was carried out in the operational domain of Puskesmas Berdi Agung. The study population comprised all postpartum moms within the jurisdiction of Puskesmas Berdi Agung who satisfied the inclusion criteria. The sample was chosen utilizing a purposive sampling technique, grounded in criteria established by the researcher.

The intervention implemented involved the eating of banana heart vegetables for a specified duration in accordance with the research design. Breast milk supply was assessed pre- and post-intervention utilizing observation sheets, breastfeeding frequency, markers of sufficient breast milk in the infant, and other metrics determined by the researchers. Data were analyzed univariately to characterize respondents and breast milk production, and bivariate to assess the impact of consuming banana heart vegetables on breast milk production enhancement. The statistical analyses employed were the paired sample t-test for normally distributed data and the Wilcoxon test for non-normally distributed data, with a significance threshold of $p < 0.05$.

3. Result And Analysis

Table 1. Demographic Attributes of Respondents.

Characteristics	Category	n	%
Age	<20 years	3	11,1
	20–35 years	21	77,8
	>35 years	3	11,1
Education	Primary school	5	18,5
	Junior high school	8	29,6
	Senior high school	12	44,4
	Higher education	2	7,4
Parity	Primipara	11	40,7
	Multipara	16	59,3
Postpartum day	1–3 days	12	44,4
	4–7 days	15	55,6
Total		27	100,0

According to Table 1, the predominant age group among responders is 20–35 years, with 21 individuals (77.8%). This age corresponds to the reproductive period typically observed in postpartum moms and significantly influences both the postpartum recovery process and the efficacy of nursing. During this phase, mothers require nutritional support,

rest, and comprehensive breastfeeding education to ensure effective lactation. The majority of responders, 12 individuals (44.4%), possessed a high school education. Education can affect a mother's capacity to obtain health information, comprehend the advantages of breast milk, and implement health experts' advice throughout the postpartum phase. The WHO underscores that breast milk is a vital nutritional supply for newborns throughout the initial months of life, so a mother's comprehension of breastfeeding is essential for its successful implementation. Regarding parity, the majority of respondents were multiparous, with 16 individuals (59.3%). Multiparous moms typically possess prior breastfeeding experience; yet, they may still face difficulties in milk production attributable to physical, psychological, dietary variables, or breastfeeding practices. Moreover, the majority of responders were in the postpartum phase of 4–7 days, a period during which lactation commences to escalate and mothers begin to acclimate to the breastfeeding routine.

Table 2. Breast Milk Production Scores Pre- and Post-Consumption of Banana Heart Vegetable.

Breast Milk Production	Mean $\pm$ SD	Median	Minimum	Maximum
Before the intervention	4,37 $\pm$ 0,79	4,00	3,00	6,00
After the intervention	7,26 $\pm$ 0,86	7,00	6,00	9,00
Increase difference	2,89 $\pm$ 0,75	3,00	1,00	4,00

According to Table 2, the mean breast milk production score prior to the consumption of banana heart vegetable was 4.37, with a standard deviation of 0.79. This score signifies that before to the intervention, the respondents' breast milk production was suboptimal. This syndrome may arise in the early postpartum phase as the mother's body continues to adjust to lactation, breastfeeding frequency, and the stimulation from the baby's suckling.

Following the introduction of banana heart vegetable consumption, the average breast milk production score rose to 7.26, with a standard deviation of 0.86. The mean rise of 2.89 signifies a favorable alteration following the operation. This rise might be ascribed to the encouragement of local food consumption that fulfills the nutritional requirements of postpartum women during breastfeeding.

This outcome aligns with the notion that the efficacy of breastfeeding is contingent upon maternal nutritional adequacy, breastfeeding support, and a sustained lactation process. UNICEF asserts that women possess unique nutritional requirements during lactation, hence the supply of healthy food is essential for the well-being of both mother and infant. Consequently, the eating of banana heart vegetables may serve as a local food resource to enhance breast milk production in postpartum women.

Table 3. Classification of Breast Milk Production Pre- and Post-Intervention.

Breast Milk Production Category	Before Intervention	Before Intervention %	After Intervention	After Intervention %
Low	19	70,4	2	7,4
Adequate	8	29,6	13	48,1
Good	0	0,0	12	44,4
Total	27	100,0	27	100,0

According to Table 3, prior to the intervention, the majority of respondents, comprising 19 individuals (70.4%), fell into the category of inadequate breast milk production. This condition signifies that at the onset of the trial, the majority of postpartum moms encountered challenges in breast milk production. Inadequate breast milk supply may induce maternal anxiety, result in infants exhibiting fussiness, and potentially impede the efficacy of exclusive breastfeeding. Following the eating of banana heart vegetables, the responders exhibited enhanced categories of breast milk production. The number of respondents with low milk production diminished to 2 individuals (7.4%), but those with adequate milk production rose to 13 individuals (48.1%), and the count of respondents with good milk production reached 12 individuals (44.4%). This alteration signifies that most respondents underwent a transition in category towards enhancement following the intervention.

These results corroborate prior research indicating that banana blossom, or banana heart, had galactagogue properties, suggesting its potential to enhance the flow and volume of breast milk. A study on banana heart beverages indicated that the intervention group had more breast milk flow and volume than the control group on the second and third days

postpartum. Consequently, banana blossom may be regarded as a beneficial local food for postpartum moms facing diminished breast milk supply.

Table 4. Modifications in Lactation Output Following Intervention.

Change in Breast Milk Production	n	%
Increased	25	92,6
Unchanged	2	7,4
Decreased	0	0,0
Total	27	100,0

According to Table 4, the predominant number of respondents, 25 individuals (92.6%), reported an enhancement in breast milk production following the use of banana heart vegetable. Two respondents (7.4%) reported no changes, and there were no respondents who suffered a reduction in breast milk output. The data demonstrate that the intervention positively impacted the majority of postpartum mothers.

The augmentation of breast milk production among the majority of respondents may be attributable to the intake of local foods that fulfill the nutritional requirements of lactating moms. Breast milk production is influenced by dietary factors, breastfeeding frequency, the stimulation from the baby's suckling, the mother's psychological state, familial support, and nursing practices. Consequently, this rise can be seen as a synthesis of nutritional interventions and additional lactation-enhancing elements.

The inclusion of two responders who did not exhibit any changes may be attributed to variations in physiological response to the intervention, exhaustion, stress, insufficient breastfeeding frequency, or inadequate latching technique by the infant. The WHO and UNICEF advocate for the prompt commencement of breastfeeding, exclusive breastfeeding for a duration of six months, and the continuation of breastfeeding for up to two years or longer, accompanied by suitable complementary foods. Consequently, the intake of banana heart vegetables necessitates concurrent breastfeeding education and support from healthcare providers.

Table 5. The Impact of Banana Heart Vegetable Consumption on Breast Milk Production.

Variable	Mean Before Intervention	Mean After Intervention	Mean Difference	p-value
Breast milk production	4,37	7,26	2,89	0,000

According to Table 5, the mean breast milk production score prior to the consumption of banana heart vegetable was 4.37, which rose to 7.26 following the intervention, resulting in an average rise of 2.89. The results reveal an enhancement in breast milk production following the consumption of banana heart vegetable by postpartum women. The rise suggests that this local food intervention may facilitate the lactation process.

The statistical test yielded a p-value of 0.000, indicating $p < 0.05$. This indicates a substantial impact of banana heart vegetable consumption on the enhancement of breast milk production in postpartum moms at Puskesmas Berdi Agung. Consequently, the research hypothesis is validated, indicating that the ingestion of banana blossom vegetables influences the enhancement of breast milk production. Banana blossom is a traditional local delicacy that has been utilized to enhance lactation, and recent research have begun to demonstrate its potential as a galactagogue. Studies indicate that the ingestion of banana blossom enhances breast milk production in lactating mothers, hence supporting the utilization of banana heart as a non-pharmacological alternative grounded in local dietary practices. The ingestion of banana blossom should be accompanied by breastfeeding education, balanced nutrition, sufficient relaxation, and oversight by healthcare professionals.

4. Conclusion And Recommendation

The research findings indicate that the eating of banana heart vegetables positively influences breast milk production in postpartum moms at Puskesmas Berdi Agung. Subsequent to the intervention, the mean breast milk production escalated, and the majority of participants reported an enhancement in breast milk output. Consequently, banana heart vegetables may serve as a local dietary resource to enhance breast milk production in postpartum women. Postpartum mothers are encouraged to ingest nutrient-dense foods, such as banana heart vegetables, to facilitate optimal breast milk production. Healthcare professionals are anticipated to deliver instruction on the significance of balanced diet,

appropriate breastfeeding methods, and familial support throughout the postpartum phase. Researchers are encouraged to utilize a greater sample size, implement a control group, and extend the duration of the intervention.

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