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The Effect Of Bean Sari On Increasing Breast Milk Production In Breastfeeding Mothers At The Puskesmas Sumbersari

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ABSTRAK

Air Susu Ibu (ASI) merupakan hasil proses fisiologis yang memiliki peranan penting dalam menunjang pertumbuhan serta perkembangan bayi, terutama pada periode awal kehidupannya. Produksi ASI yang tidak mencukupi dapat menyebabkan bayi kekurangan asupan gizi, sehingga berpotensi menghambat pertumbuhan, perkembangan, bahkan memengaruhi kemampuan kognitifnya. Walaupun secara alami tubuh ibu memproduksi ASI pasca melahirkan, pada kenyataannya tidak semua ibu mampu menghasilkan ASI dalam jumlah yang optimal. Sari kacang hijau diketahui mengandung beragam zat gizi yang berperan dalam mendukung peningkatan produksi ASI. Berdasarkan pertimbangan tersebut, penelitian ini dilakukan untuk mengkaji pengaruh konsumsi sari kacang hijau terhadap peningkatan produksi ASI pada ibu menyusui di wilayah kerja Puskesmas Sumbersari. Metode: Penelitian ini menggunakan pendekatan kuantitatif dengan desain kuasi eksperimen dan metode kelompok kontrol non-ekuivalen pre-test-post-test. Populasi penelitian terdiri dari 23 ibu nifas di wilayah kerja Puskesmas Sumbersari. Sampel penelitian terdiri dari 16 ibu nifas hari ke-10 hingga minggu kedua, yang dipilih secara purposive sampling. Data produksi ASI diperoleh dengan mengukur perubahan berat badan bayi menggunakan timbangan digital. Analisis data dilakukan secara univariat dan bivariat, dengan uji T-sampel Independen digunakan untuk perbandingan statistik. Hasil: Uji T-sampel Independen menunjukkan nilai signifikansi (p-value) sebesar 0,004, yang lebih kecil dari α = 0,05. Hal ini menunjukkan bahwa hipotesis nol (H0) ditolak, sedangkan hipotesis alternatif (H1) diterima. Kesimpulan: Terdapat perbedaan produksi ASI yang signifikan antara ibu nifas yang mengonsumsi ekstrak kacang hijau dan yang tidak, dengan konsumsi ekstrak kacang hijau terbukti meningkatkan produksi ASI. Saran: Tenaga kesehatan didorong untuk memberikan edukasi dan motivasi kepada ibu nifas untuk mengonsumsi ekstrak kacang hijau sebagai strategi untuk meningkatkan produksi ASI..

ABSTARCT

Breast milk (ASI) is the result of a physiological process that plays a vital role in supporting infant growth and development, particularly during the early stages of life. Inadequate breast milk production can lead to insufficient nutrient intake for the infant, potentially hindering growth, development, and even cognitive abilities. Although breast milk is naturally produced after childbirth, not all mothers are able to generate it in optimal amounts. Mung bean extract is known to contain various nutrients that contribute to improving breast milk production. Therefore, this study aimed to examine the effect of mung bean

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extract consumption on breast milk production among breastfeeding mothers in the working area of Puskesmas Sumbersari. Methods: This study used a quantitative approach with a quasi-experimental design and a non-equivalent control group pre-test-post-test method. The study population consisted of 23 postpartum mothers in the Sumbersari Community Health Center area. The study sample consisted of 16 postpartum mothers from day 10 to week two, selected using purposive sampling. Breast milk production data were obtained by measuring changes in infant weight using a digital scale. Data were analyzed using univariate and bivariate methods, with an Independent Samples T-test used for statistical comparisons. Results: The Independent Samples T-test showed a significance value (p-value) of 0.004, which is less than α = 0.05. This indicates that the null hypothesis (H0) is rejected, while the alternative hypothesis (H1) is accepted. Conclusion: There was a significant difference in breast milk production between postpartum mothers who consumed mung bean extract and those who did not, with mung bean extract consumption proven to increase breast milk production. Recommendation: Healthcare workers are encouraged to provide education and motivation to postpartum mothers to consume mung bean extract as a strategy to increase breast milk production

Introduction

Breast milk production is a physiological process that plays a crucial role in supporting an infant's growth and development, particularly during the early stages of life. This process is regulated by two main hormones: prolactin, which stimulates the production of breast milk, and oxytocin, which facilitates its release. Although a mother's body naturally begins producing breast milk after childbirth, not all mothers are able to produce it in sufficient quantities. Low breast milk production is often a common concern during the postpartum period and is one of the contributing factors to the failure of exclusive breastfeeding (Lestari, 2023). Breastfeeding is recommended until the child reaches the age of two years. International recommendations establish exclusive breastfeeding as a standard guideline based on scientific evidence regarding the benefits contained in breast milk (Maryunani, 2018).

At the national level, in 2023, 63.9% of infants aged 0–6 months in Indonesia were recorded as receiving exclusive breastfeeding. This percentage has exceeded the 2023 program target of 50%. In East Java Province, the exclusive breastfeeding rate reached 74.8%, which also met the regional target of 50% (Ministry of Health of the Republic of Indonesia, 2023). Meanwhile, based on the 2023 Jember Regency Health Profile from the Nutrition Section of the local Health Office, the target for exclusive breastfeeding coverage was set at 80%, but the realization only reached 67.0% (Health Office, 2023). In the working area of the

Sumbersari Community Health Center, the percentage of exclusive breastfeeding for infants under six months in 2023 was recorded at only 47.9% of a total of 634 births (Health Office, 2023). This low rate of exclusive breastfeeding can negatively impact infant health. A study in the European Respiratory Journal stated that children who are not breastfed at all are more likely to experience respiratory and digestive problems in the first four years of life than babies who are breastfed for at least six months. Furthermore, failure to provide exclusive breastfeeding contributes to approximately 11.6% of infant mortality (Maryunani, 2015).

Based on findings from the World Health Organization (WHO), the primary reason mothers discontinue exclusive breastfeeding is the perception that their breast milk production is insufficient to meet their baby's needs. Approximately 35% of mothers decide to stop exclusive breastfeeding within the first few weeks of the postpartum period because they feel that the amount of milk produced is inadequate and that their baby appears unsatisfied (S & Rosdiana, 2022).

The failure to achieve exclusive breastfeeding targets can be attributed to various factors, including limited knowledge among pregnant and breastfeeding mothers, improper breast care practices, and maternal nutritional status. In addition, suboptimal breast milk production may also be influenced by maternal age, parity (number of previous births), breastfeeding frequency, psychological condition, nutritional status, and breast care habits. When breast milk production is inadequate or decreases, infants are at risk of insufficient nutritional intake, which can negatively affect physical growth, development, and even cognitive ability. In the long term, this condition may impact the quality of human resources in the future. Impaired breast milk production also contributes to the failure to achieve national exclusive breastfeeding coverage. Infants who do not receive exclusive breastfeeding are more vulnerable to various diseases and infections, such as diarrhea, and may have a higher risk of obesity in adulthood. Meanwhile, mothers who do not breastfeed face increased risks of breast engorgement, mastitis, and difficulty losing postpartum weight (Khusniyanti & Purwati, 2024).

One of the factors that plays an important role in increasing breast milk production is maternal nutritional status. Mothers with good nutritional status tend to produce breast milk in adequate amounts and optimal

quality. In fact, a mother's nutritional requirements during the breastfeeding period are higher than during pregnancy. Nutritional intake while breastfeeding greatly influences the nutrient composition of breast milk, which is essential in supporting infant growth (Nurasiah et al., 2024). This statement is supported by research conducted by Kusparlina (2020), which demonstrated a relationship between maternal nutritional intake and breast milk production.

To help optimize the breastfeeding process, nursing mothers require support, including the consumption of foods that can stimulate milk production, such as mung beans. According to Marbun et al. (2024), mung beans belong to the Leguminosae family and play an important role in Indonesia. Their protein content ranges from 20–25%, with a digestibility rate of approximately 77% in raw form. Mung beans contain lactagogues, compounds that stimulate and increase breast milk production. In addition, mung beans are rich in natural B-complex vitamins that have been scientifically proven to support the health of breastfeeding mothers and enhance milk production. During lactation, high protein intake especially proteins containing amino acids is essential because it can stimulate milk secretion. Mung beans are also rich in active compounds such as polyphenols and flavonoids, which help increase prolactin levels. Elevated prolactin levels can optimize milk secretion, thereby improving both the quantity and nutritional quality of breast milk. This is consistent with the findings of Nasution et al. (2022), which showed that consuming mung bean juice had a positive effect on breast milk production among postpartum mothers. Similarly, research by Marbun et al. (2024) demonstrated that mung bean juice supplementation could help increase breast milk production in breastfeeding mothers.

The results of a preliminary study conducted by the researcher between December 2024 and January 2025 in the Sumbersari Community Health Center area were obtained through interviews with postpartum mothers. Of the 13 postpartum mothers interviewed separately on different days, 8 were found to be providing formula milk to their babies. Upon further inquiry regarding the reasons for formula feeding, the mothers stated that they were unable to provide breast milk continuously due to what they perceived as very low milk production. As a result, some mothers chose to meet their babies' nutritional needs by providing

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formula milk. Considering this situation, and to strengthen the scientific evidence regarding the benefits of mung bean extract as an alternative method to increase breast milk production, the researcher was motivated to conduct a study entitled "The Effect of Mung Bean Extract on Increasing Breast Milk Production.

Method

This study employed a quantitative approach using a quasi-experimental pretest–posttest design with two groups and was conducted in the working area of the Sumbersari Community Health Center. The study design involved comparing two groups of postpartum mothers: an experimental group that received the intervention in the form of mung bean extract consumption, and a control group that did not receive any intervention. Measurements were taken both before and after the intervention to assess changes in breast milk production.

The study population consisted of all postpartum mothers within the working area of the Sumbersari Community Health Center. A total of 16 respondents were selected as the sample and divided equally into two groups: 8 mothers in the experimental group and 8 mothers in the control group. The sampling technique used was purposive sampling. The inclusion criteria were postpartum mothers between day 10 and the end of the second week after delivery, those who had a normal vaginal delivery, had healthy nipple conditions, and were exclusively breastfeeding. The exclusion criteria included mothers with a mung bean allergy, those who provided formula milk, and those who consumed herbal remedies or lactation-enhancing medications.

The independent variable in this study was the administration of mung bean extract, while the dependent variable was breast milk production, measured indirectly through infant weight gain. Infant weight was measured using a digital baby scale in grams on days 10–14 (pre-intervention) and again on days 17–21 (post-intervention). The difference in weight before and after the intervention was used as an indicator of infant weight gain, which reflected breast milk production.

Data were analyzed using both univariate and bivariate statistical methods. For the bivariate analysis, an Independent Samples t-test was conducted to determine differences in the mean breast milk production scores—based on infant weight

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gain—between the experimental and control groups, both before and after the intervention. The data analyzed were primary data collected directly from infant weight measurements.

Ethical approval for this study was obtained from the Health Research Ethics Committee (KEPK) of Dr. Soebandi University, Jember, under approval number 1194/KEPK/UDS/VI/2025, issued on June 24, 2025. As the respondents were postpartum mothers and therefore considered a vulnerable population, informed consent was obtained from each participant prior to data collection. The researcher adhered strictly to ethical principles throughout the study and provided a modest, non-coercive token of appreciation as a gesture of gratitude for the participants' voluntary involvement.

Results

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General Data

Table 1. Frequency Distribution of Age Characteristics Among Postpartum Mothers (Day 10 to 2 Weeks) in the Sumbersari Community Health Center Area

Characteristics	Experimental Group		Control Group	
Age (years)	**F**	**%**	**F**	**%**
21-35	8	100 %	8	100 %
total	8		8	

Source : *Primary Data, 2025*

In table 1. all postpartum mothers in the experimental group were within the age range of 21–35 years, totaling 8 respondents (100%). Similarly, all respondents in the control group were also within the 21–35-year age range, with 8 respondents (100%). These findings indicate that the majority of respondents were in the active reproductive age group, which is categorized as the productive and fertile period.

Table 2. Frequency Distribution of Parity Characteristics Among Postpartum Mothers (Day 10 to 2 Weeks) in the Sumbersari Community Health Center Area

Characteristics	Experimental Group		Control Group	
Paritas	**F**	**%**	**F**	**%**
Primipara	3	38%	2	25%
Multipara	5	63%	6	75%
total	8	100%	8	100%

Source : Primary Data 2025

In table 2. Based on the data presented in the table of respondent characteristics by parity, it is shown that the majority of mothers in the experimental group were multiparous, totaling 5 respondents (63%), while the remaining 3 respondents (38%) were primiparous.

A similar pattern was observed in the control

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group, where most respondents were also multiparous, accounting for 6 respondents (75%), and the remaining 2 respondents (25%) were primiparous.

Tabel 3. Frequency Distribution of Socioeconomic Characteristics Among Postpartum Mothers (Day 10 to 2 Weeks) in the Sumbersari Community Health Center Area

Characteristics	Experimental Group		Control Group	
Monthly Income	**F**	**%**	**F**	**%**
3.500.00-4.000.00	1	13%	3	38%
2.500.00-3.000.00	7	88%	5	63%
1.000.00-2.000.00	0	0%	0	0%
total	8	100%	8	100%

Source : Primary Data 2025

In table 3. These results indicate that the majority of respondents in both groups fell into the upper-middle income category, predominantly within the range of IDR 2,500,000–3,000,000 per month. This suggests that, in general, the respondents had relatively favorable socioeconomic conditions, which may also support adequate nutritional intake during the postpartum period.

Tabel 4. Frequency Distribution Table of BMI Characteristics Among Postpartum Mothers (Day 10 to 2 Weeks) in the Sumbersari Community Health Center Area

Characteristics	Experimental Group		Control Group	
IMT	F	%	F	%
Normal	6	75%	5	63%
Underweight	1	13%	2	25%
Overweight	1	13%	1	13%
	8	100%	8	100%

Source : Primary Data 2025

In table 4. The distribution of BMI status among postpartum mothers from day 10 to the second week shows that the majority of respondents in the experimental group had normal nutritional status, totaling 6 individuals (75%). One respondent (13%) was classified as underweight, and one respondent (13%) was categorized as overweight.

In the control group, most respondents also had normal nutritional status, with 5 individuals (63%). Meanwhile, 2 respondents (25%) were classified as underweight, and 1 respondent (13%) was categorized as overweight.

Tabel 5. Frequency Distribution of Infant Weight Before and After the Intervention in the Control and Experimental Groups

Group	Mean Before (grams)	Mean After (grams)	Mean Weight Gain (grams)	Min–Max (grams)
Control	3094	3227	132,5	2900 – 3350
Eksperimen	3069	3278	208,75	2900 – 3370

Source : Primary Data 2025

Based on Table 5, there was an increase in infant body weight in both groups. In the

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control group, the average body weight before the intervention was 3,094 grams and increased to 3,227 grams after the intervention, with a mean weight gain of 132.5 grams. The range of weight gain in this group was between 100 and 160 grams.

In the experimental group, the average infant body weight before the intervention was 3,069 grams and increased to 3,278 grams after the intervention, with a mean increase of 208.75 grams. The weight gain in this group ranged from 129 to 240 grams.

Results

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General Data

Table 6. Normality Test of the Control and Experimental Groups

Kelompok	Waktu	N	Sig.	Ket
Eksperimen	Pretest	8	0,093	Normal
Eksperimen	Postest		0,322	Normal
Control	Pretest	8	0,740	Normal
Control	Postest		0,690	Normal
total		16		

Source : Primary Data 2025

Based on Table 6 The normality test using the Shapiro–Wilk method showed that the breast milk production data in both groups, experimental and control, at both pre-intervention (pretest) and post-intervention (posttest) measurements had significance values greater than 0.05.

In the experimental group, the pretest significance value was 0.093 and the posttest value was 0.322. Meanwhile, in the control group, the pretest significance value was 0.740 and the posttest value was 0.690.

All significance values exceeding 0.05 indicate that the data in each group and at each measurement time were normally distributed. Therefore, the data met the assumptions required for parametric analysis, such as the paired t-test and the independent t-test.

Table 7 Breast Milk Production Assessed by Infant Body Weight in Postpartum Mothers in the Control Group Without Mung Bean Juice Administration (N = 8)

Variabel	mean	SD	SE	P-value	N
Breast Milk Production Assessed by Infant Body Weight					
a. Before without intervention (Days 10–14)	3093,75	105,551	37,318	0,000	8
b. After without intervention (Days 17–21)	3200,63	103,938	36,748		8

Based on Table 7, the mean breast milk production score assessed by infant body

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weight in the control group before no intervention (Days 10–14) was 3,093.75, with a standard deviation of 105.551 and a standard error of 37.318. Meanwhile, after no intervention (Days 17–21), the mean score increased to 3,200.63, with a standard deviation of 103.938 and a standard error of 36.748. The results of the paired t-test showed a p-value of 0.000 ($p < 0.05$), indicating that there was a statistically significant difference between breast milk production scores before and after in the control group that did not receive mung bean juice.

Table 8 Breast Milk Production Assessed by Infant Body Weight in Postpartum Mothers in the Experimental Group Before and After Mung Bean Juice Administration (N = 8)

Variabel	Mean	SD	SE	P-value	N
Breast Milk Production Assessed by Infant Body Weight				0,000	
Before without intervention (Days 10–14)	3068,88	92,467	32,692		8
After without intervention (Days 17–21)	3277,63	83,543	29,537		8

Based on Table 8, the average infant body weight in the experimental group before receiving mung bean juice was 3,068.88 grams, with a standard deviation of 92.467 and a standard error of 32.692. After the intervention was administered, the average body weight increased significantly to 3,277.63 grams, with a standard deviation of 83.543 with a standard error of 29.537. The paired t-test produced a p-value of 0.001 ($p < 0.05$), indicating a highly statistically significant difference in infant body weight before and after the consumption of mung bean juice in the experimental group.

Table 9. Breast Milk Production Assessed by Infant Body Weight in Postpartum Mothers Who Were Given Mung Bean Juice and Those Who Were Not at Sumbersari Community Health Center (N = 8)

Variabel	Mean	SD	SE	P-Value	N
Breast Milk Production				0,004	

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Assessed by Infant Body Weight					
a.Control Group (Days 17–21)	32	00, 6	103,9	36,7	8
b.Experimental Group (Days 17–21)	32	77, 6	83,5	29,5	8

Based on Table 9 above, the results of the statistical analysis showed that the mean breast milk production score assessed by infant body weight in the control group (without mung bean juice consumption) on Days 17–21 was 3,200.63 grams. Meanwhile, in the experimental group that received the mung bean juice intervention, the mean infant body weight reached 3,277.63 grams.

The results of the Independent t-test showed a p-value of 0.004 at a 5% level of significance (α = 0.05). These findings indicate that the administration of mung bean juice had a significant effect on increasing breast milk production among postpartum mothers in the working area of Sumbersari Community Health Center.

Discussion

1. **Breast Milk Production in Postpartum Mothers Who Did Not Consume Mung Bean Juice in the Sumbersari Community Health Center Area**

This discussion highlights breast milk production among postpartum mothers who did not receive any specific intervention, namely without additional nutritional supplementation, in the working area of Sumbersari Community Health Center. Infant body weight, used as an indicator of breast milk production, showed an increase from a mean of 3,093.75 grams on Days 10–14 to 3,200.63 grams on Days 17–21. The results of the paired t-test confirmed that this increase was statistically significant ($p = 0.000$; $p < 0.05$). This indicates that even without additional intervention, infant body weight continued to increase, reflecting an improvement in breast milk production. Physiologically, this occurs because during the postpartum period from Day 10 to approximately the third week (around Day 21), the mother's body enters the mature milk production phase. During this phase, the hormones prolactin and oxytocin function optimally in response to the infant's suckling stimulus. Prolactin regulates milk synthesis in the breast alveoli, while oxytocin triggers the let-down reflex that facilitates milk ejection. Consistent frequency and effective infant suckling play a crucial role in maintaining and enhancing milk production.

Another contributing factor to increased breast milk production is the mother's socioeconomic status. The majority of respondents in the control group had a moderate monthly income (IDR 2,500,000–4,000,000), enabling better access to nutritious food, healthcare services, and social support. Research by Mirawati and Asthiningsih (2021) showed that mothers with better socioeconomic status tend to have more optimal milk production, as they are better able to meet their nutritional needs during breastfeeding. In addition, maternal nutritional status, particularly Body Mass Index (BMI), also contributes to milk production. In this study, most mothers in the control group had a normal BMI. Research by Naharani and Wahyuningsih (2024) found that mothers with normal nutritional status (normal BMI) demonstrated smoother and higher-quality milk production compared to mothers with underweight or overweight BMI. A normal BMI reflects adequate energy reserves and good metabolic status, both of which are essential for lactation. Maternal nutritional intake during breastfeeding plays an important role in influencing milk production. Research by Ismarani Yustina Irma et al. (2016) showed that the consumption of macronutrients such as protein, fat, and carbohydrates, as well as micronutrients such as iron and B-complex vitamins, supports the function of lactation hormones and the formation of breast milk components. Although the control group did not receive a specific intervention, adequate daily nutritional intake from a balanced diet was still able to support increased milk production. Infant-related factors, such as the frequency and effectiveness of breastfeeding, also influence milk production. Syari et al. (2022) found that infant suckling had a significant effect on milk production volume ($p = 0.001$). Consistent and strong suckling directly stimulates the pituitary gland to release optimal amounts of prolactin and oxytocin. According to the researcher's perspective, these findings emphasize the important role of healthcare providers in delivering nutritional education to pregnant and breastfeeding mothers. The utilization of local foods, such as mung bean juice, should be encouraged as part of lactation nutrition interventions, as it is accessible, affordable, and proven to support the success of exclusive breastfeeding. Furthermore, these results underscore that breast milk production in postpartum mothers is influenced by multiple interrelated factors, even in the absence of specific additional

nutritional interventions. The significant increase in infant body weight during the observation period reflects that the infant's nutritional needs were adequately met through the mother's breast milk. This reinforces the validity of infant body weight as an indirect indicator of improved milk production. Maternal nutritional status, particularly a normal BMI, plays a crucial role in breastfeeding success. Socioeconomic factors also affect a mother's ability to access nutritious food and supportive healthcare services, indirectly contributing to smooth milk production. Adequate daily intake of protein, healthy fats, complex carbohydrates, and micronutrients such as iron and B-complex vitamins supports hormonal function and optimal milk composition for infant growth. Thus, the increase in infant body weight during the postpartum period on Days 17–21 not only reflects healthy growth but also indicates that physiological, socioeconomic, and breastfeeding practice factors have worked synergistically to support successful breastfeeding.

2. **Breast Milk Production in Postpartum Mothers Who Consumed Mung Bean Juice in the Sumbersari Community Health Center Area**

This discussion highlights breast milk production among postpartum mothers who consumed mung bean juice in the working area of Sumbersari Community Health Center. The paired t-test results showed that the mean breast milk production score increased significantly, from 3,068.88 on Days 10–14 before the intervention to 3,277.63 on Days 17–21 after the intervention. A p-value of 0.000 ($p < 0.05$) indicates that this difference was statistically highly significant. These findings demonstrate that the consumption of mung bean juice effectively increased breast milk production among postpartum mothers in this area.

The increase in milk production can be explained by the nutritional content of mung beans. Mung beans are a rich source of plant-based protein, vitamin B1, iron, and bioactive compounds such as polyphenols and flavonoids. Protein plays a role in the formation of the hormone prolactin and supports the regeneration of alveolar cells responsible for milk production. Iron helps increase hemoglobin levels and maintain maternal metabolism and energy, thereby supporting hormonal activity. Meanwhile, vitamin B1 (thiamine) assists in the production of prolactin and oxytocin hormones, maintains nervous system

function, and reduces stress—an important factor, as stress can inhibit the oxytocin let-down reflex (Handayani, 2023).

The findings of this study are consistent with research conducted by Nasution et al. (2022), which revealed that mung bean juice consumption significantly increased breast milk production in breastfeeding mothers. The study reported that the protein and vitamin content in mung beans play a role in stimulating prolactin secretion. Furthermore, Marbun et al. (2024) also indicated that mung bean juice enhances milk production because it contains lactagogue compounds and bioactive components that physiologically support the breastfeeding mechanism.

Based on these findings, the researcher concludes that the administration of mung bean juice represents a simple yet effective intervention to increase breast milk production in postpartum mothers. This intervention is low-cost, easy to implement in daily life, and can serve as a natural alternative to support breastfeeding success. Given the significant increase in milk production observed in the experimental group, mung bean juice has the potential to be promoted as a functional food alternative to reduce dependence on infant formula in early infancy.

Moreover, increased milk production not only helps meet infants' nutritional needs but also supports the successful implementation of exclusive breastfeeding programs, which remain suboptimal in several regions, including the working area of Sumbersari Community Health Center. Therefore, this study is expected to serve as a non-pharmacological alternative, particularly for midwives, in providing education to breastfeeding mothers regarding the benefits of mung bean consumption during the lactation period..

3. **Analysis of the Effect of Mung Bean Juice on Breast Milk Production in Postpartum Mothers at the Sumbersari Community Health Center**

Based on the results of the Independent t-test, the mean breast milk production score in the control group that did not receive mung bean juice was 3,200.63, whereas in the experimental group that received the mung bean juice intervention, it reached 3,277.63. The obtained p-value was 0.004 ($p < 0.05$) at a 5% level of significance, indicating a statistically significant difference between the two groups. These findings suggest that the consumption of mung bean juice had a significant effect on increasing breast milk

production. This effect is likely triggered by the presence of essential nutrients in mung bean juice, such as protein, vitamin B1, iron, and phytoestrogens, which support the lactation process through hormonal mechanisms. These nutrients play a role in stimulating the secretion of prolactin and oxytocin, the primary hormones responsible for milk synthesis and ejection.

The results of this study are consistent with the findings of S and Rosdiana (2022), who reported that mung bean juice consumption had a strong effect on increasing breast milk production in breastfeeding mothers. Similarly, Nasution et al. (2022) demonstrated the effect of mung bean juice (Vigna radiata) on increasing breast milk production among postpartum mothers at Yeni Clinic, Tinggi Raja District, Asahan Regency. That study reported a p-value of 0.000 < 0.005, indicating a statistically significant relationship between mung bean juice consumption and breast milk production. The vitamin B1 content in mung bean juice is believed to improve mood, enhance feelings of well-being, and improve concentration, all of which contribute to smoother milk production and ejection.

This study further demonstrates that mung bean juice consumption has a significantly positive impact on increasing breast milk production. These findings align with the study by Madiyanti et al. (2022), which revealed that breastfeeding mothers with inadequate nutritional intake tend to produce suboptimal amounts of breast milk. This may explain why the control group in this study, which did not receive mung bean juice intervention, had a lower mean breast milk production score compared to the experimental group.

Based on these findings, the researcher concludes that the significant increase in milk production in the experimental group was attributable to the nutritional content of mung bean juice, including plant-based protein, B-complex vitamins, and iron. These nutrients support the function of prolactin and oxytocin, which are essential in the processes of milk production and ejection. Moreover, the intervention was administered regularly for six days at a dose of 250 ml per day, allowing the mothers' bodies to respond optimally to the nutritional intake. The smaller increase observed in the control group may be explained by natural physiological stimulation, such as infant suckling and normal postpartum adaptation, but without the support of specific additional nutrients as provided in the experimental

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group.

Therefore, the researcher believes that mung bean juice has the potential to serve as a lactagogue option to help increase breast milk production, particularly during the early postpartum period. The use of this accessible, safe, and relatively inexpensive non-pharmacological option is expected to become a practical strategy to support the success of exclusive breastfeeding programs.

Identification of Early Childhood Pregnancy Data at dr. Soebandi Jember Hospital

Based on the results of research obtained at dr. Soebandi Jember Hospital, it was obtained that 26 mothers (30.6%) were pregnant at an early age or <20 years old. Pregnancy in adolescence can increase the risk of health problems, both for the mother and the fetus. This is because adolescents' bodies are still in the growth stage and are not yet fully physically ready to face pregnancy and childbirth. During this period, pregnancy can hinder the physical development of the adolescent itself. Some of the negative impacts that can arise from early pregnancy include high blood pressure during pregnancy (preeclampsia), anemia due to iron deficiency, to the risk of death during childbirth due to the body's overall unpreparedness. One of the causes of anemia in pregnant women is pregnancy at a young age, because physically and mentally they are not ready to bear the burden of pregnancy. Pregnancy among adolescents generally occurs simultaneously with a lack of physical and mental readiness, such as suboptimal pelvic size and insufficient nutritional intake. This can trigger premature birth and low birth weight (BBLR) in babies (Agustina, 2023). Wahyudi and colleagues (2024) also stated that adolescents' limited access to reproductive health information and antenatal care (ANC) services exacerbates this condition. Young pregnant women are more prone to complications such as anemia and preeclampsia which also increase the risk of BBLR. Social and economic pressures, including stigma from the surrounding environment, also hinder pregnant adolescents' access to proper health services. This condition not only has an impact on the high number of babies born with low weight, but can also affect the quality of children's growth and development in the future. Therefore, efforts to prevent pregnancy at a young age and improve health services for

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pregnant adolescents are needed (Wahyudi et al., 2024).

Based on the researchers' opinion, pregnancy in adolescence is often associated with a high risk of complications, both caused by the physical and psychological unpreparedness of the mother who is still in the developmental stage. A number of studies reveal that adolescents who are pregnant generally have limited knowledge related to reproductive health, nutritional fulfillment during pregnancy, and pregnancy symptoms that need to be watched out. This lack of understanding has a negative impact on the health condition of the mother and fetus, and can increase the risk of anemia, preeclampsia, premature birth, and death during childbirth. The research also highlights that low education levels and lack of access to information are inhibiting factors for adolescents in making the right decisions to maintain their pregnancy. Teenage mothers who do not understand the importance of adequate nutritional intake, regular pregnancy checkups, and childbirth preparations tend to be more prone to serious complications. Therefore, health education is a crucial aspect in prevention efforts to reduce the adverse effects of pregnancy at a young age.

Conclusion

1. in the control group that did not receive mung bean juice, infant body weight increased from a mean of 3,093.75 grams to 3,200.63 grams.
2. In the experimental group that received mung bean juice for six days, the increase in infant body weight was greater, rising from a mean of 3,068.88 grams to 3,277.63 grams. The results of the paired t-test analysis showed that this increase was statistically significant, with a p-value of 0.000 ($p < 0.05$).
3. The Independent t-test indicated a significant difference between the non-intervention group and the intervention group after the intervention, with a p-value of 0.004 ($p < 0.05$). These findings confirm that breastfeeding mothers who consumed mung bean juice experienced a greater increase in breast milk production compared to those who did not consume it. Based on these results, the researcher concludes that the consumption of mung bean juice had a significant

effect on increasing breast milk production among breastfeeding mothers in the working area of Sumbersari Community Health Center in 2025**.**

Ethics Approval and Consent to Participate

This research has received an ethical feasibility test at dr. Soebandi with number: No.1194/KEPK/UDS/VI/2025.

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