



## THE EFFECT OF PAPAYA AND GUAVA LEAF DECOCTION ON THE ADEQUACY OF BREAST MILK IN POSTPARTUM MOTHERS

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### ABSTRACT

Breast milk is a source of food that contains complete nutrition for babies, increases endurance, increases intelligence will establish affection between mother and child. Data on postpartum mothers in 2023 is the incidence of adequacy of 50 cases. Of the 38 respondents, about 76% of mothers said breast milk was not smooth and milk did not come out after giving birth and milk only came out two days after giving birth but the amount was small and the amount of breast milk was small, so mothers gave formula milk. The purpose of this study is to evaluate the effect of papaya and guava leaf decoction on the adequacy of breast milk production in postpartum mothers in Bekasi City. to determine the effect of papaya leaves and guava seeds with the adequacy of breast milk on postpartum mothers in East Bekasi. The design used in this study is Quasi Experimental with a one group pretest – posttest design approach. The sample in this study amounted to 30 respondents consisting of 15 intervention respondents and 15 control respondents with purposive sampling techniques. In this study on the effect of papaya and guava leaf decoction on breast milk adequacy in postpartum mothers in Bekasi City, data were collected using observation sheets for 30 respondents divided into intervention and control groups, analyzed with an Independent T-Test, showing significant improvement in the intervention group's breast milk production from a pretest average of 41.13 to a posttest average of 92.22, compared to the control group's increase from 44.45 to 66.67, concluding papaya leaf's positive influence on milk adequacy. The data were analyzed using a t-independent test. The instrument used is an observation sheet. The results of univariate analysis in the intervention group obtained an average pretest score of 41.13 and posttest of 92.22, while in the control group obtained an average pretest value of 44.45 and posttest of 66.67. The results of the Independent T-Test test with a P-Value significance value of 0.003 which means there is an influence of papaya leaves on the adequacy of breast milk in nursing mothers. The conclusion of the research results is the influence of papaya leaves on the adequacy of breast milk in nursing mothers. Breastfeeding mothers are expected to pay attention to what is consumed to support the smooth running of breast milk so that the baby is met with the needs of mothers who have sufficient milk.

Keywords: adequacy; breastfeeding; milk; mother papaya leaf

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## INTRODUCTION

The puerperium period is a period that begins after the placenta is born and ends when the uterine organs return to their original state before pregnancy which lasts approximately 6 weeks, where in the postpartum period this is the period of adjustment of the mother to the new role (Prawirohardjo, Sarwono. 2010). Breast milk is a source of food that contains complete nutrition for babies, increases endurance, increases intelligence will establish affection between mother and child, supports personality, and emotional intelligence, contains fatty acids needed for brain growth so that babies are smarter (Anggraini, 2010). WHO has reviewed from 3000 researchers for 6 months is the most optimal period for exclusive

breastfeeding. According to UNICEF, the world's average coverage of exclusive breastfeeding (38%) promotes exclusive breastfeeding, potentially saving 720 postnatal deaths in the country. Researchers from 42 developing countries showed that exclusive breastfeeding for 6 months was the largest intervention to reduce infant mortality (AKB) by 13% (Indonesian Lactation Center, 2009).

Basic Health Research Data (Rikesda) 2013 shows that breast milk coverage in Indonesia is only 42% below the WHO target which requires breast milk coverage up to 50%. The birth rate in Indonesia reaches 4.7 million per year, so babies who get breast milk for 6 months to 2 years have not reached 2 million. This figure indicates that only a few Indonesian children obtain adequate nutrition from breast milk, while breast milk plays an important role in the long-term growth and physical and mental development of children (Journal of Infant Feeding Survey, 2010 in Eka Wuri. H, Umi Laelatul Q, 2018). Based on Suensa data (National Socioeconomic Survey) in 2010, there are only 33.6% of infants aged 0-6 months who get exclusive breastfeeding. Even the 2010 Basic Health Research (Riskesdas) only 15.3% of infants aged less than 6 months received exclusive breastfeeding. Based on data from the Directorate General of Public Health, nationally the coverage of exclusive breastfeeding in Indonesia for infants aged less than 6 months is 55.7%.

The most breastfeeding starts 1-6 hours after birth (35.2%) and less than 1 hour (early initiation of breastfeeding) by 34.5%. While the lowest breastfeeding start process occurs at 7-23 hours after birth, which is 3.7% (Profile of the Indonesian Ministry of Health, 2015). The success of breastfeeding depends on the production of milk produced by the mother after giving birth. Breast milk is produced from the results of interhormonal cooperation in the body. Estrogen hormones play a role in maintaining the texture and function of enlarged breasts and stimulate the growth of breast milk glands. Breast milk is produced at any time before, during and after the baby feeds. Adequate or excessive milk production will affect the baby's weight gain (Aliyanto & Rosmadewi, 2019). Based on the above problems, papaya leaves are believed to be able to launch breast milk, to evaluate the effect of papaya and guava leaf decoction on the adequacy of breast milk production in postpartum mothers in Bekasi City. so researchers are interested in conducting research by formulating the title "The Effect of Papaya and Guava Leaf Decoction on the Adequacy of Breast Milk in Postpartum Mothers in Bekasi City.

## **METHOD**

The type of research used in this study is quantitative research. Quasi-experimental research design using one group pre-test post-test design where there is no control group as a comparison. In the study titled "The Effect of Papaya and Guava Leaf Decoction on the Adequacy of Breast Milk in Postpartum Mothers in Bekasi City," a quantitative quasi-experimental design is employed, focusing on a one-group pre-test post-test setup. Initially described without a control group, the study will indeed include a control group for a more robust analysis, with 15 respondents in the control group and 15 in the experimental group. A specifically designed questionnaire will be utilized to collect data on breast milk production before and after the intervention, encompassing questions on breastfeeding frequency, maternal perceptions of milk adequacy, and any side effects experienced. The validity and reliability of the questionnaire are critical, with validity expected to be established through expert consultations in lactation and nutrition, and reliability measured using retest methods or Cronbach's alpha coefficient, aiming for a value above 0.7 to denote good consistency. Sample determination will employ purposive sampling, selecting postpartum mothers in Bekasi City who experience low milk production and are willing to follow the study protocol,

excluding those currently taking other lactation supplements. The sample size, including both the control and experimental groups, ensures a balanced comparison, with each group containing 15 respondents. This comprehensive approach, with a clear delineation between control and experimental groups, ensures the methodological rigor necessary to accurately assess the effects of papaya and guava leaf decoctions on enhancing breast milk production among postpartum mothers.

## RESULTS

Table 1.

Frequency distribution of breast milk adequacy in mothers before and after papaya and guava leaves In the intervention group Respondent characteristics (n= 15)

| Group Intervention | Mean  | Standard Deviation | Min   | Max   |
|--------------------|-------|--------------------|-------|-------|
| Pre test           | 41.13 | 17,63              | 16,77 | 66,67 |
| Post test          | 92.22 | 12,38              | 66,67 | 100   |

Based on table 1 above, it can be explained that the pre-intervention group had a minimum value of 16.77 and a maximum value of 66.67 with a mean value of 41.13. While the post-intervention group had a minimum value of 66.77 and a maximum value of 100 with a Mean value (average) of 92.22 This means that most respondents have a very significant increase after being given papaya leaves and guava so that respondents have enough breast milk to meet the needs of their babies.

Table 2.

Frequency distribution of milk adequacy in mothers before and after, In the Control Group Respondent characteristics (n= 15)

| Control Group | Mean  | Standard Deviation | Min   | Max   |
|---------------|-------|--------------------|-------|-------|
| Pre tesr      | 44,45 | 16,24              | 16,77 | 66,67 |
| Post test     | 66,67 | 28,15              | 16,77 | 100   |

Based on table 2 above, it can be explained that the pre-control group had a minimum value of 16.77 and a maximum value of 66.67 with a mean value of 44.45, while the post-control group had a minimum value of 16.77 and a maximum value of 100 with a mean value of 66.67. This means that some respondents have not seen a significant increase.

Table 3.

Normality Test Results

| Tests of Normality    |                     |                                 |    |      |              |    |      |
|-----------------------|---------------------|---------------------------------|----|------|--------------|----|------|
|                       | Group               | Kolmogorov-Smirnov <sup>a</sup> |    |      | Shapiro-Wilk |    |      |
|                       |                     | Statistic                       | df | Sig. | Statistic    | df | Sig. |
|                       |                     | c                               |    |      | c            |    |      |
| Questionnaire Results | Pre intervention s  | .204                            | 15 | .093 | .889         | 15 | .064 |
|                       | Post Intervention s | .402                            | 15 | .062 | .663         | 15 | .062 |
|                       | Pre Control         | .234                            | 15 | .027 | .891         | 15 | .070 |
|                       | Post Control        | .190                            | 15 | .151 | .898         | 15 | .087 |

a. Lilliefors Significance Correction

Table 3, it was found that the results of the normality test in the group before the intervention found a significance value greater than 0.05 ( $0.064 > 0.05$ ) and after the intervention found a significance value greater than 0.05 ( $0.062 > 0.05$ ), then in the control group a significance

value of more than 0.05 ( $0.070 > 0.05$ ) and after the control group A significance value of more than 0.05 ( $0.087 > 0.05$ ) was found. Knowing whether it is normal or not is if the  $\text{sig} > 0.05$  then normal and if the  $\text{sig} < 0.05$  can be said to be abnormal. Based on these results, it is found that all data results are normally distributed.

Table 4 .  
Homogeneity Test

|                       |                                      | Levene Statistic | df1 | df2    | Sig. |
|-----------------------|--------------------------------------|------------------|-----|--------|------|
| Questionnaire Results | Based on Mean                        | 15.518           | 1   | 28     | .000 |
|                       | Based on Median                      | 13.582           | 1   | 28     | .001 |
|                       | Based on Median and with adjusted df | 13.582           | 1   | 28.000 | .001 |
|                       | Based on trimmed mean                | 15.899           | 1   | 28     | .000 |

Table 4 of the test of homogeneity of variance, a p value of  $0.00 < 0.05$  was found, which means that the data is not the same / inhomogeneous, which means that the data obtained is heterogeneous data. The homogeneity test is not an absolute requirement in conducting research with an independent sample t test. So that research can continue to use the independent sample t test by looking at the table of *equal variance not assumed*.

Table 5.  
Differences in the average adequacy of breast milk before and after in the intervention and control groups

| Measurement        |                    | N  | Mean  | Standard deviation | P Value |
|--------------------|--------------------|----|-------|--------------------|---------|
| Kecukupan Asi      |                    |    |       |                    |         |
| Intervention Group | Pre interventions  | 15 | 41.13 | 17.639             | 0.000   |
|                    | Post interventions |    | 92.22 | 12.386             |         |
| Control Group      | Pre control        | 15 | 44.45 | 16.241             | 0.003   |
|                    | Post control       |    | 66.67 | 28.158             |         |

Table 5 above, in the intervention group, it is known that the average value of respondents before being given papaya leaves was 41.13 with a standard deviation of 17,639. After being given papaya leaves, the average score from the respondents' interviews became 92.22 with a standard deviation of 12.386. It can be seen that the difference between before and after being given papaya leaves is 51.09 with a p value of 0.000, meaning that the results of respondents' interview scores after being given papaya leaves are greater than the results of interview scores before being given papaya leaves. In the control group, it is known that the average value of respondents before being given the leaflet was 44.45 with a standard deviation of 16.241. After being given the leaflet, the average value of the respondents' interviews became 66.67 with a standard deviation of 28.158. It can be seen that the difference between before and after being given papaya leaves is 22.22 with a p value of 0.003, meaning that the results of respondents' interview scores after being given leaflets have increased not too significantly.

Table 6.  
The Effect of Papaya Leaves and Guava Leaves on the Adequacy of Breast Milk

|                         | Measurement        | f  | Mean  | T     | P Value |
|-------------------------|--------------------|----|-------|-------|---------|
| Adequacy of breast milk | Intervention Group | 15 | 92.22 | 3.217 | 0.003   |
|                         | Control Group      | 15 | 66.67 | 3.217 | 0.004   |

Table 6 above, the results of the *Independent Sample T-Test* test, the number of data from interviews of the intervention group and the control group was 15 respondents each. The mean interview score for the intervention group was 92.22 and the control group was 66.67. Thus, descriptively it appears that there is a significant difference between the average result value of the intervention group and the control group of 25.55%.

## DISCUSSION

In this study, Table 1 illustrates the analysis of knowledge improvement among participants before and after receiving health counseling in Jakarta. This follows a similar study titled "Smart Adolescent The results of the table showed the difference in the average adequacy of breast milk before and after the intervention in the group receiving papaya leaves and the control group receiving the leaflet. In the intervention group, there was a significant increase from the average adequacy of breast milk before papaya leaf feeding (Mean=41.13) to after papaya leaf feeding (Mean=92.22) with a very low p-value ( $p = 0.000$ ), showing a significant difference. Conversely, in the control group, there was an increase in the average adequacy of breast milk from before (Mean=44.45) to after (Mean=66.67) with a p-value of 0.003, which indicates a significant difference as well, although not as strong as in the intervention group. The recorded standard deviation shows variation in the data, and it is worth noting that the intervention group had a lower standard deviation, indicating better consistency in the increase in milk adequacy after the intervention. These results provide a positive indication regarding the effectiveness of papaya leaf administration in increasing the adequacy of breast milk compared to the control group.

The results of this study have similarities with the results of research conducted by Reni apriliya, Rilyani and Lidiya Arianti (2020) in the Journal of the Effect of Papaya Leaf Giving on the Smooth Breastfeeding for Nifas Mothers in the Working Area of the Kotabumi II Health Center, North Lampung Regency. This study used a sample of 30 respondents, data analysis using a t-test. Average milk production in postpartum mothers after vegetable papaya leaves were given to 30 nursing mothers, with an average of 4.83 standard deviations of 1.020 standard errors of 0.186 and min-max values of 3-7 and after being given papaya leaves with an average of 7.40 standard deviations of 0.855 standard errors of 0.156 and min-max values of 5-8, with a difference of 2 differences in mean 2.57, standard deviations of 1.277, Standard error 0.233. P – value is  $0.00 < 0.05$ . This means that there is an influence of giving papaya leaves to smooth breast milk in postpartum mothers at the Kotabumi II Utara Health Center, Lampung Regency In 2019, suggestions for breastfeeding mothers are able to use papaya leaf vegetables as complementary therapies to complement breast milk production. Another pivotal study that aligns with our findings on the efficacy of natural remedies in enhancing breast milk production is the work conducted by Singh, Patel, and Sharma (2018), which examined the impact of herbal supplements on lactation.

Their comprehensive review, published in the "International Journal of Pharmaceutical Sciences and Research," highlighted several key herbs with galactagogue properties, including papaya leaves, which have been traditionally used across different cultures to improve milk supply in nursing mothers. Their analysis concluded that natural galactagogues,

like papaya leaves, not only potentially increase breast milk production but also contribute to the nutritional quality of the milk, thereby supporting infant health and development. Singh et al.'s research provides additional evidence supporting the use of papaya leaf as an effective natural strategy to boost lactation, mirroring our study's findings where the papaya leaf decoction group showed a significant improvement in breast milk adequacy. This further underscores the value of integrating traditional herbal knowledge with modern lactation support practices, offering a holistic approach to addressing challenges in breastfeeding.

## **CONCLUSION**

The average value of breast milk adequacy before and after papaya leaves were given to the intervention group of breastfeeding mothers in Bekasi obtained a pretest of 41.13 and a posttest of 92.22 so that it increased by 51.09, the average value of milk adequacy before and after in the control group of breastfeeding mothers in Bekasi was obtained Pretest of 44.45 and posttest of 66.67 so that there is a less significant increase of 22.22. There is an effect of papaya and guava leaves on the adequacy of breast milk of nursing mothers with a significance value of 0.003.

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