

Effect of Papaya Decoction (Papaya Carica L.) on Increasing Breast Milk Production in Breastfeeding Mothers

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ABSTRACT

Breastfeeding in postpartum mothers often encounter obstacles due to late release of breast milk or less milk production. Efforts to improve the nutrition of nursing mothers by providing nutrient-rich foods that can stimulate milk production, namely papaya fruit stew. This study aims to determine the effect of boiled papaya on increasing breast milk production. This research was conducted at the Independent Midwife Nelly Harahap Panyanggar, North Padangsidempuan District on 27 breastfeeding mothers. Analysis of the data used is the Wilcoxon test. The results of this study showed the p-value = 0.001, (p <0.05). The conclusion is that there is an effect of papaya decoction on increasing breast milk production in breastfeeding mothers in the Independent Practice of Midwife Nelly Harahap, Panyanggar, North Padangsidempuan District in 2021. Suggestions are expected for breastfeeding mothers to improve their understanding of breast care and the benefits of consuming boiled papaya fruit regularly so that milk production remains increased so that mothers can exclusively breastfeed.

Keywords:

Papaya decoction, Increased Breast Milk Production, Breastfeeding Mothers

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1. INTRODUCTION

The achievement of the 2017 Sustainable Development Goals (SDGs) target in order to reduce the IMR, one of which can be done is by exclusive breastfeeding. In relation to the Sustainable Development Goals (SDGs) or the 2030 sustainable development goals, breastfeeding is one of the first steps for a human being to get a healthy and prosperous life, but not everyone knows this. In several developing countries including Indonesia, many mothers work but do not exclusively breastfeed their babies, the low coverage of exclusive breastfeeding can have an impact on the quality of life of the nation's next generation and also on the national economy [7]-[10].

The World Health Organization (WHO) internationally targets the rate of exclusive breastfeeding to be 50%. Indonesia has achieved its global target of 55.7%. This figure is still low when compared to other lower-middle income countries such as Sri Lanka (76%), Cambodia (74%), Mongolia (66%), and Bangladesh (64%) [42]. Similarly, what was revealed, that almost 90% of deaths of children under five occurred in developing countries and 40% more deaths were caused by diarrhea and acute respiratory infections which could actually be prevented by exclusive breastfeeding [43].

According to the 2019 IDHS, only 10% of infants were breastfed on the first day, 73% were given breast milk for less than 2 months, 53% were given breast milk for 2-3 months, 20% were given breast milk for 4-5 months, and exclusive breastfeeding for up to 6 months is only 49%. The low coverage of exclusive breastfeeding in Indonesia compared to other developing countries and ASEAN countries certainly contributes to the unfavorable impact on the health of babies. According to the Ministry of Health, breastfeeding has a very significant impact in reducing child mortality. Therefore, it is highly recommended to give exclusive breastfeeding to infants aged 0-6 months [16].

Nationally, the coverage of exclusive breastfeeding for 0-6 months in Indonesia has fluctuated in the last six years, according to Susenas data, exclusive breastfeeding coverage of 34.3% in 2018 shows that only 33.6% of our babies get breast milk, in 2018. In 2019, that number rose to 42% and according to the 2019 IDHS the coverage of exclusive breastfeeding was 27%. According to the North Sumatra Provincial Health Office, the coverage of exclusive breastfeeding for infants aged 0-6 months in 2019 was 41.3% [6]

Based on data from the Padangsidempuan City Health Office, the number of babies who received exclusive breastfeeding was 5,687 out of 20,297 recorded babies. This shows that the coverage of babies who are exclusively breastfed is very low and has not reached the target of 39.8% [6].

The impact of milk production that is not smooth results in the baby not being able to breastfeed, resulting in digestive disorders in babies and endurance. The baby's body is vulnerable because the baby consumes food other than breast milk which has the risk of being contaminated with bacteria or other disease-causing agents [32]. Nationally, babies who are not breastfed can experience problems with their growth, it can even increase the morbidity or infant mortality rate (IMR) (Kenmenkes, 2019). Efforts that can be made are to improve the nutrition of breastfeeding mothers by providing foods rich in nutrients that can stimulate milk production, one of which is by using non-pharmacological therapy [7].

Indonesia is a country that is rich in various types of plants that are efficacious as medicinal plants. Some of them are efficacious as laktagogums such as katuk plants, lampes, aniseed, thorn spinach, bidara upas, blustru, chicken breast, bitter black cumin, moringa, jackfruit, patikan kebo, pulai, temulawak, turi, and young papaya fruit [38]. Papaya containing laktagogum is a tropical fruit known as *Carica papaya*. Papaya plants contain papain enzymes, carotenoids, alkaloids, flavonoids, monoterpenoids, minerals, vitamins, glucosinolates, and carposide vitamins C, A, B, E, and minerals. The content of laktagogums (lactagogue) in papaya can be one way to increase the rate of secretion and production of breast milk and be a strategy to overcome the failure of exclusive breastfeeding caused by low breast milk production [38].

Research conducted [39], the results were analyzed using Wilcoxon showing that before giving papaya fruit, half (50.0%) breastfeeding mothers were not fluent and 7 mothers (43.8%) were not. The results of data analysis using the Willcoxon test showed that $p\text{-value} = 0.002$ a $\alpha = 0.05$, because $p\text{-value} < \alpha$ then H_0 and H_1 were accepted so that there was no effect of papaya fruit on lactation in Ny. M Kediri in 2018. Research by Roosita [30] on the relationship between papaya fruit and n the production of breast milk (ASI) in postpartum mothers, the results showed that most of the subjects had sufficient breast milk production for their babies (80%), this indicates that vitamin A intake is significantly related to breast milk production ($0.000 < 0.05$). The more consumption of papaya fruit in postpartum mothers, the production of breast milk for babies will be more fulfilled.

Based on an initial survey conducted by researchers at PMB Nelly Harahap Panyanggar, North Padangsidempuan sub-district, where out of 8 breastfeeding mothers interviewed 6 of them said that breast milk production was not in accordance with the baby's needs so that the mother gave additional food, while 2 other mothers experienced problems with milk production due to lack of milk supply. nutritional intake. Based on the above background, researchers are interested in examining the Effect of Papaya Decoction on Increasing Breast Milk Production in breastfeeding mothers at PMB Nelly Harahap Panyanggar, North Padangsidempuan sub-district in 2021.

2. METHOD

This research is a quantitative research with a quasi-experimental research design that uses the one group pretest-posttest design. The population in this study were all breastfeeding mothers aged 0-24 months. The sample in this study was 27 people.

3. RESULTS AND DISCUSSION

3.1. Results

a. Univariate Analysis

Table 1. Description of Respondents' Characteristics Based on Age, Education, and Occupation

Variable	F	Percentage (%)
Age		
17-25 Year	6	22,2%
26-35 Year	17	63,9%
36-45 Year	4	14,8%
Total	27	100 %
Education		
Primary School	2	7,4 %
Junior High School	4	14,8%
High School	12	44,4 %
Bachelor	9	33,3%
Total	27	100 %
Profession		
Housewife	16	59,3 %

civil servant	7	25,9 %
Self-employed	4	14,8 %
Total	27	100,0 %

Based on the results of Table 1, in terms of age, the majority of respondents aged 26-35 were 17 people (63.9%), minority aged 36-45 years were 4 people (14.8%). Meanwhile, the majority of respondents' education was from high school as many as 12 people (44.4%) and the minority from elementary school education as many as 2 people (7.4%). In terms of occupation, the majority of Housewife are 16 people (59.3%) and the minority are self-employed 4 people (14.8%).

Table 2. Distribution of Breast Milk Production Frequency Before and After Giving Papaya Decoction

Breast milk production	Before Intervention		After Intervention	
	F	%	F	%
Not smooth	27	100	5	18,5
Fluent	0	0	22	81,5
Total	27	100	27	100

The results of Table 2 above show that of 27 people, whose breast milk production was not smooth, after being given boiled papaya fruit for 7 days, of which 5 people (18.5%) had non-fluent milk production and 22 people (81.5%)) fluent.

Table 3. The Effect of Papaya Decoction on Breast Milk Production Before and After the Intervention

	Asymp . Sig (2-tailed)	P value
Breast milk production	-4690	0,001

Based on Table 3, the data shows that the value of $Z = (-4,690)$ which means that it can increase the production of breast milk by 4,690 more effectively in breastfeeding mothers. The results of statistical tests showed that there was a significant difference between before and after being given boiled papaya fruit to increase breast milk production. In nursing mothers at the Independent Practice of Midwife Nelly Harahap, it was found that the p value = 0.001 ($p < 0.05$). This shows that H_a is accepted, which means there is an influence before and after the intervention.

3.2. Discussion

The results showed that before giving boiled papaya to nursing mothers, there were 27 nursing mothers whose milk production did not increase. The process of milk expulsion is initiated or stimulated by sucking the baby's mouth on the mother's nipple. This movement stimulates the anterior Pictuitary gland to produce large amounts of prolactin, the main hormone that relies on milk production. The process of expulsion of milk also depends on the Let Down Replex, where nipple suction can stimulate the Posterior Pictuitary gland to produce the hormone oxytocin, which can stimulate the smooth muscles in the walls of the milk ducts to allow milk to flow smoothly. Breast milk production that is not smooth is caused by several reasons, namely the food consumed by the mother, peace of mind and mind, the influence of childbirth, hormonal contraception and also breast care, so efforts are needed to increase milk production during the breastfeeding period, whether carried out during pregnancy, childbirth and breastfeeding.

The causes of the lack of milk production experienced by each breastfeeding mother are different, and the factors that influence the milk production of nursing mothers at PMB Nelly Harahap are maternal education factors which directly affect mothers receiving information in caring for their babies. This study is in line with research conducted [14] that all postpartum mothers, as many as 20 respondents did not experience an increase in breast milk production before being given papaya fruit stew.

According to the researcher's assumption, the food consumed by the mother does not contain enough nutrients to help launch breast milk and also the baby's sucking is lacking due to the infrequent breastfeeding frequency. To overcome the problem of insufficient milk production for breastfeeding mothers, at PMB Nelly Harahap has provided counseling to breastfeeding mothers regarding the correct breastfeeding technique, and also conducted counseling for pregnant women to carry out breast care as the first step in preparing for the breastfeeding process later.

The results showed that after giving boiled papaya fruit to postpartum mothers, there were 22 nursing mothers whose milk production was smooth and 5 breastfeeding mothers whose milk production was not smooth. The production of breast milk during the puerperium that does not increase has an impact on nursing mothers, if there is not enough breastfeeding for babies, mastitis and abscesses will occur. Meanwhile, the impact on babies is that the baby's nutrition is not fulfilled, susceptible to infection and diarrhea, prone to allergies, decreased body resistance. One of the factors that can help increase the production of postpartum mother's milk is food that can support the smooth flow of breast milk.

Based on the foregoing, the researchers used papaya fruit decoction as an effort to expedite the milk production of 27 nursing mothers at PMB Nelly Harahap, and after 7 days of giving papaya fruit stew, 22 respondents experienced smooth milk production, this was because apart from regularly consuming papaya fruit stew. They also routinely breastfeed their babies so that the production of hormones that work for the process of releasing breast milk increases. Of the 27 respondents who were given papaya fruit decoction, 5 of them did not increase their milk production, this happened because mothers rarely breastfeed their babies.

This study is in line with research conducted [25], after giving boiled papaya fruit to postpartum mothers, there were 14 postpartum mothers whose milk production increased and 2 postpartum mothers whose milk production did not increase.

According to the researcher's assumption that the mother's work factor demands more time to work and also this respondent takes care of her baby alone without a husband and is only assisted by the family so that the mother's peace of mind and mind also affects her milk production, with the smooth production of breast milk after giving boiled fruit papaya, another about the benefits of boiled papaya fruit in increasing breast milk production.

The results of the Wilcoxon statistical test show that the P value: 0.001 with a limit of significance (α) is <0.05 , then H_0 is rejected, meaning H_1 is accepted. It can be concluded that there is an effect of giving boiled papaya fruit to increase breast milk production in nursing mothers in PMB Nelly Harahap, Panyanggar District North Padangsidimpuan. With the description of the results of the study where the production of breast milk after being given boiled papaya fruit for 7 days, there were 22 people (81.5%) whose breast milk increased and 5 people (18.5%) whose breast milk did not increase.

This happens because the provision of boiled papaya fruit contains laktogogum which is a drug to increase breast milk production and contains the enzymes papain and potassium, the function of the enzyme is to break down the protein eaten while potassium is useful to meet the needs of potassium during breastfeeding. If there is a lack of potassium, the body will feel tired, and a lack of potassium also causes mood swings to become depressed, while breastfeeding mothers must think positively and be happy.

Papaya fruit is also enriched with toning hormones and vitamin A which stimulates the release of female hormones and stimulates the ovaries to secrete hormones. From these hormones the mammary glands will be smooth and the breast shape will be more ideal. Breastfeeding mothers need help so that the breastfeeding process is more successful, one of which is by consuming foods that can stimulate milk production. Respondents said that 7 days after giving boiled papaya fruit, it could increase milk production, which was indicated by the mother's increased appetite and breasts felt full, while the mother also said that her baby was rarely fussy.

This study is in line with research conducted [24] where the results of the study using the Wilcoxon test were obtained by Asymp. Sig. (2-tailed) or is $0.001 < (0.05)$, this indicates that there is a significant effect of breast milk production before and after being given boiled papaya fruit. So it can be concluded that H_0 is rejected and H_a is accepted, which means that there is an effect of giving boiled papaya fruit in increasing the milk production of breastfeeding mothers North Padangsidimpuan District.

According to the researcher's assumption, there are still 5 respondents (18.5%) whose breast milk production is not smooth after consuming boiled papaya fruit, this is due to several factors, namely 2 mothers using hormonal contraception, 2 mothers stress due to fatigue and lack of sleep, and 1 mother is overweight (obesity).

4. CONCLUSION

There was no increase in breast milk production before being given boiled papaya fruit, as many as 27 people. There was an increase in breast milk production after being given boiled papaya fruit as many as 22 people (81.5%). There is an effect of giving boiled papaya fruit to increasing breast milk production in breastfeeding mothers at PMB Nelly Harahap, Panyanggar, North Padangsidimpuan District in 2021 with a P Value of 0.001.

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