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The effect of young papaya abon on breast milk expenditures of postpartum mothers 3–7 day

Pengaruh abon pepaya muda terhadap pengeluaran asi ibu nifas hari ke 3–7

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ABSTRACT

Background: The number of breastfeeding problems in early postpartum, one of which is not smooth breast milk, results in low exclusive breastfeeding coverage in West Bandung Regency in 2021 which is 72.76%, Rongga Health Center January - May 2023 only 29%. One of the efforts to increase breast milk production by consuming young papaya fruit, processed into abon because it is much favored by all circles of society. **Objective:** The purpose of the study was to determine the effect of young papaya abon on breast milk production of postpartum women on days 3-7, in the working area of the Rongga Health Center, West Bandung Regency. **Methods:** Quantitative method and quasi experiment design of one group pre and posttest, population of 90 postpartum women, 20 samples of postpartum women on days 3-7 with quota sampling technique. Data collection with observation sheet instruments, SOP and Wilcoxon test. **Results:** Statistical test results mean before intervention 2.20, mean after intervention 7.50 with p-value=0.0001 (α <0.05).

Conclusion: It is concluded that there is an effect of giving shredded young papaya on breast milk production of postpartum women on days 3–7. It is recommended that midwives provide care during the lactogenesis period in order to achieve successful breastfeeding and make innovations that can increase exclusive breastfeeding coverage.

Keywords: Breast Milk, Postpartum, Young Papaya Abon, Production

PENDAHULUAN

Breast milk is the optimal nutrition for infants. addition in to protein, fat. carbohydrates, vitamins and minerals. Breast milk contains various immune cells and bioactive components that have antiinflammatory, anti-infective and probiotic actions. Breast milk is also the best natural nutrition for infants because it contains the energy and substance requirements needed during the first six months of a baby's life. However, there are many breastfeeding problems in the early postpartum period (postpartum or lactation period), namely, sore nipples, nipple blisters, swollen breasts, mastitis and the most common is caused by poor milk output. So that some mothers do not breastfeed their babies for 6 months, many factors affect breast milk production both nutritional and non-nutritional.^{9.8}.

The effects of not breastfeeding on the mother include swollen breasts (engorgement), obstructive milk ducts, breast inflammation (mastitis), breast abscesses and little milk will be released. Meanwhile, the consequences of not giving breast milk to the baby include, the baby will often cry, the baby is confused about the nipple (nipple confusion). Then the baby's weight is also not ideal, the baby looks jaundiced, experiences nutritional deficiencies and is prone to infectious diseases. These infections such as diarrhea, ear infections, asthma, ARI (Acute Respiratory Tract Infection), pneumonia, obesity, and the risk of death is higher than babies who are exclusively breastfed.⁴ Exclusive breastfeeding data for infants less than 6 months old at the global level, during the period 2014-2020, reached 44%. Southeast Asia has a percentage value of 45%.

Based on data from the Central Bureau 2020-2021, of Statistics for exclusive breastfeeding coverage in Indonesia in 2020 was 69.62%. In 2021 it was 71.58% and in 2022 it was 72.04%. Exclusive breastfeeding coverage in West Java, in 2021 amounted to 64.20%. In 2020, exclusive breastfeeding coverage was 68.10%. Meanwhile, in West Bandung district in 2020 the coverage was 71.11%, in 2021 it was 72.76%. This achievement figure shows that there is still a low coverage of exclusive breastfeeding in West Bandung Regency, because it has not reached 100% of the target set 2021. In 2022, the Rongga Health Center exclusive breastfeeding coverage was 55% of the 100% target. While in January - May 2023 the exclusive breastfeeding coverage was 29%, this shows the low coverage of exclusive breastfeeding in various regions.^{5.8.9}

Exclusive breastfeeding data for infants less than 6 months old at the global level, during the period 2014-2020, reached 44%. Southeast Asia has a percentage value of 45%. Based on data from the Central Bureau of Statistics for 2020-2021, exclusive breastfeeding coverage in Indonesia in 2020 was 69.62%. In 2021 it was 71.58% and in 2022 it was 72.04%. Exclusive breastfeeding coverage in West Java, in 2021 amounted to

64.20%. In 2020, exclusive breastfeeding coverage was 68.10%. Meanwhile, in West Bandung district in 2020 the coverage was 71.11%, in 2021 it was 72.76%. This achievement figure shows that there is still a low coverage of exclusive breastfeeding in West Bandung Regency, because it has not reached 100% of the target set. 2021. In 2022, Health Center the Rongga exclusive breastfeeding coverage was 55% of the 100% target. While in January - May 2023 the exclusive breastfeeding coverage was 29%, this shows the low coverage of exclusive breastfeeding in various regions.5.8.9

Many efforts have been made to overcome this problem, one of which is to increase breast milk production in breastfeeding/postpartum mothers by providing pharmacological and nonpharmacological therapies.

Nonpharmacological therapies include utilizing plants that can stimulate milk production, namely consuming foods that contain lactogogum. Young papaya fruit as one of the fruits that contain lactogogum, also has guite a lot of water content. So that it can help stabilize breast milk which requires a lot of water, lactagogum has the potential to stimulate the hormones oxytoxin and prolactin. Alkaloids, polyphenols, steroids, flavonoids and other substances found in young papaya sap are most effective in increasing and facilitating breast milk production.⁸.

Young papaya is also called green papaya which is often used as fresh

vegetables or as sweets, but if traced further, green / raw papaya can be processed in such a way as to become processed food, one of which is shredded papaya. Shredded papaya is a food made from young papaya fruit, its appearance is light brown. Shredded papaya looks like cotton fibers, because it is dominated by shredded dried muscle fibers, which can be consumed as a side dish or meal accompaniment. Abon currently still has quite a lot of enthusiasts, both among children and adults. The content of papaya fruit contained in the shredded, namely, contains vitamin C (78 mg/100 g) higher than other fruits, and beta carotene content of 20.722 mg/100 g fruit weight. Antioxidant compounds produced from plants such as vitamin C, phenols, especially flavonoids have the potential to reduce the risk of various degenerative disease and increase breast milk production.¹⁰

Previous research according to showed that in the experimental group the average before being given young papaya fruit, the breast milk fluency score was 5.9, while after being given young papaya, the breast milk fluency score was 14.60. This result shows that there is an increase in breast milk production after being given young papaya fruit for 7 days in the form of fruit which is given 3 times a day as much as 600 grams.⁴

Based on preliminary studies at the Rongga Health Center in May 2023, there were 50 primigravida postpartum mothers. During postpartum control the mother said that she had little breast milk, so it was still lacking and the child was given formula milk. In addition, the Rongga Health Center Region has local wisdom which is a source of lactogogum that can be found anywhere, namely papaya fruit, so based on this background it is important for researchers to conduct research on "The Effect of Shredded Papaya on Breast Milk Expenditure of Postpartum Mothers Days 3 - 7 in the Rongga Health Center Working Area, West Bandung Regency

RESEARCH METHOD

Quantitative research with quasi experiment one group pre and posttest, population 90 postpartum women, sample of 20 postpartum women day 3 - 7 who meet the inclusion / exclusion criteria. The sampling technique was quota sampling, primary data collection with observation sheet instruments and SOP. Assessment of breast milk fluency using indicators of mother and baby, analysis used univariate, bivariate. Data normality test using Shapiro wilk and Wilcoxon analysis to determine the effect of shredded young papaya on breast milk production for postpartum women on days 3-7, if p value 0.05.

RESULT AND DISCUSSIONS

Result

Characteristic	Amount	Persentage	
Paritas			
Primipara	7	35	
Multipara	13	65	
Birth Distance			
0-2 tahun	7	35	
>2	13	65	
Education			
College	1	5	
Senior high school	7	35	
Junior high school	3	15	
Elementary school	9	45	
Total	20	100	

Based on table 1, the characteristics of respondents were mostly 17 people (85%) aged 20-35 years, more than half of them were multiparous and birth spacing > 2 years as many as 13 people (65%), less than half of them had elementary school education (SD) 9 people (45%)

Table 2 Frequency Distribution of Breast Milk Expulsion Before and After Giving Young Papaya Abon To Postpartum Women On Day 3 -7

	Before		After	
Expressing Breast milk	Amo unt	Persenta ge (%)	Amo unt	Perse ntage (%)
Not Current	20	100	0,0	0
Current	0	0	20,0	100
Total	20	100,0	20	100

Based on table .2 shows that the distribution of breast milk production of postpartum women on days 3 - 7 before the intervention was entirely 20 people (100%) not smooth, after the intervention all 20 people (100%) were smooth.

Table 3. Effect Of Young Papaya Abon On Breast Milk Expenditure Of Postpartum Mothers On Days 3 - 7 In The Working Area Of The Rongga Health Center, West Bandung Regency

Expressing breast milk	Mean	SD	SE	P.Value
Pre	2,20	410	092	0,0001
Post	7,50	688	154	

Based on table 3, it was found that the results of breast milk production in postpartum women on days 3-7 had a mean before the intervention of 2.20 while after the intervention, the mean was 7.50 so that the p value was 0.0001, ($\alpha \le 0.05$).

Discussions

Characteristics Of Respondents Based On Age, Parity, Birth Spacing And Education

Based on table 1, the characteristics of respondents were 17 people (85%) aged 20-35 years, multiparous 13 people (65%), birth spacing > 2 years as many as 13 people (65%) and the most education was elementary school (SD) 9 people (45%). These characteristics are one of the factors that affect the milk supply of postpartum women on days 3-7. According to a person's characteristics are traits that distinguish a person from others in the form of education, occupation, income, number of children, and number of families in the household that affect a person's behavior.¹¹ This is in line with the characteristics of mothers found during the research, age, parity, birth spacing and education.

Overview Of Breast Milk Expulsion Before And After Being Given Abon Papaya Muda To Postpartum Mothers On Days 3-7

Based on table 2 shows that the distribution of breast milk production of postpartum women on days 3 - 7 before the intervention, all 20 people (100%) were not smooth, after the intervention all 20 people (100%) were smooth.

This situation is related to the process of breastfeeding from the first day is not always easy, so many mothers experience problems in doing so. In the working area of the Rongga Health Center, all postpartum / postpartum mothers at the time of day 3 control said their breast milk was not smooth, where at the beginning of the postpartum period there is a mechanism for the formation of breast milk called the lactogenesis phase which is divided into 3 phases. Lactogenesis I occurs since the 2nd trimester or 16-22 weeks of pregnancy. Produces breast milk 10 - 50 cc or about 3-5 teaspoons, called colostrum which contains antibodies.¹

Lactogenensis II occurs between 30-72 hours after placental discharge, but the mother feels full breasts about 2-3 days after delivery. The process of lactogenesis II shows that breast milk production is not produced immediately after childbirth, where the amount of this hormone is not directly related to the volume of milk, so the milk produced is only 50 - 100 cc. Frequent breastfeeding in early lactation can stimulate the development of prolactin receptors in the mammary glands, the hormone prolactin is needed to produce milk. Prolactin and oxytocin can become permissive or weakened in function if milk is not released.¹

Lactogenesis III occurs on days 3-14 after delivery, the phase where the autocrine system begins. At this stage there is a process of switching breast milk from colostrum to transitional breast milk on days 4-6, producing 100-300 cc of breast milk influenced by the supply and demand process.¹

In addition to lactogenesis factors in respondents, there were several factors that influenced breast milk production, namely age, parity, birth spacing and education. Where according to (Rayhana & Sufriani, 2017) there are several factors that affect breast milk production, namely breastfeeding frequency, baby's birth weight and gestational age at birth. Age, parity, stress, illness, smoking, type and distance of labor, nutrition and family support are one of the factors that affect breast milk production.¹

Breast milk production after the intervention was obtained by all 20 respondents (100%) smoothly, this is related to phase III lactogenesis which produces 100-500 cc of breast milk per day. If a lot of milk is released, the breast will produce more milk, blood flow to the breast increases so that the breasts begin to feel firmer and heavier. The process of lactogenesis III depends on the cycle of filling and emptying the alveoli, lactogenesis III is also called galactogenesis, which maintains breastfeeding. Milk contains active "Whey Protein" called Feedback inhibitor lactation (FIL), FIL is produced by secretory cells (Lactocyle) along with other components of milk.¹

The role of FIL is very influential on autocrine control, which will slow down milk secretion when the breast is full. A decrease in milk secretion can also occur due to the accumulation of milk in the breast alveoli, this will reduce the increase in prolactin at the alveoli membrane receptors For this reason, appropriate lactogensis management is needed, namely, 7 contacts plus breastfeeding is a special time to meet and consult with a breastfeeding counselor including on days 3 and 7, avoid stress, milk the baby as often as possible, provide vitamin A and increase intake containing lactogogum, one of which is papaya fruit. The content of young papaya fruit has lactagogum which can be one way to increase the rate of secretion and production of breast milk.15

The results of showed that in the experimental group the average before being given young papaya fruit, the breast milk fluency score was 5.93, while after being given young papaya, the breast milk fluency score was 14.60.⁴ Another study by Muhartono et al, (2019) showed that the average breast milk production before consuming papaya fruit was 5.7 times with a standard deviation of 0.8131, the average after consuming papaya fruit was 9.75 times with a standard deviation of 0.78640. Because the difference in the average value is 4.05000 with sig = 0.001, so sig < 0.05, it can be concluded that there is a difference in the average production of breast milk before and after consuming papaya fruit.¹⁵

According to Budiarti et al (2011) and Wilda (2021) Breast milk production is said to be smooth if at least 4 of the 6 indicators observed are present in the baby, namely defecation 2-5 times a day, concentrated green stool color, BAK 6-8 times a day, yellow BAK color, 2-3 hours of sleep and weight gain of 200-2500 per week. If the value is less than 4, it is said that it is not smooth, plus the mother's indicator is said to be smooth if the observation of the respondent shows at least 5 indicators out of 10 indicators, the breasts are tense and full, the mother is relaxed, the attachment is correct, breastfeeding alternately using both breasts, the let down reflex is good, the frequency of breastfeeding is more than 8 times a day, the nipple is not blistered, the mother is seen expressing milk, the breasts are empty and breastfeeding is unscheduled.9

It can be concluded that there is an increase in breast milk production in postpartum women on days 3 - 7 after consuming 100 grams of young papaya per day for 5 days by processing it into abon

The Effect of Abon Papaya Muda On Breast Milk Expenditure Of Postpartum Mothers On Days 3 - 7 In The Working Area Of Puskesmas Rongga, West Bandung Regency

Based on table 4.3, it was found that breast milk expenditure in postpartum women on days 3-7 had a mean before intervention of 2.20 while after the intervention, the mean was 7.50 p value 0.0001, ($\alpha \le 0.05$). That means there is an effect of shredded young papaya on breast milk production of postpartum women on days 3-7 in the working area of the Rongga Health Center, West Bandung Regency, so Ho is rejected because the degree of significance obtained from the results of the study is $\alpha \leq$ 0.05. Thus, shredded young papaya can increase breast milk production in postpartum women on days 7, giving it for 5 consecutive days is proven to increase breast milk production.³

Papaya fruit is one type of fruit that contains papain saponins, enzymes, alkaloids. carotenoids flavonoids, monoterpenoids which have the effect of increasing the number and diameter of the mammary callus, vitamins C, A, B and E, and minerals. The chemical content of young papaya fruit contains polyphenols and steroids which lactogogum, increased milk are production is influenced by the presence of polyphenols and steroids. Polyphenols and steroids affect the prolactin reflex to stimulate the alveolus which works actively in the formation of breast milk, polyphenols also affect the hormone oxytocin which will make breast milk flow faster than before consuming papaya fruit.7

Lactagogum in papaya fruit has the potential to stimulate oxytocin and prolactin hormones such as alkolids, polyphenols 63.09 mg GAE/100 g papaya. Flavonoid steroids 20.71 mg QE/100 grams of young papaya produce breast milk when the baby sucks the nipple of the mother's breast, Neorohormonal stimulation occurs in the nipple and areola of the mother. This stimulation is forwarded to the pituitary through the nervos vagus, then to the anterior lobe, from this lobe will release prolactin hormone, enter the bloodstream and reach the glands - the glands that make breast milk. Polyphenols also affect the hormone oxytocin to encourage the contraction of myoepithelial cells surrounding the alveolus, breast milk will be pushed out so that the alveolus becomes empty and spurs the next breast milk.⁶

Another substance that is effective in increasing breast milk production and facilitating milk ejection is that in 100 grams of green papaya fruit, there is a lot of vitamin A content of 50 IU. Vitamin A is an important micronutrient for postpartum mothers, vitamin A helps the anterior hypophysis to stimulate the secretion of the hormone prolactin in the brain epithelium, activating epithelial cells in the alveoli to collect milk in the breast. This shows that young papaya fruit is rich in nutrients, and explains the benefits of papaya in many treatments.5

Papaya has scientifically proven gastroprotective, antibacterial, laxative, and lactagogue effects from papaya fruit. The content of lactagogue in papaya, can be one way to increase the rate of secretion and production of breast milk for nursing mothers. The utilization of young papaya fruit in the community has been widely found, such as good for eye health, good for digestion, used to make vegetables because of the protein and vitamin content, and eaten to facilitate and increase breast milk production. Processing of young papaya fruit in the community is usually done by boiling, steaming, stir-frying and shredded.¹⁶

Papaya fruit is a food ingredient that has many benefits and is easily obtained by the community, because it can be easily planted in the yard. With the use of papaya fruit that can increase breast milk production, it can help the success of government programs in exclusive breastfeeding efforts. With this research, it will increase people's knowledge in utilizing fruits, especially papaya in making shredded.¹²

Papaya abon is a food made from young papaya fruit, looks like cotton fibers because it is dominated by drying muscle fibers. Papaya fruit contains vitamin C (78 mg/100 g) higher than other fruits, and beta carotene content of 20,722 mg/100 g fruit weight. The content of vitamin C and beta carotene is useful as an antioxidant, 10 antioxidant compounds produced from plants such as vitamin C, phenols, especially flavonoids have the potential to reduce the risk of various degenerative diseases and increase breast milk production.²⁰

Pattypeilohy and Henukh's research (2019) states that giving papaya fruit decoction water in increasing breast milk production in postpartum women has a significant effect before and after being given papaya fruit decoction water. Evident from the 16 postpartum women who were respondents, there were 14 postpartum women who experienced an increase in breast milk production after 7 days of giving papaya fruit decoction water.² Another study conducted by Yuni (2019) states, the consumption of papaya fruit by way of clear vegetables as much as 100 grams / day for 5 days. Before the intervention, the frequency was only 3 - 5 times, while after giving young papaya fruit, the frequency increased to 11-12 times / day.¹¹

The results of research which say that papaya fruit (Carica papaya L) contains lagtagogum substances that can increase breast milk production, and prove based on the results of the study. Breast milk before being given papaya fruit in the intervention group averaged 178.57, while the average control group was 194.29. The amount of breast milk after being given papaya fruit in the intervention group on average on the first day was 191.42, while the average control group on the first day was 194.29. There is an effect of giving papaya fruit on the smoothness of breast milk in breastfeeding mothers in midwives' independent practice (p value 0.00<0.05), so it can be concluded that young papaya fruit processed with various preparations is proven increase breast milk production to in breastfeeding mothers.¹⁵

CONCLUSION

Based on the results of research and discussion, it can be concluded that the characteristics of respondents based on age, parity, distance of birth and education are known. Furthermore, it is obtained that the description of breast milk expenditure of postpartum women on days 3-7 before being given shredded papaya was entirely 20 people smoothly (100%), then after being given shredded papaya, the breast milk expenditure of postpartum women on days 3-7 was entirely 20 people smoothly (100%). The mean before the intervention was 2.20, after the intervention the mean was 7.50 and the p=value was 0.0001 (α < 0.05), it means that there is an effect of shredded young papaya on breast milk production of postpartum women on days 3 - 7 in the working area of the Rongga Health Center, West Bandung Regency

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