
THE EFFECT OF GIVING PAPAYA & HONEY (*Carica papaya L and Apis*) JUICE ON INCREASING THE PRODUCTION OF BREAST MILK

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Interviews conducted by researchers on midwives and 10 postpartum mothers at the Ranomeeto Health Center, the midwife said that in January, February, March 2020 there were 51 babies but only 15 babies were given exclusive breastfeeding due to the lack of milk production in post partum mothers in the Ranomeeto Health Center area so that some mothers giving formula milk from the time of the newborn with the reason that breast milk has not come out after giving birth, this study aims to determine the effect of giving papaya leaf juice and honey to increase milk production in nursing mothers in the working area of the Ranomeeto Health Center, South Konawe Regency. This study uses quantitative (analytic) research methods using a quasi-experimental design. Quasi experimental. The total population of 51 respondents and the number of samples of 21 respondents. This sampling was taken using purposive sampling technique. The results of statistical tests using Shapiro Wilk's statistics show the P Value is 0.000 so it can be concluded that there is an effect of giving papaya leaf juice and honey on increasing breast milk production for breastfeeding mothers in the Ranomeeto Health Center area, South Konawe Regency. So it is suggested to the Puskesmas to provide recommendations to mothers who are about to give birth and breastfeeding to use papaya leaf juice and honey to support smooth breastfeeding. For breastfeeding mothers, use papaya leaf juice to support

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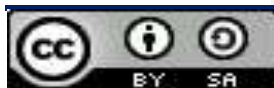
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smooth breastfeeding.

KEYWORDS

Breast Milk Production, Papaya Leaf Juice, Ranomeeto Health Center



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INTRODUCTION

Substandard milk production due to lack of nutritious food intake, lack of knowledge, family economy, and mother's psychology when giving breast milk to her baby, exclusive breastfeeding has a major impact on reducing infant mortality. Breastfeeding after the baby is born until the baby is 2 years old is really is the foundation of the formation of quality human resources (Wiknjosastro, 2010).

Infant mortality, as a result of not giving exclusive breastfeeding can cause diarrhea as much as 67%, ARI as much as 39%, and the risk of obesity as much as 42% (Kemenkes RI, 2015). This is in line with the research conducted by Lilin Turlina (2015) on the effect of giving papaya leaf powder on the smoothness of breast milk in postpartum mothers at BPM Mrs. Hanik Dasiyem, Amd. Kebdi Kedungpring, Lamongan Regency that babies who were exclusively breastfed for 6 months experienced fewer morbidity due to infection, develop optimally and do not get sick easily, compared to infants who are not breastfed. With the results of his research, there was a significant effect in giving papaya leaf drink to the smoothness of breast milk in postpartum mothers with a value of $p = 0.004$ ($p < 0.05$). Seeing the results of this study, it is recommended for postpartum mothers to often consume papaya leaf drinks to help facilitate the release of breast milk in the mother.

The Sustainable Development Goals in The 2030 Agenda for Sustainable Development target by 2030 to reduce the neonatal mortality rate by at least 12 per 1,000 live births and death in children under the age of 5 years by at least 25 per 1,000 live births. One of the ways to achieve this is by properly implementing exclusive breastfeeding (United Nations). However, only 44 percent of newborns in the world are breastfed within the first hour of birth, and even a few babies under the age of six months are exclusively breastfed (WHO, 2014).

Various efforts have been made to support exclusive breastfeeding in Indonesia. Exclusive breastfeeding is one of the indicators of household Clean and Healthy Behavior (PHBS). Efforts have been made such as the Community Cares for Breastfeeding Movement, the Policy to Increase the Use of Mother's Milk (PP-ASI) and the National Movement to Increase the Use of Mother's Milk (GNPP-ASI). However, the program did not run as expected because the coverage of exclusive breastfeeding in Indonesia was still low (Nurlinawati et al 2016).

Breastfeeding puts a metabolic burden on the physiological processes of the mother's body, requiring a minimum of 480 kcal per day for daily milk production to be able to carry out the exclusive breastfeeding process. Therefore, mothers need additional nutrition to increase milk production in order to carry out their role properly when breastfeeding. Other previous efforts to increase breast milk production, namely research with intervention methods conducted by Dharmawati et al (2008), showed that an early increase in milk production was carried out through a combination of areola massage with rolling massage for mothers at the Pamulang and Cikupa Health Centers, Banten. However, this study has not looked at the effectiveness of the intervention on the smooth

production of breast milk. While research conducted by Nurlinawati et al (2016) The breastfeeding process can also be assisted by consuming galaktogogue, examples of galaktogogue that have been researched and succeeded in increasing breast milk production are katuk leaves, green bean and fennel juice, papaya fruit boiled water and papaya leaf powder.

Papaya leaf is a plant that contains vitamins needed for baby growth and maternal health, so it can be a very potential source of nutrition. The content of high protein, high fat, vitamins, calcium (Ca), and iron (Fe) in papaya leaves functions to increase the formation of hemoglobin in the blood, it is hoped that oxygen in the blood will increase, metabolism will also increase so that brain cells function properly. In addition, papaya leaves also contain papain and potassium enzymes, the function of which enzymes are to break down the protein eaten while potassium is useful to meet the needs of potassium during lactation. Because 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 (Turlina, 2015). This is in line with Hesty's (2016) research that papaya leaves are an ingredient raw materials that contain high protein and calories so that it affects the volume of breast milk produced to produce breast milk in sufficient quantities. With the results of his research there was an effect of papaya leaf extract on the adequacy of breast milk ($p = 0.038, = 0.05$).

Interviews conducted by midwife researchers and 10 postpartum mothers at the Ranomeeto Health Center, the midwife said that in January, February, March 2020 there were 51 babies but only 15 babies were given exclusive breastfeeding due to the lack of milk production in post partum mothers in The area of the Ranomeeto Health Center so that some mothers give formula milk from the time of the newborn with the reason that there is not much milk production after giving birth, and 3 post partum mothers said that they gave breast milk and additional foods such as bananas and water, 5 mothers said they had insufficient breast milk. a lot, 2 mothers give breast milk, porridge and formula milk to their babies on the grounds that their babies are fussy because it is not enough to drink only breast milk. and obesity.

Based on the background and the initial survey conducted by the researcher, the researcher is interested in the use of papaya leaves and honey to overcome the lack of breast milk production which can be done in simple ways such as trying traditional ingredients. One of the plants that can increase breast milk production is honey papaya leaves. Through several studies, it is indeed useful to increase breast milk production.

This study aims to determine the effect of giving papaya juice & honey (Carica Papaya L and Apis) to increasing breast milk production of nursing mothers before and after being given papaya leaf juice.

RESEARCH METHOD

This study uses quantitative (analytic) research methods using a quasi-experimental design. Quasy experimental aims to investigate the possibility of a causal relationship by conducting treatment or intervention to one or more experimental groups, then the results of the intervention are compared with the group that is not subject to treatment (Control) (Notoatmodjo 2015). The approach of this research is to use a one group pretest-posttest approach, which is to compare the conditions before being given treatment and after being given treatment.

The place and time of this research was carried out in the area of the Ranomeeto Health Center in August 2020. This research was carried out on breastfeeding mothers in

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the working area of the Ranomeeto Health Center. The population in this study were all breastfeeding mothers aged 0-6 months who were at the Ranomeeto Public Health Center, which amounted to 51 people.

RESULT AND DISCUSSION

A. Research Place Profile

The Ranomeeto Health Center is located on Jalan Poros Haluoleo Airport, Ranomeeto District, Konawe Selatan Regency with the working area bordering:

1. To the north, it is bordered by Baruga District
2. To the south, it is bordered by Landonno District,
3. In the west, it is bordered by Lameuru District
4. In the east it is bordered by Konda District

The Ranomeeto Health Center has 12 Villages/Kelurahan working areas including:

Table 3. The working area of the Ranomeeto Public Health Center, South Konawe Regency

No	Village	Total population
1	Langgea	2.539
2	Kota Bangun	2.325
3	Kel. Ranomeeto	2.598
4	Laikaaha	1.310
5	Ranooha	1.178
6	Onewila	1.418
7	Ambaipua	2.385
8	Amoito	1.142
9	Amoito Siana	855
10	Rambu-Rambu Jaya	1.754
11	Duduria	621
12	Boro-Boro R	840
	Total	18.965

B. Research Result

1. Characteristics of respondents

- a. Education

The results of the research on the characteristics of respondents based on education can be seen in the following table:

Table 4. Distribution of Respondents by Education Level

No	Respondent's Education	Total	
		n	%
1	College	11	52,3
2	Senior High School	4	19,0
3	Primary school	6	28,7
	Total	21	100

Source: Primary Data 2020

Based on table 4, it can be seen that of the 21 respondents, the education category of PT was 11 people (52.3%), SMA was 4 people (19%) and elementary school was 6 people (28.7%).

b. Age group

The results of the research on the characteristics of respondents based on age groups can be seen in the following table:

Table 5. Distribution of Respondents by Age Group

No	Age group	Total	
		n	%
1	30 – 35 Year	13	61,9
2	> 35 Year	8	38,1
	Total	21	100

Source: Primary Data 2020

Based on table 5, it can be seen that of the 21 respondents the most age group is 30-35 years as many as 13 people (61.9%) and the lowest is > 35 years with 8 people (38.1%).

c. parity

The results of the research on the characteristics of respondents based on parity groups can be seen in the following table:

Table 6. Distribution of Respondents by Parity

No	Parity	Total	
		n	%
1	Primipara	9	42,9
2	Multipara	12	57,1
	Total	21	100

Source: Primary Data 2020

Based on table 6, it can be seen that of the 21 respondents in the parity group the most were multiparas as many as 12 people (42.9%) and the lowest were primiparas with 9 people (57.1%).

2. Univariate Analysis

a. Breast milk production in breastfeeding mothers in the working area of the Ranomeeto Health Center before being given treatment

Table 7. Distribution of breast milk production in breastfeeding mothers in the working area of the Ranomeeto Health Center before being given treatment

No	Breast milk production	Pre test Measurement	
		n	%
1	Increase	4	19
2	Not increasing	17	81
	Total	21	100

Source: Primary Data 2020

Based on table 7 above, it can be seen that before giving the treatment, the respondent's milk production was in the sufficient category as many as 4 people (19%) and the less category as many as 17 people (81%).

b. Breast milk production in breastfeeding mothers in the working area of the Ranomeeto Health Center after being given treatment

Table 8. Distribution of breast milk production in breastfeeding mothers in the working area of the Ranomeeto Health Center after being given treatment

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No	Breast milk production	Pre test Measurement	
		n	%
1	Increase	18	85,7
	Not increasing	3	14,3
Total		22	100

Source: Primary Data 2020

Based on table 8 above, it can be seen that after giving the treatment, the respondent's milk production was in the sufficient category to 18 people (85.7%) and the less category as many as 3 people (14.3%).

3. Bivariate Analysis

a. Normality test

Table 9 Distribution of Data Normality Test Results

No	Breast milk production for breastfeeding mothers	P value	A
1	Pre Test	0,85	0,05
2	Post Test	0,112	0,05

Source: Primary Data 2020

Based on table 9 above, it shows that the results of the normality test using the Shapiro Wilk test because the number of samples is less than 50 and using 2 groups (Arikunto, 2010) shows that the p value (0.85) > (0.05), meaning that the data normally distributed; and after being given treatment, it shows that the p value (0.112) > (0.05), meaning that the data is normally distributed.

b. Differences in breast milk production in breastfeeding mothers in the working area of the Ranomeeto Health Center before and after being given treatment

Based on the measurement results of breast milk production before and after treatment, the following results were obtained:

Table 10. Mean measurement results of breast milk production

Measurement	Pre test	Pos test	Different	P Value
	Mean	Mean		
Breast milk production	1,19	1,86	0,67	0,000

Source: Primary Data 2020

Based on table 10, it can be seen that the difference in the mean value of the milk production category between the pre-test value of 1.19 and the post-test value of 1.86 with a large difference of 0.67.

The results of statistical tests show that the P Value is 0.000 so it can be concluded that there is an effect of giving papaya leaf juice on increasing breast milk production for nursing mothers at the Ranomeeto Health Center, South Konawe Regency.

A. Discussion

1. Production of breast milk before being given treatment in the Work Area of the Ranomeeto Health Center, Konawe Selatan Regency

Before giving the treatment, the respondent's milk production was in the sufficient category as many as 4 people (19%) and the less category as many as 17 people (81%). This shows that there has been a very significant change, especially the number of mothers whose breast milk production category is sufficient to 18 respondents.

While 3 respondents remained in the less category this was due to the physical condition of the mother's breasts such as nipples that did not come out. It was obtained information that during pregnancy the mother did not do breast care, especially for mothers with first-time pregnancies. However, the change in symptoms felt by the mother was slightly reduced compared to before being given treatment, including breast milk but not sufficient for the baby's needs.

Breast milk production can be influenced by many factors. The main factors that can influence are hormonal factors, namely prolactin and oxytocin hormones. Babies who suck the mother's breast will stimulate neurohormonal in the mother's nipple and areola. The stimulation will be transmitted to the pituitary via the vagus nerve and continued to the anterior lobe. The prolactin hormone will be released when the stimulus reaches the anterior lobe, enters the blood circulation and reaches the milk-making gland which will then stimulate the gland to produce milk.

The hormone oxytocin stimulates milk production. Babies have a reflex turning their head towards the mother's breast when brought close to the mother's breast, which is called the rooting reflex (turning reflex), this causes stimulation of the release of the hormone oxytocin.

Papaya leaf is a type of plant that contains laktagogums which have the potential to stimulate the hormones oxytocin and prolactin such as alkaloids, polyphenols, flavonoid steroids and other substances that are most effective in increasing and facilitating breast milk production. Hormonal prolactin reflex to produce breast milk, when the baby sucks the mother's nipple, neurohormonal stimulation occurs on the mother's nipple and areola. This stimulation is transmitted to the pituitary via the vagus nerve, then to the anterior lobe. From this lobe will release the hormone prolactin, into the blood circulation and up to Pol. Pepper glands that make breast milk. This gland will stimulate to produce breast milk (Istiqomah, et al 2014).

The hormones prolactin and oxytocin play a role in increasing milk production. Prolactin plays a role in the synthesis of milk, while the activity of oxytocin in the mammary glands causes contraction of myoepithelial cells, so that milk will be pushed into the milk ducts.

Giving papaya leaf juice which contains alkaloids, saponins can increase prolactin levels. This is because the juice works as a dopamine antagonist. Increased prolactin levels can play a role in stimulating lactation.

2. Respondents' milk production after being given treatment in the working area of the Ranomeeto Health Center, Konawe Selatan Regency

After giving the treatment, the respondent's milk production was in the sufficient category to 18 people (85.7%) and the less category as many as 3 people (14.3%). The increase in breast milk production is influenced by the presence of polyphenols and steroids that affect the prolactin reflex to stimulate the alveoli which work actively in the formation of breast milk. The increase in breast milk production is also stimulated by the hormone oxytocin, the increase in the hormone oxytocin is influenced by the polyphenols present in young papaya leaves which will make breast milk flow more profusely compared to before consuming papaya leaf juice.

Oxytocin is a hormone that plays a role in encouraging the secretion of milk (milk let down). The role of oxytocin in the mammary glands is to encourage the contraction of the myopic cells that surround the alveolus to be pushed out into the milk ducts, so that the alveolus becomes empty and spurs the next milk synthesis (Istiqomah, et al 2014).

The increase in breast milk production is influenced by the presence of polyphenols and steroids that affect the prolactin reflex to stimulate the alveoli which

work actively in the formation of breast milk and polyphenols also affect the oxytocin hormone which will make breast milk flow more profusely compared to before consuming papaya leaf juice (Istiqomah, et al, 2014). Other content contained in papaya leaf juice, such as starch (43.28%), sugar (15.15%), protein (13.63%), fat (1.29%) moisture (10.65%), fiber (1.88%) (Kharisma, 2017).

The mammary gland consists of many lobes, each lobe is divided into lobules, and each lobule consists of alveoli. The contraction of myoepithelial cells causes the synthesis of milk in the alveoli to be squeezed into the lactiferous ducts and then collects in the ampulla. During lactation, the lumen of the alveoli is filled with secretions, so that the lumen of the alveoli will appear stretched as breastfeeding increases.

Alveolar glands are composed of s cells Epithelial cells are highly proliferative, their activity increases during the lactation period. This will be followed by an increase in the proliferation of epithelial cells forming the alveoli. The production and expenditure of milk involves prolactin and oxytocin which will stimulate the formation of more and more new alveoli. At the beginning of lactation, the process of formation of new alveoli is still found which is stimulated by good sucking of milk and increased levels of the hormone prolactin. Oxytocin can also have a similar effect by accelerating the emptying of the alveolar lumen through myoepithelial contraction and increasing the rate of protein secretion in the secretory cells lining the walls of the alveoli.

The mechanism of action of laktagogums in helping to increase the rate of secretion and production of breast milk is by directly stimulating protoplasmic activity in the secretory cells of the mammary glands and secretory nerve endings in the mammary glands which results in increased milk secretion, or by stimulating the hormone prolactin which is a lactagonic hormone to the mammary glands in the breast. alveolar epithelial cells that stimulate lactation.

Papaya as a plant that contains Lactogogum is a tropical fruit known as Caricapapaya. Lactogogum is a drug that can increase or facilitate the release of milk (Istiqomah, Wulandari, Azizah, 2015). Papaya leaf juice is also a plant that contains enzymes, vitamins C, A, B and E, and minerals. As well as the chemical content of young papaya fruit contains polyphenols, and steroids.

This study is in line with research by Istiqomah, et al. in 2014 about the effect of young papaya on the smooth production of breast milk in nursing mothers. Proving that from the results of 20 respondents who were given unripe papaya fruit experienced an increase in breast milk production seen from the frequency of breastfeeding babies.

This study is in line with the research on the Effects of Young Papaya Fruit Extract (*Carica Pepeaya L*) on Histological Description of the Lactational Mammary Kenjer In 2011 the results showed that the average lactating mammary gland diameter of mice in the young papaya extract group was larger than that of the lactating group. negative control.

This research is supported by research by Istiqomah, et al (2014) about the effect of giving young papaya fruit to the smooth production of breast milk in breastfeeding mothers, namely the Paired T-Test test, the value of $p = 0.0005$ ($p < 0.05$) means that there is an effect of giving papaya fruit Young papaya fruit extract on the smooth production of breast milk and in the study of the effect of the aqueous extract of young papaya (*Carica Papaya L*) on the histological description of the mammary glands of lactating mice in 2011 the results showed that the diameter of the lactating mammary glands on average was greater in the water extract group of young papaya fruit. compared to the negative control group.

CONCLUSION

The conclusion of this study is that there is an effect of giving honey papaya leaf juice on increasing breast milk production for breastfeeding mothers in the Ranomeeto Health Center area, South Konawe Regency.

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