THE EFFECT OF GIVING PAPAYA LEAF EXTRACT (*Carica Papaya L*) ON INCREASING BREAST MILK PRODUCTION IN BREASTFEEDING MOTHERS AT WORKING AREA OF BERNUNG PUSKESMAS, GEDONGTATAAN DISTRICT YEAR 2022

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ABSTRAK

Cakupan bayi yang mendapatkan ASI eksklusif di Desa Kebagusan baru mencapai 72,8% dari target 80%. Belum tercapainya target ASI Eksklusif salah satunya disebabkan produksi ASI yang kurang. Ekstrak daun pepaya banyak mengandung laktagogum yang berguna untuk meningkatkan prduksi ASI. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian ekstrak daun pepaya (*Carica Papaya L*) terhadap peningkatan produksi ASI pada ibu menyusui di INDEPENDENT MIDWIFERY PRACTICEwilayah kerja puskesmas Bernung Kecamatan Gedongtataan tahun 2022.
Jenis penelitian kuantitatif dengan rancangan *Quasi Eksperimental* menggunakan desain *pretest and postest with control group design*. Penelitian dilakukan bulan September - November 2022. Teknik sampel *purposive sampling*. Sampel 26 responden, masing – masing 13 responden pada kelompok intervensi dan kontrol. Intervensi selama 7 hari. Instrumen menggunakan lembar observasi. Data dianalisis secara univariat dan bivariat menggunakan SPSS20.
Hasil penelitian ada pengaruh ekstrak daun pepaya terhadap peningkatan ASI *(p 0,000<0,05)*. Saran dalam penelitian ini dapat menggunakan ekstrak daun pepaya sebagai salah satu alternatif untuk meningkatkan produksi ASI pada ibu menyusui di Wilayah Kerja Puskesmas Bernung Kecamatan Gedongtataan Tahun 2022.

Kata Kunci : *Carica Papaya L, Back Massage* , Ibu Menyusui, Produksi ASI

ABSTRACT

The coverage of babies who are exclusively breastfed in January-June 2022 in Kebagusan Village has only reached 72.8% with a target achievement of 80%, the target of exclusive breastfeeding has not been achieved, one of which is due to insufficient milk production. Papaya leaf extract contains a lot of lactagogum which is useful for increasing milk production. This study aims to determine the effect of giving papaya leaf extract (*Carica papaya L*) on increasing milk production in breastfeeding mothers at independent midwifery practice Wiwit Fitri Yani in Kebagusan Village, Gedong Tataan District, Pesawa- ran Regency.
This type of quantitative research with a quasi-experimental design using a pretest and posttest design with a control group design. The research was conducted in September - November 2022 at independent midwifery practice Wiwit Fitri Yani and independent midwifery practice Yulina in the Work Area of the Bernung Health Center, Gedongtataan District in 2022. Sampling was taken using a *purposive sampling* technique. This study used 26 respondents, each 13 respondents for the intervention and control groups. The intervention was given for 7 days. The instrument used to measure the increase in breast milk is an observation sheet. The data obtained were analyzed univariately and bivariately using the Wilcoxon test.
The results showed that there was an effect of papaya leaf extract on increasing breast milk (p 0.002 (<0.05)). This research is expected to be useful for midwifery services and the development of obstetrics by using this papaya leaf extract as an alternative to facilitate breastfeeding so that breastfeeding is sufficient at independent midwifery practice Wiwit Fitri Yani and independent midwifery practice Yulina in the Working Area of the Bernung Public Health Center, Gedongtataan District in 2022.

Keywords: *Carica Papaya L,Back Massage* ,Breastfeeding Mothers,BreastMilk Production

INTRODUCTION

The World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend that children should only be given Breast Milk for at least 6 months and continued breastfeeding until the child is 2 years old. According to WHO data for 2018, 136.7 million babies were born worldwide and only 32.6% of them were exclusively breastfed in the first 6 months. Meanwhile in developing countries only 39% of mothers give exclusive breastfeeding. (WHO, 2018) In 2021 the results of the 2021 Directorate of Community Nutrition routine report, it is known that out of 1,845,367 infants aged <6 months who were recalled there were 1,287,130 who get exclusive breastfeeding, so it can be concluded that the achievement indicator for infants aged <6 months getting exclusive breastfeeding is 69.7%. This achievement has met the 2021 target, which is 45%. The government's efforts to protect, support and promote exclusive breastfeeding, PP Number 33 of 2012 concerning exclusive breastfeeding, this regulation implements the provisions of article 129 paragraph (2) of Law Number 36 of 2009 concerning health. (Ministry of Health, 2021).

The coverage of babies receiving exclusive breastfeeding in Lampung Province 2019 was 69.3%, where this figure was still below the expected target of 80%. (Health Lampung Province Profile, 2019). Coverage of babies receiving exclusive breastfeeding in Indonesia in the age range 0-5 months in 2021 is 71.58% and in Lampung Province 2021 it is 74.93%, where this figure is above the expected target (Central Bureau of Statistics, 2019). Exclusive breastfeeding coverage in Kebagusan village from January to June is 72.5%, which is still below the expected target of 80% (Bernung Public Health Center Monthly Report, 2022). Breast milk has all the nutrients and fluids that are needed to meet all of the babies nutrition at 6 months after birth. Giving breast milk for 6 months after birth without any complementary food is often called exclusive breastfeeding (Muhartono, 2018).

After about six weeks postpartum, women experience a natural process called puerperium. When this process occurs, women will experience physiological changes, such as uterine involution and lochia discharge, psychological and physical changes, as well as lactation/exposure of breast milk. Lactation is a condition in which changes occur in the post-partum mother's breasts, which causes a mother to produce breast milk (Muhartono, 2018).

Milk production is influenced by several factors, both from external factors and internal factors. External factors, namely adequate rest patterns and breastfeeding positions, knowledge, and education. Internal factors are factors that exist in the mother herself, including age, parity, mother's perception that insufficient milk production, hormonal factors and maternal nutrition.

One effort to improve milk production is by consuming foods that can affect milk production. Indonesian people have a tradition or habit of exploiting natural potentials, both plants and animals as ingredients for medicinal properties. Plants and animals are quite attractive as alternative therapies because they have fewer side effects and are also cheaper (Winata & Putri, 2019). Indonesia has many plants that have the potential to be used as medicinal plants, one of which can be used as a lactogogum. Istiqomah, Wulanadari, & Azizah, 2015). Papaya leaves are natural plants that also have lactagogums to help increase and facilitate the release of breast milk, and contain potassium, tocophenols, saponins, alkaloids, minerals, vitamins and enzymes (Aliyanto & Rosmadewi, 2019).

There are several ways to increase breast milk production, including both pharmacological and non-pharmacological. Pharmacologically, drugs such as Domperidone, Metocopramide, chlorpromazine, sulpiride, have been used for a long time and are recommended to stimulate lactation in post-partum mothers. Domperidone is most recommended because it has been proven effective, no side effects have been found on the baby, and side effects are rare in breastfeeding mothers. In addition, based on the literature, domperidone as a galactogogue has been widely used in various countries even though as an "off label", such as Australia, the Netherlands, Belgium, England, Ireland, Italy, Japan, and Canada (William, Carrey 2016)

Meanwhile, non-pharmacologically, it can utilize sources from animals and plants, namely papaya leaves, katuk leaves, moringa leaves and black cumin. Papaya leaf (Carica Papaya L) is one of the leaves that contains lactagogum which is a substance that can help increase and facilitate the release of breast milk. Compared to katuk leaves and bitter melon leaves, papaya leaves are a supplement which is a traditional plant and has the potential to increase milk production and from the results of the analysis of the three leaves, papaya leaves have the highest average lactagogum content. This is also supported by the results of other studies that in fact papaya leaves have the highest efficacy for increasing milk production compared to katuk leaves and bitter gourd leaves. It can be seen clearly that one of the components possessed by papaya leaves is 676.2 g/100 gram, while katuk leaves only have 45.7 g/100 gr and Moringa leaves contain the least amount, namely 1.5 gr/100 gram. (Iwansyah et al., 2016; Wartini, 2002, in Riski, et al. 2020).

Lactagogum has ingredients such as alkaloids, polyphenols, steroids, flavonoids which are effective in stimulating the release of the hormones oxytocin and prolactin to increase the secretion and release of breast milk. Lactagogum exerts its pharmacological effect by stimulating the process of forming hormones that support the lactation process, namely oxytocin and prolactin. (Grzeskowiak et al., 2019; Istiqomah et al., 2015).

The mechanism of action of lactagogue 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 result in increased milk secretion, or by stimulating the hormone prolactin which is a lactagogue hormone against the mammary glands. on alveolar epithelial cells which will stimulate lactation (Istiqomah, 2015). Research on giving papaya leaves had previously been carried out and the results of the research were carried out by giving papaya leaf powder to the respondents, the results obtained were Sig. As much as 0.000 <0.05, it can be concluded that there is a significant effect of consumption of papaya leaf powder on milk production. (Istiqamah 2015).
From the results of the preliminary study on July 20 2022 through direct observation and interviews with the midwife Wiwit Fitri Yani in Kebagusan Village. Where based on initial interviews with midwives there were 5 breastfeeding mothers, there were 4 (90%) people who stated that milk did not come out after giving birth, one of which was because they rarely breastfed and gave birth via SC and took drugs. Mother's milk only came out two days after giving birth but the amount was small and the amount of breast milk was small so the mother gave formula milk and in the independent midwifery practice working Area of the Bernung Public Health Center also never used papaya leaves as an alternative ingredient to increase milk production. Based on the background that has been described, the authors are interested in conducting research on the effect of papaya leaf extract (Carica Papaya L) on increasing milk production in Breastfeeding Mothers at independent midwifery practice Working Area of the Bernung Public Health Center, Gedong Tataan District in 2022.

RESEARCH METHODOLOGY

The type of research used in this research is experimental research, which is a research procedure carried out. This research was conducted in September - November 2022. The population in this study were all mothers breastfeeding 7-40 days at the independent midwifery practice Working Area of the Bernung Public Health Center, Gedong Tataan District. In 2022, a total of 26 breastfeeding mothers.

In this study the sampling technique used was purposive sampling. According to the existing theory, the researchers divided the two groups, namely 13 respondents for the intervention group and 13 respondents for the control group.

Data analysis used univariate and bivariate analysis using the SPSS program. In the study, univariate analysis consisted of mother's age, child's age, parity, education, occupation, and frequency of breastfeeding, the average volume of breast milk before and after back massage in the control group, the average volume of breast milk before and after being given papaya leaf extract and back massage in the intervention group.

The data normality test in this study used the Shapiro-Wilk normality test because the sample used was <50. Obtained abnormal analysis results (p-value <0.05) on the variable after the intervention and the difference variable in the control group, which means that the data is continued to bivariate analysis, namely the Wilcoxon and Man-Whitney tests.

Bivariate analysis was performed after carrying out the normality test. The normality test in this study obtained abnormal results. Therefore, in this study the Wilcoxon and Man-Whitney tests were used.

RESEARCH RESULTS

Respondents' Characteristics

Table 4.2
Table of Characteristics of Respondents in Intervention Group and Control Group

Characteristics	Intervention Group		Control Group		Total	
	N	%	N	%	N total	%
Mother's Age						
<20 th	0	0,0	1	100,0	1	3,8
21-35 th	12	52,2	1 1	47,8	23	88,5
>35 th	1	50,0	1	50,0	2	7,7
					26	100,0 %
Child's Age						
0-28 hari	6	54,5	5	45,5	11	42
29-57 hari	7	50,0	7	50,0	14	53,8
>57 hari	0	0,0	1	100,0	1	38
					26	100,0 %
Parity						
Primipara	7	70,0	3	30,0	10	38,5
Multipara	6	37,5	1 0	62,5	16	61,5
					26	100,0 %
Education						
Middle School	0	0,0	1	100,0	1	3,8
High School	12	60,0	8	40,0	20	76,9
University	1	20,0	4	80,0	5	19,2
					26	100,0 %
Job						
Housewife	13	61,9	8	38,1	21	80,8
civil servants	0	0,0	2	100,0	2	7,7
Private	0	0,0	3	100,0	3	11,5
					26	100,0 %
Breastfeeding frequency						
5-10	4	66,7	2	33,3	6	23,1
Times/day	9	45,0	1 1	55,0	20	76,9
11-15 Times/day					26	100,0 %

Source: SPSS Crosstabs Data, 2020

Based on Table 4.2, it is known that most of the postpartum women were 21-35 years old, as many as 23 respondents (88.5%), the age of the child was 29-57 days old, and as many as 14 respondents (53.8%). It is known that the number of parity is mostly multipara mothers, with as many as 16 respondents (61.5%). Most of the mothers' education was in high school, with as many as 20 respondents (76.9%). It is known that most of the mothers' occupations are housewives, as many as 21 respondents (80.8%), and most mothers breastfeed their babies 11-15 times/day as many as 20 respondents (76.9%).

Univariate Analysis

Average Milk Production in Breastfeeding Mothers Before and After Giving Papaya Leaf Extract "Carica Papaya L"

Table 4.3

Average Milk Production in Breastfeeding Mothers Before and After Giving Papaya Leaf Extract "Carica Papaya L" and Back Massage at independent midwifery practice Bernung Public Health Center in the Working Area Gedong Tataan District Pesawaran Regency in 2022

Intervension Group	N	Mean (ml)	Selisih (ml)	SD	Min-Max
Before intervension	13	16,38	11,31	6,874	5 – 30
After intervension	13	27,69		9,920	15 – 50

Based on Table 4.3, the average measurement of breast milk production before being given Papaya Leaf Extract "Carica Papaya L" from 13 people in the intervention group obtained an average of 16.38 ml. While the average after being given Papaya Leaf Extract "Carica Papaya L" from 13 people in the intervention group was 27.69 ml. with a difference of 11.31 ml.

Average Milk Production in Breastfeeding Mothers Before and After Back Massage

Table 4.4
Average Milk Production in Breastfeeding Mothers Before and After Giving Papaya Leaf Extract "Carica Papaya L" and Back Massage at independent midwifery practice Bernung Public Health Center in the Working Area Gedong Tataan District Pesawaran Regency in 2022

Milk Production	N	Mean (ml)	Difference (ml)	SD	Min-Max
Before *Back Massage*	13	24,77	3,154	10,158	10 – 40
After *Back Massage*	13	27,92		9,716	14 – 45

Based on Table 4.4, the average measurement of breast milk production before the Back Massage was given to 13 people in the control group; the average obtained was 24.77 ml. At the same time, the average breast milk production after being given a Back Massage massage in the control group was 27.92ml. With a difference of 3.15 ml.

Normality Test

Analytical testing in this study has been fulfilled because the research sample was taken randomly to breastfeeding mothers in the working area of the Bernung Community Health Center, Gedong Tataan District, Pesawaran. It is known that the level of accuracy in taking a sample, then another analysis requirement test is carried out, namely, the normality test using Shapiro-Wilk; if Shapiro-Wilk> 0.05, then the distribution is not bad (Hastono, 2016).

Based on the data normality test using Shapiro-Wilk, there is a p-value <0.05 on the variable after the intervention and the difference variable in the control group, which means the data is abnormal. So the bivariate test uses the Wilcoxon and Man-Whitney tests.

Bivariate Analysis

Bivariate analysis is carried out on two variables suspected of being related or correlated. The analysis used in this study was the Wilcoxon test as an alternative because the data were not normally distributed. This analysis was conducted to determine whether there was an effect of Papaya Leaf Extract (Carica Papaya L) on increasing breast milk production in breastfeeding mothers in the independent midwifery practice work area of the Bernung Health Center, Gedong Tataan District, Pesawaran Regency.

The Effect of Papaya Leaf Extract (Carica Papaya L) on Increasing Milk Production in Breastfeeding Mothers

Table 4.6
Differences in the Effect of Increasing Milk Production before and after being given Papaya Leaf Extract (Carica Papaya L) and Back Massage at independent midwifery practice Bernung Public Health Center working area Gedong Tataan District, Pesawaran Regency in 2022

Variable Milk Production	n	Mean	SD	SE	P-value
Before Intervension	13	16,38	6,874	1,907	0,001
After Intervension	13	27,69	9,920	2,751	

Source: SPSS Crosstabs Data, 2020

Based on 4.6 above, the statistical test results obtained a p-value: of 0.001 (p-value. $\alpha = 0.05$), which means that there is an influence between the administration of papaya leaf extract (Carica Papaya L) and Back Massage with increased breast milk production in breastfeeding mothers in independent midwifery practice Bernung Public Health Center working area Gedong Tataan District, Pesawaran Regency in 2022.

Effect of Back Massage on Increasing Milk Production in Breastfeeding Mothers

Table 4.7
Differences in the Effect of Increased Milk Production Before and after being given a Back Massage in the independent midwifery practice work area Bernung Public Health Center Gedong Tataan District, Pesawaran Regency Year 2022

Variable Milk Production	N	Mean	SD	SE	P-value
Before control	13	24,77	10,158	2,817	0,007
After control	13	27,92	9,716	2,695	

Source: SPSS Crosstabs Data, 2020

Based on 4.7, the statistical test results obtained a p-value: 0.007 (p-value. α = 0.05), meaning there is Back Massage with increased breast milk production in breastfeeding mothers at independent midwifery practice Bernung Public Health Center working area Gedong Tataan District, Pesawaran Regency in 2022.

Differences in the effect between the intervention group and the control group on Increased Milk Production in Breastfeeding Mothers

Table 4.8
The difference in the effect of increasing breast milk production before and after the intervention and control groups in the independent midwifery practice of the Bernung Public Health Center working area, Gedong Tataan District, Pesawaran Regency, in 2022

Variable Milk Production	N	Mean	SD	SE	P-value
Intervension Difference	13	11,31	5,040	1,398	0,000
Control Difference	13	3,15	2,478	0,687	

Source: SPSS Mann-Whitney Non-Parametric Test, 2020

Based on 4.8, the statistical test results obtained a p-value: of 0.000 (p-value. α = 0.05) which means that there is a difference in the effect between the intervention and control groups on increasing breast milk production in breastfeeding mothers in the independent midwifery practice Bernung Public Health Center working area, Gedong Tataan District, Pesawaran Regency in 2022.

DISCUSSION

Univariate Analysis

Average Milk Production in Breastfeeding Mothers Before and After Given Papaya Leaf Extract "Carica Papaya L" and Back Massage

Based on the results of the study, it is known that the average breast milk production before being given Papaya Leaf Extract "Carica Papaya L" is 16.38 ml with a standard deviation value of 6.874 ml, a minimum value of 5 ml, and a maximum value of 30 ml. While the average breast milk production after being given Papaya Leaf Extract "Carica Papaya L" is 27.69 ml with a standard deviation value of 9.920 ml, a minimum value of 15 ml, and a maximum value of 50 ml. With a difference in breast milk production before and after the intervention of 11.31 ml.

Under normal circumstances, the most milk volume can be obtained in the first 5 minutes. Milk production ranges from 600 ccs to 1 liter per day. In the first days of birth, breast milk production ranges from 10-100 cc; in age 10-14 days, breast milk production ranges from 700-800cc; at age six months, breast milk production ranges from 400-700 cc; at age one year, breast milk production ranges from 300-350 cc. The smoothness of breast milk production is influenced by several factors, including the mother's age and parity. Where in

The characteristics of respondents in this study found that the mother's ages between 21-35 years amounted to 23 people (88.5%). This shows that most respondents are in the healthy reproductive age range. According to Romlah (2019), older mothers have more experience than younger mothers; this makes older mothers continue to breastfeed their babies. For mothers who provide breast milk to their babies, the more milk is released or emptied from the breast, the more milk comes out, and the more milk will be produced. In this study, most respondents' parity was multiple, totaling 16 people (61.5%). Supported by the results of research conducted by Romlah (2019) show that there is a significant relationship between the parity of breastfeeding mothers and breast milk production. Breast milk production will adjust to the baby's needs, and breast milk production in multiparous mothers is more than in primiparous mothers.

One of the efforts that can be made to increase breast milk production is using traditional herbal medicine such as Papaya Leaf Extract (Carica Papaya L). Papaya leaf (Carica papaya L) is one of the leaves that contain galactagogue, which is a substance that can help increase and facilitate breast milk production. Compared to katuk leaves and bitter melon leaves, papaya leaves (Carica papaya L) are traditional supplements that can potentially increase breast milk production. Papaya leaf (Carica papaya L) has the highest mean content. This is also supported by other studies showing that papaya leaves (Carica papaya L) are more effective than katuk leaves and bitter melon leaves. It can be seen clearly that one of the components possessed by papaya leaves is 676.2g / 100gram while katuk leaves only have 45.7g / 100 grams and Moringa leaves with the least content, namely 1.5 gr / 100 grams (Riski Wahyu et al., 2021 (Iwansyah et al., 2016;)).

Back massage is one of the alternative solutions to overcome the smooth production of breast milk. This study aimed to see the effectiveness of back massage on breast milk production. In line with research by Grasiana et al. (2021). About the effectiveness of Back Massage on breast milk production in mothers with post-SC, namely with the results of the study showing that back massage intervention is effective in increasing breast milk production. The results of the univariate and bivariate test analysis obtained the p-value of each test, namely the t-test normality test of (0.000), meaning there are significant results regarding breast milk production.

In line with Ristu's research, 2019 entitled The Effect of Papaya Leaf Powder (Carica papaya L) on the Smoothness of Breastfeeding in Postpartum

Women (The Effect Of Papaya Leaf Powder (Carica papaya L) Pro- vision To Smooth Breastfeeding In Posrtpartum Ba- bies).

The research design used Quasi Experiment with Pre and Post Test Without Control. The sample in this study found that before being given papaya leaf powder, most respondents (75%) experienced milk that was not smooth, and a small proportion (25%) experienced smooth breastfeeding. After being given papaya leaf powder, it is known that almost all respondents (80%) experience breast milk smoothly, and a small proportion (20%) experience breast milk as not smooth. The study's results using the Wilcoxon test obtained a p-value <0.05 (0.001), meaning papaya leaf powder has a significant effect on breast milk fluency in postpartum women.

According to the researcher's assumption, each individual's milk production is different, influenced by the individual's nutritional intake and correct breastfeeding techniques. In addition, supported by data on parity and age of the mother in the characteristics of respondents, the most multiparous mothers were 16 people (61.5%), and the mother's age was 21-35 years, as many as 23 people (88.5%). So that Papaya Leaf Extract (Carica Papaya L) becomes one of the herbal methods that can be consumed to increase breast milk production.

Average Milk Production in Breastfeeding Mothers Before and After Back Massage

Based on the results of the study, it is known that the average breast milk production before being given Back Massage is 24.77 ml with a standard deviation value of 10.158 ml, a minimum value of 10 ml, and a maximum value of 40 ml. In contrast, the average breast milk production after being given Back Massage is 27.92 ml with a standard deviation value of 9.716 ml, a minimum value of 14 ml, and a maximum value of 45 ml. With a difference in breast milk production before and after treatment in the control group of 3.15 ml.

The control of prolactin and oxytocin hormones influences breast milk production. Oxytocin hormone can be stimulated through oxytocin massage / Back Massage, namely by massaging the spine starting from the fifth up to sixth nerve to the scapula, accelerating the work of the parasympathetic nerves to convey commands to the back of the brain so that oxytocin comes out. The family can do back massage, especially the husband (Wahyuningsih, 2018).

The smooth production of breast milk is influenced by several factors: education and work. In the characteristics of respondents in this study, it was found that most of the high school graduates had 20 people (76.9%), and most of the mothers' jobs were housewives, totaling 21 people (80.8%). It is expected that with high education, it has good knowledge, which will affect good attitudes and behavior, especially in exclusive breastfeeding. In terms of mothers' work, this is not in line with Edward's research (2019), which states that mothers with the most types of work, namely as housewives (51.3), most infants.

Get exclusive breastfeeding. The possible factors that occur so mothers with IRT workers do not breastfeed are laziness and lack of support from the closest people, mothers tend to be lazy and rarely breastfeed (Lowdermilk et al., 2013; Umar, 2014).
The results of this study are in line with research (Handayani & Kameliawati, 2020) with the results of breast milk production values after oxytocin massage from 30 respondents obtained an average of 96.93 with a standard deviation of 16.062, the lowest breast milk production was 70 and the highest was 135. In this study, the posttest was conducted on the fourth day by pumping the right and left breasts for 15 minutes each and then getting the results in the intervention group with the most milk production of 150 ccs and the least milk production of 60 ccs. According to researchers (Handayani & Kameliawati,

Researchers assume that Back Massage given to respondents with breast milk production problems can launch breast milk production because it can comfort the mother. Researchers on existing theories and SOPs carry out the implementation of Back Massage. In addition, it is also supported by data on maternal education and maternal employment in the characteristics of respondents. For the mother's education, namely high school, as many as 20 (76.9%) and the mother's work, namely housewife, as many as 21 people (80.8%) The comfort felt by the mother will be felt by the baby so that it can suckle better.

Bivariate Analysis

Effect of Papaya Leaf Extract (Carica Papaya L) and Back Massage with increased breast milk production in breastfeeding mothers.

Based on the results of data analysis, it was found that the average breast milk production before giving papaya leaf extract (Carica Papaya L) was 16.38 ml. After giving papaya leaf extract (Carica Papaya L), the average was 27.69 ml with a value of 11.31 ml. The statistical test results of the Wilcoxon test obtained p-value = (0.001), and it can be concluded that consuming papaya leaf extract (Carica Papaya L) can increase breast milk production.

While the average value before giving Back Massage was 24.77 ml, and the average value after Back Massage was 27.92 ml. The difference value in the control group was found to be 3.15 ml. The statistical test results of the Wilcoxon test obtained a p-value = (0.007), so it can be concluded that Back Massage can increase breast milk production.

According to Istika (2017), with the title Potential of Papaya Leaves (Carica Papaya L) as an Alternative to Smooth Breast Milk Production.

Results: Based on the statistical tests with SPSS, the results of Correlation = 0.994 and Sig were obtained. =0.000, where p<0.05, shows that there is a difference in the composition of breast milk production in postpartum mothers in the pre-test group and post-test group, or it can be said that there is a significant effect after giving papaya leaves attachment to the smoothness of breast milk production.

According to the researcher's assumption, based on the study results, the average in the intervention group was 11.31 ml, and in the control group was 3.15 ml. With an increase difference of 8.16 ml and the results of the man-Whitney test (p-value 0.000 <0.05). It can be seen from these results that both groups are equally effective in increasing breast milk production. However, it can be seen from the average value of the results that the intervention group given papaya leaf extract (Carica Papaya L) and back massage is higher than the control group, which was only given back massage alone. This is because papaya leaf extract (Carica Papaya L) is rich in antioxidants and lactagogoum. Lactagogum is a substance that can increase and smooth breast milk production by stimulating the release of oxytocin and prolactin hormones, such as alkaloids, polyphenols, steroids, and flavonoids, which are effective in increasing breast milk production.

According to the researcher's assumption, based on the study results, the average in the intervention group was 11.31 ml, and in the control group was 3.15 ml. With an increase difference of 8.16 ml and the results of the man-Whitney test (p-value 0.000 <0.05). It can be seen from these results that both groups are equally effective in increasing breast milk production. However, it can be seen from the average value of the results that the intervention group given papaya leaf extract (Carica Papaya L) and back massage is higher than the control group which is only given back massage. This is because papaya leaf extract (Carica Papaya L) is rich in antioxidants and lactagogoum. Lactagogum is a substance that can increase and smooth breast milk production by stimulating the release of oxytocin and prolactin hormones such as alkaloids, polyphenols, steroids, and flavonoids, which are effective in increasing the secretion and release of breast milk.

Therefore, papaya leaf extract (Carica Papaya L) can be used as a complementary therapy to increase breast milk production more effectively than just a back massage.

Research Limitations

Based on the direct experience of researchers in this study, several limitations are experienced; among others, this study only includes two independent midwifery practice in the working area of the Bernung Public Health Center, Gedong Tataan District. So that the results of the study are less representative. The postpartum age variable in the respondents taken was not homogeneous; namely, postpartum women aged 0-57 days. So that the results of measuring breast milk production can be different based on the postpartum age. The researcher did not control the intake of other nutrients besides the intervention that could increase breast milk production in postpartum women during the study.

CONCLUSION

It is known that the average breast milk production before and after giving papaya leaf extract (Carica Papaya L) and Back Massage in the intervention group was 16.38 ml and 27.69 ml, with a difference of 11.31 ml. It is known that the average breast milk production before and after being given Back Massage in the control group is 24.77 ml and 27.92 ml, with a difference of 3.15 ml. There is an effect of the consumption of papaya leaf extract (Carica Papaya L) and Back Massage with an increase in breast milk production in breastfeeding mothers in the working area of the Bernung Public Health Center Work Area, Gedongtataan District in 2022 (p-value = 0.000) Papaya leaf extract (Carica Papaya L) is more effective in increasing breast milk production.

SUGGESTION

It can be a reference for study material in complementary health care courses in the postpartum period and enrich knowledge in applying research methods. As input in the development of the midwife profession in order to improve the quality of service.

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