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THE EFFECT OF FEEDING KATUK LEAVES AND MORINGA LEAVES ON MILK PRODUCTION

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ABSTRAK : PENGARUH PEMBERIAN DAUN KATUK DAN DAUN KELOR TERHADAP PRODUKSI ASI

Latar Belakang : Pada tahun 2018 Indonesia data cakupan bayi yang mendapatkan ASI eksklusif sebesar 68,74%, di Provinsi Jawa Barat memiliki presentase cakupan ASI eksklusif sebesar 90,79% dengan persentase gizi buruk sebesar 2,5% dan gizi kurang sebesar 8,1% .

Tujuan : Penelitian ini bertujuan untuk mengetahui Pengaruh pemberian air rebusan daun katuk dan daun kelor terhadap produksi ASI pada ibu nifas di wilayah kerja puskesmas parung Panjang tahun 2023.

Metodologi : Desain penelitian ini dengan *quasi experiment Two Group Pre-Post Test* . P opulasi dalam penelitian ini adalah ibu nifas di wilayah kerja puskesmas Parung Panjang Bogor Jawa Barat Tahun 2023. Teknik pengambilan sampel menggunakan *Purposive Sampling*. Sampel berjumlah 30 orang, dikelompokkan menjadi 2 kelompok yaitu 15 orang diberikan intervensi rebusan daun kelor dan 15 orang diberikan daun katuk. Analisa data Univariat dan Bivariat uji *Paired T-test*.

Hasil Penelitian : Nilai rata-rata produksi ASI sebelum pemberian air rebusan daun katuk adalah 2.87 dan sesudah pemberian rebusan daun katuk adalah 3.93 (*p value* : 0.004) Nilai rata-rata produksi ASI sebelum pemberian air rebusan daun kelor adalah 2.80 dan sesudah pemberian rebusan daun kelor adalah 4.13. (*p value* : 0.004)

Simpulan : Tidak ada Perbedaan rata rata produksi ASI yang signifikan pada kelompok sesudah diberikan air rebusan daun kelor dibandingkan pada kelompok sesudah diberikan air rebusan daun katuk (*p value* : 0,430) (*Uji Mean Whitney*)

Saran : Diharapkan pemanfaatan daun kelor dapat diolah menjadi sayuran sebagai menu selingan yang dapat dikonsumsi oleh ibu nifas selain olahan daun katuk.

Kata kunci : ASI, Daun kelor, Katuk.

ABSTRACT

Background: In 2018 Indonesia data on the coverage of infants who get exclusive breastfeeding is 68.74%, in West Java Province has a percentage of exclusive breastfeeding coverage of 90.79% with a percentage of malnutrition of 2.5% and undernutrition of 8.1%.

Objective: This study aims to determine the effect of giving boiled water of katuk leaves and moringa leaves on breast milk production in postpartum women in the working area of the Parung Panjang health centre in 2023.

Methodology: This research design with *quasi experiment Two Group Pre-Post Test*. The population in this study were postpartum mothers in the working area of the Parung Panjang Community Health Centre, Bogor, West Java in 2023. The sampling technique used *purposive sampling*. The sample amounted to 30 people, grouped into 2 groups, namely 15 people given the intervention of moringa leaf decoction and 15 people given katuk leaves. Univariate data analysis and Bivariate *Paired T-test* test.

Results: The mean value of breast milk production before giving water decoction of katuk leaves was 2.87 and after giving water decoction of katuk leaves was 3.93 (*p value*: 0.004) The mean value of breast milk production before giving water decoction of moringa leaves was 2.80 and after giving water decoction of moringa leaves was 4.13. (*p value*: 0.004)

Conclusion: There is no significant difference in average breast milk production in the group after being given moringa leaf decoction water compared to the group after being given katuk leaf decoction water (*p value*: 0.430) (*Mean Whitney test*).

Suggestion: It is expected that the use of moringa leaves can be processed into vegetables as a side menu that can be consumed by postpartum mothers in addition to processed katuk leaves.

Keywords: Breast milk, Moringa leaves, Katuk

INTRODUCTION

Breast milk is the natural first food for babies.

It provides all the energy and nutrients a baby needs for the first months of life. In order to reduce infant morbidity and mortality, the World Health Organisation (WHO) recommends that infants should only be breastfed for at least 6 months, and that breastfeeding be continued until the infant is two years old. (Shafieian, 2020)

Exclusive breastfeeding coverage in ASEAN countries such as India has reached 46%, in the Philippines 34%, in Vietnam 27% and in Myanmar 24%, while in Indonesia it has reached 54.3 (infodatin, 2017). The World Health Organisation (WHO) in 2017 still shows that the average rate of exclusive breastfeeding in the world is only around 48%. According to the SDKI data in Indonesia, the coverage of exclusive breastfeeding in Indonesia in 2017 is still low at only around 35%, this figure is still far below the WHO recommendation of around 50% (Dila Gunarti, 2024)

Data from the Ministry of Health 2018 states that in 2018 Indonesia data on the coverage of infants who received exclusive breastfeeding was 68.74%, in West Java Province, the percentage of exclusive breastfeeding coverage was 90.79% with a percentage of malnutrition of 2.5% and undernutrition of 8.1%, the percentage of newborns who received IMD was 71.17%, in West Java Province, the percentage of newborns who received IMD was 72.30%. (Dinengsih *et al.*, 2022)

The Bogor district health office reported that in 2019 IMD activities in newborns were 94,970 babies (81.43%). Exclusive breastfeeding in Bogor District in 2019 was 30,630 babies aged 6 months with a coverage of 53.12%. There were 16,179 under-fives (0-59 months) who required supplementary feeding in 2019. Supplementary feeding for underweight toddlers was 13,846. (85,60%). (Dinas Kesehatan Kabupaten, 2020)

The release of breast milk is influenced by many factors, including hormonal factors, where the role of prolactin in the production of breast milk and oxytocin which functions to stimulate the release of breast milk. The amount of prolactin hormone is influenced by the amount of nutrients eaten by the mother, as well as the frequency of the baby's suction, while the oxytocin hormone is influenced by the mother's mood while breastfeeding, so it is very important for a mother if she wants to breastfeed her baby, to keep a good mood, and comfortable. (Dahliansyah, 2022)

All efforts are made by breastfeeding mothers to increase breast milk production through pharmacological and non-pharmacological therapies. One effort to increase breast milk production is to consume foods that contain

lactagogues. Foods that contain lactagogues such as katuk leaves, papaya fruit, stone banana heart and moringa leaves. (Maesaroh Agnestiani, 2023)

Katuk leaves are categorised as a medicine or substance that is thought to increase the amount of breast milk production, Katuk leaves have a variety of nutrients and compounds that function to increase glucose metabolism in the lactose synthesis process, where the end result is expected to be breast milk that can meet the needs of the baby. (Hanifa *et al.*, 2021)

Moringa leaves have high levels of vitamins A and C. They are also known to be rich in Ca and Fe, as well as a good source of phosphorus. In addition, moringa leaves are known to be rich in Ca and Fe, and a good source of phosphorus. The young fruit has a high water content and high protein content. Moringa is said to provide 7 times more vitamin C than oranges, 10 times more vitamin A than carrots, 17 times more calcium than milk, 9 times more protein than yoghurt, 15 times more potassium than bananas and 25 times more iron than spinach. (Harahap and Warly, 2020)

The purpose of this study was to determine the effect of giving boiled water of katuk leaves and moringa leaves on breast milk production in postpartum women in the working area of the parung Panjangbogar health centre, West Java in 2023.

RESEARCH METHODS

This type of research is a Quasi Experiment two group pre test - posttest. The sampling technique in this study was purposive sampling by considering the inclusion criteria and exclusion criteria with a total sample of 30 respondents in Bogor Regency, West Answer, conducted in December 2023. The research instrument used a breast milk production observation sheet. In the Moringa leaf group, 250 grams/day and 300 grams/day of katuk leaves were given for 7 days. Starting on day 3 post partum and observed again on day 10. The analysis was carried out using the Paired T Test statistical test.

RESEARCH RESULTS

Based on table 1 in the katuk leaf group, respondents aged 20-25 years were 11 people (53.4%) and aged > 31 years were 4 people (26.7%). Respondents with junior high school education were 11 people (73.3%) and high school education were 2 people (13.3%). In the Moringa leaf group, 9 respondents aged 20-25 years (60%) with a junior high school education as many as 7 people (47.4%) and a high school education as many as 4 respondents (26.3%).

Table 1
Frequency Distribution of Respondents' Characteristics

Respondents' Characteristics	Groups			
	Katuk Leaf		Moringa Leaf	
	N	%	N	%
Age				
20-25	8	53.4	9	60.0
26-30	3	20.0	4	26.7
>31	4	26.6	2	13.3
Education				
SD	2	13.3	4	26.3
SMP	11	73.3	7	47.4
SMA	2	13.3	4	26.3

Table 2
Mean values of pretest and posttest breast milk production in the groups administered with Katuk Leaf Decoction Water and the Group given Moringa Leaf Decoction Water in the Parung Panjang Health Centre Working Area in 2023

Groups		n	Min	Max	Mean	Mean Difference	Std. Deviation
Katuk Leaf	Pretest	15	2	3	2.87	1.06	0.352
	Posttest		3	5	3.93		0.799
Moringa Leaf	Pretest	15	2	3	2.80	1.33	0.414
	Posttest		3	5	4.13		0.516

In table 2, in the katuk leaf group, the average value of breast milk production before being given katuk leaf decoction water was 2.87 and after being given katuk leaf decoction water, the average value of breast milk production became 3.93, meaning that there was a difference in the average value of breast milk production after being given katuk leaf decoction water with an average difference of 1.06 with a standard deviation of 0.799.

In the Moringa leaf group, the average breast milk production before being given Moringa leaf decoction water was 2.80 and after being given Moringa leaf decoction water to 4.13, meaning that there was a difference in the average value of breast milk production after being given Moringa leaf decoction water with an average difference of 1.33 with a standard deviation of 0.516.

Table 3
The Average Difference in Breast Milk Production in the Group Giving the Decoction of Katuk Leaf Water Decoction and Moringa Leaf Water Decoction Giving Group in the Parung Panjang Health Centre Working Area in 2023

Groups	n		N	Mean Rank	Sum of Ranks	Ties	Z	Sig. (2-tailed)
Katuk Leaf Pre-Posttest	15	Negative Rank	0	0.00	0.00	5	-2.889	0.004
		Positive Rank	10	5.50	55.00			
Moringa Leaf Pre-Posttest	15	Negative Rank	0	0.00	0.00	1	-3.407	0.001
		Positive Rank	14	7.50	105.00			

Based on table 3 that in the group given katuk leaves, no one experienced a decrease in breast milk production with a Negative Rank value of 0

respondents but there were 10 respondents who experienced an increase in breast milk production Positive Rank 10 with similarities there were as many

as 5 respondents the value of ties: 5 with a Z value of -2.889 and a 2 tailed sig of 0.004 (p value <0.05), it can be interpreted that there is a significant difference in breast milk production before and after being given katuk leaf boiled water.

In the Moringa leaf group, no one experienced a decrease in breast milk production with a Negative Rank value of 0 respondents but there were 14 respondents who experienced an increase in breast milk production. Positive Rank 14 with the similarity of 1 respondent, the value of ties 1 with a Z value of -3.407 and 2 tailed sig of 0.001 (p value <0.05), it can

be interpreted that there is a significant difference in breast milk production before and after being given Moringa leaf decoction water.

It was concluded that in the group given water decoction of katuk leaves and the group given water decoction of moringa leaves had an effect on increasing breast milk production but in the moringa leaf group had a greater mean difference (Z value: -3.407 mean ranks / average rank value of : 7.50 and sum of ranks: 105.00) compared to the katuk leaf group

Table 4

Differences in Giving Katuk Leaf Water Decoction and Moringa Leaf Decoction on Breast Milk Production in the Working Area Parung Panjang Health Centre in 2023

Groups		N	Mean Rank	Sum of Ranks	Mann Whitney	Wilcoxon	Z	Sig. (2-tailed)
Katuk Leaf	Pretest	15	16.00	240.00	105.000	225.000	-0.482	0.630
Moringa Leaf			15.00	235.00				
Katuk Leaf	Posttest	15	14.37	215.50	95.500	215.500	-0.789	0.430
Moringa Leaf			16.63	249.50				

Based on table 4 that breast milk production before (pretest) given water decoction of katuk leaves has a mean rank of 16.00 and breast milk production before given water decoction of moringa leaves has a mean rank of 15.00 means that the value of The mean rank of breast milk production in the katuk leaf group is lower than the mean rank of breast milk production in the moringa leaf group with a Z value of -0.482 and a 2 tailed sig value of 0.630 (p value > 0.05), it can be concluded that there is no significant difference in the mean breast milk production in the group before being given katuk leaf decoction water and the group before being given moringa leaf decoction water.

Average breast milk production in the group that has been (post test) given katuk leaf decoction water has a mean rank of 14.37 and breast milk production after being given moringa leaf decoction water has a mean rank of 16.63, meaning that the katuk leaf group has lower breast milk production than breast milk production in the moringa leaf group with a Z value of -0.789 and a 2 tailed sig value of 0.430 > 0.05, it can be concluded that there is no significant difference in average breast milk production in the group after being given katuk leaf decoction water and the group after being given moringa leaf decoction water.

DISCUSSION

The Mean Value of Breast Milk Production in the Group Giving Katuk Leaf Decoction Water in

Parung Panjang Subdistrict Year 2023

Based on the results of the study, it is known that the pretest mean value of giving water from boiled katuk leaves is 2.87 with a Standard Deviation value of 0.352. While the average posttest value of giving water from the decoction of katuk leaves increased to 3.93 with a Standard Deviation value of 0.799. The difference in the mean value is 1.06.

This is in line with the research of Rosdianah and Irmawati (2021) which states that there is an effect of giving katuk leaf extract on the smoothness of breast milk in mothers who have babies aged 0-6 months. So that katuk leaf extract can be recommended for mothers who have problems in breastfeeding. Catuk leaf extract can facilitate and increase breast milk production in breastfeeding mothers coupled with consuming adequate nutrition, the frequency of breastfeeding according to the baby's wishes. (Rosdianah and S, 2021)

The results of the 2021 Hanifa study showed that there was a difference in the average prolactin level in the intervention group (231.72 ng/ml), and the control group (152.75 ng/ml) with a significant increase in prolactin levels (p = 0.002). There was a significant effect on the duration of infant sleep (p = 0.000). Thus, promoting the benefits of moringa leaves as an alternative supplement to breast milk facilitators (Hanifa *et al.*, 2021)

The researcher assumed that there was an increase before and after the administration of boiled

water and katuk leaves due to the effect of increasing the amount of breast milk production.

Average Value of Breast Milk Production in the Moringa Leaf Decoction Water Giving Group in Parung Panjang District in 2023

Based on the results of the study, it is known that the pretest mean value of giving moringa decoction water is 2.80 with a Standard Deviation value of 0.414. While the average posttest value of giving moringa leaf decoction water increased to 4.13 with a Standard Deviation value of 0.516. The difference in the mean value is 1.33, so it can be concluded that there is an effect of giving moringa leaf water decoction on breast milk production in breastfeeding mothers 0-6 months in Parung Panjang District in 2023.

One of the factors that affect breast milk production is food intake. The food consumed by the mother affects breast milk production. If the food you eat is nutritionally balanced and regular, you can expect your breastmilk-making glands to work optimally. So fulfil your need for sufficient calories, protein, fat, and vitamins and minerals. If a mother who is breastfeeding her baby does not receive additional food, there will certainly be a setback in the production of breast milk. Additional food recommended during breastfeeding contains protein and food as a source of vitamins. Based on several studies, consumption of katuk leaf vegetables, young papaya and moringa leaf vegetables can help breast milk production. (DELVINA, Kasoema and Fitri, 2022)

The results of the study are in line with Septadina (2018) reporting that moringa leaves contain phytosterol compounds including campesterol, stigmasterol, and β -sitosterol which are lactagogues that can increase breast milk production. The results of her study showed that the administration of moringa leaf extract can significantly increase milk production along with the increase in the concentration given. Breast milk is a complex liquid that contains various important elements such as carbohydrates, proteins, fats, water-soluble vitamins, fat-soluble vitamins, minerals, and epithelial cells. In general, the nutrient content of breast milk is high at birth and will decrease during the lactation period. (Harahap, 2021)

The researcher's assumption that giving Moringa leaf decoction can increase breast milk production for breastfeeding mothers, this is as the results of the data presented in this study.

Differences in the Giving of Katuk Leaf Decoction

and Moringa Leaf Decoction on Breast Milk Production

Based on the research, it is known that the average breast milk production in the group that has been (post test) given katuk leaf decoction water has a mean rank of 14.37 and breast milk production after being given moringa leaf decoction water has a mean rank of 16.63, meaning that the katuk leaf group has lower breast milk production than breast milk production in the moringa leaf group with a Z value of -0.789 and a 2 tailed sig value of 0.430 > 0.05, it can be concluded that there is a significant difference in the average breast milk production in the group after being given katuk leaf decoction water and the group after being given moringa leaf decoction water.

In line with research conducted by Dinengsih that the value of breast milk production given moringa leaf powder obtained a P-value of 0.001 which means <0.05. From these data it can be concluded that there is an effect of giving moringa leaf powder at the Serpong I South Tangerang Health Centre. This is because Moringa leaves can increase the production of breast milk after childbirth. The content of phytosterol compounds, namely alkaloids, saponins, and flavonoids, functions to increase and facilitate milk production. Known as a source of high nutrition, Moringa leaves contain higher amounts of carbohydrates, protein, vitamins, beta carotene, and iron than other types of vegetables. through lactagogum activity, Moringa leaves have phytosterol compounds such as stigmasterol, β -sitosterol, and campesterol to increase milk production and body weight of white rat pups. (Maesaroh Agnestiani, 2023)

The results of the study are in line with Mariene (2021) in her research revealed that the administration of katuk leaf extract to a group of mothers giving birth and breastfeeding at a dose of 3x300 mg / day for 15 days starting from day 3 after giving birth can increase breast milk production 50.7% more than mothers giving birth and breastfeeding their babies not given katuk leaf extract. Likewise with moringa plants, in Indonesia moringa plants are called miracle plants because moringa plants have many benefits for humans, including benefits for breastfeeding mothers. Similar to katuk leaves, moringa leaves also contain phytosterol compounds that function to increase breast milk production (lactogogum effect). The content of many nutrients in moringa plants, it is used not only for breastfeeding mothers but can also be used for malnutrition problems in toddlers. (Dolang et al., 2021)

According to Alwi's (2020) literature review, Moringa leaves have polyphenolic substances that

can inhibit dopamine receptors, which are responsible for increasing the release of the hormone prolactin. In addition, there are phytosterols, such as beta-sitosterol, campesterol, and stigmasterol in moringa leaves that play a role in milk formation. These compounds act as basic ingredients for the manufacture of estrogen hormones and trigger the accumulation of prolactin hormones. (Saputra, Arfi and Yulian, 2020)

Supported by Damayanti 2022, showed that giving moringa leaf extract can affect breast milk production and weight gain in infants. This happens because Moringa leaves (*Moringa oleifera*) are one type of galactagogue food that has a higher micronutrient content compared to other galactagogue foods. Components such as phytosterols, polyphenols, and steroids have a lactagogue effect that plays a role in stimulating the prolactin reflex as well as an increase in prolactin hormone levels. Consequently, this encourages the alveoli to produce milk, resulting in the baby gaining weight due to adequate milk intake. (Damayanti and Widiawati, 2022)

Purnanto's research 2020, showed that breast milk production at the post test stage had a greater mean value than the pre test stage, which was a difference of 6.50. This can be interpreted that moringa consumption has been proven to be able to increase the amount of breast milk production in nursing mothers. This increase is also supported by the p value of 0.002 with a level of significance of 0.934 which means it has a very strong influence. This means that regular consumption of moringa leaves for 3 weeks (in accordance with the intervention) is proven to be able to increase breast milk production in breastfeeding mothers. (Purnanto, Himawati and Ajizah, 2020)

Based on the study, there was a significant difference in the increase of breast milk production between the groups that consumed katuk and moringa. This was explained by the higher nutrient content in moringa, which was able to stimulate more milk production compared to the group consuming katuk. However, this study has limitations as it did not take into account factors such as dietary intake, economic conditions, and hygiene levels of the respondents, which can also affect milk production and infant growth.

CONCLUSION

There is an effect of giving water decoction of katuk leaves and giving water decoction of moringa leaves on increasing breast milk production, but there is no significant difference in the average breast milk production in the group after being given

moringa leaf decoction compared to the group after being given water decoction of katuk leaves.

SUGGESTIONS

It is expected that the use of moringa leaves can be processed into vegetables as a side menu that can be consumed by postpartum mothers in addition to processed katuk leaves.

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