



THE EFFECTIVENESS OF GINGER AND TURMERIC BOILED WATER ON MILK PRODUCTION IN POSTPARTUM MOTHERS

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ABSTRACT

Breast milk is the ideal food for babies. Besides boosting the baby's autoimmune system, making them less susceptible to illness, breastfeeding can also prevent irregular and low milk production. A preliminary study found that some mothers still do not exclusively breastfeed due to irregular or low milk production. To address this issue, an innovation was created in the form of boiled ginger and turmeric water, which is believed to facilitate milk production and increase milk production due to its lactogogum content. The purpose of this study was to identify differences in breast milk production before and after the intervention. This study used a quasi-experimental design with a one-group pre-test-post-test. This study used a checklist data collection technique with direct observation of the administration of boiled ginger and turmeric water on breast milk production in postpartum mothers. The population was 15 postpartum mothers on days 5-7 using purposive sampling. The results of the paired t-test analysis showed an increase in breast milk production, proving that boiled ginger and turmeric water can increase breast milk production and facilitate breast milk production.

Keywords: breast milk production; ginger; turmeric

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INTRODUCTION

Breast milk (ASI) is an ideal food for babies, especially in the first six months of life. Breast milk contains all the nutrients needed for the growth and development of the baby. The goodness and quality of breast milk will be reduced if the amount of breast milk produced by the mother is not in accordance with the baby's needs. Like nutrition in general, breast milk contains macro and micronutrient components. Macronutrients are carbohydrates, proteins and fats while micronutrients are vitamins and minerals. Each component of breast milk has its own benefits for the baby's growth. About 88% of breast milk is water (Giting, 2020).

The Indonesian government has taken a stance in improving nutrition, namely by joining the movement *Scaling up Nutrition* (SUN Movement) and launched the 1000 HPK Movement Program Planning Guidelines with the aim of reducing nutrition problems with a focus on the first 1000 days of life (270 days during pregnancy 730 days from birth to 2 years of age), while specific nutrition interventions targeting breastfeeding mothers and children aged 0-6 months are by encouraging early breastfeeding initiation and exclusive breastfeeding (BKKBN, 2022). According to the data WHO in 2023, as many as 52.2% of babies aged 0-6 months who receive exclusive breastfeeding worldwide. Meanwhile, in developing countries, only India experienced a significant increase in exclusive breastfeeding achievement from 2015 - 2016 by 65% to 76% in 2021 - 2022 (WHO, 2023). The number of exclusive breastfeeding in Indonesia has increased, although it is not significant enough. Where in 2023 exclusive breastfeeding is 72.04% and will increase to 73.90% in 2023. Based on the province, the highest exclusive breastfeeding nationally will be in West Nusa

Tenggara in 2023 with a percentage of 82.45%. Meanwhile, Gorontalo is still ranked lowest in exclusive breastfeeding with a percentage of 55.11%. (Director General of Health, 2023).

Data on the coverage of exclusive breastfeeding in South Sumatra Province was 69.93% in 2021 and increased to 75.59% in 2023. Meanwhile, in the city of Palembang, exclusive breastfeeding coverage in 2021 was 66.39% and increased by 70.6% in 2023 (South Sumatra Health Office, 2023). Data on the coverage of exclusive breastfeeding in the city of Palembang in the Plaju region was obtained from 2 Puskesmas of 82.56%, with the coverage of the Talang Buluk Palembang Health Center which is still below the target of 72.80% (Sari, 2023).

The success of breastfeeding depends on several factors, such as the precise position of the baby on the mother's nipple when breastfeeding, the frequency of unscheduled breastfeeding and breastfeeding or breastfeeding according to the baby's wishes. In addition, there are several factors that affect breast milk production. Among them are maternal food, breastfeeding frequency, contraceptives, breast care (Apriana, 2023). One method of facilitating breastfeeding in mothers can be done through various methods, including consuming herbal ingredients, katuk leaves, and breastfeeding boosters. There are herbal ingredients that can increase breast milk production such as turmeric, ginger, binohang leaves and many others. In this study, the researcher was interested in ginger and turmeric herbal ingredients because they contain lactogum which can facilitate breast milk production.

Turmeric is one of the plants of the tribe (*ziniaceae*) which is often used as a traditional herb to share various diseases. Turmeric also contains high antioxidants. The compounds in turmeric are useful as a stimulus to facilitate the removal of milk from the body so that breast milk will be quickly produced again by the body through the performance of the hormone prolactin. The lactogum compounds contained in turmeric can also function to increase the rate of secretion and increase milk production so that the intensity of breastfeeding increases (Ariescha & Tryaningsih, 2019).

Ginger contains a number of phenol compounds that are antioxidants and then contains *lactogum* which has properties to treat impotent diseases, coughs, aches, headaches, rheumatism, low back pain, angina and facilitate breastfeeding (Ririn Ariyanti, Annisa Eka Permatasari, 2023). Lactogum compounds found in ginger and turmeric increase the rate of secretion and increase milk production, this is based on previous researchers so as to increase breastfeeding intentions (Ariescha & Tryaningsih, 2019). The purpose of this study was to identify differences in average milk production before and after the intervention. Determining the effectiveness of ginger and turmeric boiled water consumption on breast milk production in postpartum mothers.

METHOD

In this study, the dependent variables studied were breast milk production and ginger and turmeric broth, which are independent variables. The type of research used is quasi-experimental using a one group pretest – posttest research design. This research was conducted in March - June 2024 at PMB Husniyati Jl. Kapten Abdullah Palembang. The population is the entire object of this study is all postpartum mothers who have perineal lesions. The population in this study was postpartum mothers on the 5th day who experienced impaired milk production and those who only want to facilitate the production of breast milk as many as 15 people and the sampling technique in this study uses the type of Non Probability Sampling with the Purposive Sampling technique. The data used is primary data or data taken directly at the time of research. The primary data source was taken from PMB Husniyati Palembang, in this study the data collection technique used checklist sheets by means of observation that was carried out directly for the administration of ginger water and turmeric decoction to the milk production of postpartum mothers. This study was carried out by giving 400ml of ginger and turmeric boiled water to 15 respondents and consumed for 3 days.

After that, an assessment is made of the smooth or unsmooth production of breast milk. The data normality test was carried out using the shapiro wilk test and continued by using the paired – t test.

RESULT

Table 1.
Distribution of Breast Production Before and After Intervention

Group	N	Mean	Median	SD	Min	Max
<i>Pre – Test</i>	15	51,47	52,00	2.416	48	55
<i>Post – Test</i>	15	52,47	52,00	2.466	49	57

In table 1, it can be seen that in the *pre-test group*, the mean value was 51.47, the median value was 52.00, the standard deviation value was 2,416, the minimum value was 48 and the maximum value was 55. Meanwhile, in the *post-test group*, the mean value was 52.47, the median value was 52.00, the standard deviation value was 2,466, the minimum value was 49 and the maximum value was 57.

Table 2.
Increased Amount of Breast Production Before and After Intervention

Breast Milk Production Before Intervention (cc)	Category	Breast Milk Production After Intervention (cc)	Increased Breast Milk Production (cc)	Category
48	Little	50	2	Many
48	Little	49	1	Little
52	Many	51	1	Many
53	Many	53	-	Many
55	Many	57	2	Many
50	Many	51	1	Many
50	Many	50	-	Many
52	Many	52	-	Many
52	Many	54	2	Many
50	Many	51	1	Many
50	Many	52	2	Many
53	Many	54	1	Many
49	Little	51	2	Many
55	Many	56	1	Many
55	Many	56	1	Many
51,47	Average	53,47	1,14	Average

Based on the results of the study conducted for 3 days, it can be seen that there were 3 respondents who experienced irregular milk production before the intervention. After the intervention, there was only 1 respondent who experienced irregular milk production. The average score is also obtained. There was a change, where the average value of breast milk production before the intervention was 51.47. After being given ginger and turmeric boiled water for 3 days, the average value of breast milk production changed to 53.47. This proves the effectiveness of ginger boiled water on breast milk production in postpartum mothers.

Table 3.
Shapiro–Wilk Normality Test

Variable	Group	N	Sig
Breast milk production	Pre-Test	15	0,162
	Post Test	15	0,210

From the results of the spss output listed in table 4.3 above, it is known that the normality test with *shapiro – wilk* obtained significant results, namely > 0.05 (0.162) in the distribution of milk production data before the intervention and also obtained significant results in the distribution of milk production data after the intervention, namely > 0.05 (0.210). Because the results are normally distributed, parametric tests using wilcoxon do not need to be carried out and continued using *the paired t-test test*. After the normality test is carried out and normal distribution data is obtained, it is continued using *the paired t-test test*. According to Suryana (2019), the *paired t-test* is a procedure used to compare the average of two variables in a group that has two related samples or two paired samples. The level of significance (*p* value) of the *paired t test* is:

- If the significance of < 0.05 is H_0 rejected, it means that there is an effectiveness of ginger and turmeric boiled water on the production of postpartum breast milk.
- If the significance of > 0.05 is H_0 accepted, it means that there is no effectiveness of ginger and turmeric boiled water on the production of postpartum breast milk.

Table 4.
Paired T Test – *Test*

Variable	N	<i>P Value</i>
Pre-Test	15	0,001
Post Test	15	

Based on the results of the SPSS output, it can be seen that the significance in *the paired t-test* is 0.001 less than 0.05, which means that there is

DISCUSSION

Univariate Analysis

In table 1 where 15 respondents were intervened first before being given ginger and turmeric boiled water, namely by measuring milk production by pumping, milk production was obtained before the intervention was 48 – 55 ml. This is in line with research conducted by Senditya (2022), where in the intervention group before being given turmeric stew, breast milk production was measured by pumping so that a milk volume of 37.10cc was obtained. In line with research conducted by Senditya (2022) with the title The Effectiveness of Turmeric Stew (*Curcuma domestica*) to Promote Breast Milk Production. Where from this study shows that there was an average change in postpartum breast milk production before the intervention of 37.10 cc to 67.01 cc after the intervention for 3 days of study. This is due to the presence of lactogum compounds contained in turmeric stew, so that the mother's milk production can increase and become smooth. Milk production on the first day of administration was very small, but increased to ± 30 mL on the third day. The production of breast milk will adjust to the needs of the baby (on demand). If at that time the baby gets additional food from outside (for example, formula milk), then the baby's need for breast milk decreases and as a result the milk production will decrease. Breast milk of 750-1000 mL/day produces 500-700 kcal/day of energy, which is equivalent to the energy needed by a baby weighing 5-6 kg (Falikhah, 2022).

Based on table 1, data was obtained that there was a change in breast milk production after the intervention, namely 49 – 57 ml. This shows that giving ginger and turmeric boiled water can increase and facilitate breast milk production, but for efficient results, it is a good idea to give breast milk continuously or at least once every 2 hours. In line with the research conducted by Senditya (2022) with the title effectiveness turmeric decoction (*curcuma domestica*) to facilitate milk production. Where from this study shows that there was an average change in postpartum breast milk production before the intervention of 37.10 cc to 67.01 cc after the intervention for 3 days of study. This is due to the presence of lactogum compounds contained in turmeric stew, so that the mother's milk production can increase and become smooth.

According to Ririn Ariyanti and Annisa Eka Permatasari (2023), ginger contains a number of phenol compounds that are antioxidants and then contains lactogum has properties to treat impotent diseases such as cough, aches, headaches, rheumatism, low back pain, colds and facilitating breast milk. According to kumala sari (2014) said that turmeric has ingredients such as protein, minerals, vitamins and lactogogum which increases the rate of secretion and lactogogum increases the rate of secretion and increases milk production. This is in line with the theory of Ariescha & Tryaningsih (2019) which states that lactogum compounds found in ginger and turmeric increase the rate of secretion and increase milk production by stimulating protoplasmic activity in secretory cells of the mammary glands and secretory nerve endings in the mammary glands which result in increased milk secretion, or stimulate the hormones prolactin and oxytocin which are lactagonic hormones against the mammary glands in the alveolar epithelial cells which will stimulate lactation so that milk production increases and becomes smooth. According to the researchers' assumption, boiling ginger water and turmeric can increase milk production and facilitate milk production due to the presence of lactogum content.

Bivariate Analysis

Shapiro Wilk's Normality Test

Based on the results of the spss output listed in table 3, it is known that the normality test with Shapiro Wilk a significant result was obtained which was 0.162 (Pre-test) and 0.210 (Post test). This shows that the data Pre-test and Post test Normal distribution due to a significant result > 0.05 . Things according to theory Suryana (2019) which states that Shapiro Wilk It is a test that is carried out to determine the data distribution of a small sample using data simulation of no more than 50 samples. The provisions of the use of the normality test Shapiro Wilk, that is, if the data is normally distributed, the GIS value must be > 0.05 , then it can be continued with the test Paired T – test. However, if the sig value < 0.05 then the data is said to be not normally distributed.

The output results of the spss in table 4.4 were obtained from the paired t-test test results, which were 0.001. This shows that the p value is smaller than 0.05, so H_0 is rejected and accepted, which means that there is an effectiveness of ginger water and turmeric boiling on increasing breast milk production. Where there was an average change in the increase in breast milk production before and after the intervention was 52.47 ml. The average result has met operational standards, where the provisions on breast milk production if said to be a lot, must ≥ 50 ml for 3 days after giving ginger and turmeric stew. H_a This proves that decoction of ginger and turmeric in postpartum mothers can affect the increase in milk production. This is in line with research conducted by Senditya (2022) with the title The Effectiveness of Turmeric Stew (*Curcuma domestica*) to Promote Breast Milk Production. Where from the study conducted for 3 consecutive days by giving turmeric boiled water showed that there was an increase in breast milk production, where the milk production of postpartum mothers before intervention was 37.10 cc to 67.01 cc after intervention. This is in accordance with the theory of Ririn ariyanti and Annisa Eka Permatasari (2023) with the title galactagogue on ginger can increase breast milk production. Where the results of this study show that ginger can increase breast milk production because it contains active compounds 10, 10 ginger-dione, 6-gingerdion and 6-gingerol which function to increase breast milk production.

In line with research conducted by Putri Yuniartis (2023) with the title The Use of Natural Galactagogue in Postpartum Mothers states that ginger not only contains lactogogum, but there are also content found in the form of galactogum compounds. Where galactogum also has an influence on increasing milk production. From the results of this study, researchers assume that mothers' complaints about low milk expenditure and poor milk production can be reduced by drinking ginger and turmeric water boiled drinks. This is due to the presence of lactogum content which is able to stimulate the production of the hormones prolactin and oxytocin so that it can facilitate breast milk production and increase milk production.

CONCLUSION

Based on the average (mean) of breast milk production before intervention (pre test) was obtained 51.47. Based on the average (mean) of breast milk production after the intervention (post test) was obtained 52.47. The results of the paired t-test showed a significance of 0.001 less than 0.05, which means that there is an effectiveness of ginger and turmeric boiled water on breast milk production teeth.

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