



THE EFFECTIVENESS OF GIVING TURMERIC AND TAMARIND ON BREAST MILK PRODUCTION IN POST-POST MOTHERS

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ABSTRACT

Inadequate breast milk production and output is one of the problems that mothers can experience during the postpartum period and can be an obstacle to optimal breastfeeding. One of the efforts empirically used by the community to help facilitate breast milk production is the consumption of herbal drinks, one of which is turmeric and tamarind. This study aims to determine the effectiveness of administering turmeric and tamarind on breast milk production in postpartum mothers. This study used a quantitative method using a pre-experimental design with an approach (One Group Pre-Post Test Design). The population in this study amounted to 24 postpartum mothers with a sample of 20 respondents. Breast milk production was measured using an observation sheet by recording the volume of breast milk in milliliters (mL) before and after administering turmeric and tamarind. Data were analyzed univariately to describe the distribution of breast milk production and bivariate analysis using the Wilcoxon Signed-Rank test with a significance level of $\alpha = 0.05$. The results of the study before being given turmeric tamarind on respondents' breast milk production were 10ml-30ml, after being given turmeric tamarind on respondents' breast milk production were 60ml-85ml and there was a significant difference in respondents before being given turmeric tamarind and after being given turmeric tamarind on breast milk production (P Value = 0.000). There was a significant difference in respondents before being given turmeric tamarind and after being given turmeric tamarind on breast milk production.

Keywords: breast milk production; postpartum mothers; turmeric and tamarind

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INTRODUCTION

Exclusive breastfeeding is the main food for babies given as early as possible, without giving other foods and drinks to babies from birth until 6 months old, except for medicines and vitamins (Irianto, 2019). Providing breast milk until the age of 6 months is the background for the government in establishing various regulations as a form of support for the success of exclusive breastfeeding, including Government Regulation of the Republic of Indonesia Number 33 of 2012 concerning the duties and responsibilities of the government in developing the breastfeeding program, including establishing national policies.

Breast milk is a natural, biologically derived food given to infants over two years of age. It provides a varied diet sufficient to meet all of a baby's physical, psychological, social, and spiritual needs. Breast milk contains nutritional, hormonal, growth-promoting, anti-allergic, and anti-inflammatory elements. Breast milk contains approximately 200 nutrients (Wardhani et al., 2021). Important components of breast milk are antibodies that support the immune system and various enzymes in breast milk that help absorb nutrients not found in formula. Breast milk contains these substances and also has the enzyme lipase for absorption. This enzyme is not included in powdered milk because heating destroys it. Given these conditions, mothers are advised to advocate and socialize and monitor the exclusive breastfeeding program. Law Number 36/2009 Article 128 paragraphs 2 and 3 state that during breastfeeding, the family, local government, and community must fully support the mother (Ministry of Health of the Republic of Indonesia, 2019).

In 2020, the WHO again presented data on global exclusive breastfeeding rates. Although there has been an increase, this figure has not increased significantly, namely around 44% of infants aged 0-6 months worldwide who received exclusive breastfeeding during the 2015-2020 period, out of the 50% exclusive breastfeeding target according to the WHO. The continued low level of exclusive breastfeeding will impact the quality and vitality of the next generation. Globally in 2019, 144 million toddlers were estimated to be stunted, 47 million were estimated to be wasted and 38.3 million were overweight or obese (WHO, 2020). Poor breast milk supply can be caused by hormonal factors or dietary factors. One way to increase breast milk supply is by consuming traditional medicines. Traditional medicines can be derived from things found in our environment. One way to increase breast milk supply is by consuming herbal medicine. One type of traditional herbal medicine is a herbal medicine to increase breast milk production. This herbal medicine consists of turmeric and tamarind. These ingredients are beneficial for increasing breast milk supply (Rasy, 2023).

Turmeric and tamarind herbal medicine is beneficial for increasing breast milk production in breastfeeding mothers. Turmeric and tamarind herbal medicine can facilitate breast milk production because it can indirectly stimulate the hormone prolactin as one of the mechanisms of a lactagogue compound (milk production facilitator) containing protein, minerals, and vitamins. The protein component and Vitamin A play a role in stimulating the proliferation of new alveolar epithelium, thus increasing the alveoli. Several traditional Indonesian medicinal plants are believed to increase breast milk production (lactagogue), such as turmeric and tamarind. Empirically, these two plants have been used by our ancestors as herbal ingredients to increase breast milk production for breastfeeding mothers (Alisa et al., 2023). Research conducted by Rika Alisa, et al (2023), After midwifery care was carried out on postpartum mother Mrs. T at the Arrabih Primary Clinic in Pekanbaru City in March by giving turmeric and tamarind herbal medicine to the mother for 7 days. Care was carried out on June 17-23 at the Arrabih Primary Clinic and at the patient's home, and the administration of turmeric and tamarind herbal medicine was given in the morning as much as 250cc per day. After 7 days of care there was an increase in breast milk volume of 90cc.

The preliminary study was conducted by researchers in August 2024, almost all postpartum mothers in the Kerta Murti Health Center Kerya area experiencing less than ideal breast milk production. The postpartum mother stated that she had tried consuming vegetables and nutritious foods and drinking plenty of water to ensure a smooth milk flow, but these efforts had not yielded results. Furthermore, the community had not yet been introduced to turmeric and tamarind herbal medicine to facilitate breast milk production. The number of postpartum mothers in the past three months was 35. This study aims to determine the effectiveness of administering turmeric and tamarind on breast milk production in postpartum mothers in the Kerta Mukti Community Health Center Work Area.

METHOD

This study used a quantitative method with a pre-experimental design using the One Group Pretest-Posttest Design approach. The study population consisted of 24 postpartum mothers with a sample of 20 respondents selected using a purposive sampling technique based on inclusion and exclusion criteria. The intervention was in the form of providing 250 mL of turmeric and tamarind drink every morning after meals for 7 days. Breast milk production was measured using a breast pump and observation sheets before and after the intervention. Data were processed through editing, transferring, and tabulating stages using SPSS 25. Univariate analysis was used to describe the frequency distribution of breast milk production. The normality test used the Shapiro-Wilk test, while bivariate analysis used the Wilcoxon Signed-Rank test because the data were not normally distributed.

RESULT

A univariate analysis was conducted to obtain a picture of the frequency distribution of breast milk production before and after turmeric and tamarind were administered. The data analysis results were tabulated and described in narrative form as follows:

Breast milk production before being given turmeric and tamarind

Breast milk production before the turmeric and tamarind drink was administered in this study, as measured by the amount of breast milk produced (ml). For more details, see the table below:

Table 1.

Distribution of frequency of breast milk production before being given turmeric and tamarind

Breast milk production per pump (ml)	f	%
10	6	30
15	5	25
20	3	15
25	4	20
30	2	10

Based on table 1, it is known that breast milk production before being given turmeric and tamarind drink in 20 respondents was obtained breast milk production of 10ml by 6 respondents (30%), breast milk production of 15ml by 5 respondents (25%), breast milk production of 20ml by 3 respondents (15%), breast milk production of 20ml by 4 respondents (20%) and the least breast milk production was 30ml, namely 2 respondents (10%).

Pain Scale of First Stage of Labor After Warm Compresses

In this study, breast milk production after being given the turmeric and tamarind drink was measured using an observation sheet, which measured the amount of breast milk produced (ml). For more details, see the table below:

Table 2.

Breast milk production after being given turmeric and tamarind

Breast milk production per pump (ml)	f	%
60	5	25
65	5	25
70	4	20
75	3	15
80	2	10
85	1	5

Based on table 2, it is known that breast milk production after being given turmeric and tamarind drink to 20 respondents was obtained by 60ml breast milk production for 5 respondents (25%), 65ml breast milk production for 5 respondents (25%), 70ml breast milk production for 4 respondents (20%), 75ml breast milk production for 3 respondents (15%), 80ml breast milk production for 2 respondents (10%) and the least breast milk production was 85ml, namely 1 respondent (5%).

Bivariate analysis is conducted to analyze the relationship between two variables, namely the difference in breast milk production before and after being given turmeric and tamarind, analyzed using the Wilcoxon frequency distribution test using the computerized statistical program social science (SPSS) which is a statistical program created to manage or analyze data. Where the possibility limit is 0.05 if the value (p) means H_a is rejected so that there is no relationship between the independent and dependent variables and if the value (p) < 0.05 means H_o is accepted so that there is a meaningful relationship between the independent and dependent variables.

Table 3.

Results of the Wilcoxon Test: The effectiveness of giving turmeric and tamarind on breast milk production

		N	Mean Rank	Asymp. Sig. (2-tailed)
Posttest breast milk production – Pretest breast milk production	Negative Ranks	0a	,00	,000
	Positive Ranks	20b	10.50	
	Ties	0c		

Based on table 3 shows the results of the Wilcoxon test analysis using SPSS software. The data shows that there are 20 positive rankings and all respondents experienced an increase in breast milk production after consuming the turmeric and tamarind drink. There were no negative reviews

recorded, thus indicating that no respondents experienced a decrease in breast milk production. These results also show an average increase in overall breast milk production of 10.50. This means that the respondents' breast milk production increased by 10.50 times. Judging from the Asymp. Sig. (2-tailed) value of $0.000 < \alpha$ ($\alpha = 0.05$), it can be concluded that there is effectiveness in giving turmeric and tamarind to the smooth production of breast milk for postpartum mothers.

DISCUSSION

Breast milk production before being given turmeric and tamarind

Breast milk production and release depend on hormonal activity and the breastfeeding reflex. Not only is hormone production determined by the baby's sucking reflex, but sucking triggers two reflexes that allow milk to be released at the right time and in the right amount. In the first six months after birth, the estimated amount of breast milk produced is around 500–700 ml per day, decreasing to 400–600 ml per day in the second six months (Wiji, 2020). When a baby breastfeeds, the breasts send stimuli to the brain. The brain then reacts by releasing the hormone prolactin, which enters the bloodstream and returns to the breasts. Prolactin stimulates the cells to produce milk. While the baby breastfeeds, some prolactin remains in the bloodstream for approximately 30 minutes after the feeding. Prolactin is responsible for subsequent milk production. In addition to prolactin, the brain also releases oxytocin, which is produced more rapidly, influenced by the mother's thoughts and feelings. Therefore, when a mother hears a baby's voice, even if it's not her own, or touches the baby, or thinks about how much she loves the baby, breast milk can flow (Maryunani, 2021).

The breast milk (ASI) produced after birth on the first day is colostrum, with a volume of 10-100cc. On days 2-4, breast milk production will increase to a volume of approximately 150-300ml/24 hours. After 10 days and beyond—until the baby is three months old, known as mature breast milk—breast milk production reaches approximately 300-800ml/day, and milk production will continue to increase in the following days and weeks (Fitriani and Wahyuni, 2021). Research conducted by Mayasari and Jayanti (2022) found that the average breast milk production before the turmeric drink was 37.10cc. Another study by Rika Alisa et al. (2023) found that giving 250cc of turmeric and tamarind herbal medicine in the morning per day resulted in a 90cc increase in breast milk volume after 7 days. According to researchers' assumptions, postpartum mothers who experience low breast milk production are caused by: lack of good nutritional intake such as fruit, vegetables, foods containing high protein and postpartum mothers have never consumed turmeric and tamarind.

Breast milk production after being given turmeric and tamarind

Inadequate breast milk production after childbirth can be caused by a lack of oxytocin hormone stimulation, which plays a crucial role in the process of breast milk release. Turmeric and tamarind herbal medicine is beneficial for increasing breast milk production in breastfeeding mothers. Turmeric and tamarind herbal medicine can increase breast milk production by indirectly stimulating the hormone prolactin, which is one of the mechanisms of a lactagogue compound (a breast milk production enhancer) containing protein, minerals, and vitamins. Protein and vitamin A components play a role in stimulating the proliferation of new alveolar epithelium, thus increasing the number of alveoli. Several traditional Indonesian medicinal plants are believed to increase breast milk production (lactagogue), such as turmeric and tamarind. Empirically, these two plants have been used by our ancestors as herbal ingredients to increase breast milk production for breastfeeding mothers (Kumalasari, 2019).

Research by Rika Alisa et al (2023) with the results of the study showed that the respondents' breast milk production after being given turmeric and tamarind herbal medicine experienced an increase in breast milk volume to 90ml. Researchers believe the vitamins, minerals, and other nutrients in turmeric and tamarind can stimulate the hormones prolactin and oxytocin. Therefore, consuming turmeric and tamarind can increase breast milk production in postpartum mothers.

The effectiveness of giving turmeric and tamarind on breast milk production in postpartum mothers

Exclusive breastfeeding is the primary food for babies, given as early as possible, without giving any other food or drink to babies from birth to 6 months of age, except for medication and vitamins (Irianto, 2019). The breast milk produced after birth on the first day is colostrum with a volume of 10-100cc. On days 2-4, breast milk production will increase to a volume of around 150-300ml/24 hours. Breast milk production after 10 days and beyond—until the baby is three months old, known as mature breast milk—produces around 300-800ml/day, and breast milk production will continue to increase in the following days or weeks (Fitriani, Wahyuni, 2021). Poor breast milk supply can be caused by hormonal factors or dietary factors. One way to increase breast milk supply is by consuming traditional medicines. Traditional medicines can be derived from things found in our environment. One way to increase breast milk supply is by consuming herbal medicine. One type of traditional herbal medicine is a herbal medicine to increase breast milk production. This herbal medicine consists of turmeric and tamarind. These ingredients are beneficial for increasing breast milk supply (Rasy, 2023).

Turmeric and tamarind is a drink made from turmeric and tamarind that offers numerous health benefits. Turmeric and tamarind herbal drink is beneficial for increasing breast milk production in breastfeeding mothers. Turmeric and tamarind herbal drink can increase breast milk production by indirectly stimulating the hormone prolactin, which is one of the mechanisms of a lactagogue compound (a breast milk-stimulating compound) that contains protein, minerals, and vitamins (Kumalasari, 2019). This research is in line with research conducted by Baequny, et al (2016), Based on the results of statistical analysis using the Chi-Square test, the p value (Asymp. Sig. 2-sided) was obtained at $0.001 < 0.05$, meaning that there is an influence of the habit of drinking herbal medicine in postpartum mothers on breast milk production in the working area of the Buaran Health Center, Pekalongan Regency. This is supported by research conducted by Alisa et al. (2023), which found that mothers were given turmeric and tamarind herbal medicine for 7 days at the Arrabih Primary Clinic and at the patient's home. The turmeric and tamarind herbal medicine was given in the morning at a rate of 250cc per day. After 7 days of care, there was a 90cc increase in breast milk volume.

The results of this study align with those of Mayasari and Jayanti (2022), who found that the average breast milk production before the turmeric herbal drink was 37.10 ml. After consuming the turmeric decoction for three days, the average increase was 67.01 cc. This resulted in a 29.91 cc increase in breast milk production from day one to day three. Therefore, the turmeric decoction can stimulate breast milk production. The results of this study showed a significant difference in breast milk production before and after administration of turmeric and tamarind. This is due to the benefits of turmeric and tamarind, which can stimulate the hormones prolactin and oxytocin, which play a role in increasing breast milk production. Based on research, turmeric and tamarind contain chemical compounds called curcuminoids, essential oils, proteins, minerals, vitamins, and other nutrients that can help stimulate the hormones prolactin and oxytocin, thereby increasing breast milk production in postpartum and breastfeeding mothers. Turmeric and tamarind were given to mothers according to SOP and were well-received due to their pleasant taste.

CONCLUSION

Based on the effectiveness of giving turmeric and tamarind on breast milk production in postpartum mothers, it can be concluded that 1) Breast milk production before being given turmeric and tamarind drink in 20 respondents was obtained breast milk production of 10ml by 6 respondents (30%), breast milk production of 15ml by 5 respondents (25%), breast milk production of 20ml by 3 respondents (15%), breast milk production of 20ml by 4 respondents (20%) and the least breast milk production of 30ml, namely 2 respondents (10%). 2) Breast milk production after being given turmeric and tamarind drink to 20 respondents, 5 respondents (25%) produced 60ml of breast milk, 5 respondents (25%) produced 65ml of breast milk, 4 respondents (20%) produced 70ml of breast milk, 3 respondents (15%) produced 75ml of breast milk, 2 respondents (10%) produced 80ml of

breast milk and the least breast milk production was 85ml, namely 1 respondent (5%). 3) There is effectiveness in giving turmeric and tamarind to breast milk production in postpartum mothers in the Kerta Mukti Community Health Center Work Area. with a P value of $0.000 < \alpha$ ($\alpha = 0.05$)

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