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Article

EFFECT OF EDAMAME (GLYCINE MAX L.MERILL) ON BREAST MILK VOLUME IN POSTPARTUM MOTHERS

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A B S T R A C T

Breast milk is the best food ingredientand the most suitable and most perfect for babies. A mother often experiences problems in exclusive breastfeeding, one of the main obstacles is the production of breast milk that is not smoothly. It will be a factor in the low coverage of exclusive breastfeeding for newborns. So that coverage of breast milk can be done with efforts such as soybean plants. This study aims to determine an effect of giving soybeans (edamame) to the volume of breast milk in postpartum women in the work area of the Tigo Baleh Community Health Center. This was quantitative research using pre-experimental design methods. This study uses a one group pretest posttest design. Population and sample are 10 mothers who have babies aged 3-40 days who taken by accidental sampling technique. Sampling data collection tools were observation sheets. Data analysis test is done univariate and bivariate by looking at the normality of the data (paired t-test statistical test). The results showed. (p-value 0,000), it can be concluded that there is an effect of giving soybean (edamame) to the volume of breast milk in postpartum mothers. Soybean Vegetable (edamame) is a local food ingredient that has the potential for nutrition of nursing mothers, because it contains phytosterol compounds that function to increase and facilitate milk production

I. INTRODUCTION

The best nutritional for babies during the first 6 months is Breast Milk. Breast Milk is the first and single best food ingredient, the most suitable and most perfect for babies, breast milk contains natural nutrients for energy and substances needed for the first 6 months of a baby's life. Breast milk contains fat and lipase enzymes. Minerals in breast milk are tiny but it suitable for babies in their first 6 months of life. The adequacy of the amount and quality of breast milk that must be given greatly determines the development and growth of infants, in order to remain in a healthy condition (Maryunani, 2012).

The World Health Organization (WHO) and the United Nations Childrens Fund (UNICEF) recommend that mothers breastfeed their babies within the first hour after giving birth and continue until the first 6 months of the baby's life. The introduction of complementary foods with adequate and safe nutrition is given when 6 months by continuing to breastfeed for up to 2 years or more (WHO, 2016).

According to the United Nations Fund (UNICEF) as many as 30,000 infant deaths in Indonesia and 10 million infant deaths worldwide each year can be prevented by exclusive breastfeeding. In Indonesia, the coverage target of exclusive breastfeeding nationally is coverage of breastfeeding for babies 0-5 months 54.0% in 2017, whereas the target of exclusive breastfeeding for babies up to 6 months is only 29.5% in 2017. The coverage target for breastfeeding in West Sumatra is infants 0-5 months 52.8% in 2017. While the coverage of breastfeeding up to 6 months is only 37.6% in 2017 (Indonesian Health Profile, 2017).

There are several reasons of the low exclusive breastfeeding coverage, one of which is that the mother feels that her milk is not sufficient for the baby's needs. Approximately 3 out of 10 mothers stop exclusive breastfeeding in a few weeks post partum because they feel that their breast milk production is not enough and the baby feels dissatisfied (Safitri, 2018). In order for ASI coverage to be fulfilled there are several attempts that should be done by the mother among whom should breastfeed her more frequently to stimulate production and provide both sides of the mother's breastfeeding each time and if the mother feels unable to breastfeed her baby due to abrasions or nipples sinking encourage the mother to express her milk

In addition to breastfeeding as often as possible and expressing milk, one way to overcome the problem of non-smooth milk production, a mother must complete their nutritional intake. Some specific foods are highly recommended to consumption by post partum mothers one of which is sourced from green vegetables. In this study began with the selection of spinach, long bean leaves, ginger, katuk leaves and there is one type of soybean vegetable from previous

studies found that it is useful to increase milk production, which is commonly referred to as dim beans or vegetable soybeans (Edamame) (Safitri) , 2018).

Vegetable soybean (Glycine max L.Merill), known as Edamame in Japan and Mau Doudi China, or Remang beans (Indonesia), is one of the legumes included in the category of vegetable crops (green soybean vegetable). Vegetable soybean plants. (edamame) is a local food ingredient that has the potential for nutrition of nursing mothers, because it contains phytosterol compounds that function to increase and facilitate milk production. In addition, high vitamin A content in Soybean Vegetables (edamame) can increase milk production. So that Vitamin A needs to be given and is important for the mother during the puerperium (Cahyanto, 2013). Vegetable soybean (Edamame) also has the potential to stimulate the hormone oxytocin and prolactin. The content of alkaloids, polyphenols, steroids, flavonoids and other substances that are effective in increasing and expediting milk production and increasing the volume of milk (Safitri, 2018).

II. METHODS

This research was an experimental design with one group pretest posttest. The study was conducted in the Tigo Baleh Community Health Center in 2019. The sample of the study was postpartum mothers from 3-40 days who were breastfeeding, prominent nipples and not consuming breastfeeding drugs as many as 10 respondents who taken by Accidental sampling technique based on inclusion criteria by researchers. Mothers who were willing to participate in this study signed an informed consent made by the researcher. Giving edamame which oiled and consumption in the morning at 07.00 am as much as 65 grams / day for 5 days. Data collected were sample characteristics at the beginning of the study using a questionnaire, bivariate analysis using Paired T-test with a significance limit of α 0.05.

III. RESULT

Table 1. breastmilk production before edamame intervention

Mean	SD	Min – Max	SE
12.70	5.519	5-21	1.745

Regarding to production of breastmilk before intervention, it was found that; the average of breastmilk production sclase was 12.70

Table 2. breastmilk production after edamame intervention

Mean	SD	Min – Max	SE
27.20	9.235	18-48	2.920

Regarding to production of breastmilk after intervention, it was found that; the average of breastmilk production sclase was 27.20

Table 3 Effect of Giving edamame on Increasing Breast Milk Volume in Postpartum Women

	Paired Differences					
				95%		
	Mean	Standar Deviation	Standar error	Lower	Upper	P
Breast Milk Volume **Pre test Post Test**	**-14.500**	**5.740**	**1.815**	**-18.606**	**10.394**	**0.000**

Average of breastmilk production before intervention is 12.70 with a standard deviation 5.519 while the average of breastmilk production after intervention is 27.20 with a standard deviation of 9.235, Dependent T-test results p value of 0.00 <0.05 indicates that there was edamame intervention effect on increasing breastmilk production.

IV. DISCUSSION

Breastmilk is the first and single best food ingredients, the most suitable and most perfect for babies, especially at the beginning of life. Sufficient amount and quality of breast milk that must be given will determine the development and growth of infants, in order to stay in healthy state (Astutik, 2015). Factors that can affect the production of breast milk include maternal food, peace of mind and mind, the effect of labor and delivery clinics, the influence of contraception, breast care, rest patterns, and suction / frequency factors for breastfeeding mothers (Sunarsih, 2011).

The results of this study are in line with the research of Rani Safitri (2018), in which the research explains one of the factors that inhibits the production of breastfeeding mothers, namely nutritional and psychological factors of the mother. The nutritional status of mothers plays an crucial role for the success of breastfeeding. Mothers who are breastfeeding should

increase their intake, calories at 550cal / day and 17 grams of protein per day with high amounts of vitamin A, thiamin, and riboflavin (Safitri, 2018).

According to the researchers' assumptions, there are several factors that can inhibit the volume of breast milk: fatigue, mother perseption to her baby make it difficult for mothers to care for their babies, 5 out of 10 mothers have given formula milk to their babies, nutrition of foods that mothers eat and lack of mothers in breast care.

There are several attempts to influence the increase in the volume of breast milk, including the mother's dietary factors which greatly affect the smoothness of milk production, the psychological factors of the mother, and the frequency factor during breastfeeding her baby. In addition, breast care is also very important to do during pregnancy to breastfeeding.

To support adequate milk production. There are some food ingredients which recommended for nursing mothers in the form of sources of carbon dioxide, protein, fat, vitamins, and minerals (Mary Greece, 2012). Breastfeeding mothers should pay attention to things that can improve the quality of breast milk. breastfeeding women can consuming vegetables and fruits that can increase the volume of breast milk such as consuming Soybean Vegetables (edamame), katuk leaves and chayote (Mary Greece, 2012).

According to Juliastuti (2019), inadequate milk production is the most common inhibiting factor causing the cessation of exclusive breastfeeding practices. One effort to increase the volume of breast milk is through the consumption of foods such as vegetable soybeans.

The results of previous studies conducted by Safitri (2018), Women who consume soy protein when breastfeeding not only increase protein intake for their body, but also get the health benefits that exist in soybean. Breastfeeding mothers need about 71 grams of protein every day. This not only the amount of protein needed for the body itself to function normally, but also what is needed for lactation. In addition, babies who breastfeed need milk from breast milk for its development..

The results of research conducted by researchers after being given a decoction of vegetable soybeans (edamame) in nursing mothers has increased, because in vegetable soybeans contained 34.9 grams of protein, 331 cal calories, 18.1 grams of fat, 34.8 grams of charcoal hydrate, calcium 227 mg phosphorus 585 mg, iron 8 mg, vitamin A 110 SI vitamin B1 1.07 mg, water 7.5 grams. Mothers who consume vegetable soy fill the nutritional needs of nursing mothers so that it has a positive impact on the lactation process in the breastfeeding process and will indirectly help in the exclusive breastfeeding program for 6 months.

Vegetable soybeans or edamame (Glycine max L.Merill) have the potential to stimulate the hormone oxytocin and prolactin. The content of alkaloids, polyphenols, steroids, flavonoids

and other substances that are effective in increasing and expediting milk production. Isoflavones contained in edamame are amino acids that have vitamins and nutrients in soybeans that form flavonoids. Flavonoids are pigments, such as leafy green matter that usually smells. Green leaf material has many health benefits for the body. The benefits of isoflavones contained in edamame is to increase and facilitate milk production. Isoflavones or the phytoestrogen hormone are estrogen hormones that are produced naturally by the body and can help the breast milk glands of nursing mothers to produce more milk (Selin, et al, 2010).

This is in line with research Selin, et. al (2010) states that isoflavones with higher levels in infants are found in mothers who regularly consume soy. Isoflavones in soy are believed to increase milk production and reduce the risk of breast cancer, increase division of breast cells, suppress the growth of tumor cells, and other mechanisms. Mothers who consume food ingredients made from soybeans in the form of soy milk and other processed soybeans are believed to increase levels of isoflavones in the tissues in the breast. Soybeans if consumed routinely can have a good effect on health, namely preventing breast cancer.

V. CONCLUSION

The benefits of isoflavones contained in edamame is to increase and facilitate milk production. Isoflavones or the phytoestrogen hormone are estrogen hormones that are produced naturally by the body and can help the breast milk glands of nursing mothers to produce more milk. It is crucial to educate breast feeding women to consumpt edamame to increase their breastmilk production.

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