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THE EFFECTIVENESS OF ADMINISTRATION OF GREEN BEAN JUICE ON THE EFFECTIVENESS OF BREAST MILK IN PUBLIC MOTHERS IN WORKING AREA UPT PUSKESMAS SIMPANG TIGA PEKANBARU CITY

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Abstract

Breast milk (ASI) is the single most perfect food for babies in the first 6 months of growth, without any additional drinks or food. Green bean juice is a type of drink that contains lactagogum, a nutrient that can increase and facilitate breast milk production. The aim of this research is to determine effectivenessProviding Green Bean Juice to the Smoothness of Breastfeeding for Postpartum Mothers in the UPT Working Area of Simpang Tiga Health Center, Pekanbaru City, Riau Province. Which will be carried out in September-December 2023. This type of research is Quasy Experimental with a One Group Pretest Posttest design. The total population is 16 respondents and the samples taken are the entire population, namely 16 respondents using the Total Sampling sampling technique. The research instrument uses an observation sheet. The statistical test uses a paired sample test with a p value <0.05. The statistical test results obtained a p value = 0.00 <0.05. So it can be concluded that there is effectivenessProviding Green Bean Juice on the Smoothness of Breastfeeding for Postpartum Mothers in the UPT Working Area of Simpang Tiga Health Center, Pekanbaru City, Riau Province. It is hoped that the Community Health Center can provide more information by carrying out outreach activities to increase the knowledge of postpartum mothers in dealing with breastfeeding problems.

Keywords: *Breast milk, green bean juice, postpartum mothers*

1. INTRODUCTION

Breast milk (breast milk) is a natural food in the form of a liquid with sufficient nutritional content and is suitable for the baby's needs so that the baby grows and develops well. Breast milk functions to meet the nutritional needs of babies and protect them against possible disease attacks. Breast milk is also very rich in food essences which accelerate the growth of brain cells and the development of the nervous system. Therefore, it is strongly recommended that every mother only give breast milk to her baby, especially at the age of 0-6 months [15].

According to Nugraheni and Heryati [15], the achievement of exclusive breastfeeding in Southeast Asia shows figures that are not much different. As a comparison, exclusive breastfeeding coverage in Myanmar is 24%27%, the Philippines is 34% and India is 46%, and globally it is reported that exclusive breastfeeding coverage is below 40% [13]. According to the Indonesian Ministry of Health In Indonesia, Ministry of Health data shows that the rate of exclusive breastfeeding increased from 29.5% in 2016 to 35.7% in 2017. This coverage rate

is still very low considering the important role of breast milk in children's lives. In accordance with WHO targets, the minimum exclusive breastfeeding in

Indonesia is 50% [14]. The Ministry of Health targets to increase the target of exclusive breastfeeding to 80%. However, exclusive breastfeeding in Indonesia is actually still low, namely 74.5%(Balitbangkes, 2019). Indonesian health profile data recorded that in 2018, the coverage of babies receiving exclusive breast milk was 68.74% [7]. Based on data from the Central Statistics Agency, breast milk coverage in Riau province in 2020 was 65.17%. Compared to the previous year, coverage in 2021 increased by 70.29% and in 2022 by 69.51%. This year, breast milk coverage in Riau province decreased from the previous year [1].

In exclusive breastfeeding, there are several factors that can influence breast milk production during breastfeeding, namely, the mother's diet, peace of mind and soul, use of contraceptives, breast care, breast anatomy, physiological factors, rest patterns, child sucking factors or breastfeeding frequency, drug factors, baby's birth weight, gestational age at delivery, cigarette and alcohol consumption.

One of the problems that affects breast milk production is the food consumed by the mother. Considering that there are many changes in behavior in society, especially mothers who tend to refuse to breastfeed their own babies, especially mothers who work because they produce little or no milk at all, this situation has a negative impact on health status, nutrition and intelligence levels. child. Efforts that can be made by health workers so that mothers gain knowledge about the right way to facilitate the release of breast milk and provide knowledge about the importance of exclusive breastfeeding for babies.

Breastfeeding mothers are one of the groups included in the nutritionally vulnerable group. This is in accordance with the mandate of Health Law no. 36 of 2009 Chapter III article 142. Breastfeeding mothers are classified as one of the vulnerable groups, because breast milk, which is the baby's main food, is obtained from the mother. Therefore, mothers who are breastfeeding must pay attention to the nutritional intake they consume. Secretion from breast milk every day averages 800-850 ml and every 100 ml contains 60-65 kcal, protein 1-1.2 g, and fat 2.5-3.5 g every 100 ml. The substances in breast milk secretions are taken from the body of a nursing mother, which is obtained from the daily food supply.

Mothers who are unable to replace the nutrients given to their babies are at risk of experiencing malnutrition or even health problems, such as osteoporosis, tooth decay and chronic energy deficiency (CED). Problems in breastfeeding mothers caused by nutritional deficiencies: iron anemia, disorders due to iodine deficiency (IDD), protein energy deficiency (PEM), and vitamin D deficiency.

Foods that can increase breast milk include green beans, katuk leaves and banana blossoms. Green beans can be an option to help increase breast milk production while meeting the mother's nutritional needs. Green beans contain 20 – 25% protein. The protein in raw green beans has a digestibility of around 77%. This low digestibility is caused by the presence of anti-nutritional substances, such as antitrypsin and tannins (polyphenols) in green beans.

Apart from that, increasing breast milk production is influenced by the hormone oxytocin and the hormone prolactin. The increase in these two hormones is influenced by proteins, namely polyphenols and amino acids in green beans, which also influence the hormone prolactin to produce breast milk by stimulating the alveoli which work actively in the formation of breast milk. An increase in the hormone oxytocin will make breast milk flow more abundantly

than usual. Apart from that, green beans contain B1 which is very beneficial for breastfeeding mothers [10].

According to the Riau Province Central Statistics Agency in 2018, green bean production in Jambi Province reached 500 tons. Apart from that, green beans are also very easy to find in nearby shops such as traditional shops, markets, supermarkets and others. So it is very suitable to be used as an additional food, especially to help increase breast milk production for breastfeeding mothers[2].

According to research results [11], it was found that consuming green bean juice had an effect on the production of breast milk (ASI) in breastfeeding mothers at the Dinoyo Malang Community Health Center. Wulandari's research in 2015 also explained that giving green bean juice to 7 breastfeeding mothers, there were 4 people (57.1%) whose breast milk came out smoothly and 3 people (42.9%) whose breast milk did not flow smoothly. In conclusion, the more often you consume green bean juice, the smoother your breast milk production becomes.

Exclusive breastfeeding coverage in the Simpang Tiga Health Center working area has an increasing presentation every month. To date, from January to August 2023, exclusive breastfeeding coverage in the PKM Simpang Tiga Work Area, Pekanbaru City has an average of 54% .Based on an initial survey on July 28 2023, UPT Puskesmas Simpang Tiga, 2 out of 5 postpartum mothers gave breast milk and formula milk to their babies aged <6 months due to the insufficient amount of breast milk. One of the factors causing giving formula milk to babies is the mother's lack of knowledge about exclusive breastfeeding and the mother's lack of understanding of how to increase the volume of breast milk by non-pharmacological methods such as consuming green bean juice.

2. METHODOLOGY

This research is a type of Quasy Experimental research with a One Group Pretest Posttest design. In this design, before the treatment is given, the sample is first given an initial pretest (initial test) and after the experiment the sample is given a posttest (final test). This design is used in accordance with the objectives to be achieved, namely to determine the effectiveness of giving green bean juice on improvementproductionBreast milk in postpartum mothers. The population and sample in this study were all postpartum mothers aged 0-42 days in the Simpang Tiga Health Center UPT Working Area, totaling 16 people (November-December 2023).

3. RESULTS

The results of this research will be described in the table below with the research title "Effectivenessgiving green bean juice toSmoothnessbreast milkamong postpartum mothers in the working area of the UPT Puskesmas Simpang Tiga, Pekanbaru City"The results of this research are as follows:

3.1 Univariate Analysis

Table 4.1: *Age category of postpartum mothers inSimpang Tiga Community Health Center*

No	Category	F	Percentage (%)
1	20-30	11	69
	31-40	5	31

	16	**100.0**

Based on the results of table 4.1, it can be seen that of the 16 respondents, the majority of postpartum mothers were aged 20-30 years, with 11 respondents (69%).

Table 4.2: *Education category of postpartum mothers in Simpang Tiga Community Health Center*

No	Category	F	Percentage (%)
1	Junior high school Senior high school	1 15	6 94
		16	100.0

Based on the results of table 4.2, it can be seen that of the 16 respondents, the majority of postpartum mothers had a high school education, 15 respondents (94%).

Table 4.3: *Job categories for postpartum mothersSimpang Tiga Community Health Center*

No	Category	F	Percentage (%)
1	Work Doesn't work	3 13	19 81
		16	**100.0**

Based on the results of table 4.3, it can be seen that of the 16 respondents, the majority of postpartum mothers do not work, 13 respondents (81%).

Table 4.4: *Categories of increasing breast milk before intervention inSimpang Tiga Community Health Center*

No	Intervention	Category	F	Percentage (%)
1	Before	Breast milk is smooth Breast milk is not smooth	0 16	0 100
	Total		16	100.0

Based on the results of table 4.4, it can be seen that of the 16 respondents, postpartum mothers before the intervention, the majority experienced breast milk failure, 16 respondents (100%).

3.2 Discussion Based On Before And After Intervention

Based on the research results, it was found that the majority of the 16 postpartum mothers before the intervention hadSmoothnessBreast milk was not smooth as many as 16 respondents (100%). After the intervention, the majority had smooth breast milk production, 16 respondents (100%).

Various factors that can influence breast milk production include psychological conditions such as anxiety which trigger stress. When postpartum mothers experience stress, the hormone cortisol will increase. This increase in the hormone cortisol will damage all body organ functions, including inhibiting the production of oxytocin (a hormone that functions to produce breast milk). Inhibition of oxytocin production is what causes reduced breast milk production.

Breast milk production is influenced by the mother's age, parity, occupation, nutritional and fluid intake, rest patterns, the influence of childbirth, maternal psychology, breast care, the shape and condition of the nipples and mothers who smoke and consume alcohol, apart from that. It is also influenced by factors from the baby, namely the implementation of early initiation of breastfeeding, the weight of the baby at birth, the baby's sucking. Breast milk production is also influenced by social support, both from family support and from health services.

The research results showed that almost all respondents in the experimental group (93.3%) and the control group (100%) were respondents aged ≥ 20-35 years. The ideal age range for reproduction, including producing breast milk, is 20-35 years old, however, 20-25 years old is a young age where psychological maturity is still lacking, so many mothers show a fearful, confused and nervous response when the baby cries. The mother's unsettled psychological response can influence thisSmoothnessbreast milk. At the age of over 25 years, emotional maturity has been reached and mothers usually have various experiences in providing breast milk, both from themselves and others.

3.3 Discussion Based on the Effectiveness of Giving Green Bean Juice

Based on the research results, it was found that on averageSmoothnessBreast milk before the intervention was given was 1.94 and after the intervention was given green bean juice for 8 days and measurements were taken again, the average value of breast milk increase was 6.50. These data show that administration of green bean juice is effective inSmoothnessBreast milk in postpartum mothers.

Breastfeeding mothers are classified as one of the vulnerable groups, because breast milk, which is the baby's main food, is obtained from the mother. Therefore, mothers who are breastfeeding must pay attention to the nutritional intake they consume. Secretion from breast milk every day averages 800-850 ml and every 100 ml contains 60-65 kcal, protein 1-1.2 g, and fat 2.5-3.5 g every 100 ml. The substances in breast milk secretions are taken from the body of a nursing mother, which is obtained from the daily food supply [5].

Foods that can increase breast milk include green beans, katuk leaves and banana blossoms. Green beans can be an option to help increase breast milk production while meeting the mother's nutritional needs. Green beans contain 20 – 25% protein. The protein in raw green beans has a digestibility of around 77%. This low digestibility is caused by the presence of anti-nutritional substances, such as antitrypsin and tannins (polyphenols) in green beans. Apart from that, increasing breast milk production is influenced by the hormone oxytocin and the hormone prolactin. The increase in these two hormones is influenced by proteins, namely polyphenols and amino acids in green beans, which also influence the hormone prolactin to produce breast milk by stimulating the alveoli which work actively in the formation of breast milk. An increase in the hormone

oxytocin will make breast milk flow more abundantly than usual. Apart from that, green beans contain B1 which is very beneficial for breastfeeding mothers [10].

This research is in line with research conducted [11],It was found that consuming green bean juice had an effect on the production of breast milk (ASI) in breastfeeding mothers at the Dinoyo Malang Community Health Center. Wulandari's research [15],also explained that giving green bean juice to 7 breastfeeding mothers, there were 4 people (57.1%) whose breast milk came out smoothly and 3 people (42.9%) whose breast milk did not flow smoothly. In conclusion, the more often you consume green bean juice, the smoother your breast milk production becomes.

According to research by Barus, [5],The Effect of Consuming Green Bean Juice on Breast Milk Production at the Pb Selayang Health Center. The results of the study showed that the average breast milk production in postpartum mothers before giving green bean juice was 97.67 with a standard deviation of 4.302, while the average breast milk production in postpartum mothers after giving green bean juice was 118.33 with a standard deviation of 3.790. With the results of statistical tests using the T-test, it was found that the p value = 0.000, which shows that there is an influence of consumption of green bean juice on breast milk production at the PB Selayang II Community Health Center. Therefore, postpartum mothers should regularly consume green bean juice, because giving postpartum mothers green bean juice can stimulate the secretion and production of breast milk.

According to research by Sasi, et al [4], Mother's behavior in overcoming obstacles to breastfeeding. Barriers experienced by mothers in providing breast milk include breast milk not flowing smoothly and anatomical factors, namely the shape and condition of the nipples. Efforts made by mothers to overcome these obstacles are by implementing health care, fulfilling maternal nutrition and maintaining the stability of the mother's psychological condition.

According to research by Widia et al [6], The effectiveness of consuming green bean juice (Vigna Radiate) on the smooth production of breast milk for postpartum mothers. Before the green bean juice intervention was given, almost all of them (80%) experienced irregular breast milk production and a small percentage experienced smooth breast milk production (20%). After being given the green bean juice (Vigna Radiate) intervention, the majority (80%) experienced smooth breast milk production and a small percentage (20%) experienced irregular breast milk production. There is an effectiveness of consuming green bean juice on the smooth production of breast milk in postpartum mothers.

According to research by Yuniarti [12], Effectiveness of Giving Green Bean Juice on Increasing the Volume of Breast Milk in Postpartum Women in the Practice of Independent Midwives in Palangka Raya City. The results of the paired t-test statistical test show that the p value = 0.001 is smaller than the α value (0.05), which means there is a significant difference. Conclusion: Green bean juice is effective in increasing breast milk volume in postpartum mothers.

According to research by Ritonga, et al [8], Green Bean Juice as an Alternative to Increase Breast Milk Production in Breastfeeding Mothers. Based on the research results, it is known that the average breast milk production before being given green bean juice is 0.045, which means it is not smooth and the average breast milk production after being given green bean juice is 0.82, which means it is running smoothly. And the

p-value is 0.046 (p≤0.05). This means that there is an effect of giving green bean juice on breast milk production in breastfeeding mothers at the Pratama Tutun Sehati Clinic, Limau Manis Village, Deli Serdang in 2019. According to the researchers' assumptions, before administering green bean juice, a large number (100%) of postpartum mothers experienced breast milk failure. After administering green bean extract, it was found that (100%) postpartum mothers had smooth breast milk. The statistical test results obtained a p value of 0.00 < (0.05).

4. CONCLUSION

The results of research conducted with the title Effectivenessgiving green bean juice to increaseproductionbreast milkamong postpartum mothers in the UPT Puskesmas Simpang Tiga working area, Pekanbar City, Riau Province, several conclusions can be drawn, namely:

1. Known averageSmoothnessBreast milk before the intervention was carried out, the majority of postpartum mothers experienced breast milk failure, 16 respondents (100%)
2. Known averageSmoothnessBreast milk after the intervention was carried out, the majority of postpartum mothers experienced smooth breastfeeding, 16 respondents (100%)
3. Based on effectiveness analysisgiving green bean juice toSmoothnessbreast milkon postpartum mothers in the UPT Puskesmas Simpang Tiga Working Area using the paired sample analysis test, the results obtained were p value = 0.00 < 0.05, so it can be concluded that Ho was rejected and Ha was accepted, which means there is effectivenessgiving green bean juice toSmoothnessbreast milkin postpartum mothers in the UPT Puskesmas Simpang Tiga working area, Pekanbaru City, Riau Province.

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