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Pekauman Health Center, Banjarmasin

By DEDE MAHDIYAH

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The effect of giving Kelakai (*Stenochlaena palustris*) juice on the volume of breastfeeding for postpartum mothers in the working area of the Pekauman Health Center, Banjarmasin

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Abstract. The postpartum period is the period after delivery of up to 6 weeks or 42 days. During the postpartum period, the mother needs a supply of food containing vitamins to prevent anemia, infection during the puerperium, and decreased milk production. So it needs sufficient vitamins and is able to protect the mother from infection. Kelakai is a plant that grows on peat soil and is known as a plant that can increase breast milk and can stimulate breast milk production in nursing mothers, and contains many vitamins and minerals. To analyzed the effect of giving kelakai juice on the volume of breastfeeding of postpartum mothers. This research design used a quasi experimental design with pre-test and post-test one group design. The population of the study was 89 postpartum mothers who visited the Pekauman Health Center. The sample technique in this study used probability sampling with simple random sampling technique of 10 postpartum mothers. Data was analyzed used Wilcoxon test. The results showed that the volume of breastfeeding for postpartum mothers before being given kelakai juice was 38.14 ml and after being given kelakai juice was 73.35 ml to 10 postpartum mothers. Wilcoxon test results obtained p value = $0.004 \leq \alpha (0.05)$, so there is an effect of giving kelakai juice on the increase in the volume of breast milk for postpartum mothers.

1. Introduction

The puerperium is the period after delivery is completed up to 6 weeks or 42 days. After the puerperium, the reproductive organs will slowly undergo changes like before pregnancy. During the postpartum period, it needs more attention because the 60% maternal mortality rate occurs during the puerperium. Maternal mortality rate (MMR) is the cause of the number of women dying from a cause of lack of attention to post partum women. During the postpartum period, the mother really needs a lot of food supplies that contain vitamins to prevent anemia, infection during the puerperium, and decreased milk production [1].

Based on data from WHO (World Health Organization) and UNICEF in 2012, 32.6% of the 136.7 million newborns worldwide are exclusively breastfed in the first 6 months, while in industrialized countries, babies who are not exclusively breastfed The infant mortality rate is greater than that of infants who are exclusively breastfed. Exclusive breastfeeding for 6 months was associated with a decrease in cases of diarrhea (53.0%) and ARI (Upper Respiratory Infection) (27%), in developing



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countries 39% of mothers who breastfeed exclusively [2]. The achievement of exclusive breastfeeding in Indonesia has not reached the expected rate of 80%. Based on the 2012 IDHS report, the achievement of exclusive breastfeeding was 42%, while based on a 2013 report from the Provincial Health Office, the coverage of breastfeeding 0-6 months was 54.3% [3].

Based on data obtained from the Banjarmasin City Health Office in 2015, it is known that the total number of babies was 12,381 children and for exclusive breastfeeding coverage in 2015 was 63.66%. In 2016, it is known that the total number of babies is 5,945 children and the coverage for exclusive breastfeeding in 2016 is 58.66%. In 2017, it is known that the total number of babies is 6,279 children and for exclusive breastfeeding coverage in 2017 is 89.58%.

Indonesia has the largest peatlands among tropical countries, which is around 21 million ha or 10.8% of Indonesia's land area. Most of the peat swamplands are found on four large islands, namely in Sumatra 35%, Kalimantan 32%, Papua 30% and a small part is in Sulawesi, Maluku and Seram [4]. The potential for wetlands in Indonesia has not been explored much. The research results of Mahdiyah et al., stated that there are peat soil bacteria that produce antibacterial compounds [5]. South Kalimantan is an area that has a fairly wide spread of swamp land (freshwater swamps and peat swamps) 287,000 ha or peat swamps covering a large area in the lowlands of Kalimantan with estimates varying between 8% -11% of the total area. The wide swamp area is covered with various types of ferns, one of which is the Kelakai plant (*Stenochlaena palustris*). Peatlands have high plant diversity so that they can be used as a source of food, such as vegetables [6].

Kelakai (*Stenochlaena palustris*) is a type of fern which is commonly consumed by Dayak people in Kalimantan. This plant is known as a plant that can increase the availability of breast milk (ASI) in mothers who are breastfeeding or after giving birth. In addition, based on the results of research by Maharani et al. (2006), this plant also contains quite high levels of minerals, vitamin C, folic acid, and protein when compared to other local vegetables in Palangkaraya, Central Kalimantan.

According to the results of research, it contains iron (Fe) which functions to form hemoglobin which carries oxygen from the lungs throughout the body. Kelakai can be used as a functional food to increase blood [7]. Based on Irawan's research (2003) [8], it is stated that traditional kelakai are also known to stimulate milk production in nursing mothers. A preliminary study conducted by researchers in 2018 at Pekauman Puskesmas Banjarmasin found that the coverage of breastfeeding in 2015 was 62.95%, in 2016 it was 61.08%, in 2017 it was 78.62%, and the total number of babies was 879 children (data from medical records). Based on the data obtained from the background, the researchers conducted a study on the effect of giving Kelakai juice on the volume of breast milk for post-partum mothers with a pre-post study design of 10 postpartum mothers who were given 700 mL of Kelakai juice for 7 days.

2. Methodology

This study used a quasi experimental design with pre-post design [9]. The sampling technique in this study used simple random sampling [10]. The population in this study were all postpartum mothers who made repeat visits in 2017, with a total of 467 people and 89 people per month to the Pekauman Health Center. The sample in this study were 10 postpartum mothers who visited the KIA room at Pekauman Puskesmas Banjarmasin.

Data were collected according to the inclusion and exclusion criteria that had been determined during the visit process in the MCH room. After that, the researcher first provides an explanation and the purpose of the study before the postpartum mother fills in the consent application form. Researchers asked respondents to measure the volume of breast milk before being given Kelakai juice and after being given Kelakai juice at a dose of 20 grams with 100 ml water and given once a day for 1 week. Every day, we observe whether there is an increase in the volume of breast milk. After that the data was tabulated and entered into the SPSS program for analysis using the Wilcoxon test.

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3. Results and Discussion

Univariate Analysis

Table 1. Distribution of the frequency of respondents by age

Age	Frequency (n)	Percentage (%)
21-29 years	7	70
30-35 years	3	30
Total	10	100

Based on table 1, the characteristics of postpartum mothers based on age, were 21-29 years old, as many as 7 (70%).

Table 2. Distribution of the frequency of postpartum mothers by occupation

Occupation	Frequency (n)	Percentage (%)
Housewife	6	60
Private	4	40
Total	10	100

Based on table 2, the characteristics of postpartum mothers based on work are mostly housewives as much as 6 (60%).

Table 3. Distribution of the frequency of postpartum mothers was based on the length of time

Postpartum period	Frequency (n)	Percentage (%)
Day 1	2	20
Day 2	3	30
Day 3	3	30
Day 4	2	20
Total	10	100

Based on table 3, the characteristics of the postpartum mother based on the postpartum period are the second and third day (30%).

The volume level of breastmilk before and the volume of breastmilk after giving the Kelakai juice for the first day to the seventh day (Fig.1).

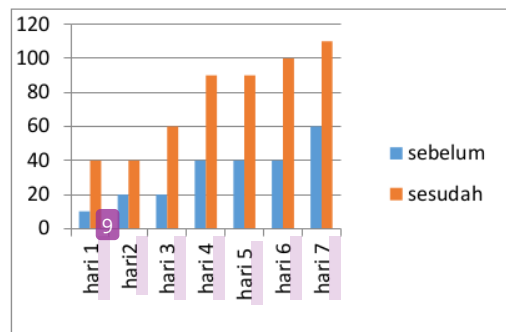


Figure 1. Breastmilk volume levels before and after giving the juice drink for the first to seventh days

Based on Figure 1, giving kelakai juice to postpartum mothers obtained the volume of milk before giving the juice kelakai on the first day of 10 ml and the volume of breast milk after giving the juice of the kelakai increased to 40 ml. On the seventh day before giving the kelakai juice, it can be seen that the volume of breast milk is 60 ml and the volume of breast milk after giving the juice of the kelakai increases to 110 ml. So the increase in the volume of mother's milk is 100 mL for seven days.

Bivariate Analysis

Table 5. The effect of giving Kelakai juice on the volume of breast milk for postpartum mothers

Volume of breastfeeding	Up	Stay	Down	Z-test	P
	n	N	n		
Pre (day1)	10	0	0	2,8	0,004
Post (day 1)					
Pre (day 7)	10	0	0	2,8	0,004
Post (day 7)					

1 Based on table 5, it shows that the results of the volume of breastmilk for postpartum mothers before and after being given Kelakai juice increased with $P=0,004$. The value of P value = 0.004 for the volume of breast milk on the first day and the seventh day or below the value of $\alpha = 0.05$ ($p < 0.05$), thus statistically at the 95% confidence level, there is an effect of giving the juice of kelakai on the volume of breast milk for postpartum mothers.

4. Discussion

Kelakai is a type of fern vegetable that is commonly consumed by Dayak people in Kalimantan. This plant is known as a plant that can increase the availability of breast milk (ASI) in mothers who are breastfeeding or after giving birth. In addition, based on the results of research by Maharani et al. (2006) [6], this plant also contains quite high levels of minerals, vitamin C, folic acid, and protein when compared to other local vegetables in Palangkaraya, Central Kalimantan. According to Sutomo et al., (2010) [11] kelakai has some of the highest Fe content, the highest vitamin A in the leaves, the highest vitamin C in the stem, the highest phytochemical content of flavonoids, alkaloids, the highest steroid content in the stem and the most domain bioactive compounds such as alkaloids and based on the research results of the analysis can used as functional food.

The first day obtained the volume of breast milk after giving 40 ml of kelakai drink extract. The second day obtained the volume of breast milk after giving 40 ml of kelakai drink extract. On the third day, the volume of breast milk obtained after giving the juice of 60 ml of kelakai drinks. The fourth day obtained the volume of breast milk after giving 90 ml of kelakai drink juice. On the fifth day, the volume of breast milk obtained after giving 90 ml of kelakai drink juice. The sixth day obtained the volume of breast milk after giving 100 ml of kelakai drink juice. **13** the seventh day, the volume of breast milk was obtained after giving 110 ml of kelakai drink juice. The results of this study are in line with Astawan (2005) research [7] that kelakai contains mineral iron (Fe) which functions to form hemoglobin which carries oxygen to the lungs throughout the body. So that kelakai can be used as a blood booster functional food. Another study by Irawan (2003) [8] states that traditional kelakai are also known to stimulate milk production in nursing mothers. According to Ambarwati (2010) [12], postpartum mothers need to consume an additional 500 calories per day, nutritious foods that contain sufficient carbohydrates, high protein and vitamins and minerals as well as iron consumption.

The resulted of the research on increasing the volume of breast milk after giving the juice of kelakai drinks showed that there was an increase in the volume of breast milk for 7 days, that all pregnant women experienced a significant increase with a percentage of 100%. Before and after giving the juice drink kelakai obtained an average volume of breast milk, the first day the average volume of breast milk before and after increased by 12 ml. The second day, the average volume of breast milk before and after increased by 21 ml. On the third day, the average volume of breast milk before and after increased by 36.5 ml. On the fourth day, the average volume of breast milk before and after increased by 39.5 ml. On the fifth day, the average volume of breast milk before and after increased by 43 ml. The sixth day the average volume of breast milk before and after increased by 48.5 ml. On the seventh day, the average volume of breast milk before and after an increase of 46 ml. The results of hypothesis testing prove that statistically there has been a **16** increase in the volume of breast milk before and after being given the juice of kelakai drinks, with a P value = 0.004 or below

the $\alpha = 0.05$ ($p < 0.05$), which means that there is an effect of giving kelakai drink juice on puerperal breast milk volume. These results indicate that giving kelakai drink juice can help increase the volume of breast milk in post-partum mothers before and after being given kelakai drink juice, in the context of this study, the kelakai drink extract given is boiled water given to post-partum mothers for one week with a frequency of 1 times a day.

The results of this study are in line with previous research conducted by Djajanti (2014) [13] that there is a significant effect on the increase in breast milk volume before and after giving Moringa leaf boiled water for 1 week with a frequency of 1 time/day. According to Sunar (2009) [14], the volume of breast milk produced is influenced by a mother's psychological condition and the food she consumes. Therefore, mothers should not feel stressed and anxious excessively. This situation greatly affects the volume of milk in the first week of breastfeeding the baby. According to Mahdiyah et al., (2017) [15] Kelakai is widely used by the people of South Kalimantan as a vegetable food and is also usually consumed by anemic pregnant women and postpartum mothers, because kelakai can increase hemoglobin levels in the blood and increase the volume of breast milk. According to Irawan et al. (2006) [16] stated that kelakai is known as an important food ingredient for breastfeeding or postpartum mothers. Kelakai that can be consumed consists of two types, namely white kelakai and red kelakai. Red kelakai is green kelakai with a reddish color, while white kelakai is green kelakai with a pale color.

5. Conclusion

Kelakai juices can increase the volume of breast milk in postpartum mothers for 7 days by giving as much as 700 ml.

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