

The Effect of Chaya Leaf Extract Consumption on Breast Milk Production

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Abstract—Breast milk contains more than one hundred types of nutrients needed for growth and development of infants. However, many lactating mothers currently do not provide breast milk because of insufficient milk production. This study was conducted to find out the effect of giving Chaya leaf extract on the breast milk production in lactating mothers in Sukarame District, Tasikmalaya in 2019. It was a quasi-experimental research using pretest-posttest with control group design. The research sample consisted of 20 lactating mothers consisting of 10 pregnant women in the control group and 10 pregnant women in the experimental group. Sampling was conducted by purposive sampling technique. This research utilized breast pumps and observation sheets as the research instruments. The statistical test used was a simple Independent t-test. This research obtained Pvalue 0.000 < 0.005, which means that there is an effect of consumption of Chaya leaf extract on increasing milk production in lactating mothers in the Sukarame Community Health Center area, Tasikmalaya. Lactating mothers are expected to consume Chaya leaf extract 2-3 times every day.

Keywords—Chaya Leaf Extract, Milk, Production

I. INTRODUCTION

Exclusive breastfeeding is carried out to improve the growth, development, health, and survival of infants, which has become one of the global strategies (WHO 2011)[1]. In fact, in West Java, exclusive breastfeeding ranks third lowest. According to Ministry of Health of the Republic of Indonesia (Data and Information Center Ministry of Health Republic of Indonesia/infodatin, 2014)3in 2014, 384,270 of 579,593 (33.7%) infants in West Java were given exclusive breastfeeding. Furthermore, the survey results in the Tasikmalaya district showed that 70.76% of mothers did not provide exclusive breastfeeding, while data obtained in the Sukarame, Tasikmalaya region indicated that 8 out of 10 mothers (around 70%) did not give exclusive breastfeeding. The low number of exclusive breastfeeding was due to the low nutritional status of lactating mothers. Most lactating mothers in Indonesia

experienced energy and protein consumption disorders that fell into the deficient category, which was as much as 50%. In addition, energy consumption <70% of RDA (Recommended Dietary Allowances) was 33.8% and the protein consumption was <80% RDA (Ministry of Health of the Republic of Indonesia,2016)[2].

As an attempt to increase the rate of secretion and breast milk production, an increase in nutrient intake can be done, one of which is by consuming green vegetables such as Chaya leaves(*cnidoscolos aconitifolus*) which are already widely used in the United States (kolapo,2016)[3]. Chaya leaves are well-known as traditional medicine in Nigeria to stimulate lactation. It can be consumed easily; by boiling it and consuming the water, while the leaves can be consumed after being cooked/boiled. Considering the importance of Chaya leaf on the breast milk production, this study was conducted to determine the effectiveness of Chaya leaf on the breast milk production in the lactating mothers (iwuji et al,2013)[4].

Breast milk is the most perfect food for babies. It contains all nutrients in the ideal ratio needed by the babies and is useful for their growth and development. The quality and production of breast milk is influenced by mothers' daily food consumption. Thus, during lactation, mothers must consume foods that are healthy, varied and contain balanced nutrition. Inappropriate and unhealthy mother's diet can affect milk production. Consuming foods that contain protein, fruits, and green vegetables that are rich in folic acid can help mothers to produce a lot of quality milk. There are various types of foods that can affect milk production, including katuk leaves, green vegetables, papaya leaves, Chaya leaves and so on.

Musa (2008) affirmed that Chaya leaf extract contains alkaloids and flavonoids which can affect the decrease in plasma LH estradiol and FSH. In 100 grams of Chaya leaves, there are some beneficial minerals for the body, including Protein (5.7gram), energy (258cal), fat

(0.7gram), calcium (199mg), phosphorus (217mg), iron (11.4mg), vit A (1085IU), vit C (165mg) and carbohydrates (30gram)[4][5].

The presence of these phytochemicals influences changes in circulating hormone levels. Accordingly, the observed increase in prolactin can be attributed to the effect of Chaya leaf extract which acts as a dopamine antagonist. Dopamine functions as a major inhibiting factor for prolactin secretion. High prolactin levels tend to suppress the ovulation cycle by inhibiting secretion while simultaneously stimulating the follicle and Gonadotropic Release Hormone (GnRH) needed for ovulation. Therefore, the increased levels of prolactin in this study justify the use of folkloric extract which functions to stimulate lactation [6][7].

II. RESEARCH METHOD

This research was a quasi-experimental, using a pre-test and post-test design. Data analysis was performed with an independent T test. The population was lactating mothers with infants aged 3-28 days (neonates). There were 20 respondents as the samples. Sampling was conducted by purposive sampling technique. The intervention group consumed Chaya leaf and its boiled water 2 times a day for seven days. From this study, the amount of milk production in lactating mothers before and after consuming Chaya leaves was discovered. It also provided information about the effect of Chaya leaves in increasing milk production in lactating mothers.

III. RESULTS AND DISCUSSION

A. Results

TABLE I. THE AVERAGE VALUE OF BREAST MILK PRODUCTION BEFORE AND AFTER CONSUMPTION OF CHAYA LEAVES IN THE INTERVENTION GROUP

	Mean	Median	Modus	Min-max	SD
Pre-Experiments	31	30	40	20-40	7.746
Post-Experiments	81	80	80	60-100	15.239

The results of analysis in Table I show an increase in the average value of breast milk production after the

lactating mothers are given Chaya leaves with a difference value before and after consumption by 50cc.

TABLE II. THE AVERAGE VALUE OF BREAST MILK PRODUCTION BEFORE AND AFTER CONSUMPTION OF CHAYA LEAVES IN THE CONTROL GROUP

	Mean	Median	Modus	Min-max	SD
Pretest	36.5	40	35	20-45	8.515
Posttest	49.5	50	55	40-60	6.852

The results of the analysis in Table II show that there is a very small increase in the milk production in the group

that is not given Chaya leaves, which is only as much as 1.3 cc.

TABLE III. THE DIFFERENCE VALUE IN MILK PRODUCTION BETWEEN THE INTERVENTION AND CONTROL GROUPS

Breast Milk Production	Mean	Standard Deviation	SE mean	P value
Intervention	81.00	15.239	4.819	0.000
Control	49.50	6.852	3.000	

The results of the analysis in Table III show that there are differences in the breast milk production in lactating mothers who get Chaya leaves and those who do not with a P value < 0.005.

B. Discussions

Based on the results of the study, it was found that there was an effect of Chaya leaf on increasing milk production in lactating mothers. It is in line with a research conducted by Musa (2008) that Chaya leaf can increase milk production since it contains alkaloids and flavonoids[6]. The abundance of these two substances in Chaya leaves can increase the prolactin hormone. Prolactin is one of the hormones that affect milk production that the high levels of prolactin automatically increase milk production.

The quality and production of breast milk is influenced by mothers' daily food consumption. During lactation, mothers need to consume foods that are healthy, varied and contain balanced nutrition. Inappropriate and

unhealthy mother's diet can affect milk production. Lactating mothers are expected to consume foods that contain protein, fruits, and green vegetables that are rich in folic acid to produce high quality milk [1][7].

Breast milk contains several compositions such as fat, carbohydrates, vitamins, minerals, protein, salt, iron and folic acid. The same content is owned by Chaya leaves so that it can support the production of good quality breast milk. Chaya leaves contain protein, energy, fat, calcium, vitamin A, vitamin C, iron and carbohydrates. The vitamin C can help to reduce the symptoms of thrush that is frequently experienced by lactating mothers [5][7][8].

IV. CONCLUSION AND SUGGESTION

One of the efforts to solve problems in improving the quality of maternal health can be done by utilizing local wisdom and natural resources in the community as well as possible, as has been done in Tasikmalaya. The utilization of abundant Chaya leaves in the region could help the

lactating mothers in getting high nutritional intake as well as doubling the amount of the milk production.

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