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EFFECT OF LEMBAYUNG LEAF (VIGNA SINENSIS L.) ON INCREASED BREAST MILK PRODUCTION IN WOMEN BREASTFEEDING 0-6 MONTHS INFANTS

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Abstract

Based on the Indonesian Demographic and Health Survey (IDHS), the coverage of infants who received exclusive breastfeeding in 2017 was 61.33%. One of the reasons mothers do not give breast milk is that the milk production is small and insufficient. Leaf of Lembayung (Vigna sinensis L.) is a plant that is well known to the public, easy to obtain and cheap. This lavender leaf is useful for stimulating the hormones oxytocin and prolactin such as alkaloids, saponins, polyphenols, steroids, and flavonoids. The purpose of this study was to see the effect of giving Lembayung leaves on the increase of milk production in breastfeeding mothers of infants aged 0-6 months in the Torjun Health Center, Sampang Regency. This research is a quantitative research with Quasi Experiment. Quasi-Experimental Research carried out two observations, observation of breast milk production before and after being given mauve leaves. The statistical test used

was the Paired Sample T-Test with the results of the analysis of the value of p = 0.000 <from the value of α (0.05), so H0 was rejected, meaning that there was a significant

difference between body weight before treatment and body weight after treatment. This can also be seen from the value shown in the t-count value for weight gain of infants

before and after the intervention by offering lavender leaves for 14 days is -5,529 with a probability (Sig.) 0.000. Thus it can be stated that offering leafy vegetables can affect milk production.

Introduction

Infants are interesting because they have different needs in different growth and developmental stage. Therefore, nutritional needs must be met at every phase. Breast milk (ASI) is the best food for infants to reach optimum growth. Breast milk contains the correct and absorbable nutrition. Breast milk gives specific nutrition in accordance with age, as well as immunology factor and antibacterial substance (1).

Breast milk also contains non-nutritional components, e.g. hormone, growth factor, macrophage, probiotic, and has important role in epigenetic formation. Psychologically, breast milk creates basic sense of trust which will help children grow with good psychological wellbeing (2). Today, midwives are very necessary. Midwives are believed to be a responsible profession that helps women by providing the necessary supports, e.g. care during pregnancy, labor, puerperium, and infant care, even when deciding on contraception.

Basically, breast milk is a fat emulsion in isotonic liquid phase with plasma. Mature breast milk contains 3-5% fat, 1% protein, 7% lactose, and 0.2% mineral, and gives 60-75 kkal/dL calories. The main fat group in breast milk is triglyceride, which has the most palmitic acid and oleic acid contents. breast milk quantity and content regulation are mostly under hormonal control, i.e. prolactin plays an important role in lactation although it requires synergy with some other hormones. Malnutrition will cause quite significant damage on infants, especially in the developmental period and may cause stunting. Exclusive breastfeeding has positive effect on infants because it contains all the nutrition required by infants, i.e. carbohydrate, fat, mineral, vitamin and important proteins such as casein, α-lactoalbumin, lactoferrin, immunoglobulin A, lysozyme, and albumin (3).

The best nutrition in terms of quality and quantity in brain development from the 0-6 month are contained in exclusive breastfeeding. Brain development starts from the womb

until the age of 3, which is known as the golden period, so that exclusive breastfeeding is required from the age of 6 months to 2 years. It's because breast milk contains balanced

amounts of protein, carbohydrate, fat and mineral required by infants (4). Polyunsaturated fatty acids are required to form optimum brain cells. The amounts of DHA and AA in breast milk are sufficient to guarantee child growth and intelligence. The food intake of breastfeeding woman also determines breast milk quality (5).

Exclusive breastfeeding is breastfeeding for the first 6 months without any other supplement. This should be taught to all breastfeeding women due to new researches on the negative effects of baby formulas. A study by Institut Pertanian Bogor (IPB) finds that of 22 baby formula samples marketed in April, 22.73% were contaminated by

Enterobacter sakazaki. The bacteria may cause meningitis in infants. Moreover, baby formula in can may contain Bisphenol A which may disturb children's health and growth
(6).

Based on Indonesian Demographic and Health Survey (SDKI,) 61.33% of infants received exclusive breastfeeding in 2017. It was below the target of 80% of infants receiving exclusive breastfeeding. One of the reasons for not breastfeeding is inadequate

breast milk production. Therefore, breastfeeding women required breast milk booster to increase breast milk production to meet their infants' needs (7). One of galactagogues is

green vegetables. Breastfeeding women only consume longyard beans, while the leaves of longyard beans have greater benefits. Lembayung leaf contains saponin and polyphenol to increase prolactin level. Prolactin is a hormone which affects breast milk production. Energy contents in lembayung leaf are 34 kilocalorie, 4.1 grams of protein, 5.8 grams of carbohydrate, 0.4 gram of fat, 134 milligrams of phosphor, and 6 milligrams of iron. 100 grams of lembayung leaf also contains 5241 IU of vitamin A, 0.28 mg of vitamin B, 29 mg of vitamin C (8). Beside boosting breast milk, the nutritional contents, lembayung also can prevent anaemia and boost blood circulation. This is stated in the study by Niken et al. on the effect of logyard bean leaf (lembayung leaf) juice on increasing Hb of male white Wistar rat (9).

Sampang Regency is a region with high number of stunting. The people of Sampang haven't fully realized the importance of exclusive breastfeeding. Therefore, the

researcher aimed to study the effect of consuming lembayung leaf for breast milk booster in women breastfeeding 0-6 months old infants in the working area of Torjun Public Health Service, Sampang Regency, to provide alternative menu for breastfeeding women

to improve breast milk quality and quantity so that infants grow well in accordance with the age and so that the government's Exclusive breastfeeding target is met.

Method

The present study used quasi experiment design. In quasi experiment, observation was performed twice, i.e. breast milk production before and after lembayung *(Vigna sinensis L.)* leaf consumption. Both measurements produced two observation results, i.e. initial observation result (O1) of breast milk production before lembayung leaf consumption and final observation result (O2) of breast milk production after lembayung leaf consumption. Lembayung leaves were given to women breastfeeding 0-6 months-old infants in the working area of Torjun Public Health Center, Sampang Regency, for 14 consecutive days. 200 gr of lembayung leaf (*Vigna sinensis L.*) was given in every treatment.

Results

a. Infant Weight Distribution During Lembayung Leaf Intervention in the Area of Torjun Public Health Center, Sampang

Table 1. Percentage of Baby Weight before Lembayung Leaf Intervention in the Area of Torjun Public Health Center, Sampang

BB Before Treatment	N	%
3350	1	4,69
4250	1	1,19
3300	1	3,13
2890	1	3,21
3600	1	2,86
4500	1	0,00
4850	1	1,04
4300	1	2,38
3850	1	4,05
3900	1	4,00
4025	1	1,26
4390	1	1,62
4620	1	2,21
3750	1	4,17
4050	1	2,53
3750	1	2,18
4050	1	1,63
5700	1	2,89
5920	1	2,07
4800	1	6,67
5500	1	4,96
5650	1	0,89
3670	1	1,94
4450	1	3,49
5750	1	0,88
6050	1	2,54
4650	1	3,33
4850	1	1,04

5540	1	2,59
4420	1	2,31
4450	1	3,49
5800	1	2,84
3900	1	3,72
6200	1	4,73
3120	1	5,76
Mean =4509	1	2,81

Based on table 1, the research subject distribution was 35. Therefore, the heaviest infant weight before treatment was 6200 gram (4.73%). Meanwhile, the lowest weight percentage was 3.21% (2890 gram). Meanwhile in table 2, infant weight after treatment as suggested by the researchers was 6850 gram (5.12%) while the infant weight percentage of 3.3% was the lowest.

Table 2. Percentage of Baby Weight after Lembayung Leaf Intervention in the Area of Torjun Public Health Center, Sampang

BB After Treatment	**N**	**%**
3850	1	7,21
4650	1	4,61
3700	1	5,89
3250	1	6,05
4020	1	5,68
5200	1	7,51
5350	1	5,03
4800	1	5,65
4450	1	7,51
4450	1	6,82
4500	1	5,74
4800	1	4,57
5150	1	5,58
4320	1	7,33
4560	1	6,11
4250	1	6,46
4600	1	6,57
6200	1	4,29
6700	1	6,40
5500	1	7,04
6200	1	6,17
6200	1	4,76
4200	1	0.89
4900	1	4,94
6350	1	5,09
6750	1	5,63

5350	1	7,26
5400	1	5,52
6120	1	5,11
4850	1	4,75
5050	1	6,53
6350	1	4,63
4520	1	7,66
6850	1	5,12
3650	1	8,16
Mean =5058	1	5,98

b. Analysis of Infant Weight Gain Before and After Intervention

The analysis result on the difference between infant weights before and after the
intervention is described in the table below:

Table 3. Result of Paired T-test of the Difference between Infant Weight Before and After Lembayung Intervention in the Area of Torjun Public Health Center, Sampang

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 before_intervention - after_intervention	-2.13571	2.28528	.38628	-2.92074	-1.35069	-5.529	34	.000

Based on the table analysis above, tcount of infant weight gain before and after lembayung leaf intervention for 14 days is -5.529 with (Sig.) 0.000. so it's concluded that

H0 is rejection and HI is accepted, meaning lembayung leaf intervention significantly affects breast milk production.

Discussion

Various substances in lembayung leaf potentially stimulates oxytocin and prolactin, such as Alkaloid, polyphenol, steroid, flavonoid and other substances effective in

increasing and boosting breast milk production. Prolactin stimulates breast milk production. When a baby suckles their mother's nipple, neurohornomal stimulation

happens to the nipple and areola. The stimulation is passed to pituitary through vagus nerves, then to anterior lobe. The lobe releases prolactin into blood circulation to breast milk producing glands. These glands were stimulated by beans.

The average infant weight gain was 4509 gram. After consuming longyard bean leaf, the average infant weight gain was 5058 gram with p = 0.000 < from α (0.05) so null

hypothesis is rejected, meaning there was significant difference between the weight before treatment and the weight after treatment. This was also evident from the tcount of infant weight gain before and after lembayung leaf intervention for 14 days, which is -5.529 with (Sig.) 0.000. Therefore, lembayung leaf intervention could increase the breast milk production of breastfeeding women in the working area of Torjun Public Health Center, Sampang.

Lembayung leaf is one of the plants believed to enlarge breast and increase breast milk production. It has proliferative effect on breast cells because it contains phytoestrogen, which is natural estrogen in plants. The substance can trigger proliferation

when bonded with estrogen receptor (3). Lembayung leaf contains saponin and polyphenol, which can increase prolactin. Prolactin is the hormone that has an important role in breast milk production. The energy content in lembayung leaf is 34 kilocalorie, 4.1 grams of protein, 5.8 grams of carbohydrate, 0.4 gram of fat, 134 milligrams of phosphor, and 6 milligrams of iron. Moreover, 100 gram of lembayung leaf also contains 5241 IU of vitamin A, 0.28 mg of vitamin B, 29 mg of vitamin C (8)

Conclusion

In conclusion, effect of lembayung leaf intervention on breast milk production of women breastfeeding 0-6 months-old infants, it's concluded that lembayung leaf

intervention affects breast milk production for 14 days based on infant weight gain. The present study is expected to increase women's interest in exclusive breastfeeding to
increase exclusive breastfeeding coverage.

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Not Applicable

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