Journal of Global Research in Public Health
Vol. 8, No 1, June 2023, pp.121-125

The Effect Of Consumption Of Green Bean Juice On Exclusive Breastfeeding Mothers On Infant Weight Gain

Lisviarose[1*], Dezy Mellisa[2], Meirita Herawati[3]
[1,2,3]Midwifery Study Program, Al Insyirah Collage of Health Pekanbaru
***Corresponding author:** lisviarose@gmail.com

ARTICLE INFO

Article history:
Received : 12th January 2023
Revised : 20th June 2023
Accepted : 26th June 2023

Keywords:
Baby weight,
Exclusive breastfeeding mother,
Green bean juice.

ABSTRACT

The prevalence of exclusive breastfeeding tends to decrease in general due to the desire of parents for rapid growth of their baby's weight, especially the promotion of formula milk which is increasingly intensive. Breast milk is the single best source of nutrition for babies because it contains Fats, Carbohydrates, proteins, Vitamins, Minerals, Water and natural protective substances that can protect babies against various diseases. Green beans are one of the lagtogogum plants that contain vitamin tiamin and polyphenols that can increase breast milk production. The purpose of this study was to determine the effect of giving green bean juice on infant weight gain in breastfeeding mothers exclusively breastfed. Quasy experimental type of research with pretest and post test design with nonequivalent control group design. The study was conducted from September to November 2020 in the Working Area of UPT Puskesmas Sebangar Bengkalis Regency with a population of 189 mothers having babies aged (0-6) months with a total sample of 32 people, purposive sampling technique. Giving green bean juice is done once a day as much as 300 ml for 14 consecutive days. Data processing using an independent sample t test. From the results of the study, the average weight gain of babies in the experimental group was 468.74 grams while the average weight gain of the control group babies was only 290.62 grams. In the independent test of the t-test sample, a p value = 0.021 was obtained, where the p value of ≤ 0.05 Ha was received, meaning that there was an effect of giving mung bean juice on infant weight gain in breastfeeding mothers exclusively in the Working Area of UPT Sebangar Health Center, Bengkalis Regency. It is recommended that breastfeeding mothers can consume Green Bean Juice to help smooth milk production, so as to increase baby weight gain in exclusive breastfeeding mothers.

I. Introduction

The program to increase breast-feeding, especially exclusive breastfeeding, is a priority program. This is because it has a broad impact on the nutritional status and health of toddlers. The need to campaign for breastfeeding as an important part and effort to "protect, promote and support breastfeeding"(Riskesdas, 2020)

According to data from the World Health Organization (WHO) in 2016 the coverage of exclusive breastfeeding in the world averaged around 38%, Indonesia's health profile in 2018 nationally recorded exclusive breastfeeding coverage in 2018 of 68.74%(Health, 2015). And the percentage of babies who get exclusive breastfeeding in Riau Province is 35.01%. The achievement of the Indicator of infants aged 6 months receiving exclusive breastfeeding in Bengkalis Regency in 2018 was 33.52% (Provinsi Riau, 2018)

Efforts to increase milk production can be done by doing breast care, improving breastfeeding techniques, and by consuming foods that can affect milk production. Indonesian people have a tradition of utilizing the potential of nature as a medicinal ingredient.(Nova Yulita et al., 2020) Medicinal plants in Indonesia there are 7000 types of plants, and more than 400 plants are identified as plants that can affect breast milk.(Rahmawati & Zain, 2017) Lactogogum is a drug that increases or facilitates the

release of milk. Some of them are efficacious as lactogogum plants such as katuk plants, green beans, lampes, anise, thorn spinach, bidara upas, blustru, chicken dadap, bitter black cumin, moringa jackfruit, patikan kebo, pulai, temulawak, turi and young papaya fruit(Nurmisih et al., 2022)(Istiqomah et al., 2015)

The selection of green beans (Phaseolus Radiatus) as lactogogum is based on its nutritional content including carbohydrates which are the largest component of green beans, which is 62-63%. The content of unsaturated fat in green beans is 73% so it is safe for consumption, and the protein content of green beans is 20-25%. Fulfillment of adequate nutrition during the lactation process can affect the production of the hormone prolactin(Sufiani et al., 2022)

In his research journal entitled The Effect of Green Bean Mixed Juice on the Increase of Prolactin Hormone and Baby Weight in BPM Neglasari District, Tanggerang City which was carried out for 14 days showed that the average weight gain of infants in the intervention group was 819.3 gr, higher than the control group only gained 550 gr. These results show that providing additional nutrients with green bean raw materials and fennel leaves can induce an increase in milk secretion which has an impact on increasing infant weight due to the content of polyphenols and flavanoids. (Suksesty & Ikhlasiah, 2017)

Based on a preliminary study conducted at the UPT Puskesmas Sebangar, Bathin Solapan District on June 12 2020, data obtained from the Nutrition Program Insurer in March 2020 before the Covid 19 pandemic occurred, it was found that the number of babies aged 0-6 months who arrived was 139 babies , there were 44 babies who received exclusive breastfeeding, 26 boys and 18 women, so that the percentage of exclusive breastfeeding at UPT Sebangar Health Center in March was 31.65%. And during breastfeeding never it is recommended to give green bean extract as a food additive to increase milk production.

Based on the description above, the researcher is interested in proving and conducting research with the title "The Effect of Consumption of Mung Bean Extract in Exclusive Breastfeeding Mothers on Infant Weight Gain in Exclusive Breastfeeding Mothers in the Work Area of the Sebangar Health Center, Bengkalis Regency".

II. Methods

This type of research is Quasy Experimental with a Pretest Post Test research design with Non Equivalent Control Group Design. The time of this research starts from June to. December 2020. The location of this research was carried out at the UPT Puskesmas Sebangar, Bengkalis Regency, Riau Province. The population in this study were 189 mothers who were exclusively breastfeeding. To obtain a sample using the Slovin formula with a sample of 32 respondents according to inclusion criteria consisting of 16 people in the intervention group and 16 people in the control group. This research was conducted for 14 consecutive days by administering 300 ml of pure mung bean extract to the intervention group. Where on Day 1 all samples were weighed before treatment. And on the 15th day, all samples were re-weighed by their baby's weight. What was different in the control group was that they were not given mung bean essence for those 14 days. This study used a purposive sampling technique. The data analysis used was univariate data analysis and bivariate data analysis using the Independent Sample T Test.

III. Results and Discussion

Univariate analysis

Table 1. Frequency Distribution of Infant Weight in the Intervention Group

Characteristics	n	Mean	Standar Deviasi
Baby's Weight Before Intervention (grams)	**16**	6209.38	832,310
Baby's Weight After Intervention (grams)	**16**	678.12	794,349

Based on Table 1, it is known that the mean weight before the intervention (Pretest) was 6209.38 grams and after the intervention (PostTest) was 6678.12 grams. Where the average difference in weight gain after and before administration of mung bean extract is 468.74 grams.

Table 2. Frequency Distribution of Control Group Baby's Weight

Characteristics	n	Mean	Standar Deviasi
Baby's Weight Before	16	5706.25	847.324
Baby's Weight After 14 days	16	5996.87	791.721

Based on Table 2, it can be seen that the average body weight before the control group (PreTest) was 5706.25 grams with a Standard Deviation of 847.324 and after that in the control group (Post Test) 5996.87 grams with a Standard Deviation of 791.721. Where the difference in weight gain after and before in the control group is 290.62 grams.

Table 3. Differences in average weight of breastfeeding mothers before and after administration of mung bean extract in the intervention group

Characteristics	n	mean± SD		Mean Difference ± SD		pvalue
Baby's Weight Before	16	6209,38±	832,310	468,750±	195,683	0,000
Baby's Weight After 14 days	16	6678,12±	794,349			

Based on table 3 describing the results of the paired sample T test, a significance value of 0.000 ($p < 0.05$) was obtained, meaning that there was a difference in the average baby's weight before and after administration of mung bean extract.

Table 4. Differences in Average Baby Weight in Breastfeeding Mothers Before and After in the Control Group

Characteristics	n	Mean ± SD		Mean Difference ± SD		p
Baby's Weight Before	16	5706,25±	847,324	290,625±	96,986	0,000
Baby's Weight After 14 days	16	5996.88±	791,721			

Based on Table 4, the results of the Paired Sample T Test obtained a significance value of 0.000 ($p < 0.05$) meaning that there was an average difference between the baby's weight in the control group before and after 14 days.

The effect of consumption of green bean juice on exclusive breastfeeding mothers on infant weight gain

Based on the results of Bivariate Analysis with the Independent Sample T Test, it showed that the weight gain of day 15 infants in the intervention group was higher than the control group, a sig value of 0.021 ($p<0.05$) was obtained with a significance value of 95%. These results show a strong relationship between two variants of Infant Weight Gain with the administration of Green Bean Juice marked by a correlation coefficient value of 0.972.

The baby's weight gain is determined by the breastfeeding process. Breastfeeding is recognized as one of the factors that most influence the weight of the baby. Estimation of adequate nutritional intake for the first year of life is based on measurements of the adequacy of intake from breast milk which generally depends on the volume of intake and composition of breast milk. One of the factors that affect the weight of babies who are exclusively breastfed is the mother's nutrition. The nutritional needs of nursing mothers increase during breastfeeding to support the growth and development of the baby. The quantity of breast milk consumed by infants and the nutritional content in breast milk are often used to assess nutritional adequacy during the lactation process.

Polyphenols and thiamin in green beans can affect milk production. Apart from polyphenols, breast milk production is also influenced by the hormones oxytocin and prolactin. The increase in oxytocin and prolactin is influenced by protein and amino acids. The content of Mung Bean Extract consumed by the mother becomes an additional food that can meet the nutritional needs of breastfeeding mothers so that it supports the growth and development of the baby.

In this study, mothers were given additional nutrition in the form of Lactogogum plants, namely Green Beans Extract.Where green beans as a raw material have elements of thiamin and polyphenol compounds which can increase breast milk production. Milk production increases, it is hoped that the baby's weight will also increase.

This research is also strengthened by research conducted by Gesit Agustin Angrugo in 2017 (Angrugo, G. A., 2017) contained in a journal entitled "The Effect of Green Bean Juice on the Smooth Production of Breast Milk in Nifas Mothers at the Cipondoh District Health Center, Tangerang" research was conducted for 7 days after being given Green Bean Juice with the results of 73.7% whose breast milk increased and 26.3% of breast milk did not increase with the p-value: 0.000 with the limit of α meaning is <0.05, it can be concluded that there is an effect of giving mung bean juice on the smooth production of breast milk.

Based on the results of research on the effect of consumption of green bean juice on exclusive breastfeeding mothers on infant weight gain in the UPT Primary health Care Sebangar work area that I have done, it is known that giving green bean extract provides great benefits for the smooth production of breast milk so as to spur baby growth, especially infant weight gain.

IV. Conclusion

There is an effect of giving green bean juice on increasing baby weight with p value = 0.021.

V. References

Angrugo, G. A., and I. N. (2017). Pengaruh Sari Kacang Hijau Terhadap Kelancaran Produksi Asi Pada Ibu Nifas di Puskesmas Kecamatan Cipondoh Tangerang. Perpus.Fikumj, 1(14). http://perpus.fikumj.ac.id

Health, R. P. H. O. . J. I. M. of. (2015). Provision of Mother's Milk and MP ASI.

Istiqomah, S., Wulanadari, D., & Azizah, N. (2015). Pengaruh Buah Pepaya Terhadap Kelancaran Produksi Asi Pada Ibu Menyusui Di Desa Wonokerto Wilayah Puskesmas Peterongan Jombang. Jurnal EduHealth, 5(2), 102–108.

Nova Yulita, Sellia Juwita, & Ade Febriani. (2020). Perilaku Ibu Nifas Dalam Meningkatkan Produksi ASI. Oksitosin : Jurnal Ilmiah Kebidanan, 7(1), 53–61. https://doi.org/10.35316/oksitosin.v7i1.619

Nurmisih, N., Hindriati, T., Nuraidah, N., & Marisi. S, R. E. M. (2022). Pemberdayaan Masyarakat dalam Pemanfaatan Buah Pepaya Muda dan Wortel untuk Peningkatan Produksi ASI pada Ibu Menyusui di Desa Kademangan, Jambi. Jurnal Abdimas Kesehatan (JAK), 4(3), 381. https://doi.org/10.36565/jak.v4i3.345

Provinsi Riau. (2018). Laporan Kinerja Instansi Pemerintah. https://ppid.riau.go.id/download/46/1569468125lakip-2018-dinas-kominfotik-riau.pdf

Rahmawati, S. I., & Zain, E. R. (2017). Tanaman Suruhan.

Riskesdas. (2020). Riset Kesehatan Dasar. Badan Penelitian Dan Pengembangan Kesehata Kementerian Kesehatan Republik Indonesia. http://www.depkes.go.id

Sufiani, A., Saleha, S., & Pramana, C. (2022). Perbedaan Produksi Air Susu Ibu Melalui Pemberian Ekstrak Sari Kacang Hijau Dan Kedelai Di Puskesmas Lumpue Kota Pare-Pare. Sebatik, 26(1), 306–311. https://doi.org/10.46984/sebatik.v26i1.1520

Suksesty, C. E., & Ikhlasiah, M. (2017). Pengaruh Jus Campuran Kacang Hijau Terhadap Peningkatan Hormon Prolaktin Dan Berat Badan Bayi. Jurnal Ilmiah Bidan, 2(3), 32–40.