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Grant of beverages sari peanut (*Arachis Hypogaea* l) on the improvement albumin body and future index (BMI) pregnant KEK (chronic energy deficiency) Siwuluh health case study in work area district health department brebes)

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ABSTRACT

Background

Impact of pregnant women who have nutritional problems are health conditions and safety of the mother and baby as well as the quality of the babies born muscle quality problems at the time of birth would even interfere with the development to the growth of the fetus, it can even cause some health problems in adulthood. The Ministry of Health, said the provision of maternal pmt pmt SEZ besides the manufacturer may also management of the local food-based PMT PMT which would create not only meet the energy needs alone, but affordable, easily accessible, and safe. peanuts as one of the local wisdom, nutritious, economically valuable and easily found in various regions in Indonesia. Objective: To determine the effect of peanut juice beverage on levels of albumin and BMI at KEK pregnant women. Methods: The experiment with the design quasy nonequivalen control group design, pre post test in the form of body mass index and levels of albumin, with a sample of 15 control group and the intervention group were given 15 to 300 ml (1 bottle) peanut juice for 28 days. Results and Discussion :Statistical test results the difference in average BMI after giving peanut juice drinks and biscuits layered between the intervention and control groups obtained p value of 0.022 is less than 0.05. It gives the sense that there is a difference in the average BMI after giving peanut juice drinks and biscuits layered between the intervention and control groups. Results of statistical test with paired t test, showed no difference between the average levels of albumin before giving peanuts juice and biscuits layered with average levels of albumin after administration peanut juice and biscuit layer ($t = -4.495$; $p = 0.001$)

Conclusions and recommendations

Peanut juice can increase body mass index (BMI) and Albumin Levels KEK pregnant women. The health worker can motivate people and pregnant women who have Chronic Energy Deficiency in order to make peanuts as an alternative to the extra food cheap and readily available that can reduce the risk of chronic energy deficiency.

Keywords: Pregnant women KEK, Juice drinks peanuts, IMT and Albumin

PRELIMINARY

Chronic energy deficiency is the problem of nutrition in pregnant women. Reduced supply of nutrients, ie energy and protein take place within a period long enough or last for some sign that the weight weedy or less than 40 kg and measure the upper arm circumference (MUAC) less than 23.5 cm.(The Ministry of Health in 2014)

Impact of pregnant women who have nutritional problems is the impact they pose to the health and safety conditions of the mother and baby as well as the quality of the babies born with problems such nutrients. Some of the impact is the decline in muscle quality mother at childbirth, death of the womb, babies born prematurely, babies born with low birth weight babies born to die. Moreover, it can interfere with the development to the growth of the fetus, such as fetal brain and physical as well as the metabolism even may cause some health problems in adulthood. (Purwitasari 2009) [1-5].

Pregnant women with KEK require additional energy of 500 kcal / day of energy needs of adult women that as many as 2500 kcal / day. Food Supplement (MT) in the form of biscuits layered programmed by the government this time amounted to 270 calories. In the guidebook prevention of pregnant women KEK issued by the Ministry of Health, said granting pmt in pregnant women KEK besides pmt manufacturer may also management of PMT based on local foods that make PMT which would not only meet the energy needs alone, but affordable, easily accessible, and safe.(RI 2017)

In tackling the problem of chronic energy deficiency in pregnant women the government has conducted several programs, one of which is to provide additional food recovery (PMT Recovery) is the provision of biscuits as food additives to overcome the problem of nutrition to pregnant women no longer belongs to the category of energy deficiency Chronic (KEK). accordance with the examination Upper Arm Circumference (MUAC), biscuits given as much as 60 grams / day (contains 3 pieces of biscuits) with the number of calories 270 calories, 6 g protein, 12 g fat, 11 kinds of vitamins and 7 kinds of minerals. (RI 2015; RI 2017)

Based on data from the Ministry of Health Riskesdas 2018 the proportion of pregnant women who get PMT which is only 25.2%, which is not as

much as 74.8% with the details that got PMT program as much as 89.7%, but that gets more than 30 packs of only 5.9%, while > 90 packs of only 2.1%.(RI 2018)

Indonesia as an agricultural country has a lot of plants has many benefits one of which is peanuts as one of the local wisdom, economic value and can be found in various regions in Indonesia. Peanuts contain vitamins and minerals varies, one per 100 gram serving of peanuts contains 25.3 g protein, 42.8 g fat, 21.1 g carbohydrates, Calcium 58 mg Iron 1.3 grams, Calories 452 grams. With all eat peanuts consumed as much as 25 grams already meet our body's daily protein needs as much as 12% of the RDA. (Agriculture 2012)

METHOD

Researchers used quasy experiment with the design Nonequivalent control group design is research using an experimental group and a control group or a comparison, using a sample formula analytic numerical pairs obtained 14 respondents for each group to avoid sample droup out then added 1 patients per group so that each amounted to 15 respondents to the inclusion criteria of pregnant women with singleton pregnancies KEK, KEK pregnant women with gestational age of the second and third trimester, pregnant women who are willing to be the respondent KEK and signed informed consent.

This study begins with a pretest or scratch test the blood sample and IMT in both intervention and control groups, the intervention group was given juice peanuts 300 ml (1 bottle) every morning for 28 days and additional food recovery biscuit layers that have been programmed by the government, namely 60 grams / day, the control group is a group of pregnant women with KEK were given extra food biscuit layers of 60 grams / day (contains 3 pieces of biscuits). After 28 days do posttest or final test (blood sampling and BMI) were performed in both groups [6-11].

RESULTS AND DISCUSSION

Research done in Puskesmas Siwuluh Brebes in Central Java province in March to April 2019, 10 rural health centers Siwuluh shade and consists of

44 Posyandu. 30 respondents drawn Siwuluh live in the village, the village Luwungragi, Banjaratma Village and Village Tegalglagah. The research was supported by enumerotar which is Posyandu cadres

and village midwives, for albumin examination conducted at Health Laboratory and Testing of Medical Devices in Central Java province.

Table 1. Characteristics of respondents

Category	Respondents group				P
	Intervention		Control		
	N	%	n	%	
Age					
20- 34 years	15	100.0	3	86.7	0,483
> 34 years	0	0.0	2	13.3	
Last education					
Low	3	20.0	3	20.0	1,000
High	12	80.0	2	80.0	
Work					
Light	15	100.0	5	100.0	-
Weight	0	0.0		0.0	
parity					
nullipara	4	26.7		13.3	0,844
primiparas	7	46.7		53.3	
multiparas	4	26.7		33.3	
Foodrecall					
Deficit	13	86.7		53.3	.109
Medium-well	2	13.3		46.7	

Characteristic of respondents include age, education, occupation, parity, and a food recall or maternal nutrient intake. Of the value of the above

shows that there are differences in characteristics between the control and intervention groups [12].

Table 2. Differences in BMI before and after after a given intervention in the intervention group and the control group

		<i>mean</i>		<i>Std. deviation</i>	<i>Delta</i>	<i>T count</i>	<i>value P</i>
Intervention	IMT_sebelum	17 333	5	.5314	1,160	-4.984	0,000
	IMT_sesudah	18 493	5	.8413			
Control	IMT_sebelum	17 473	5	.4284	0,427	-4.403	0,000
	IMT_sesudah	17,900	5	.4408			

The average BMI before giving peanuts juice and biscuit layers intervention group (17.333) is smaller than the control group (17.473). Statistical test results the difference in average BMI before giving peanuts juice and biscuit layers between the intervention and control groups obtained p value of 0.434 is greater than 0.05. This meant that there was no difference in the average BMI before giving peanuts juice and biscuit layers between the intervention and control groups.

The average BMI after giving peanut juice and biscuit layers intervention group (18.493) is greater than the control group (17.900). Statistical test results the difference in average BMI after giving peanut juice drinks and biscuits layered between the intervention and control groups obtained p value of 0.022 is less than 0.05. It gives the sense that there is a difference in the average BMI after giving peanut juice drinks and biscuits layered between the intervention and control groups.

The results of this study proved that there is a significant difference in the average BMI after giving peanut juice drinks and biscuits layered between the intervention and control groups. These results mean that there is the effect of peanut juice and biscuit layer towards IMT. Giving peanut juice and biscuit layers may increase BMI. The existence of the effect of peanut juice and biscuit layer towards IMT can also be seen from the significant differences in the average BMI difference between the intervention and control groups.

Peanuts contain vitamins and minerals varies, one per 100 gram serving of peanuts contains 25.3 g protein, 42.8 g fat, 21.1 g carbohydrates, 58 mg calcium, iron 1.3 grams, Calories 452 grams. With all eat peanuts consumed as much as 25 grams already meet our body's daily protein needs as much as 12% of the RDA. Once used as a food supplement for pregnant women and plus biscuits KEK government programs shown to increase maternal body mass index greater than the KEK pregnant women who only consume additional food such as biscuits.(Agriculture 2012) [13]

The results of the study in Malawi showed that the therapeutic feeding peanuts mixed with millet porridge provides energy intake of 245 kcal / day ie with details of 35.5 grams of protein, 78 mcg

selenium and 8 mg of zinc and can increase fat mass and the mass of cells in adults with HIV with chronic malnutrition. In Bangladesh therapeutic food for pregnant and lactating women who experienced nutritional deficiencies made from peanuts called Plumpy'nut is developed, the response of pregnant and lactating women that show the benefits of the reduction of headache or dizziness, reduces fatigue, weight gain until the milk increases ,(Ali, Zachariah et al. 2015; Diouf, Badiane et al. 2016)

While based on research Edo Ryzki (2008), the addition of peanut milk in complementary foods affect the water content, fat content, protein content, carbohydrates, dietary fiber insoluble fiber bean porridge tanah.Selama total Indonesian people more familiar with the green bean juice , soya bean juice as a beverage that has a high nutrient content. Peanuts are high in calories compared to other nuts, and the best protein digestibility compared to other nuts. Peanut juice can be used as an alternative companion supplementary food for pregnant women, based on the book of SEZ control guidelines issued by the Health Kementerian in local pmt development of affordable, readily available and safe.(Fernando 2008; Demelash, Motbainor et al. 2015)

Table 3. Differences Albumin Levels Before and after after a given intervention in the intervention group and the control group

		<i>mean</i>		<i>Std. deviation</i>	<i>Delta</i>	<i>T count</i>	<i>value P</i>
Intervention	Before	3,378	5	0,153	0.135	-4.495	0,001
	After	3513	5	0.135			
Control	Before	3,397	5	0.141	0,036	1,005	0.332
	After	3,361	5	0.112			

In the intervention group, discovered that the average albumin levels prior to administration of the peanut juice and biscuit layers (3.378) was lower than the average levels of albumin after administration peanut juice and biscuit layer (3.513), with a difference of 0.135. Results of statistical test with paired t test, showed no difference between the average levels of albumin before giving peanuts juice and biscuits layered with average levels of albumin after administration peanut juice and biscuit layer ($t = -4.495$; $p = 0.001$). This suggests that an increase in the average levels of albumin after administration peanut juice

and biscuit layer, or in other words there is the effect of giving peanut juice and biscuit layer towards increased levels of albumin.

In the control group, discovered that the average levels of albumin before giving biscuit layer (3.397) higher compared to the average levels of albumin after administration of biscuit layers (3,361), with a difference of 0,036. Results of statistical test with paired t test, showed no difference between the average levels of albumin before giving biscuits layered with average levels of albumin after administration of the biscuit layer ($t = 1.005$; $p = 0.332$). This shows that there is an increase in the

average levels of albumin after administration biscuit layer, or in other words there is no effect of giving the biscuit layer towards increased levels of albumin.

Various conditions such as burns, liver disease, malabsorption syndrome, and malnutrition is often associated with low albumin levels, while conditions associated with high levels of serum albumin is a high-protein diet and dehydration. (Pongsibidang, Tiho et al. 2016)

As albumin and BMI as one of the patient's assessment of nutritional status, BMI as an indicator based antropometri while albumin is based on clinical examination. Based on research hospitalization of patients with normal BMI is shorter compared with patients undernourished or less IMT, IMT and Albumin effect on wound healing. (Said, Taslim et al. 2016)

Continuous nutritional deficiencies will result in a lack of protein so albumin decreases. The results of this study are also in line with the study of Mary (2017), that in this study, the results of the analysis of albumin levels before and after the intervention in the experimental group obtained value $p = 0.001$ means there is a significant increase in albumin levels after the intervention, so there is the effect of porridge green beans modisco against albumin

levels before and after the intervention. (Maria 2018)

Albumin is the main protein in human plasma and make up about 60% of the total protein especially albumin synthesis is highly responsive to the influx of (input) amino acids from food. If the protein intake increases the albumin synthesis will also increase.

CONCLUSIONS AND SUGGESTIONS

Based on the above description can be concluded that the peanut juice can increase body mass index (BMI) and Albumin Levels KEK pregnant women. Peanuts as one local knowledge readily available, economical and contain vitamins and minerals varies, one per 100 gram serving of peanuts contains 25.3 g protein, 42.8 g fat, 21.1 g carbohydrates, Calcium 58 mg Iron 1.3 grams, Calories 452 grams. With all eat peanuts consumed as much as 25 grams already meet our body's daily protein needs as much as 12% of the RDA so that health workers can motivate people and pregnant women who have Chronic Energy Deficiency in order to make peanuts as an alternative to the extra food cheap and readily available that can reduce the risk of chronic energy deficiency.

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