

## **Analysis Family Assistance by Health Cadres Can Increase LILA of Pregnant Women**

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### **ABSTRACT**

One of the problems caused by malnutrition in pregnant women is Chronic Energy Deficiency (CED). CED is a condition where a mother experiences a chronic (chronic) lack of energy and protein. Efforts made to improve the nutrition of pregnant women with KEK are by providing additional food). Objective: to determine the effect of giving local food, (local, local food: eg; catfish, catfish, vegetable Sutan and local fruit) on changes in LILA in KEK pregnant women. Method: The research used a quasi-experimental design. The research was conducted in November 2023–January 2024. The sample size was calculated using the Lameshow formula and a sample of 22 people was obtained, with a total of 26 people in each group. Research was carried out by interviews and observations. Bivariate data analysis used the non-parametric Mann-Whitney test. Results: The results of the study showed that there was a difference in LILA in the control and treatment groups ( $P=0.000$ ). Conclusion: there are differences in hemoglobin and LILA in the control and treatment groups.

**Keywords:** Pregnant Women, KEK, Providing Supplementary Food

### **INTRODUCTION**

One of the problems caused by malnutrition in pregnant women is Chronic Energy Deficiency (CED). Chronic Energy Deficiency is a condition where a mother experiences a chronic lack of energy and protein which results in health problems for the mother which is characterized by an upper arm circumference (LILA) of less than 23.5 cm and looking thin, at risk of giving birth to an intrauterine child. Growth Retardation (IUGR), Low Birth Weight (LBW) and stunting (Simbolon et al., n.d.).

The cause of SEZ is due to an imbalance between incoming and outgoing energy intake. The mother's nutritional needs are not met due to insufficient food intake and infectious diseases, pregnant women whose food intake is sufficient but suffering from illness will experience malnutrition and pregnant women whose food intake is insufficient will have a weakened immune system and will be susceptible to disease, level of education low, the mother's knowledge about nutrition is inadequate, the family income is inadequate, the mother's age is less than 20 years or more than 35 years which affects her nutritional needs. High maternal parity or too frequent pregnancies can deplete the body's nutritional reserves, births that are too close together cause the mother does not get the opportunity to repair her body after giving birth, pregnant women who work need more energy because their energy reserves are divided between themselves, the fetus and work.

Efforts made to improve the nutrition of pregnant women with KEK are by providing additional food and consuming iron (Fe) tablets (Adfar et al., 2023). Providing additional food, especially for vulnerable groups, is one of the supplementation strategies in overcoming nutritional problems. In the context of providing healthy food and accelerating nutritional improvements within the scope of implementing the Healthy Living Community Movement (Germas), providing additional food and consuming iron (Fe) tablets are efforts that can be carried out in line with other Germas (Rohmah, 2020).

Assisting cadres/midwives in providing iron tablets and providing additional food (PMT) Biscuits to pregnant women is an effort to improve the nutrition of pregnant women and to increase mothers' motivation to avoid anemia. One of the factors that influence pregnant women to consume iron includes the behavior of health workers, especially midwives and cadres, who often monitor the condition of pregnant women, where consumption can be increased if midwives provide special education about the benefits of iron tablets and local food, (local, local food: eg; catfish, catfish, vegetable Sutan and local fruit). Cadres can also be utilized and invited to increase the number of iron tablets and PMT biscuits consumed by pregnant women. Health workers must involve families in monitoring the consumption of iron tablets and PMT biscuits (Rahmiati, 2023).

Providing additional food to pregnant women is a nutritional supplement in the form of biscuits made with a special formulation containing minerals and vitamins, where local food, (local, local food: eg; catfish, catfish, vegetable Sutan and local fruit) is given to pregnant women with KEK. Providing additional food to pregnant women is integrated with ANC (Aternal Care) services. Each pack of local food for pregnant women contains 3 biscuits (60 grams). In the first trimester of pregnancy they are given 2 pieces per day, in the second and third trimesters they are given per day until pregnant women are not in the KEK category. If your weight meets the standard for weight gain, then consume balanced nutritious food (Ministry of Health of the Republic of Indonesia, 2018).

According to (Bakri, 2021), there is a significant difference in the increase in Hemoglobin of KEK pregnant women after being given local food and is supported by research (Sairuroh, 2019), that there is an influence of local food on the increase in Hemoglobin of KEK pregnant women. According to (Keswara and Wahyudi, 2019) states that there is an effect of giving iron (fe) tablets on the increase in hemoglobin in pregnant women.

## **RESEARCH METHODS**

This research is a Quasi Experimental research using a two group pre and post test design, where the first step that must be taken is to determine experimental groups 1 and 2. The second step is to give the same pretest (initial test) to experimental groups 1 and 2. Then both groups The experiment was given different treatments, namely being given health education and local food with assistance (X1: Treatment) and being given health education and local food without assistance (X2: control). After that, both experimental groups were given the same posttest. This research was carried out in the work area of the Community Health Center. The research was carried out from November 2023- January 2024.

The population of this study was 1011 pregnant women, while the target population was 90 pregnant women who experienced CED at the Community Health Center. The sample size was calculated using the Lemeshow formula and a minimum sample size of 47 was obtained (Lemeshow et al., 1997), with a total of 22 people in each group.

The sampling technique in this research is: Purposive simple random sampling technique is a sampling technique by randomizing and then taking those who meet certain

criteria. The sampling technique from the target population was 90 KEK pregnant women and those who met the inclusion criteria were 22 pregnant women.

The research sample to be studied must meet the following inclusion criteria: Pregnant women in good health, pregnant women residing in the work area of the Community Health Center, pregnant women willing to be research respondents, pregnant women who have LILA less than <23.5 cm, maternal class participants pregnant and can communicate well. Exclusion Criteria: Not participating in full education. The data that has been obtained is then analyzed using SPSS. Analysis to see the effect of providing additional food on KEK pregnant women. LILA and iron data were found to be not normally distributed using non-parametric tests Mann-Whitney.

## RESULTS AND DISCUSSION

Below is a table of characteristics of research subjects including the age of the pregnant mother and gestational age.

**Table 1.** Subject characteristics

Characteristics	Treatment		Control	
	n	(%)	n	(%)
Age (Year)				
< 20	1	3,8	1	3,8
>35	21	96,2	21	96,2
Pregnancy to				
Trimester 1	5	19,2	8	30,7
Trimester 2	11	46,1	13	50
Trimester 3	6	34,6	1	19,3
Total	22	100	22	100

**Table 2.** The Effect of Providing Health Education and local food on Nutritional Status (LILA)

Variable	Control			Treatment			<i>P value</i>
	Min	Maks	Median	Min	Maks	Median	
<b>LILA</b>	20	23,5	22,25	22,5	24,5	23,5	0,000*

Table 2. Shows that the results of the analysis using the Mann-Whitney test can be concluded that there is a difference in LILA in the control and treatment groups ( $P=0.000$ ). The research is in line with research (Setiowati, 2018) which states that the average nutritional status before and after giving additional food with sandwich biscuits for 30 days increased. The results of the Wilcoxon statistical test obtained a  $p$  value  $<0.05$  ( $p= 0.002$ ), so it can be concluded that there is an effect of giving additional food sandwiches for 30 days on

nutritional status (LILA) before and after giving additional food biscuit sandwiches for 30 days to pregnant women. KEK is 0.138 cm.

This is in accordance with research that pregnant women with CED nutritional status are 3 times more likely to suffer from anemia in pregnant women than pregnant women who are not CED ( $p = 0.005$ ) (Suhaeti et al., 2018). (Aminin et al., 2014) research shows that there is a significant relationship between KEK and anemia. In reality, pregnant women with CED tend to experience anemia more often than those without anemia, this is due to unbalanced food consumption and absorption patterns during pregnancy.

To improve the nutritional status of pregnant women, according to Manuaba (2020), providing nutrition must be adequate according to the mother's needs during pregnancy. The food consumed must be balanced, containing all the necessary elements, meeting basic needs to replace damaged parts or energy needs in daily activities.

The dominant factors for low levels of nutritional consumption are thought to be two things, namely (a) low socio-economic status which has implications for low purchasing power and (b) a decrease in appetite in the early period of pregnancy (trimesters I and II). This can happen because in the first or second trimester of pregnancy there will be an increase in metabolism, hormonal changes and organ systems will begin to form and begin to function. For pregnant women, this period is a period of adjustment both physically and emotionally. Pregnant women generally experience feelings of wanting to vomit, nausea, feeling tired, known as morning sickness, although this incident can occur not only in the morning and often occurs in the first trimester, although a small percentage still occurs in the second trimester. In this study, in the group given local food made from fish, 40% of pregnant women had a gestational age in the second trimester. This is what causes the mother's weight gain in the second trimester to not increase or experience only a slight increase. Eating arrangements for pregnant women will affect the nutritional adequacy and nutritional status of pregnant women. This is supported by a cohort study conducted by P Lagiou, et al which showed a relationship between regulating energy intake and increasing the weight of pregnant women at the end of the second trimester ( $p=0.006$ ).

The limitation of this research is the short time it provides energy intake to pregnant women so that the increase in pregnant women's weight does not appear to be significant. Differences in maternal weight gain are influenced by many factors, including the lifestyle of pregnant women related to fat consumption patterns and physical activity which is related to weight gain. The more modern life in an area and the life of a pregnant woman, the less physical activity the population/pregnant women in that area. This is caused by modernization which tends to make things easier for everyone so that activity is reduced and causes fat mass to increase because energy from food is stored as fat reserves.

Based on the research results above, it can be seen that the average value of the 15 respondents in the group of pregnant women who were given local food had an upper arm circumference (LILA) of 23.2 with a standard deviation of 0.2, while those given PMT Biscuits showed an average upper arm circumference (LILA) ) 22.9 with a standard deviation of 0.4. The statistical test results obtained a  $p$  value of 0.008, meaning that there was a significant effect of giving local food on the increase in upper arm circumference (LILA) of pregnant women at the Community Health Center. In nugget PMT, the calorie and protein intake provided can increase the LILA size of pregnant women. Additional protein is needed during pregnancy to cover the estimated 925 g of protein deposited in the fetus, placenta and maternal tissues. The daily addition of protein in successive trimesters is estimated at TM I 0.6 gr, TM II 1.8 gr and TM III 6 gr per day. Protein usage is = 67-70%, on average pregnant

women will need an additional 8.5 grams of protein/day (Pramitha, 2019). Most of the protein is recommended to come from animal sources, for example dairy meat, eggs, cheese, chicken and fish products, because these foods contain the optimal combination of amino acids. Milk and dairy products have long been considered an ideal source of nutrients, especially protein and calcium, for pregnant women (Givens, 2020). Several studies state that increasing energy intake plays a role in stimulating body weight and muscle mass (Çitar Dazıroğlu & Acar Tek, 2023).

LILA measurements cannot be used to monitor changes in nutritional status in the short term (Center, 2022). However, it can provide an idea of whether the mother tends to experience CED or not. The condition of CED in pregnant women must be followed up immediately. Providing additional food that is high in calories and high in protein, combined with the use of small but frequent portions, has in fact succeeded in reducing the incidence of LBW in Indonesia. The addition of 200 – 450 calories and 12 – 20 grams of protein to the mother's needs is sufficient to meet the nutritional needs of the fetus. Even though this addition significantly (95%) will not free the mother from the condition of CED, the baby is born with a normal weight (Chinue, 2020). In this study, the additional calories given were 300-500 calories/day for the content of catfish and tempeh nuggets.

## CONCLUSION

The results of the study showed that there was a difference in LILA in the control and treatment groups ( $p=0.000$ ). Research needs to be conducted on other variables that also influence CED, namely the variables in respondent characteristics which include: increase in respondent stress factors, morning sickness, husband's support, respondent's environment, role of ANC, occupation, respondent's education and other variables.

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