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The Effect of Additional Blood Tablets (Fe) Towards Increasing Hemoglobin Levels in Pregnant Women in Trimester I in Puskesmas Laosu, Konawe Regency

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Abstract

Anemia is a global public health problem in both developing and developed countries and has serious implications for human health. which affects a quarter of the world's population, data from the Laosu Health Center found that pregnant women in the first trimester who experienced anemia in 2017 were 68 (53.96%) cases of 126 target pregnant women, in 2018 there were 71 cases out of 127 targets (55.90%) of mothers pregnant, and in 2019 there were 74 (56.48%) cases of 131 target pregnant women. In 2020, periodically from January to August, 75 visits were found with pregnant women in the first trimester and in September new visits from pregnant women with anemia cases in the first trimester were found to be 33 (44%) pregnant women. The aim of the study to see the effect of giving blood supplemented tablets on hemoglobin levels in pregnant women in the first trimester at the Laosu Health Center, Konawe Regency. This study used a semi-experimental research method. The research design used was one pre-test and one post-test design. This research was conducted at the Laosu Public Health Center, Konawe Regency. This research will be conducted in November 2020. There is a significant influence between the dependent and independent variables, namely the effect of giving FE tablets with HB levels in pregnant women in the first trimester of the Laosu Health Center, Konawe Regency. There was a significant difference between first trimester pregnant women who were given Fe tablet treatment and first trimester pregnant women who were not given Fe tablets. There is an effect of offering blood-added tablets on the increase in hemoglobin levels in pregnant women in the first trimester in the work area of the laosu health center, Konawe district.

86

Introduction

Anemia is a global public health problem in both developing and developed countries and has serious implications for human health. which affects a quarter of the world's population. Iron deficiency is the main cause of anemia. Anemia is associated with chronic fatigue, impaired cognitive function, and decreased well-being (Jimenez, Kulnigg-Dabsch&Gasche, 2015).

WHO (World Health Organization) released data that about 2.3 billion people in the world live with anemia, half of which are caused by iron and partly because of iron deficiency as the basis for forming hemoglobin. this condition is particularly prevalent in preschool children (<5 years), women of reproductive age and pregnant women with prevalence rates, reaching up to 41.7%, 32.8% and 40.1%, respectively (Health Observation Data Global 2016). Report of the Anemia Convention 2017, 202 million women in Southeast Asia and 100 million women in the Western Pacific between the ages of 15 and 49 have anemia.

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Global data shows that 41.8% of pregnant women (Sandrianti, 2017). Currently, Indonesia continues to experience nutritional anemia as one of Indonesia's main food problems. A study shows that the prevalence of iron deficiency anemia remains high. SKRT data shows: The prevalence of anemia in pregnant women reaches 57.1%. Observed in the Household Health Survey (SKRT) in 2015(RI, 2015).

The results of Riskesda in 2018, the prevalence of anemia in pregnant women was 48.9%, while anemia in pregnant women according to age were: age 15-24 years as much as 84.6%, age 25-34 years as much as 33.7%, age 35-44 years as many as 33.6%, and age 45-54 years as much as 24%

The gestational age most vulnerable to the incidence of anemia is young pregnancy where the adaptation process for pregnant women, things that are likely and often occur are excessive emesis, lack of appetite and disruption of rest patterns and lack of activity for the early stages of pregnancy, iron deficiency can also be influenced by nutrition. associated with a deficiency of folic acid, vitamin A or B12, which has the potential to cause chronic energy deficiency with the risk of bleeding during pregnancy due to uterine inertia that begins with anemia (Ministry of Health, 2018). Anemia due to iron deficiency causes fatigue in the end this condition makes activities hampered, lack of appetite, and the risk of chronic energy deficiency in pregnant women (Arisman, 2007).

NanikKristyan 2010; The results showed that there were differences in hemoglobin levels before and after administration of iron (Fe) tablets to female students in GroupoanAlhidaya District (P = 0.0001). A similar study by FitriGyanti et al. 2013; This shows that there is a difference in the average increase in hemoglobin levels between 0.1 and 0.7 between the control group and the experimental group. There was an increase of 40% in the control group and an increase of 93.33% in the experimental group. Noky Tri Rachmadito 2013; the results of the study also showed that there was

a positive effect with the administration of FE tablets and the consumption pattern of healthy foods rich in nutrients.

Data from the Laosu Health Center found that in the first trimester pregnant women who had anemia in 2017 there were 68 (53.96%) cases of 126 targeted pregnant women, in 2018 there were 71 cases out of 127 targeted (55.90%) pregnant women, and in 2019 there were 74 (56.48%) cases out of 131 targeted pregnant women. In 2020, precisely from January to August, there were 75 visits with pregnant women in the 1st trimester and in September, new visits for pregnant women with cases of anemia in the first trimester were found to be 33 (44%) pregnant women.(Profil Puskesmas Laosu, 2017-2019).

Based on the data and background description above, the researcher is interested in conducting a study with the title "The Effect of Giving Blood Supplemental Tablets (Fe) on Increased Hemoglobin Levels in First trimester pregnant women at Laosu Public Health Center, Konawe Regency".

Methods

This study uses a semi-experimental research method. The experimental method is defined as a form of structured method that aims to investigate the effect of one variable on another variable by providing tight control over specific treatments and situations. The research design used is one pre-test and one post-test design. This design includes groups that are given pre-test (O), treatment (X), and post-test procedures. Treatment success was determined by comparing post-test scores by comparing baseline test scores with untreated respondents. (control) (Sugiono, 2012).

Results And Discussion
Research Results
Bivariate Analysis

Analysis On Experimental Group samples

Table 1. Paired Samples Statistics Experimental Group					
		Mean	N	Std. Deviation	Std. Error Mean
Class A	Pre Test	11.5333	30	1.61316	.29452
	Post Test	13.3333	30	.84418	.15413

The results of the discriptive statistical summary of the two pretest and post test data average value

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increased from 11.5 to 13.3.

Table 2. Paired Samples Correlations Experimental Group		N	Correlation	Sig.
Class A	Pre Test & Post Test	30	.447	.013

There is a relationship between pre-test and post-test in the known significance value of 0.013 which is smaller than 0.05 then there is a significant relationship

Table 3. Paired Samples Test Experimental Group							t	Df	Sig. (2-tailed)
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Class A	Pre Test - Post Test	-1.80000	1.44795	.26436	-2.34067	-1.25933	-6.809	29	.000

It is known that the significance value is less than 0.05, it can be concluded that through the treatment of giving Fe tablets can provide changes in hemoglobin levels in statistics, it is explained that Ha is accepted and Ho is rejected.

Analysis On Control Group samples

Table 4. Paired Samples Statistics Control Group		Mean	N	Std. Deviation	Std. Error Mean
Class B	Pre Test	11.7000	30	1.72507	.31495
	Post Test	11.6333	30	1.51960	.27744

The results of the discriptive statistical summary of the two pretest and post test data average value decreased from 11.7 to 11.6

Table 5. Paired Samples Correlations Control Group		N	Correlation	Sig.
Class B	Pre Test & Post Test	30	.825	.000

There is a pre-test and post-test relationship in the known significance value of 0.00 which is smaller than 0.05 then there is a significant relationship

Table 6. Paired Samples Test Control Group							t	Df	Sig. (2-tailed)
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Class B	Pre Test - Post Test	.06667	.98027	.17897	-.29937	.43270	.372	29	.712

It is known that the significance value of 0.712 or greater than 0.05, it can be concluded that the Control group or Group without treatmant administration is known to have not experienced significant changes or no increase in hemoglobin levels without treatment thus Ha is accepted and HO is rejected by stating that the need for administration of FE tablets to increase

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Hemoglobin levels

Discussion

Identification of Hemoglobin levels in pregnant women in trimester 1 in the working area of the Laosu health center, Konawe Regency.

The results of research that has been carried out on pregnant women in the 1st trimester in the Work Area of the Laosu Health Center, Konawe Regency, it was found that 55% of respondents experienced mild to moderate anemia, namely 33 people. First trimester pregnant women have a high risk of anemia due to iron deficiency. This is because in this phase pregnant women in the 1st trimester experience changes accompanied by various hormonal changes in the phase of pregnancy. Mothers experience emesis and changes in diet so that this phase requires a number of nutrients, especially iron which is used to transport oxygen, insufficient iron triggers anemia.

Anemia is an abnormal condition and the cause must be sought. History, physical examination and simple laboratory tests are useful in the evaluation of patients with anemia. Symptoms and signs of anemia depend on the degree and speed of anemia, as well as the patient's need for oxygen. Symptoms will be milder in anemia that develops slowly, because there is an opportunity for homeostatic mechanisms to adjust to the reduced ability of the blood to carry oxygen(Oehadian, 2012).

Anemia in pregnant women can lead to fatigue, decreased health, motor and mental development, decreased body resistance so that it is susceptible to infection, decreased concentration which affects daily activities, work productivity, risk of abortion and bleeding, risk of fetal growth retardation. The high prevalence of anemia if not handled properly will have a negative impact on the fetus and mother because it can cause maternal death, premature birth, and low birth weight babies(Kementerian Kesehatan RI, 2013).

Iron is the main component that plays an important role in the formation of blood (hemopoiesis), which is to synthesize hemoglobin. Excess iron is stored as the protein ferritin, hemosiderin in the liver, spinal cord and the rest in the spleen and muscle. If iron stores are sufficient, the need for the formation of red blood cells in the bone marrow will be met. However, if the amount of iron stores is reduced and the amount of iron in the body, as a result, the hemoglobin level decreases below normal which is known as iron nutritional anemia. The need for iron

also increases in pregnant women up to 1.4 mg when the mother experiences emesis(Gibney, 2008).

Effect of FE Tablets with HB Levels in pregnant women in the 1st trimester in the Laosu Health Center Working Area, Konawe Regency.

From the results of the study, it was found that there was a significant relationship between the effect of giving Fe tablets with an increase in hemoglobin levels in first trimester pregnant women in the working area of the Laosu Health Center, Konawe Regency. The significance value is less than 0.05, it can be concluded that through the treatment of Fe tablets giving changes in hemoglobin levels in the statistics, it is explained that Ha is accepted and Ho is rejected. For the control group, it is known that the significance value is greater than 0.05, namely 0.712 it can be concluded that the control group or the group without treatment is known to have no significant changes or no increase in hemoglobin levels without treatment, thus Ha is accepted and HO is rejected by stating that it is necessary to give Fe tablets to increase hemoglobin levels.

Differences in the Effects of Giving Blood Supplemental Tablets (Fe) and Without Giving to Increase Hemoglobin Levels in First Trimester Pregnant Women in the Work Area of Laosu Public Health Center, Konawe Regency.

Based on the results of this study, there was a significant difference between the experimental group which was given the FE tablet intervention, compared to the control group which was not given the intervention. Hemoglobin levels in the experimental group experienced a significant increase while hemoglobin levels in the control group did not increase. So it can be concluded that there is a significant difference in the increase in HB levels between the experimental group respondents and the control group respondents.

The significance value in the experimental group was less than 0.05, while the significance value in the control group was greater than 0.05 (0.712), meaning that the administration of Fe tablets was effective in increasing Hb levels compared to the group that was not given treatment. Hemoglobin is a complex protein, which is composed of globin protein and a non-protein compound called haem. In red blood cells, hemoglobin functions to bind oxygen (O2). With the abundance of oxygen that can be bound and carried by the blood, with the presence of Hb in red blood cells, oxygen supply to various places throughout the body, even the most

89

remote and isolated will be achieved.

Research has also been conducted by(Tonasih, et al., 2019); Hemoglobin levels in respondents before being given Fe tablets obtained an average Hb level of 12.7 g/dl, while after consuming Fe tablets the average Hb level was 12.9 g/dl with a P value of 0.022. There is an effect of giving blood-added tablets to adolescents on the increase in Hb at STIKes Muhammadiyah Cirebon in 2019.

Researchers assume that the effect of giving Fe tablets is very large for children of pregnant women in the 1st trimester because the anemia experienced greatly affects the process of fetal formation, the risk of bleeding and abortion, and causes new diseases, because anemia in pregnant women is very susceptible to occur, on the other hand, diet reduced due to emesis, and changes in activity patterns and eating patterns that make hemoglobin levels decrease.

Conclusion

As many as 55% of Pregnant Women in trimester 1 in the Laosu Health Center Working Area, Konawe Regency, were identified who had hemoglobin levels of less than 12 g/ dl.

There is a significant influence between dependent and independent variables, namely the effect of giving FE Tablets with HB levels in pregnant women in the 1st trimester in the Laosu Health Center Working Area, Konawe Regency.

There is a significant difference between pregnant women in the 1st trimester who are given fe tablets treatment and pregnant women in the 1st trimester who are not given Fe tablets

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