THE EFFECT OF GIVING GREEN SPINACH WITH FE TABLET PREPARATIONS ON CHANGES IN HEMOGLOBIN LEVELS IN PREGNANT WOMEN

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ABSTRACT

Anemia in pregnancy is a condition where the hemoglobin level of pregnant women under of 11 g/dl. The incidence of anemia in pregnancy in Indonesia reaches 63.5%. One of the efforts to meet iron needs can be done by consuming vegetables that contain iron, one of which is green spinach. In Public Health Center of Garuda in 2016, there were 20 mothers with anemia out of a total of 60 pregnant women. This study aims to determine the effect of giving green spinach with Fe tablet preparations on changes in hemoglobin levels in pregnant women. This type of research is quasi-experimental with a randomized pretest and posttest design and control group design. The population was pregnant women in trimester II and trimester III who experienced anemia at Public Health Center of Garuda with a sample of 20 people, using a sampling technique, namely sampel jenuh. The data displayed in univariate and bivariate analysis with distribution test with the Shapiro-Wilk test of normal. The results of this study indicate that the Hb before and after consumption of spinach in the Garuda Health Center work area obtained a p-value (0.036> 0.05), which means that there is no significant difference between the levels of Hb before and after consumption of spinach. In the Hb results before and after consumption of Fe tablets, the p-value (0.811> 0.05) was obtained, which means that there was no significant difference between the Hb levels before and after consuming Fe tablets. It is hoped that health workers can provide anemia counseling and early detection in preventing anemia in pregnant women.

Keywords: Anemia, pregnant women, green spinach

INTRODUCTION

Anemia in pregnancy is national problems because reflects the value of socio-economic welfare and have great effect for quality of human resourse. Anemia in pregnancy is called *Potensial Danger Mother And Child* that's why anemia need serious attention from all parties involved in health services [1].

Anemia of pregnant women will have risk happen abortion, IUFD, LBW, prematurity labour, haemorrhage as well as maternal and infant mortality [2]. Government policy in dealing with anemia in pregnancy is giving suplementation iron and folic acid [3]. Besides consuming Fe tablets, alternatives to meet the needs of iron can be done by consumption of vegetables on the menu foods containing iron [4]. Iron found in vegetables, among others spinach. Spinach contains high mineral substances, namely iron to encourage body growth and maintain health. The iron content in 100 grams of green spinach is 3.9 [5].

At the Garuda Public Health Center, Pekanbaru City is one of the health centers that conducts Antenatal Care. Data on examination of pregnant women in 2016 amounted to 60 people, and 20 people who experienced anemia in pregnant women in trimesters II and III. Although pregnant women routine are given Fe tablets. Based on the above background, the researchers are interested in knowing the effect of giving green spinach with Fe tablet preparations on changes in hemoglobin levels in pregnant women in Garuda Public Health Center, Pekanbaru City."

MATERIAL AND METHODS

This type of research is quasy experiment with randomized pretest and post test and control group design. The population in this study are 2nd trimester and 3rd trimester pregnant women who experienced anemia in Garuda Public Health Center, with a sample of 20 people, using a sampling technique, namely sampel jenuh. The data are presented in univariate and bivariate analysis with distribution with the Shapiro-Wilk test of normal tests.

RESULTS

Univariate Analysis

Respondents' characteristic was special characteristic attached at respondents' themselves. Respondents' characteristics in this research included: age, education, gravida, and knowledge. Description of respondents' distribution based on patients' characteristics at this research was as follow:

Table 1. Respondents' Characteristics

Karaktersitik	Experimen and Control	
	N	%
Age		
< 20	0	0
20 – 35	14	70
> 35	6	30
Total	20	100
Education		
SD	3	15
SMP	1	5
SMA	6	30
PT	10	50
Total	20	100
Knowledge		
Low	13	65
High	7	35
Total	20	100

The majority of respondents aged 20-35 years were 14 people (70%), the majority of respondents with high education were 10 people (50%), and the majority of respondents with low knowledge were 17 people (50%).

Bivariate Analysis

Table 4 Hb normality test before and after spinach consumption in the Garuda Public Health Center

Experiment group	Mean	SD	Sig
Early Hb	10,91	1,4	0,24
Final Hb	11,5	1,9	0,23

Based on table 4, the results of the normality test using saphirowilk, the Hb results before consuming spinach are almost the same as the Hb after consuming spinach. Significant value of Hb before consumption of spinach (0,24> 0,05) and significant value after three days of consumption of spinach (0,23> 0,05), which means the levels of pregnant women before and after consuming spinach are normally distributed, so the next test uses the paired T-test.

Table 5 Normality test for paired sample Hb test before and after consumption of spinach in the Garuda Public Health Center

Experiment group	Mean	SD	95% CI		P value
			Lower	Upper	
Hb awal-Hb akhir	5.100	21.701	5.056	15.256	0.306

Based on table 5, the results of the paired sample t-test resulted in p value (0.306> 0.05) which means that there is no significant difference between the Hb levels before and after the consumption of spinach.

Table 6 Hb normality test before and after Fe consumption in the Garuda Public Health Center

Control Group	Mean	SD	Sig
Early Hb	12,3	1,7	0,78
Final Hb	12.2	1,7	0,84

Based on table 6, the results of the normality test using saphirowilk, the Hb results before consuming Fe tablets are almost the same as the Hb after consuming Fe tablets. Significant value of Hb before consumption Fe tablets (0,78> 0,05) and significant value after consumption of Fe tablets (0,84> 0,05), which means the levels of pregnant women before and after consuming Fe tablets are normally distributed, so the next test uses the paired T-test.

Table 7 Normality test for paired sample Hb test before and after consumption of Fe tablets in the Garuda Public Health Center

Control Group	Mean	SD	95% CI		P value
			Lower	Upper	
Hb awal-Hb akhir	0.11	1.4	0.8985	1.11854	0.811

Based on table 7, the results of the paired sample t-test resulted in p value (0.811> 0.05) which means that there is no significant difference between the Hb levels before and after the consumption of Fe tablets.

DISCUSSION

The aim of this study was to determine the effect of green spinach with Fe tablet preparations on changes in hemoglobin levels in pregnant women but the result no significant difference between the Hb levels before and after the consumption of spinach with pvalue (0.306> 0.05).

The need for iron during pregnancy increases. Some literature says the need for iron has doubled from the need before pregnancy. It happens because, during pregnancy, blood volume increases by 50%, so more iron is needed to form hemoglobin. Besides, the rapid growth of the fetus and placenta also requires much iron. In a nonpregnant state, iron needs can usually be met from a healthy and balanced diet. However, in a pregnancy stage, iron supply from food is still inadequate, so the supplement is needed in the form of iron tablets [6]. The most successful approach to increasing consumption of micronutrient rich foods is likely to be a combined strategy that addresses both increased production (supply) and increased consumption (demand) of food [7]. Kumar dan Pandey research [8], that green spinach can increase hemoglobin levels, as well as research Anggreini [9], that green spinach can increase hemoglobin levels in anemic mice. Anemia in pregnancy was anemia due to iron deficiency (Fe). The lack of iron can cause a deficiency in the body through food, due to impaired absorption, disruption of use, or too much iron coming out of the body, for example, bleeding. The need for iron will increase in pregnancy, especially in the second trimester. This need is due to the increased need for the fetus contained by the mother [10].

CONCLUSION

Based on the research result and discussion explained at the previous chapter, it was concluded as follow no significant difference between the Hb levels before and after the consumption of spinach and no significant difference between the Hb levels before and after the consumption of Fe tablets.

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