

Consumption Compliance of Ferrum Tablet with Anemia in Pregnant Woman in Ngasinan Village Sukoharjo Central Java

1st Anik Sulistiyanti
Faculty of Health Sciences,
Duta Bangsa University
Surakarta, Indonesia
anik_sulis@udb.ac.id

2nd Ana Yuliana
Faculty of Health Sciences
Duta Bangsa University
Surakarta, Indonesia
ana_yuliana@udb.ac.id

Abstract—Iron deficiency called anemia is still a health problem in Indonesia which has a bad impact on sufferers, especially in pregnant women. Pregnant women affected by anemia reach 40% -50%, meaning that 5 out of 10 pregnant women in Indonesia suffer from anemia. Fe tablets or blood booster tablets are 60 mg of iron and 0.5 mg of folic acid given orally or commonly referred to as oral iron therapy. The iron content in Fe tablets is greater than that of folic acid, this is because iron deficiency anemia is the main cause of anemia in pregnant women compared to other iron deficiencies. The purpose of this study to find out the compliance of Fe tablets consumption with the incidence of anemia in pregnant women and the difference in the incidence of anemia after giving Fe tablets to pregnant women.

This type of research is a quasi-experimental two group pretest-posttest design research design. The study population was all pregnant women in the village of Ngasinan, Sukoharjo. The research sample was 35 pregnant women with random sampling techniques. Collecting data using examination of hemoglobin levels and a closed questionnaire. Data analysis with univariate analysis and multivariate analysis using one way anova.

The results of the one way anova test results obtained F count was 19,735 with a significance of 0,000. In the hypothesis test the test decision is if $F_{\text{arithmic}} > F_{\text{table}}$ or significance value ≤ 0.05 . There is a significant difference between compliant in consuming Fe tablets with the incidence of anemia in pregnant women.

Keywords—Compliance, Ferrum Tablets, Anemia

I. INTRODUCTION

Maternal Mortality Rate (MMR) in Indonesia is currently still the highest compared to AKI of other ASEAN (Association of South East Asian Nations) countries.

MMR in Central Java has decreased every year from 2014 to 2017 which is 14% (88.58 / 100,000 KH) [2]. Anemia is a condition when hemoglobin in the blood is less than 10 mg/dl, so the number of red blood cells or oxygen-carrying capacity in the blood is insufficient to meet body's needs [3].

In developing countries 40% of maternal mortality is associated with pregnancy anemia. Pregnancy anemia has negative effect to mothers, before, during, and after delivery. World Health Organization (WHO) reports that there are 52% of pregnant women having anemia in developing countries. In Indonesia (Susenas and the Unicef Ministry of Health Survey) it was reported that of around 4 million pregnant women, half had nutritional anemia and one million experienced chronic energy shortages [8].

Anemia often occurs due to iron deficiency because in pregnant women there is a doubling in iron demand due to increased blood volume without expansion of plasma volume, to meet maternal needs (prevent blood loss during childbirth) and fetal growth. Ironically, estimated below 50% of mothers do not have sufficient iron reserves during pregnancy, so the risk of iron deficiency or anemia increases with pregnancy [7]. Anemia is influenced by many factors, including gestational age, maternal education, family income, pregnancy spacing, parity, consumption of blood-added tablets (Fe), and history of illness. Anemia in trimester I and II are not related to the incidence of LBW and preterm birth, whereas anemia in TM III has an influence on the incidence of LBW and preterm birth [5].

Many factors can cause iron deficiency anemia, including a lack of iron and protein intake from food, impaired absorption in the intestine, acute and chronic bleeding, and increased need for iron such as in pregnant women, growth period and recovery period from illness, and non-compliance of pregnant women in consuming blood enhancing tablets (Fe)[4]. Noncompliance of pregnant women taking iron tablets can reflect how much a chance of developing anemia. Providing information about anemia will increase. Their knowledge about anemia, because knowledge plays a very important role so that pregnant women obediently drink iron. In general, non-compliance can lead to an increased risk of developing health problems or to prolong or worsen the pain being suffered. Existing estimates suggest that 20% of hospitalizations are the result of patient non-compliance with treatment rules. Noncompliance of pregnant women taking iron tablets can reflect how much a chance of developing anemia. Providing information about anemia will increase. Their knowledge about anemia, because knowledge plays a very important role so that pregnant women obediently drink iron [10].

Indonesian government established programs to decrease prevalence of anaemia during pregnancy through government regulation which is Peraturan Menteri Kesehatan (the Ministry of Health regulation) No.88 year 2014. The program was providing 90 iron tablets for each pregnant woman during pregnancy. The coverage of this program reached 83.3% in 2011, and then increased up to 85% in 2012 (1). The purpose of this study to find out the compliance of Fe tablets consumption with the incidence of anemia in pregnant women and the difference in the incidence of anemia after giving Fe tablets to pregnant women.

I. METHOD

This type of research is a quasi-experimental design two groups pretest-posttest design. In this design observations were made twice, namely before and after the experiment. Observations made before experiments are called pre-tests, and observations after experiments are called post-tests. This study was conducted to determine the relationship of the independent variable (the level of compliance of pregnant women consuming Fe tablets) with the dependent variable (the incidence of anemia) by measuring hemoglobin levels.

The population in this study were all pregnant women who examined their pregnancies in Ngasinan Village, Sukoharjo Regency. The amount of sample taken in this study is the average number of visits of pregnant women who have a pregnancy check up to 35 pregnant women every month. The sampling technique used is random sampling. Data collection using primary data is data or material collected by the researcher himself at the time of the research. Data was collected using a closed questionnaire about the respondent's compliance in taking Fe tablets after which Haemoglobin was examined in pregnant women. Data analysis used in this study was univariate analysis and multivariate analysis using the One Way Anova test.

II. RESULT

Table 1. Characteristics of Respondents

The characteristics	N 35	%
Age :		
- < 20 years	2	5.7
- 20-35 years	32	91.4
- > 35 years	1	2.9
Education Level		
- Elementary school	4	11.4
- Junior high school	13	37.1
- Senior high school	17	48.6
- College	1	2.9
Working		
- Government Civil	1	2.9
- Seller	9	25.7
- Employees	5	14.3
- Farmer/Laborers	3	8.6
- Housewife	17	48.5

Based From table 1, the results show that the majority of respondents aged between 20-35 years, namely a number of 32 respondents (91.4%). The youngest is 18 years old and the oldest is 36 years old.

The most respondents have a high school level education or equivalent, which is 17 respondents (48.6%). And most respondents work as housewives, namely 17 respondents (48.5%).

Univariate analysis

1. Hb levels before and after given Fe tablets

Table 2. Hb levels before and after Fe tablets were given

No	Mean	Max	Min	Median	SD
Hb1	8.014	10.2	6.7	8.000	.9527
Hb2	7.814	10.0	6.7	7.000	1.0500

From table 2. the results show that there is an effect of giving Fe tablets with Hb levels before and after given Fe tablets.

2. Anemia of Respondents before being given Fe tablets

Table 3. Frequency distribution of the incidence of anemia before given Fe respondents pregnant women

No	Anemia	Frekuensi	%
1	Mild anemia	9	25,7
2	Moderate anemia	23	65,7
3	Severe anemia	3	8,6
	Total	35	100,0

From table 3 the results are obtained that before being given Fe tablets most of the respondents had moderate anemia in the amount of 23 respondents (65.7%).

3. Compliance Consuming Fe

Table 4. Distribution of frequency of compliance consuming Fe respondents of pregnant women

No	Obedience	Frequency	%
1.	Obedient	9	25.7
2.	Less obedient	19	54.3
3.	Not obey	7	20.0
	Total	35	100.0

From table 4 we get the results that most of the respondents are less obedient in consuming Fe given by researchers. namely 19 respondents (54.3%).

4. Respondent Anemia Event after being given Fe tablets

Table 5. Frequency distribution of anemia after Fe was given by pregnant women respondents

No	Anemia	Frekuensi	%
1.	Mild anemia	8	22.9
2.	Moderate anemia	21	60.0
3.	Severe anemia	6	17.1
	Total	35	100.0

From table 5 the results are obtained that after being given Fe tablets most of the respondents had moderate anemia which is a number of 21 respondents (60.0%)

Bivariate Analysis

1. Test results are different from the Hb t-test before and after Fe tablets are given

Table 6. Test results are different from the Hb t-test before and after Fe tablets are given

	Mean	SD	t	df	Sig. (2-tailed)
HB1					
HB2	.200	.8677	1.364	34	.182

In table 6 above, the value of t arithmetic = 1.364 is obtained with a significant value of .182, thus there is no

difference in Hb levels before and after Fe tablets are given. (provision if t count is smaller than t table, or significantly greater than 0.05, then Ho is accepted)

2. Compliance Consuming Fe with Anemia

Table 7. Frequency distribution of anemia after Fe was given by pregnant women respondents

Obedience	Anemia						Total	
	Mild anemia		Moderate anemia		Severe anemia		N	%
	N	%	N	%	N	%		
Obedient	7	77.8	2	22.2	0	0	9	100.0
Less obedient	1	5.3	16	84.7	2	10.5	19	100.0
Not obey	0	0	3	42.9	4	57.1	7	100.0

From the cross tabulation in table 7, the results of 9 respondents who complied to consume Fe mostly (77.8%) had mild anemia. Most respondents (84.2%) had moderate anemia. And the respondents who are not compliant in consuming Fe most (57.1%) have severe anemia. Thus there is a relationship between the level of compliance of respondents in consuming Fe with the incidence of anemia.

This is confirmed by the one way ANOVA statistical test presented in Table 8 below:

Table 8. ANOVA Test Results one way relationship between the level of compliance with the incidence of anemia

variables	N	F	df1	df2	Sig (2-tailed)
Obedience Anemia after given Fe tablets	35	19.735	2	32	0,000

From table 8 which is the result of one way ANOVA test, the F count result is 19,735 with a significance of 0,000. In the hypothesis test the test decision is if $F_{\text{arithmetic}} > F_{\text{table}}$ or significance value ≤ 0.05 then H_a is accepted and H_0 is rejected. In this study, the value of F table with $df_1 = 2$ and $df_2 = 32$ with a level of error taken 5%, the F table price of = 19.46. Therefore, because the calculated F value (19,735) > F table value (19.46) and the significance value (0.000) < 0.05, the conclusion is that there is a significant difference in the incidence of anemia among respondents who are obedient, less compliant and not compliant in consuming Fe tablets.

DISCUSSION

1. Hb levels before and after given Fe tablets

Based on the results of the study on the different test tables using the t-test, it was found that the value of t arithmetic = 1.364 with a significant value of . This shows that there is no difference in Hb levels before and after administration of Fe tablets.

2. Compliance of respondents in consuming Fe tablets with anemia

Based on the results of the study in table 5.7 the results obtained from 9 respondents who obediently consume Fe most (77.8%) have mild anemia. Most respondents (84.2%) had moderate anemia. the majority of respondents who were not compliant in consuming Fe (57.1%) had severe anemia. This shows that there is a relationship between the level of adherence to consume with the incidence of anemia. According to Niver (2002), the factors that influence the compliance of pregnant women taking iron tablets include the knowledge of pregnant women about anemia and the usefulness of iron obtained from counseling given by midwives when pregnant women carry out checks on pregnant women. In addition to the educational background knowledge of pregnant women is also very influential on the compliance of pregnant women taking iron tablets. This can be seen in the results of research showing that the education and occupation of respondents influence the incidence of anemia suffered by most pregnant women in Ngasinan Village, Sukoharjo Regency. The education of most respondents who are in the medium level of education and many respondents who work will affect the information absorbed by the majority of respondents. Low respondent's knowledge about anemia caused most respondents not to know the various disorders and diseases that accompany during pregnancy, especially about anemia. This causes the lack of treatment and prevention of anemia during pregnancy. Low knowledge results in respondents not paying attention to food and nutrition consumption, especially consumption of Fe tablets for pregnant women so the risk of anemia is large.

3. Differences in the incidence of anemia based on the level of compliance of pregnant women in consuming Fe tablets.

Based on the results of the study in table 8 which is the result of the one way ANOVA test, the F count result is 19,735 with a significance of 0,000. In the hypothesis test the test decision is if $F_{\text{arithmetic}} > F_{\text{table}}$ or significance value ≤ 0.05 then H_a is accepted and H_0 is rejected. In this study, the value of F table with $df_1 = 2$ and $df_2 = 32$ with a level of error taken 5%, the F table price of = 19.46. Therefore, because the calculated F value (19,735) > F table value (19.46) and the significance value (0.000) < 0.05, the conclusion is that there is a significant difference in the incidence of anemia among respondents who are obedient, less compliant and not compliant in consuming Fe tablets. According to Nguyen in Bilimale 2010, In a study conducted in Toronto, the range of pill intake for both groups was zero to 100%, and the mean pill intake for both groups was approximately 50%. Among those who started taking assigned prenatal supplements 73% were adherent in 35mg iron group and 76% were adherent in 60 mg iron group. Among them >80% adherence was seen in 37% in 35mg group and 38% in 60 mg iron group. >50% adherence was seen in 56% in 35mg iron group and 60% in 60mg iron group. Participants were controlled for strength of iron supplementation at 100 mg.

III. CONCLUSION

Based on the results of the study above the level of compliance of pregnant women in consuming Fe tablets

with anemia in Ngasinan village, Sukoharjo Regency, it can be concluded as follows: there is a relationship between the level of compliance of respondents in consuming Fe with anemia and there is a significant difference in the incidence of anemia based on the level of compliance of respondents in consume Fe tablets.

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