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ANEMIA OF PREGNANCY ASSESSED FROM THE COMPLIANCE BEHAVIOR OF PREGNANT WOMEN IN CONSUMING IRON SUPPLEMENTS IN THE WORKING AREA OF PITU HEALTH CENTER, NGAWI DISTRICT

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A B S T R A C T

Introduction: pregnant women with anemia are at high risk of bleeding which can cause serious complications to both the mother and the fetus. In Indonesia, maternal mortality due to bleeding due to anemia is quite high because many pregnant women disobidient to consume iron supplements. The study was to determine the relationship between the obedience behavior of pregnant women in consuming iron supplements with the incidence of pregnancy anemia in the working area of the Pitu Community Health Center, Ngawi Regency. *Methods:* This study used a cross sectional design and total sampling of 60 respondents. The data collection method was using a questionnaire and analyzed by using the Chi Squre test. *Results:* The results showed 18 respondents (30%) were at a high level of adherence with anemia condition 5 people (8.3%). Respondents with a moderate level of adherence were 34 people (56.7%) with anemia conditions 16 people (26.7%), and 8 respondents (13.3%) had a low level of compliance with anemia. The statistical test results obtained p value = 0.003 (p <0.05). *Conclusion:* There is a relationship between compliance behavior of pregnant women in consuming Fe supplements with the incidence of pregnancy anemia.

INTRODUCTION

Maternal mortality and morbidity rates in Indonesia as a developing country are still the main problem, where 40% of maternal deaths are due to anemia. (Abdullahi et al., 2014). Pregnant women are one of the groups at high risk for iron deficiency anemia because the need for iron during pregnancy increases significantly, especially in the second and third trimesters (Waryana, 2017). Pregnant women with anemia where HB <11gr / dl can cause various complications both to the mother and the fetus such as problems during pregnancy and birth (abortion, premature birth, low birth weight, perinatal death), disturbances in the delivery process (uterine atony inertia, childbirth duration, bleeding), postpartum disturbances (sub-involution of the uterus, postpartum infection and depression as well as low milk production) (Kadir, 2019).

The World Health Organization (WHO) reports that about 51% of pregnancy anemia cases are found in developing countries, such as Indonesia, which shows a prevalence of 37.1%, which means that one in every 3 pregnant women is anemic. In Indonesia there has been an increase in the coverage of Fe supplements by the government where in 2011 it was 83.3% increased to 85% in 2012, however, the maternal mortality rate due to anemia was still high (Vemulapalli and Rao, 2013; Banglitbangkes, 2013). This figure is classified as a serious health problem because according to WHO the prevalence of anemia which reaches 20-39.9% is classified as a moderate health problem that requires further intervention.*(World Health Organization,* 2011).

Anemia is a condition of decreasing blood hemoglobin levels, decreasing erythrocytes, and meeting the oxygen needs of the body. The occurrence of anemia can be caused by various factors such as lack of iron intake, low ability to absorb Fe by the body, nutritional status, parity, pregnancy, low adherence to iron consumption in pregnant women (Ononge et al., 2014). Pregnancy anemia can occur because the mother's iron needs are higher than in a non-pregnant state, so it requires iron intake from outside. Mothers must obey to consume 90 Fe supplements

during pregnancy so that their needs are fulfilled and anemia does not occur. The obedient behavior of mothers in consuming Fe supplements was measured by the accuracy of the number of supplements consumed, the accuracy of how to consume it, and the frequency of consumption per day (Hidayah and Anasari, 2012) This is because the mother's disobedient behavior will have a higher risk of developing anemia (Lestrina, et al., 2015).

The results of interviews with 6 pregnant women who had finished the 90-day Fe supplements program showed 2 mothers were obedient while 4 other mothers were not obedient for various reasons such as forgetting, uncomfortable with side effects, and feeling unnecessary. Based on this background, the researcher wanted to analyze the relationship between the obedience behavior of pregnant

women in consuming Fe supplements with the incidence of pregnancy anemia.

MATERIALS AND METHODS

In this study, researchers analyzed the relationship between the obedience behavior of pregnant women in consuming Fe supplements with the incidence of anemia. The research was conducted in February-March 2020 at the KIA Poli Puskesmas Pitu, Ngawi Regency. Research design is correlation with cross sectional. The sampling technique was a total sampling method of 60 respondents with the criteria of pregnant women in the second and third trimesters who came to do Antenatal Care (ANC) examinations in the Pitu Community Health Center, Kab. Ngawi and had completed the 90 Fe supplements program. Obedience behavior data retrieval using questionnaires and anemia status seen from the KIA book. Data analysis using Chi-Square statistical test.

RESULTS

Table 1 Distribution of Respondents based on Age of Pregnant Women in Pitu District, Ngawi Regency in February-March 2020.

No.	Age of Pregnant Women	Frequency	Percentage (%)
1	<20 years	3	5
2	20-35 years	36	60
3	≥ 35 years	21	35
Total		60	100

From table 1 above, it is found that most of the respondents are aged 20-35 years, namely 36 people (60%), while the least is the age of less than 20 years as many as 3 people (5%).

Table 2. Distribution of Respondents based on the Education Level of Pregnant Women in Pitu District, Ngawi Regency in February-March 2020.

No.	Level of education	Frequency	Percentage (%)
1	Graduated from elementary school	1	1.7
2	Graduated from junior high school	5	8.3
3	Graduated from high school	42	70
4	Graduated from PT	12	20
Total		60	100

Table 2 shows that the characteristics of pregnant women based on education level are dominated by high school education, namely 42 people (70%), while only 1 person (1.7%) has an elementary education.

Table 3 Distribution of Respondents based on the Amount of Parity in Pregnant Women in Pitu District, Ngawi Regency in February-March 2020.

No.	Parity Status	Frequency	Percentage (%)
1	Primigravida	33	55
2	Multigravida	27	45
Total		60	100

Data from table 3 shows that the majority of respondents in primigravida parity status are 33 people (55%) and the rest are 27 people (45%) with multigravida status.

Table 4 Distribution of Pregnant Women based on Compliance Level in Consuming Iron supplementss (Fe) in Pitu District, Ngawi Regency in February-March 2020.

No.	Compliance Level	Frequency	Percentage (%)
1	Low	8	13.3
2	Moderate	34	56.7
3	High	18	30
Total		60	100

In table 4, the majority of pregnant women, namely 34 people (56.7%), were in a moderate level of compliance in consuming Fe supplements for 90 days while for pregnant women with a low level of compliance were 8 people (13.3%).

Table 5 Incidence of Anemia in Pregnant Women in Pitu District, Ngawi Regency in February-March 2020.

No.	The occurrence of anemia	Frequency	Percentage (%)
1	Anemia	29	48.3
2	Not anemia	31	51.7
Total		60	100

The incidence of anemia in pregnant women as described in table 4.5 was experienced by pregnant women as many as 29 people (48.3%), while pregnant women who were not anemic had a higher number, namely 31 people (51.7%).

Table 6 Compliance Behavior of Consumption of Iron supplementss (Fe) with the Incidence of Pregnancy Anemia in Pregnant Women in Pitu District, Ngawi Regency in February-March 2020 with Chi-Square Test analysis.

		The occurrence of anemia		
		Anemia	No anemia	Total
Compliance level	Low compliance	8 (13.3%)	0 (0%)	8 (13.3%)
	Adherence is moderate	16 (26.7%)	18 (30%)	34 (56.7%)
	High compliance	5 (8.3%)	13 (21.7%)	18 (30%)
Total		29 (48.3)	31 (51.7%)	60 (100%)
Chi Square Test p = 0.003 (p <0.05)				

Based on table 4.6 above, it can be seen that of the 60 respondents as many as 29 (48.3%) pregnant women had anemia with a low proportion of adherence levels of 8 people (27.6%), 16 people (55.2%) had moderate compliance, and 5 people with high levels of compliance. (17.2%). Meanwhile, most of the respondents did not experience pregnancy anemia, namely 31 people (51.7%) who were distributed to a low level of adherence, none of which was found non-anemia (0%), at the moderate level of adherence there were 18 people (58.1%) who were not anemia while for high level of adherence, there were 13 people (41.9%) who were not anemic. The results of the Chi-Square analysis showed that the value of p = 0.003 (p <0).

DISCUSSION

Compliance behavior is an action of an individual (such as: taking medication, adhering to a diet, changing lifestyle) in accordance with recommended therapy and health (S and Triska, 2018). Adherence to the therapy program is influenced by various factors such as the patient's awareness and knowledge of health, the incidence of drug side effects age and gender differences (J et al., 2013). Compliance of pregnant women in consuming Fe supplements is a behavior of mothers in consuming Fe supplements regularly for 90 days to prevent pregnancy anemia. However, not all pregnant women adhere to this therapy. Several things that cause mothers to not comply with the consumption of Fe supplements are related to side effects such as nausea, vomiting, dizziness, and heartburn. This is in accordance with the statement (Hidayah and Anasari, 2012) that oral iron supplements can cause nausea, vomiting, heartburn and constipation. In addition, the lack of support from families such as husbands also contributed to the low compliance of mothers in consuming the 90 programmed iron supplements (Wiradnyani et al., 2013)

Pregnant women are said to suffer from anemia if their Hb level is <11gr% in the 1st or 3rd trimester and <10.5% in the 2nd trimester (Sarah and Irianto, 2018). Anemia is a major health problem in women of childbearing age (WUS), especially during pregnancy. In table 5 of 60 respondents, the proportion of pregnant

women who are anemic and not anemic is almost the same. This shows that anemia is still experienced by many women during pregnancy. The data show that in Indonesia the prevalence of anemia in pregnant women is still high, namely 37.1% or one in three pregnant women in Indonesia suffers from anemia (Badan Penelitian dan Pengembangan Kesehatan, 2013). Pregnant women with anemia are at high risk of morbidity and mortality, such as the risk of bleeding that leads to death. In addition, it can also give birth to premature babies and low birth weight (LBW) (Christian, 2010) Pregnancy anemia can be caused by various factors including gravidity, age, parity, education level and compliance with Fe supplements (Astriana, 2017).

Table 6 above shows that from the results of the chi-square analysis, the value of p = 0.003 (p <0.05), which means that there is a significant relationship between the behavior of the level of compliance of pregnant women in consuming Fe supplements with pregnancy anemia. Pregnant women with a high level of adherence (18 people), the lower the incidence of anemia (5 people). Likewise, on the other hand, mothers with low levels of adherence (8 people) all experienced anemia. This illustrates clearly that the level of adherence is very influential with the incidence of pregnancy anemia. This fact is in accordance with the results of research from(Sarah and Irianto, 2018) which states that if the higher the level of adherence to taking Fe supplements, the lower the risk of anemia in third trimester pregnant women.

A person's level of compliance is influenced by various factors, both internal and external. Age is one of the factors that are considered in a person's obedience behavior. From table 1, it can be seen that the age of respondents who are over 20 years old is more than 90% where at this age someone is considered mature to be able to think well in making decisions. This opinion is in accordance with the statement from (Kamidah, 2015) which states that the older a person is, the better his mental development will be so that he is able to make decisions that can affect obedience behavior. However, as the level of age gets older, the level of mental development of a person will slow down so that the ability to absorb and remember something will decrease which causes low adherence to therapy in addition, the level of education can indirectly influence a person's compliance behavior in implementing the therapy regimen, including the behavior of consuming Fe supplements in pregnant women. Table 2 illustrates that most of the respondents (70%) achieved the highest

level of basic education, namely senior high school level, while the second largest (20%) of respondents were at the tertiary education level. These results indicate that the majority of respondents are at a high level of education, which means that their level of knowledge is quite good (Notoatmodjo, 2015). has explained that the higher a person's level of education, the easier it is for that person to absorb and understand the information provided. The same thing is also confirmed by research conducted by (Chandra et al, 2019) which explains that there is a significant relationship between the level of knowledge and the incidence of anemia associated with maternal health behavior, where mothers with higher levels of education will easily accept knowledge that can influence behavior to maintain their health and the children they contain. It can be concluded that pregnant women with a high level of education will be more receptive to new information so that they can apply obedient behavior to the consumption of Fe supplements compared to mothers with a low level of education.

The obedience factor of pregnant women in consuming Fe supplements is also influenced by parity. Mothers who got pregnant for the first time when compared to mothers who were pregnant more than once, the level of compliance could be different. Table 3 shows the majority of respondents (55%) with primigravida parity status. Mothers who are pregnant for the first time tend to have extra attention to their pregnancy so that they will comply with the therapy regimen given by a doctor. On the other hand, mothers with pregnancies that have been pregnant more than once will consider their pregnancy to be normal, especially if the previous pregnancy was not problematic so that the attention to their health decreased (Sarah and Irianto, 2018). This is what causes the level of compliance of primigravida pregnant women with different multigravidas so that the risk of developing anemia will be greater in multigravida mothers. In addition, the risk of anemia is greater in pregnant women with higher parity levels. Research results from (Astriana, 2017) proves that there is a relationship between parity and anemia in pregnant women where women who frequently get pregnant and give birth will deplete more nutrients including iron reserves from their bodies so that the risk of anemia is higher in subsequent pregnancies.

Another factor that often affects the non-compliance of pregnant women is the side effect of Fe supplements themselves. The smell and taste of Fe supplements which make the stomach feel nauseous make mothers lazy and bored to consume them (Aditianti et al., 2015).

This often makes mothers consume Fe supplements only when they feel dizzy, which indicates a decrease in Hb or anemia (Susilawati and Sudarmiati, 2015).

CONCLUSION

The results of the Chi-Square analysis showed that the value of p = 0.003 (p <0.05), which means that there is a significant relationship between the behavior of pregnant women in consuming Fe supplements with pregnancy anemia in pregnant women in Pitu District, Ngawi Regency.

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