



Factors that influence pregnant women's adherence to consuming fe tablets

Idawati¹, eka novera fitria², iswaton husna³, erna wati⁴, mira marlisa⁵

^{1,5}Midwifery STIKES Medika Nurul Islam, Indonesia

Article Info

Article history:

Received April 19, 2023

Revised May 20, 2023

Accepted June 11, 2023

Keywords:

Consumption of FE tablets;
Compliance of Pregnant Women;
Factors.

ABSTRACT

Pregnant women can be at risk for anemia, especially anemia due to iron deficiency. Anemia occurs due to low hemoglobin content in the body during pregnancy or less red blood cells in the blood than usual, with hemoglobin levels below 11 g%. The impact that can be caused by anemia in pregnant women is bleeding during childbirth, low birth weight babies (LBW), decreased IQ, babies are easily infected and easily suffer from malnutrition.

This is an open access article under the CC BY-NC license.



Corresponding Author:

Idawati,
Health Sciences, Faculty of Midwifery,
STIKES Medika Nurul Islam, Indonesia,
9X93+6D7, Cot Teungoh, Kec. Pidie, Pidie District, Aceh 24112, Indonesia.
Email: idawati-2021@fkm.unair.ac.id

1. INTRODUCTION

According to WHO, in developing countries there are around 4% of maternal deaths related to anemia during pregnancy due to acute bleeding and lack of iron intake. Supplementation of iron (Fe) tablets given to pregnant women is an effort to prevent anemia caused by iron deficiency. The effectiveness of iron supplementation faces many challenges, one of which is the compliance of pregnant women in consuming it. The results obtained from one of the studies regarding the characteristics of taking iron tablets were that 50% of respondents sometimes admitted that they rarely consumed iron tablets.

Interaction variables with good, adequate, and poor categories between pregnant women and health workers also affect the adherence of pregnant women in taking iron tablets (p value = 0.000). From this study it was found that there were several factors that influenced the adherence of pregnant women in taking iron tablets, namely age, education, occupation, side effects of iron tablets, family support, and interactions between pregnant women and health workers. Adherence of pregnant women in taking iron tablets and support from various parties is vital as an effort to prevent the incidence of anemia in pregnancy.

The Maternal Mortality Rate (MMR) is one of many indicators to assess the degree of public health, the quality of health services, and determine the level of community welfare, especially women's health. Maternal death is defined as the death of a woman occurring during pregnancy, childbirth or within 42 days after delivery with causes directly or indirectly related to the birth.

In Indonesia, the Maternal Mortality Rate (MMR) is higher than other ASEAN countries. The 2012 Indonesian Health Demographic Survey (SKDI) recorded an average Maternal Mortality Rate

(MMR) of 359 per 100,000 live births. Seeing the current conditions, it takes the seriousness and hard work of all elements of society to achieve the 5th SDG's (Sustainable Development Goals) global target, namely reducing the Maternal Mortality Rate (MMR) to 70 per 100,000 live births by 2030.

The biggest contributor to the high maternal mortality rate (AKI) is bleeding. Followed by other causes, namely a history of illness experienced by the mother such as kidney disorders, heart disease, tuberculosis, and direct causes such as prolonged labor. According to WHO, maternal deaths that occur in developing countries are around 4% and are related to anemia during pregnancy which can be caused by acute bleeding and lack of iron intake. Iron is especially needed in pregnancy to meet micronutrient intake, fetal growth and development, and assist in the process of hematopoiesis. Globally, about 40% of pregnant women experience anemia and 50% of anemia is caused by iron deficiency. The incidence of anemia is estimated at 12.8% of maternal deaths during pregnancy and childbirth in Asia. In Indonesia,

Iron intake during pregnancy is physiologically needed in large quantities, namely 1000-1200 mg. About 2/3 of this requirement is used for the addition of maternal erythrocytes and another 1/3 is needed for the growth of fetal placental tissue. In the first trimester, iron that must be met is 0.8 mg/day and increases in the third trimester, namely 3.0-7.5 mg/day. The need for iron in large quantities is not enough if it only comes from food intake, so it must be supplemented with iron (Fe) tablet supplementation.

Provision of iron (Fe) tablet supplementation in pregnant women is an effort to overcome anemia caused by iron deficiency. Iron (Fe) tablets obtained by pregnant women during pregnancy checks at health facilities. The dose given is 0.25 g of folic acid and 60 mg of elemental iron in one successive tablet for at least 90 days of pregnancy. If carried out in accordance with the provisions and dosages, this method of supplementing iron (Fe) tablets is a good and efficient way because there is a content of iron as well as folic acid which can prevent anemia because anemia has a bad impact and is a risk factor for premature parturition, prolonged parturition, abortion, postpartum hemorrhage, infection, until shock occurs.

Compliance in consuming iron tablets is the obedience of pregnant women in carrying out the recommendations of health workers to consume iron tablets. Compliance with consuming iron tablets was measured by the accuracy of the number of iron tablets consumed, the accuracy of how to consume iron tablets, the frequency of consumption of iron tablets per day. Iron tablet supplementation is an important effort in preventing and treating anemia, especially iron deficiency anemia. Iron supplementation is an effective way because the iron content is complemented by folic acid which can prevent anemia.

Non-adherence of pregnant women taking iron tablets can have a greater chance of developing anemia. Regulation of the Minister of Health of the Republic of Indonesia Number 88 of 2014 concerning Standard Blood Supplement Tablets for Women of Reproductive Age and Pregnant Women that women of childbearing age and pregnant women are vulnerable to iron deficiency and can cause bleeding during childbirth in pregnant women and is one of the causes of high mortality rates mother in Indonesia. The purpose of this regulation is to protect women of childbearing age and pregnant women from malnutrition and to prevent iron deficiency anemia, so it is necessary to take iron tablets. According to the World Health Organization (WHO), anemia damages the health and well-being of women and increases the risk of harm to mother and baby. Anemia affects women of reproductive age worldwide. In 2011 it showed that 29% (496 million) of non-pregnant women and 38% (32,400,000) of pregnant women aged 15-49 years suffered from anemia. While the highest prevalence of anemia in South Asia, Central and West Africa. The cause of anemia which is estimated that half of the cases is caused by a deficiency of iron tablets.

According to Notoamodjo, health behavior is influenced by predisposing factors, including knowledge and attitudes. Taking iron tablets can cause annoying side effects so that people tend to refuse the tablets they are given. Enabling factors include skills, facilities and reinforcing factors including family support, support from health workers. The program of various health centers in preventing anemia in pregnant women, by providing iron supplements as much as 90 tablets during

pregnancy. However, many pregnant women refuse or do not comply with this recommendation for various reasons. Compliance with taking Fe tablets if $\geq 90\%$ of the iron tablets that should be taken. Adherence of pregnant women taking iron pills is an important factor in ensuring an increase in hemoglobin levels of pregnant women. Iron tablets as a supplement given to pregnant women according to the rules must be consumed every day. However, due to various factors such as poor knowledge, attitudes and actions of pregnant women, the side effects of the tablets caused by these tablets can trigger a person to not comply with the correct consumption of iron tablets so that the purpose of giving these tablets is not achieved.

This research method uses the literature review method by examining 20 journals with the same topics and themes related to factors that influence pregnant women's adherence to taking Fe tablets, and where a lack of mothers consuming Fe tablets can increase the occurrence of anemia in pregnant women.

2. RESEARCH METHOD

The method used in this study is a literature review by examining 20 articles with the same topics and themes in the 2018-2023 range from Indonesia. After reviewing the 20 articles that were considered relevant, 13 articles were determined to have inclusion related to the factors that affect adherence of pregnant women consuming fe tablets. This literature search uses keywords, namely, factors, compliance of pregnant women, consumption of fe tablets.

3. RESULTS AND DISCUSSIONS

Research result

The results of this literature review were carried out by examining 20 articles related to factors that influence the adherence of pregnant women consuming fe tablets where after reviewing the 20 articles, 13 articles were found to be relevant where the keywords used were factors, compliance of pregnant women, consumption Fe tablets are listed in the table below.

Table 1. Research articles about the factors that influence pregnant women's adherence to taking fe tablets

Name and year of research	Journal Name	Types of research	The variables studied	Study design	Research samples	Research conclusion
Regina Pricilia Yunika , Husnita Komalasari 2020	Nutriology Journal: Food, Nutrition, Health	quantitative research	Factors related to adherence of pregnant women in consuming iron tablets	cross sectional	35 respondents	There is a relationship between knowledge and adherence of pregnant women in consuming Fe tablets. There is a relationship between motivation and adherence of pregnant women in consuming Fe tablets. There is a relationship between attitudes and adherence of pregnant women in consuming Fe tablets.
Nirma Yunita, Salasiah Supiyati, Eka Isdiana 2018	Influenced Factors The Conformity Of Pregnant Women In Consuming	analytic	knowledge, motivation, family support, antenatal care visits, side effects of iron (Fe) tablets	cross sectional	73 respondent	Knowledge is proven to have a relationship with adherence of pregnant women to consuming iron (Fe) tablets

Ainun Mardhiah, Marlina 2019	Iron Tablets (Fe) Health Journal	quantitative analytical survey	Knowledge, attitude, family support, health worker support	cross sectional	75 respondents	It is necessary to increase public knowledge, especially pregnant women, about the importance of Fe tablets and safe motherhood by improving antenatal care (ANC) services and increasing the role of health workers and families as well as in conveying information about the importance of Fe tablets.
Juanda Syafitasari, Fitria, Esitra 2020	Scientific Journal of Health and Its Applications	screening	Factors that influence pregnant women's adherence to consuming iron	Pubmed and Science Direct	14 respondent	a age has a significant positive relationship with maternal adherence in taking iron supplements; knowledge has a significant positive relationship with maternal adherence in taking iron supplements; education has a significant positive relationship with maternal adherence in taking iron supplements; economic status has a significant positive relationship with maternal adherence in taking iron supplements; Occupation has a significant positive relationship with maternal adherence to taking iron supplements
Heriani 2019	Abdurahman Palembang Health Journal	analytical survey	Knowledge of family support, the role of health workers	Cross Sectionals	37 respondents	There is a relationship between the knowledge of pregnant women and the adherence of pregnant women to taking Fe tablets. There is a relationship between family support and the adherence of pregnant women to taking Fe tablets. There is a

						relationship between the role of health workers and the adherence of pregnant women to taking Fe tablets.
Dewi Francesca, Melia Pebrina, Fenny Fernando 2023	Permas Scientific Journal:	Analytic	Motivation, Knowledge, Family support	Cross-sectional	57 respondents	There is a relationship Motivation of knowledge and family support by consuming FE tablets in pregnant women
Sumi Anggraini 2019	Media Health Sciences	analytical survey	Compliance, knowledge of ANC visits	Cross-sectional	63 respondents	The factors that influence pregnant women's adherence to consuming Fe tablets are knowledge and antenatal care visits.
Atika Zahria Arisanti, Rr. Catur Leny Wulandari, Desi Yunita 2022	Scientific Journal of Midwifery, Vol. 9, No. 2	analytic	knowledge, attitudes, family support, and support from health workers	Cross-sectional	70 respondents	several factors that affect pregnant women's adherence in consuming Fe tablets, namely knowledge, attitudes, family support, support from health workers, frequency of ANC visits, and age
Rizka Agnes Kusumasari, Nadila Ika Putri, Chici Riansih, Dwi Ratnaningsih 2021	INDONESIAN GEMS JOURNAL	Analytical surveys	Relationship between Compliance of Fe Tablet Consumption of Pregnant Women with Anemia	purposive sampling	43 respondents	There is a relationship between adherence to consumption of Fe tablets and the risk of anemia in pregnant women
Vicky Agit Permana, Arie Sulistiyawati, Mira Meliyanti 2019	MASADA HEALTH JOURNAL	descriptive	adherence of pregnant women in consuming Fe tablets.	Questionnaire	59 respondents	factors that influence pregnant women's adherence in consuming fe tablets knowledge, support motivation,
Rahma Yanti, Kurnia Yusuf, Fitri Wahyuni 2022	Preventive Promotive Journal	Analytical Surveys	Compliance, knowledge, attitudes, health services, family knowledge	Cross-sectional	75 respondents	There is a relationship between knowledge of pregnant women, attitudes of pregnant women with family support and health services with adherence to consumption of iron tablets in pregnant women.
Ardan,	Scientific journal	Evaluative Research	Health workers participate in	Purposive sampling	12 respondents	Human resources are one of the aspects

Devi Safitri Effendy , Asriati 2022	OBSGIN Vol 14. No. 4		administering Fe tablets to pregnant women.			that support success in handling the administration of Fe tablets to pregnant women.
Widya ningsih, Ainal Mardiah, Indres wati , Rezky Agusnur Rizita 2022	Journal of Obstetrics (Journal of midwifery sciences) Vol 11. No.2	Quantitative	Knowledge, compliance, attitude and support	Cross-sectional	138 respondents	Based on the results of the study there were respondents who had sufficient knowledge about consuming Fe tablets, had a negative attitude about Fe tablets, and husbands who supported consuming Fe tablets. Most of the respondents obediently consume Fe tablets.

Discussion

The results showed that the role of good health workers can influence pregnant women's compliance in consuming iron (Fe) tablets when compared to the role of health workers who are less good. The results of the chi square analysis obtained a value of $p = 0.005$ ($p < 0.05$), then H_0 was rejected, so the result was that there was a relationship. The results showed that respondents who did not receive family support were less obedient in consuming iron (Fe) tablets compared to respondents who had family support.

According to Rizqi Nur Alifah (18) that the description of knowledge shows that pregnant women are less knowledgeable, namely as many as 46 people (55.4%). According to Purbadewi (19), pregnant women who are less knowledgeable about iron (Fe) tablets will behave negatively, while those with good knowledge will behave positively, in this case behavior to prevent or treat anemia.

According to Astuti (20) that this knowledge generates awareness of pregnant women to consume iron (Fe) tablets regularly during pregnancy. According to Ma'rufah (21) that motivation is a process that produces an intensity, direction, and individual persistence in an effort to achieve goals. According to research from Masnarivan (22) that pregnant women who are disobedient in consuming iron (Fe) tablets are due to forgetting which can occur if the pregnant woman does not have the motivation within herself to remind her to consume iron (Fe) tablets so that the number of iron tablets (Fe) consumed is not in accordance with the gestational age.

Purnamasari (28) that compliance in this study is the obedience or regularity of respondents in consuming iron (Fe) tablets received from the Puskesmas in accordance with recommendations both in terms of the number of Fe tablets taken or in terms of how to drink iron (Fe) tablets itself. According to Notoadmodjo, Knowledge is the result of human sensing, or the result of knowing someone about an object through the senses they have (eyes, nose, ears, and so on). Knowledge is a very important domain for the formation of one's actions. The husband's role is very necessary, such as increasing knowledge of the importance of iron (Fe) tablets in pregnant women and the benefits for the mother and fetus, especially being able to give or convey to the wife the importance of iron tablets.

According to Newcomb, that attitude is a readiness or willingness to act and is not an implementation of a particular motive. The attitude of readiness to react to objects in a certain environment as an appreciation of the object. Attitude is purely individual, but attitude is more of an individual conscious process. According to the researchers, the family support of the respondents had an effect on adherence to consuming Fe tablets in pregnant women. Pregnant women who are in a physiological state really need family and social support, which in this case is obtained from the closest

people such as husbands or parents and closest relatives. Someone who feels cared for and needed by the closest people and relatives will find it easier to follow medical advice than someone who doesn't get family support.

4. CONCLUSION

It can be concluded that age has a significant positive relationship with maternal adherence in taking iron supplements; knowledge has a significant positive relationship with maternal adherence in taking iron supplements; education has a significant positive relationship with maternal adherence in taking iron supplements; economic status has a significant positive relationship with maternal adherence in taking iron supplements; work has a significant positive relationship with the mother's adherence to taking iron supplements; ANC visits have a significant positive relationship with maternal adherence in taking iron supplements; and the frequency of ANC visits were the variables most significantly positively related to the level of adherence of mothers taking iron supplements.

REFERENCES

- Angraini, Dian Isti, Efriyan Imantika, Safyan Musabiq Wijaya. 2019. The Effect of Knowledge and Income of the Mother's Family on the Incidence of Anemia in Pregnant Women in the Working Area of the Gedongtataan Health Center, Pesawaran Regency. JK Unila Volume 3 Number 3.
- Budiarni W. Relationship of Knowledge, Attitudes, and Motivation with Adherence to Consumption of Iron Folate Tablets in Pregnant Women. *J Nutr Col.* 2012;2(4):585-595. doi:10.1093
- Camaschella, C. 2015. Iron Deficiency Anemia. *The New England Journal of Medicine*, 372(19): 1832-1843.
- Dwi E. 2017. Factors that influence pregnant women's compliance in consuming Fe tablets at the Danurejan 1 Health Center, Yogyakarta City. 2017;12(1), p: 145.
- Gebremedhin S, Samuel A, Mamo G, Moges T, Assefa T. 2014. Coverage, compliance and factors associated with utilization of iron supplementation during pregnancy in eight rural districts of Ethiopia: a cross-sectional study. *BMC Public Health.* 2014;14, h: 607. doi:10.1186/1471-2458-14-607.
- Hartatik S, Agustini T. Factors Influencing Adherence of Pregnant Women Consuming Fe Tablets at Uptd Puskesmas Bantur. *Biomed Sci.* 2018;1(1):22-31.
- Kamidah. 2015. Factors Affecting Adherence of Pregnant Women Consuming Fe Tablets at Simo Boyolali Health Center. *Gaster*, 7 (1) : 1-10.
- Indonesian Ministry of Health. Riskesdas 2018 results [Internet]. Jakarta: Health Research and Development Agency; 2018. Available from: http://www.depkes.go.id/resources/download/Hasil_Riskesdas_2018.
- Ministry of Health of the Republic of Indonesia, DJKM (2020) 'Guidelines for Giving Blood Supplement Tablets (TTD) for Pregnant Women', p. 24.
- Mardhiah, A. and Marlina, M. (2019) 'Factors Affecting Adherence to Consuming Fe Tablets in Pregnant Women', *Window of Health: Journal of Health*, 2(3), pp. 266-276. doi: 10.33368/woh. voio.182.
- Notoatmodjo S. Health promotion and health behavior. Jakarta: Rineka Cipta. 2012;45-62.
- Rizqi Nur Alifa. 2016, Factors that influence pregnant women's adherence to taking fe tablets at the limestone 2 health center. Scientific Writing, Undergraduate, University of Muhammadiyah Yogyakarta
- Saifuddin, Abdul Bari. 2011. Practical Handbook of Neonatal Maternal Health Services. Jakarta; PT Bina Pustaka Sarwono Prawirohardjo.
- Sinsin, I. 2008. Maternal and Child Health Series during Pregnancy and Childbirth. Jakarta: Elex Media Komputindo.
- Syauqy A. Compliance with Pregnant Women Consuming Iron Tablets. *JMJ.* 2017;5 No 2:151-163.