Relationship between Knowledge and Compliance of Pregnant Women in Consuming Fe Tablets in the Work Area of the Kartasura Public Health Center

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Abstract

One of the common health issues that can seriously affect both the mother and the foetus is anaemia disease in pregnant women. Taking iron (Fe) supplements on a regular basis throughout pregnancy is one way to prevent anaemia. Numerous expectant mothers in the Kartasura Health Center's service area are still unaware of the benefits of taking iron supplements during pregnancy, which leads to anaemia in many of them. In the Kartasura Health Centre, the purpose of this study is to ascertain the association between pregnant women's level of understanding on the use of Fe pills. This study employed a cross-sectional methodology and an analytical survey design. The research was conducted in the Kartasura Health Center Working Area, Sukoharjo Regency, Central Java Province, and was carried out from August 2024. The study population of pregnant women in trimesters 1-3 who were in the Kartasura Health Center Working Area was 258. The sample was taken by purposive sampling from pregnant women registered at the Kartasura Health Center, so the research sample obtained was 72 pregnant women. Data collection was done through questionnaires. Univariate analysis and the bivariate chi-square test were used to analyse the data. The results showed a significant relationship between pregnant women's knowledge level and compliance level in taking Fe tablets (p-value=0.020 < α 0.05). When it comes to taking Fe pills, pregnant women with greater knowledge are generally more obedient than those with less information. It is recommended that health workers enrich the knowledge of patients by more routinely providing education related to the need to consume Fe tablets, using leaflets or posters that are made attractive. This can be given by health workers at every pregnant women's class meeting so that the level of knowledge of mothers becomes better and they become more compliant in consuming Fe tablets.

Keywords : Knowledge, Compliance, Pregnant Women, Fe Tablets, Anemia

INTRODUCTION

Anemia is one of the health problems that often occurs in pregnant women, especially in developing countries such as Indonesia. Anemia in pregnant women in Indonesia is still relatively high (Devi et al., 2023). Anaemia in pregnant women may increase the risk of pregnancy complications such as low birth weight, preterm labour, and maternal and foetal death. One of the main causes of anaemia in pregnant women is iron (Fe) deficiency (Nasir et al., 2024).

According to data from the World Health Organization (WHO), anemia affects 41.8% of pregnant women globally (WHO, 2018). Data from Indonesia's Basic Health Research shows that the percentage of pregnant women who are anemic rose from 37.1% to 48.9% in

2018 (Kemenkes RI, 2018). According to data from the Central Java Provincial Health Office in 2021, 43.5% of pregnant women in Central Java suffer from anemia. In contrast, 90.44% of Central Java will administer Fe tablets in 2021 (Central Java Provincial Health Office, 2021).

Among an attempt to avoid anemia during pregnancy, the government administered at least 90 Fe pills to expectant mothers in an attempt to lower the prevalence of anemia in this population. In 2024, there were 68 anemic pregnant women at the Sukoharjo District Health Office (Sukoharjo Health Service, 2024). There were 258 pregnant women in the Kartasura Health Center working area in February-March 2024 and the number of pregnant women with anemia recorded from February to March 2024 was 35 people.

Fe tablets are nutritional supplements for pregnant women and should be taken daily at bedtime at night (Prananingrum, 2020). However, many factors, such as lack of knowledge, adherence, and iron tablet adverse effects, may cause pregnant women to neglect to take their medication as directed so that they cannot meet the target dose of Fe tablets. The non-adherence of pregnant women when taking Fe tablets is the cause of the increasing prevalence of anaemia (Arlym et al., 2024).

Understanding a pregnant woman plays a vital role in providing necessary and adequate nutrition for the growing foetus (Mona & Maharawati, 2021). Ignorance about the health benefits of nutrition during pregnancy can lead to malnutrition with pregnant women. Factors that result in iron deficiency anaemia, namely the lack of iron nutrition from pregnant women (Sandy & Sulistyorin, 2023).

Adherence is an attempt to avoid anaemia during pregnancy. Anaemia in pregnant women can be experienced if iron deficiency is not addressed (Omasti et al., 2022) . It can lead to the risk of death during childbirth, low birth weight babies, miscarriage, possible infections in the fetus and mother, and premature birth. Non-compliance can be caused by many aspects, especially age, education, and understanding of the mother (Aminin & Dewi, 2020).

From providing pregnant women with at least 90 Fe tablets during their pregnancy, the government aims to lessen the amount of anemia that develops in expectant mothers. The percentage of pregnant women in the Kartasura subdistrict who took Fe pills was 97.8%. Fe pills are administered to expectant mothers in an effort to avoid anemia-related fatalities (Azizah & Sulastri, 2023).

Similar research has been conducted by Stania et al., (2022), Regarding the connection between adherence to using Fe tablets and awareness of pregnant women at Kedungwuni II health center. The results obtained show that some pregnant women have been obedient when consuming Fe tablets, and respondents have insight into the knowledge of Fe tablets.

Research Nirmalarumsari et al., (2020), revealed a connection between the prevalence of anemia at the Walendrang Health Center in Luwu Regency and the knowledge and adherence of expectant mothers to taking iron supplements. Research Hastanti, (2019), stated a relationship exists between knowledge and compliance of pregnant women in consuming iron tablets (Fe) at the Lawanga Health Center, Poso Regency. The more knowledge pregnant women have about health maintenance and how to live a healthy life during pregnancy, the more consideration for choosing the types of nutritious foods and the benefits of these nutritious foods for the health of pregnant women.

According to a preliminary study carried out at the Kartasura Health Center working area, 68 out of the 258 pregnant women there suffered from anemia. where pregnant women's average level of awareness regarding the significance of Fe pills is still quite low. Many expectant mothers are unaware of the critical advantages of taking iron supplements to prevent anemia during pregnancy, which may jeopardize the health of both the mother and the fetus. Fe pill use is frequently viewed by expectant mothers as unnecessary and merely a formality in the health program. Furthermore, many of them report experiencing negative side effects like nausea, vomiting, and an unpleasant odor, which makes them less likely to take the tablets as prescribed.

The primary issue in this study was the pregnant women's lack of knowledge about the significance of taking Fe tablets and the long-term consequences for both their own and the fetus's health. This lack of awareness raises the risk of anemia and pregnancy difficulties by causing non-compliance with the use of Fe pills. Therefore, more research is required to examine the degree of the association between pregnant women's understanding and adherence to taking Fe pills.

METHODS

The research design used in this study was analytic observational research with a cross-sectional approach to describe the independent variable of pregnant women's knowledge of Fe tablets and the dependent variable of compliance of pregnant women in taking Fe tablets.

From the start in August 2024, the study was carried out in the Kartasura Health Center's operational space in the Sukoharjo Regency of the Central Java Province. Up to 258 pregnant women in trimesters 1-3 who were located in the Kartasura Health Centre Working Area made up the study's population.

Purposive sampling is the sampling method used, which entails choosing samples from the population based on the researcher's intended criteria. The inclusion criteria in this study are pregnant women who are willing to become respondents and are willing to be given

questionnaires, pregnant women in good health and pregnant women who are in place during the study. At the same time, the exclusion criteria of this study are pregnant women who are unable to attend during data collection, either due to illness or other things and pregnant women who suffer from DM, chronic diseases, or infections. So that the sample to be studied is 72 respondents.

Data collection using a modified questionnaire from Iskandar (2023), which was tested for validity and reliability by researchers on April 18, 2024, at the Baki Health Center, Sukoharjo. A total of 30 research respondents took part in the validity test and were given 28 questions with a knowledge category of 20 questions and a compliance category of 8 questions. The results obtained were 28 questions declared valid, indicated by the value of r count less than 0.04. The questionnaire reliability test using Cronbach's Alpha statistical test showed a reliability of 0.808.

Univariate and bivariate analysis are used to analyse research data. To ascertain the proportion of each variable, univariate analysis is performed by presenting the knowledge of Fe pills and compliance with Fe tablet use. In the Kartasura Health Centre Working Area, bivariate analysis using the chi-square test attempts to determine whether pregnant women's knowledge and their compliance with Fe pill consumption are related. Data processing in this study used SPSS version 20 computer software. This study has received approval from the Health Research Ethics Committee of Dr. Moewardi Regional General Hospital number 1.969/VIII/HREC/2024.

RESULTS

Table 1 Characteristics of Respondents

Characteristics	Frequency	%
Age		
< 20 years	18	25,0
20-35 years	51	70,8
>35 years	3	4,2
Education		
Primary School	5	6,9
Junior High School	16	22,2
Senior High School	31	43,1
Bachelor	20	27,8
Jobs		
Housewife	44	61,1
Private Employee	23	31,9
Civil Servants	5	6,9
Pregnancy Age		
1st Trimester	7	9,7
2nd Trimester	17	23,6
3rd Trimester	48	66,7
Parity		

Primigravida	28	38,9
Multigravida	44	61,1

From Table 1, most respondents were aged 20 to 35 years, namely 51 respondents (70.8%), as well as the lowest at the age of >35 years, having a frequency of 3 respondents (4.2%). The respondents' last education ranged from elementary, junior high, and high school to university. The results were obtained by the majority of respondents whose last education was high school level, with 31 respondents (43.1). However, some went to college with 20 respondents (27.8%).

The jobs of the research participants ranged from domestic helpers to private and public servants. According to the findings, 44 respondents (61.1%) were housewives, making them the majority of respondents. Furthermore, from the age of pregnancy, the results showed that most respondents were in trimester 3, with 48 respondents (66.7%). Finally, namely parity, most mothers are multigravida, namely 44 respondents (61.1%).

Table 2. Distribution And Frequency of Pregnant Women's Knowledge and Compliance Pregnant Women Consuming Fe Tablets in The Kartasura Health Center Working Area

Variable	Frequency	%
Knowledge		
Good	27	37,5
Simply	30	41,7
Less	15	20,8
Compliance		
Compliant	41	56,9
Non-compliant	31	43,1

Table 2 shows that most pregnant women in the Kartasura Health Center work area know about Fe tablets in the sufficient category, with 30 respondents (41.7%). Of the 41 respondents (56.9%), it is known that most pregnant women in the Kartasura Health Center work area are obedient in taking Fe tablets.

Table 3. Analysis of the Relationship between Insight and Adherence of Pregnant Women When Taking Fe Tablets

Knowledge	Compliance				Total		p-value
	Compliant		Non Compliant				
	n	%	n	%	N	%	
Good	21	29,2	6	8,3	27	37,5	0,020
Fair	14	19,4	16	22,2	30	41,7	
Poor	6	8,3	9	12,5	15	20,8	
Total	**41**	**56,9**	**31**	**43,1**	**72**	**100**	

Based on table 3. The results showed that 27 (37.5%) respondents had good knowledge. Of the 27 (37.5%) respondents, 21 (29.2%) respondents were compliant in consuming Fe

tablets, and 6 (8.3%) respondents were not compliant in consuming Fe tablets. Then, as many as 30 (41.7%) respondents had sufficient knowledge. Of the 30 (41.7%) respondents, 14 (19.4%) respondents were compliant in consuming Fe tablets, and 16 (22.2%) respondents were not compliant in consuming Fe tablets. Furthermore, 15 (20.8%) respondents needed better knowledge. Of the 15 (20.8%) respondents, 6 (8.3%) respondents were compliant in consuming Fe tablets, and 9 (12.5%) respondents were not compliant in consuming Fe tablets. Based on statistical tests, there is a significant relationship between knowledge and pregnant women's compliance in consuming Fe tablets, the value (p-value) 0.020.

DISCUSSION

A condition known as anemia occurs when the body's hemoglobin content in red blood cells is below the normal range. A pregnant lady is deemed anaemic if her haemoglobin level is less than 11 grammes per decilitre. In addition to affecting the fetus's growth and development in the womb, anemia in pregnant women can lead to difficulties during pregnancy and childbirth and even result in maternal and infant deaths (Republic of Indonesia Ministry of Health, 2020).

Pregnant women who do not take their Fe supplements may be at higher risk of developing anaemia. Giving pregnant women information about anaemia will boost their understanding of the condition because education is crucial for them to continue taking Fe pills (Wulandini et al., 2020).

Pregnant women's knowledge will affect their actions. Pregnant mothers who know about iron will endeavour to provide plenty of minerals for themselves and their unborn babies (Stania et al., 2022). By using the knowledge gained through iron supplements to meet their needs during pregnancy, expectant mothers will benefit from a better understanding of iron for themselves and their unborn children (Notoadmojo, 2018).

One of the most important components in creating a comprehensive mindset is knowledge. One will develop a better mindset to produce a good activity the more knowledgeable they are. Pregnant women who are well-informed on the value of iron and the effects of iron deficiency during pregnancy are more likely to have a positive compliance attitude, which will result in compliant behavior when taking iron supplements (Sunaryo, 2004).

After conducting research by distributing questionnaire sheets, most respondents had insights in the moderate category, namely 30 respondents (41.7%) in the good category, namely 27 respondents (37.5%) also in the poor category, namely 15 respondents (20.8%). This can be

influenced by the fact that most mothers' education level is high school graduates, namely 31 respondents (43.1%).

Based on the research, many respondents did not understand the proper way to consume Fe tablets, nor did they realize the importance of Fe tablets for pregnant women and fetuses. This shows that knowledge about nutrition during pregnancy still needs to be improved.

This is based on the research carried out (Azwad, 2023). It is recognized that insight is closely related to education. Mothers with higher levels of education are more likely to access information, understand health information sources, and apply these insights to their daily lives. In the context of Fe tablets, good knowledge of the benefits, dosage, and how to use them is essential for anaemia prevention and supporting maternal and fetal health. According to Sasono et al., (2021), with higher education, pregnant women are more likely to follow the doctor's advice and pay attention to the importance of the supplement. In addition, education can also influence mothers' skills in seeking information and educating themselves about health.

The researcher assumed that insight is essential in determining adherence to taking the tablets. In the presence of insight about Fe tablets, pregnant women want to know how to consume them, their uses, and the effects experienced when not consuming them.

The investigation outcomes show that the respondents in this study were compliant when consuming Fe tablets, 41 respondents (56.9%). Moreover, with disobedient when consuming Fe tablets, 31 respondents (43.1%). According to research conducted by Sihombing (2021), adherence when taking iron tablets refers to the extent to which pregnant women follow medical advice regarding the dose, frequency, and mode of use of Fe tablets. Adherence is essential to ensure that the iron intake needed to prevent or treat anaemia is met. This research aligns with Diansari et al. (2024) that most pregnant women took their Fe tablets as directed by as many as 45 respondents (64.3%).

This study's results indicate a relationship between knowledge and compliance of pregnant women in consuming Fe tablets (p-value=0.020). In this case, good individual knowledge affects the consumption behaviour of Fe tablets. Knowledge is one factor that influences a person's behaviour when taking blood enhancement tablets.

The results of this study are by research conducted by Budiani et al. (2024), which demonstrates that pregnant women's compliance with taking iron supplements is correlated with their level of knowledge, indicating that moms with high levels of knowledge are more likely to take iron supplements throughout pregnancy.

This research is in line with Wulandini et al. (2020), which states a significant relationship between the knowledge of pregnant women and adherence to taking Fe patches.

By concluding that if pregnant women's knowledge is better, they will also be more compliant when consuming Fe tablets. Vice versa, if the knowledge of pregnant women is not good, the tendency to consume Fe tablets will also be more disobedient.

Research Hastanti (2019) shows a relationship between knowledge and compliance of pregnant women in consuming iron tablets (Fe) in the Lawanga Health Center Working Area, Poso Regency. Referring to the test results, it can be explained that the higher the mother's knowledge about deficiency anemia will increase compliance in taking Fe tablets and vice versa, the lower the mother's knowledge about deficiency anemia will reduce compliance in taking Fe tablets.

The prescription of iron supplements, sometimes known as Fe tablets, is one of the main strategies for preventing and treating anaemia, especially iron deficient anaemia. Pregnant women who follow medical professionals' advice to take iron supplements are said to be complying with the instructions. The accuracy of how many iron tablets are taken, the regularity of daily consumption, and the number of tablets taken are all used to gauge adherence to taking iron supplements. Pregnant women who take iron supplements non-compliantly may be more susceptible to anemia (Aryani et al., 2023).

The researcher assumed that there was a relationship between pregnant women's knowledge about Fe tablets and their compliance in consuming them at the Kartasura Health Center because pregnant women with low knowledge tend to underestimate the importance of Fe tablets, making them less compliant. In contrast, good knowledge increases their awareness of the benefits of Fe tablets for maternal and fetal health. Adequate knowledge helps mothers overcome side effects such as nausea and vomiting, making them more compliant. In addition, better education from health workers is expected to improve mothers' understanding and compliance with taking Fe tablets.

CONCLUSIONS

Based on the results of this study, there is a relationship between pregnant women's knowledge of Fe tablets and their compliance with consuming iron tablets (Fe) in the Kartasura Health Center working area. It is suggested that health workers can enrich the knowledge of patients by more routinely providing education related to the importance of consuming Fe tablets, using leaflets or posters that are made exciting and for pregnant women, it is hoped that they can pay more attention to health conditions during pregnancy by being more compliant in taking Fe tablets. It is advisable to regularly check their pregnancy with health workers.

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