



Incidence of Anemia and Adherence to Fe Tablet Consumption Based on MCH Book Completion

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ABSTRACT

Maternal mortality is a measure of welfare and health status in a country. The death of 1320 mothers in Indonesia is caused by bleeding, one of which is caused by anemia during pregnancy. The success of supplementing 90 Fe tablets in Indonesia is 51% and only 37.7% of pregnant women consume 90 tablets of Fe tablets. Pregnant women and giving 90 iron tablets in West Java Province amounted to 98.2%, or 943.34 people and there was a jump of 0.5% or 5,505 pregnant women did not get Fe tablets. One way to monitor the consumption of FE tablets is through the MCH book. Research Objectives: To determine the relationship between consumption of Fe tablets in terms of filling out the MCH handbook and the incidence of anemia in third trimester pregnant women at the Cipayung Health Center in 2022. Research Methods: This study used the chi square method where observations were made of pregnant women at one time to measure the relationship between consumption adherence FE tablets with the incidence of anemia. The sample used in this study were 33 people who met the inclusion and exclusion criteria. Research Results: demo data obtained the average age of the mother is 31 years. Mother's education 54.5% have higher education. As many as 84.4% of mothers have high knowledge. As many as 66.7% of the 21 pregnant women who adhered to the consumption of FE tablets did not experience anemia. Statistical tests showed a P-value of 0.016 and there was a relationship between adherence to consumption of FE tablets and the incidence of anemia in third-trimester pregnant women at the Cipayung Health Center in 2022. Conclusion: monitoring of FE consumption can be done through the MCH handbook for pregnant women so that early prevention of anemia during pregnancy, especially when entering the third trimester.

Keywords: *Anemia, Kia Book, Obedience*

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INTRODUCTION

Maternal mortality in Indonesia is generally caused by direct factors, namely bleeding 1320 cases (28%), hypertension 1077 cases (24%) and infection (11%) and indirect factors, namely the existence of nutritional problems including anemia in pregnant women (40%), chronic energy deficiency (37%) and pregnant women with energy consumption below minimum needs (44.2%) (Abdullah & Anissa, 2014; Hill & Hill, 2018; Jordan dkk., 2018; Norasetthada dkk., 2021). Pregnancy anemia is a hemoglobin level of less than 33% at any time of pregnancy considering the normal hemodilution that occurs in pregnancy where the hemoglobin level is less than 11% in the first trimester (Hernawati, 2022; Itskoviz dkk., 2019; Olupot-Olupot dkk., 2023). Anemia is a symptom of an underlying condition, such as loss of blood components, inadequate trace elements or lack of nutrients required for the formation of red blood cells resulting in a decrease in the oxygen-carrying capacity of the blood (Sah dkk., 2019; Vanhala dkk., 2022; Wigati dkk., 2021).

In addition to impacting the fetus, suboptimal pregnancy conditions can also have an impact on the mother, namely maternal death due to bleeding during childbirth or postpartum hemorrhage (Al-Jarallah dkk., 2019; Kadriyan dkk., 2019; Wigati dkk., 2021). As a cause of maternal death, postpartum hemorrhage is caused by low oxygen supply in the blood or anemia, which under normal conditions is useful for uterine contractions. In anemic conditions with a thin supply of oxygen in the blood, the lower the ability of the pregnant mother to contract the uterus (Connon dkk., 2021; Junianti, 2018; Tigabu dkk., 2022). In overcoming and reducing anemia in pregnant women, namely by supplementing 90 Fe tablets. Fe tablet supplementation is an effective effort because it can prevent and overcome anemia caused by iron and folic acid deficiency. Specifications The Fe tablets given contain 60mg elemental iron and 400mcg folic acid (Dutta dkk., 2018; Kementerian Kesehatan Republik Indonesia, 2021; Rubio-Álvarez dkk., 2018). Iron supplementation is a very important element in the formation of hemoglobin. Hemoglobin is a red compound found in red blood cells and is used to transport oxygen and carbon dioxide in the body. Pregnant women need to take iron supplements during pregnancy, because pregnant women need to increase their iron content during pregnancy.

The success rate of 90 Fe tablets supplementation in Indonesia is 51% and only 37.7% of pregnant women take 90 Fe tablets (Kementerian Kesehatan Republik Indonesia, 2018). The 4th pregnancy check-up (K4) in 2019 amounted to 98.7% or 948,852. The government has launched iron supplementation to overcome anemia in pregnant women, but in reality there has not been a significant result on iron supplementation in pregnant women which can be seen from the prevalence of anemia which is still high in the results of the Basic Health Research which is 37.1% (Kementerian Kesehatan Republik Indonesia, 2018). Iron (Fe) tablets are very important

for pregnant women because they have several functions, namely increasing nutritional intake to the fetus, preventing iron deficiency anemia, preventing bleeding during childbirth, and reducing the risk of maternal death due to bleeding during childbirth.

The provision of 90 iron tablets to pregnant women in West Java Province amounted to 98.2%, or 943,34 people and there was a gap of 0.5% or 5,505 pregnant women who did not receive Fe³ tablets. The district/city with the highest Fe³ coverage was Subang District (131.65%) and the lowest was Bekasi City (82.06%) (Dinkes Jawa Barat, 2020). Cipayung Health Center in 2021 The coverage of pregnant women receiving 90 Fe tablets supplementation at Cipayung Health Center is 93.88%. Data in 2021 there were 176 pregnant women with iron tablet coverage of 176 pregnant women, but there were 59 pregnant women who were still anemic, in January - March 2022 there were 59 pregnant women with 19 pregnant women who were anemic, the causes of anemia included forgetting and problems with the side effects of iron tablets, so compliance of pregnant women in taking iron tablets is very important to reduce the occurrence of anemia.

Adherence to taking Fe tablets is defined as the accuracy of pregnant women in taking Fe tablets, namely 1 tablet regularly for at least 90 days during pregnancy (Anggraini dkk., 2018a; Enani dkk., 2020; Palaka dkk., 2020). The success of Fe tablet administration depends on whether or not pregnant women are compliant in consuming Fe tablets. High coverage of Fe tablets does not have an impact on reducing anemia if adherence to Fe tablet consumption is still low (Chen dkk., 2020; Eriksson dkk., 2018; Fitria Rahmi, 2016). Taking 90 Fe tablets during pregnancy is effective in meeting the iron requirement in accordance with the nutritional adequacy rate of pregnant women and reducing the prevalence of anemia by 20-25%. Pregnant women who took Fe tablets for 12 weeks showed an increase in hemoglobin levels from 8.45 gr/dl to 11.45 gr/dl. Providing iron tablet supplementation at the right time and in the right way can support WHO activities in achieving the target hemoglobin level of 11 gr/dl (Aghina Ilma Izzati, Didik Tmtomo, 2021; Kapoor dkk., 2022; Minutolo dkk., 2022). Compliance of pregnant women in taking Fe tablets can reduce the incidence of anemia. However, in reality, out of 20 pregnant women in the field, only 55% know the importance of blood supplements and how to take Fe tablets properly. Most of these pregnant women take blood supplement tablets because it is recommended by health workers and they are bored taking medicine because they have to drink every day and sometimes forget, so the incidence of anemia in pregnant women still occurs a lot, this is due to the disobedience of pregnant women in taking Fe tablets (Aghina Ilma Izzati, Didik Tmtomo, 2021; Pratiwi dkk., 2018)

MCH book coverage is based on the availability of MCH books with the target of pregnant women as a whole. The MCH book program is supported by the stipulation of the Minister of Health Decree No. 284/MENKES/SK/III/2004 which states that the MCH book is an information and health recording tool for mothers and children which is a mandatory guideline for mothers and children. Pregnant women are the direct target of the MCH book which is used until the postpartum period. The use of the MCH book

by pregnant women is assessed by their active role in reading and understanding the contents of the MCH book. The need for knowledge of pregnant women in understanding the MCH book aims to enable mothers to carry out independent care related to the health of pregnant women so that it is hoped that comprehensive and sustainable MCH services will be achieved. That way pregnant women will be able to detect as early as possible complications that may occur and seek help from quality health services.

In the MCH book there is a TTD Drinking Supervision form which aims to monitor the taking of Fe tablets. The following is the table of TTD Drinking Supervision during pregnancy. Pregnant women should record on the TTD drinking control card in the MCH book, or record manually to report manually to the midwife or nutritionist. Midwives conduct recording, reporting and monitoring of TTD administration to determine the achievement of TTD administration targets and anemia control. The following table is a table of supervision of drinking TTD / Fe during pregnancy from the first contact with a health worker / midwife that must be filled in by the husband / closest person of the pregnant woman. There are 9 boxes or the same as 9 months of pregnancy.

Table 1.1
TTD Drinking Supervision Table during pregnancy

The image displays two forms related to TTD (Iron and Folic Acid) consumption during pregnancy. The left form is titled 'Kartu Kontrol Minum TTD pada IBU HAMIL' (TTD Drinking Control Card for Pregnant Women) and features a 3x3 grid of boxes for recording TTD intake. The right form is titled 'Bulan ke- 9' (Month 9) and features a 5x5 grid of boxes for recording TTD intake. Both forms include a 'Bulan' (Month) field at the bottom.

The purpose of this study was to determine the relationship between compliance with Fe tablet consumption in terms of MCH Book filling with the incidence of Anemia in third trimester pregnant women at Cipayung Health Center in 2022.

RESEARCH METHODOLOGY

This study aims to determine the Relationship between Compliance with FE Tablet Consumption in terms of the Use of MCH Book with the Incidence of Anemia in Pregnant Women at Cipayung Health Center in 2022. This study used a quantitative approach with a Cross sectional research design, which is a study that studies the dynamics of the correlation between the dependent and independent variables with a point in time approach model (Praktiknya, 2007). So the dependent variable (anemia in pregnant women) and the independent variable (maternal compliance with FE tablet consumption).

RESULT AND DISCUSSION

Table 1
Frequency Distribution Based on Age and Pregnancy Age in Trimester III Pregnant
Women at Cipayung Health Center in 2022

Characteristics	Mean	SD	Minimum- Maximum	95%CI
Age of Pregnant Women	30,52	1,28	20 – 45	27,90 - 33,13
Pregnancy Age	32,85	2,77	28 – 37	31,86 – 33,83

Based on the data contained in table 4.1, it is known that the average age of pregnant women is 31 years with a standard deviation of 1.28. The lowest age is 20 years old and the highest is 45 years old. The interval estimation concluded that 95% believed that the average age of mothers who participated in this study was in the age interval of 28 years to 33 years. In the results of gestational age, it was found that the average gestational age was at 33 weeks with a standard deviation of 2.77. The lowest gestational age was at 28 weeks gestation and the highest was at 37 weeks gestation. The interval estimation concluded that 95% believed that the average mother who participated in this study was in the range of 32 weeks to 34 weeks of gestation.

Table 2
Frequency Distribution Based on Education and Parity in Trimester III Pregnant
Women at Cipayung Health Center in 2022

Characteristics	Frequency	Persentase (%)
Education		
Education less than equal to Junior High School Graduation / Equivalent	15	45,5 %
Education more than equal to Graduated Senior High School / Equivalent	18	54,5 %
Gravida		
Pregnancy 1-2 times	26	78,8 %
Pregnancy more than 2 times	7	21,2 %
Knowledge		
High (76-100)	28	84,8
Medium (56-75)	5	15,2
Low (<55)	0	0

Based on table 4.2, it is known that out of 33 pregnant women there are 18 people (54.5%) who have more than the same education as graduating from high school / equivalent and 15 people (45.5%) who have less than the same education as graduating from junior high school / equivalent. Pregnancy data shows that out of 33 pregnant women there are 26 people (78.8%) who are currently undergoing the first to second child pregnancy and 7 pregnant women (21.2%) are currently carrying out more than 2 pregnancies. Data on the knowledge of pregnant women about adherence to consuming

the FE table showed that out of 33 pregnant women, 28 people (84.8%) had high knowledge and 5 people (15.2%) had low knowledge.

Table 3
Frequency Distribution of Adherence to FE Tablet Consumption in Review of MCH Book Filling of Pregnant Women in Trimester III at Cipayung Health Center in 2022

Adherence to FE Tablet Consumption	Frequency (f)	Persentase (%)
Compliant	21	63,6
Non-compliant	12	36,4
Total	33	100

Based on table 4.3, it is known that out of 33 pregnant women there are 21 people (63.6%) who are obedient in consuming FE tablets in terms of compliance in filling out the KIA book. The data also showed that there were 12 people (36.4%) who were not compliant in consuming FE tablets in pregnant women in Trimester III at Cipayung Health Center in 2022.

Table 4
Frequency Distribution of Anemia in Pregnant Women in Trimester III at Cipayung Health Center in 2022

Anemia Status	Frequency (f)	Persentase (%)
No Anemia	16	48,5
Moderate Anemia	17	51,5
Severe Anemia	0	0
Total	33	100

Based on table 4.4, it is known that out of 33 people there are 16 people (48.5%) third trimester pregnant women who do not experience anemia and 17 people (51.5%) pregnant women with moderate anemia at Cipayung Health Center in 2022.

Table 5
Frequency Distribution of Hb Levels at the Initial and Final Visit of the Study in Third Trimester Pregnant Women at Cipayung Health Center in 2022

Data	Mean	SD	Minimum-Maximum	95%CI
Initial visit Hb level	10,15	0,22	8,1 – 13	9,69 – 10,62
Final visit Hb level	10,87	0,18	9 – 13,1	10,5 – 11,25

Based on the data contained in table 4.5, it is known that the average Hb level in pregnant women at the initial visit is 10.15 gr% with a standard deviation of 0.22. The lowest Hb level was 8.1 gr% and the highest was 13 gr/dl. The interval estimation concluded that 95% believed the average Hb level before treatment was 9.69 g% to 10.62 g%. The mother's Hb level at the final visit was an average of 10.87 gr% with a standard deviation of 0.18. The lowest Hb level after treatment was 9 g% and the highest was 13.1 g%. The interval estimate concluded that 95% confidence that the average Hb level after treatment was 10.5 g% to 11.25 g%.

Table 6
Relationship between Compliance of FE Tablet Consumption in terms of MCH Book Filling with Anemia Incidence at Cipayung Health Center in 2022

No	Adherence to FE Tablet Consumption	Status Anemia				Anemia Status	%	Value <i>p</i>
		No Anemia	%	Moderate Anemia	%			
1	Compliant	14	66,7	7	33,3	21	100	0,016
2	Non-compliant	2	16,7	10	83,3	12	100	

Based on table 4.5, it is known that of the 21 pregnant women who were obedient in consuming FE tablet in terms of the use of the MCH Book, there were 14 people (66.7%) who were not anemic and 7 people (33.3%) who experienced moderate anemia in third trimester pregnant women at Cipayung Health Center in 2022. The results also showed that of the 12 pregnant women who were not compliant in the consumption of FE table in terms of the use of the MCH book, there were 10 people (83.3%) who were anemic and 2 people (16.7%) who were not anemic in Trimester III pregnant women at Cipayung Health Center in 2022. The statistical test results obtained a Pvalue of 0.016 where this result is smaller than 0.05 so it can be concluded that there is a relationship between compliance with FE tablet consumption in terms of the use of the MCH book with the incidence of anemia in third trimester pregnant women at Cipayung Health Center in 2022.

This study is in line with the research of Neng Imas, et al (2021) which states that there is a significant relationship between compliance with Fe tablet consumption, ANC visits with the incidence of anemia, and there is no significant relationship between information sources and the incidence of anemia in third trimester pregnant women at Puskesmas X, Serang Regency in 2021. This study is also in line with the research of Atun Wigati, et al (2021) which states that there is a relationship between the level of compliance with taking Fe tablets and the incidence of anemia in third trimester pregnant women.

The regularity of pregnant women in taking FE tablets can be seen from the use of the KIA book. Maternal compliance in taking FE tablets is an awareness and obedience that must be done every day. Based on research conducted by Kenang et al (2018), it shows that there is a significant relationship between the role of health workers and maternal compliance in taking FE tablets. The role of health workers in this study is seen from the support and information of health workers in informing the importance of FE tablets through an explanation of the use of the MCH book. The sample in this study amounted to 115 pregnant women and as many as 76 pregnant women who received an explanation of the MCH book properly. Of these, 63 pregnant women (83%) were compliant in taking FE tablets during pregnancy. (Kenang et al., 2018).

FE tablets are given and must be consumed regularly by pregnant women. These efforts are made to overcome iron nutrition anamia that occurs in pregnancy. Through the consumption of 90 tablets during pregnancy, it is hoped that iron consumption, which cannot be fully obtained from food, can be obtained through FE tablets. The

provision of FE tablets has been scientifically tested for its effectiveness and must be given according to the applicable dosage and conditions (Ministry of Health, 2020).

Research conducted by Anggraini et al (2018) shows that good interactions between mothers and health workers have an effect on maternal compliance in consuming FE tables. Through this good interaction, prevention of severe anemia can be prevented 5 times. The interaction of pregnant women with health workers was obtained from questionnaires and in-depth interviews between health workers and pregnant women, for the variable of adherence to taking iron tablets was obtained from in-depth interviews with pregnant women and data in the MCH book. Many pregnant women said that the role of health workers was very important in filling out the MCH book. Pregnant women are given information about the contents of the MCH book related to pregnancy danger signs and how to prevent them, one of which is filling out the FE tablet consumption checklist sheet (Anggraini et al., 2018b).

The results of this study are in line with research conducted by Tasya (2018) regarding the relationship between maternal knowledge of the use of the MCH book and compliance with FE tablet consumption in Samarinda. Pregnant women with high knowledge have high compliance with FE table consumption. High maternal knowledge of the use of the MCH book makes good behavior changes during pregnancy, one of which is in consuming FE tablets. MCH Book filling is done as one of the strategies to monitor FE tablet consumption during pregnancy. The midwife will check when the mother makes a re-visit using the KIA book filling done by the mother (AYUNITA, 2018b).

Research by Colti Sistriani et al (2018) said that mothers who have low knowledge about filling out the MCH book tend not to fill out the book. Filling in complete records in the book can support the provision of information for health workers in providing interventions to mothers at every age during pregnancy control. The study found that there was a relationship between MCH book recording function and MCH knowledge. Complete MCH book records are more common in mothers with high education levels and routinely carry out pregnancy checks at Posyandu or Puskesmas. The results of the study explained that 69.2% of pregnant women received information on the use of the MCH book from cadres. When the research was conducted, there was still no program for group study between midwives, cadres, and pregnant women to conduct joint learning related to the filling of the MCH book carried out from pregnancy to child birth.

Based on all the explanations that have been given from several similar studies, the researcher provides assumptions and conclusions from the results of this study. According to the researcher, the use of the MCH book is very important for the monitoring process of midwives as health workers on the health status of mothers during pregnancy. One of the monitoring that can be done is in the consumption of FE tablets during pregnancy. Consumption of FE tablets is a mandatory thing that must be consumed by pregnant women, to prevent problems during pregnancy, one of which is anemia. Education on the use of the MCH Book is important so that pregnant women

understand and understand what parts are the focus of filling. The explanation of the book is very important to be given in an interesting way by health workers, so that pregnant women are interested in reading every page. Communication must also be well established, so that midwives can follow up on the use of books at every meeting during pregnancy implementation either at the Posyandu or at the Puskesmas.

CONCLUSION

Based on the research that has been conducted on third trimester pregnant women at Cipayung Health Center, the following conclusions can be drawn:

Demographic data shows that:

1. The average age of pregnant women is 31 years old.
2. The average gestational age of the mother at the time of the study was 33 weeks.
3. The education of pregnant women in the study was mostly higher education, namely 18 people (54.5%) from a total of 33 pregnant women.
4. The number of children the mother currently has is out of 33 pregnant women, 26 people (78.8%) have 1 to 2 children.
5. In the knowledge data of 33 pregnant women, 28 people (84.8%) had high knowledge with a questionnaire score of more than 75 points.

Anemia category data, there were 16 people (48.5%) of third trimester pregnant women experiencing anemia and 17 people (51.5%) of pregnant women with moderate anemia at Cipayung Health Center in 2022.

Data on the category of adherence to taking FE tablets, there were 21 people (63.6%) compliant pregnant women and 12 people (36.4%) non-compliant third trimester pregnant women in terms of the use of the KIA Book at Cipayung Health Center in 2022.

The statistical test results generated a Pvalue of 0.016 where the result is smaller than alpha 0.05 so it can be concluded that there is a relationship between FE tablet consumption in terms of the use of the MCH book with the incidence of anemia in third trimester pregnant women at Cipayung Health Center in 2022.

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