

# The Dominant Factor Causing Low Adherence of Pregnant Women Consuming Zinc Tablets in the Work Area of the Public Health Center Stem Quiz Deli Serdang Regency Year 2022

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## ARTICLE INFO

## ABSTRACT

### Keywords:

Dominant factor, compliance, pregnant women, zinc tablets

Background: The zinc supplementation program is an effort that has been made by the Indonesian government to prevent anemia in pregnancy which is given in pill form but the incidence of anemia and pregnancy complications is still high due to low adherence of pregnant women in consuming iron tablets. The purpose of this study was to determine the dominant factors causing low adherence of pregnant women to consuming zinc tablets in Batang Kuis Health Center work area in 2022. Research Methods: The research design uses a descriptive analytic method with a cross sectional research design. The study population was all pregnant women who came for a visits at Batang Kuis health center and classes for pregnant women carried out at the Pustu and Poskesdes in the working area of Batang Kuis health center. The number of samples involved 124 people using accidental sampling. Univariate data analysis using frequency distribution tables, bivariate analysis using Chi-Square, multivariate analysis using multiple logistic regression tests. Results: The significant predisposing factors were the knowledge variables p - value (0.000) and parity p - value (0.042), which were not significant for the educational variables p - value (0.193) and employment p - value (0.140). The significant enabling factors were place of residence variable p - value (0.001), socioeconomic p - value (0.003), quantity of visits anc p - value (0.007), quality anc p - value (0.011). The significant reinforcing factors were the variables of the role of health workers p - value (0.022) and motivation p - value (0.000), not significant to the family/community support variable p - value (0.227). multivariate analysis showed that the dominant factor was knowledge with p-value (0.001) and OR 179.5. Conclusion: pregnant women with more or less dominant knowledge cause low adherence of pregnant women in consuming zinc tablets.

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## 1. INTRODUCTION

Pregnancy is defined as fertilization or union of spermatozoa and ovum and followed by nidation or implantation. If calculated from the fertility phase until the birth of the baby, a normal pregnancy will take place within 40 weeks or 10 months according to the international calendar. The first pregnancy (primiparous) is associated with high compliance with the consumption of iron and folic acid tablets. This can be influenced by the mother being very careful during her first pregnancy so that the mother follows the advice regarding the consumption of iron and folic acid tablets to ensure the condition of the mother and The fetus is well looked after. Women who have been pregnant and have had the experience of giving birth several times (Grandemultipara) may experience unwanted side effects, therefore they are hesitant to take iron and folic acid tablets again[1].

Iron as an essential micro element is needed by the body which is related to hemoglobin synthesis. Consumption of Fe tablets is closely related to hemoglobin levels in pregnant women. Non-compliance in consuming iron tablets is closely related to the problem of iron deficiency anemia which is experienced by many pregnant women, non-compliance and the wrong way of consuming it

can cause a lack of iron absorption in the body of pregnant women, this is one of the nutritional problems that occurs in pregnant women and still difficult to overcome throughout the world [2].

Iron deficiency anemia in pregnant women is a health problem that affects all pregnant women in developing countries. According to WHO, iron deficiency in pregnant women is 35-75% and increases with increasing gestational age. Based on data according to WHO (2020), the prevalence of anemia in pregnant women throughout the world has decreased by 4.5% over the last 19 years, from 2000 to 2019, while in Indonesia in 2019 the incidence of anemia in pregnant women increased by 44.2% from 2015 of 42.1%. Based on the 2018 Riskesdas results, it shows that in Indonesia 48.9% of pregnant women experience anemia. As many as 84.6% of anemia in pregnant women occurs in the 15-24 year age group [3]

Pregnant women with severe anemia are more likely to give birth to babies with premature birth or low birth weight (LBW) and high perinatal mortality. According to WHO (2020) 40% of maternal deaths in developing countries are related to anemia during pregnancy, which is mostly caused by iron deficiency and acute bleeding. The birth outcomes of pregnant women with iron deficiency anemia are 12-28% fetal death, 30% perinatal death, and 7-10% neonatal death. The number of maternal deaths compiled from family health program records at the Ministry of Health in 2020 showed 4,627 deaths in Indonesia. This number shows an increase compared to 2019 of 4,221 deaths [4]. Considering the large effects of iron deficiency on pregnant women and fetuses, it requires careful attention, and with timely diagnosis and appropriate treatment of complications, complications can be overcome and better results are achieved [5]. In Indonesia, it is estimated that every day there are 41 cases of anemia, and 20 women die because of this condition. This high figure is caused by low knowledge and awareness of the dangers of anemia in pregnancy which tends to appear in the first and third trimesters of [6].

An indicator of the success of health services in a country can be seen from the Maternal Mortality Rate (MMR). Maternal death can occur due to several factors, including anemia. The maternal mortality rate shows that 70% is caused by anemia and 19.7% for pregnant women who are not anemic. 15-20% of maternal deaths are directly or indirectly related to anemia. Anemia in pregnancy is also associated with increased maternal morbidity [7].

Indonesia has not succeeded in achieving the 5th MDG goal, namely improving maternal health. In 1991, the maternal mortality rate reached 390 per 1,000 live births. This number has decreased to 228 per 100,000 live births in 2007. However, hard efforts are still needed to achieve the target of 102 per 100,000 live births in 2015. As stated in the Presidential Regulation of the Republic of Indonesia Number 59 of 2017, Indonesia is committed to playing an active role in implementing Sustainable Development Goals (SDGs). The goals of the SDGs consist of 17 goals and 169 targets which describe the targets and scope of the global development agenda (Regulation of the President of the Republic of Indonesia Number 59, 2017). The third goal is to create a healthy and prosperous life, where one of the targets in 2030 is to reduce the death rate ratio Maternal (MMR) to less than 70 per 100,000 live births [8]

The iron supplementation program is an effort that has been made by the Indonesian government to prevent anemia in pregnancy which is given in the form of 200 mg ferrous iron sulfate pills every day for 90 days in the third trimester of pregnancy but the rate of anemia in pregnancy is still high. This is in line with research conducted by Triana et al., (2021) which states that prevention and treatment of anemia that occurs in pregnant women can be done by consuming iron tablets [9].

Compliance with consuming iron tablets in pregnant women is influenced by several factors, one of which is age, education, employment, knowledge of the importance of consuming iron tablets, knowledge about the risk of anemia, family support, motivation in pregnant women to comply with consuming iron tablets, the number of parities of pregnant women, the quantity and quality of antenatal care visits as well as the support of health workers in providing continuous information to pregnant women about the importance of consuming iron tablets regularly. The results of research by Sumi Anggraeni (2019) stated that knowledge is a determining factor that influences the compliance of pregnant women in consuming iron tablets. Lack of knowledge will tend to be disobedient in consuming iron tablets. They think that consuming iron tablets will not be of any benefit. what and if the mother does not regularly consume iron tablets it will not have a bad effect on pregnancy. Family

support is related to adherence to consuming iron tablets. One of the roles of the family is to remind them to take medication regularly, efforts to increase family support regarding iron tablets, namely by providing health education to the families of pregnant women by providing knowledge and instilling positive values and perceptions so that families. Good motivation in consuming iron tablets is a supporting factor in successful compliance with iron tablet consumption. Antenatal visits have an important role in increasing pregnant women's compliance in consuming iron tablets. Iron tablets are given when pregnant women make antenatal visits so compliance with consuming iron tablets (iron tablets) depends on routine visits. Pregnant women make antenatal care visits to get sufficient amounts of iron tablets. Low maternal participation in antenatal care visits related to the level of compliance with iron tablet consumption [10]

The health services provided to pregnant women must meet the 14 T Antenatal Care Service Standards, namely weighing and measuring body height, measuring blood pressure, measuring LILA, measuring the height of the top of the uterus (uterine fundus), determining tetanus immunization status and administering tetanus immunization according to immunization status. , Giving blood supplement tablets of at least 90 tablets during pregnancy, Determining fetal presentation and fetal heart rate (DJJ), Carrying out interviews (providing interpersonal communication and counseling, including postpartum family planning), Simple laboratory test services, minimum blood hemoglobin (Hb) test , urine protein examination and blood group examination (if this has not been done before), case management according to indications. A low level of compliance with consuming iron tablets is associated with a high rate of anemia in pregnant women, which is one of the factors causing LBW. Non-compliance with taking Fe tablets can cause low hemoglobin levels in the blood or anemia. Untreated anemia endangers pregnant women and the fetus they are carrying. [11]

Iron tablet supplementation is an anemia prevention program in Indonesia. Indicators of the success of the program use antenatal care (ANC) coverage and iron tablet coverage. Ministry of Health of the Republic of Indonesia Basic Health Research (RISKESDAS) Balitbang Ministry of Health of the Republic of Indonesia. 2018 explains the iron tablet supplementation program to overcome the lack of iron consumption, namely the government creates a blood supplement program for each pregnant mother, 90 tablets during pregnancy. Apart from being used to form red blood cells, iron also plays a role as a component in forming myoglobin (a protein that carries oxygen to muscles), collagen (a protein found in bones, cartilage and connective tissue) and enzymes. Iron also functions in the body's defense system[12].

2018 Riskesdas data shows that 73.2% of pregnant women who received blood supplement tablets (iron tablets) took them for 90 days. However, 26.8% of pregnant women do not consume iron tablets regularly and only 38.1% consume iron tablets for 90 days or more. The reason why the iron tablet supplementation target of 90 days or more was not achieved was because 21.2% of pregnant women did not like it and 61.9% admitted to consuming iron tablets for less than 90 days. The risk factors for non-compliance with consuming iron tablets are influenced by the form of the iron tablets, pregnant women often forget, the side effects they experience such as nausea and vomiting, and the lack of education and counseling from health workers [13]. The percentage of pregnant women in North Sumatra province who received 90 iron tablets was 67.0% and this figure was still unable to reach the national target where the target set for giving iron tablets during pregnancy was 83.6%. [14].

Based on data from the North Sumatra Health Service in 2022, the percentage of anemia cases caused by iron deficiency in pregnant women was 72.3%, this was because pregnant women did not take iron tablets, while the increase in cases of anemia was also due to mothers' non-compliance in consuming iron. iron was 23.15%, where this case occurred in Deli Serdang Regency, which is one of the regencies in North Sumatra Province [15]

Deli Serdang Regency is one of the regencies on the east coast of North Sumatra which is located between 2°57' North Latitude to 3°16' North Latitude and 98°33' East Longitude to 99°27' East Longitude with an altitude of 0-500 m above sea level. Deli Serdang Regency has an area of 2,497.72 km<sup>2</sup> with the largest sub-district being Sinembah Tanjung Muda (STM) Hulu District (223.38 km<sup>2</sup>) and the smallest sub-district being Deli Tua District (9.36 km<sup>2</sup>). Deli Serdang Regency consists of 22 sub-districts and 394 villages/sub-districts. These sub-districts include Gunung Meriah, STM Hulu, Sibolangit, Kutalimbaru, Pancur Batu, Namorambe, Biru-Biru, STM Hilir, Bangun Purba,

Galang, Tanjung Morawa, Patumbak, Deli Tua, Sunggal, Hamparan Perak, Labuhan Deli, Percut Sei Tuan, Batang Kuis, Labu Beach, Beringin, Lubuk Pakam, and Merbau Fence. Based on data from Deli Serdang Regency, it is stated that health services for pregnant women in Deli Serdang Regency have decreased from 93.04% in 2019 to 90.92% in 2020. The problem that is still being faced in the implementation of health services for pregnant women is that pregnant women are not targeted. in accordance with conditions in the field due to the very high level of mobility of the Deli Serdang population, especially residents in areas near the border with districts/cities around Deli Serdang Regency, so data collection is inaccurate. There is still a lack of reports from the community health center network so that pregnant women who receive health services at other health service facilities are not recorded in the health center reports. There is still a lack of public awareness regarding the importance of examinations during pregnancy, the importance of consuming iron tablets regularly so that iron tablets are not distributed optimally so that the coverage of pregnant women who receive blood supplement tablets in 2020 is 91.39%. This figure is not much different from the coverage of K4 pregnant women, which means that as many as 90.92% of pregnant women received health services [16]

Batang Kuis District has an area of  $\pm 40.34$  KM<sup>2</sup>. is located at an altitude of 4 – 30 m above sea level and has a tropical climate. Batang Kuis District has a population of 59,989 people and 10,837 households (heads of families). Batang Kuis Health Center is an inpatient health center located in Deli Serdang Regency. The results of a survey conducted as preliminary data at the Batang Kuis Community Health Center showed that in 2020 the total number of pregnant women was 1385 and 89.9% received iron tablets. In 2021 the total number of pregnant women will be 1446 people and 90% will receive iron tablets. The October 2022 report stated that the target was 1,463 pregnant women, 293 pregnant women with complications, 125 K1 visits and 127 K6 people. The percentage of iron tablets given was 73.8% and 10% were identified as having anemia. The administration of iron tablets is carried out during classes for pregnant women held in each village. The Batang Kuis Community Health Center's pregnant women's class activities are a means for group learning for pregnant women, which aims to increase mothers' knowledge and skills regarding pregnancy, pregnancy care, childbirth, postpartum care including postpartum family planning, newborn care using the Regional KIA Book The work of the Batang Kuis Health Center consists of 11 villages with a total of 47 posyandu, each village implementing posyandu for pregnant women. Apart from being given at the posyandu to pregnant women, iron tablets are also given during pregnant women's K1 to K6 visits at the Batang Kuis Health Center. Coverage of K1 and K6 at the Batang Kuis Community Health Center still cannot meet the target, namely only 72.1%. Low compliance of pregnant women in taking iron tablets is one of the causes of anemia and complications in pregnancy. Data from the Batang Kuis Community Health Center is that around 40% - 50% of mothers do not comply with taking iron tablets. Pregnant women say they don't drink regularly because they feel nauseous after drinking, it smells bad, they often forget, they feel healthy so they don't need to consume it every day, they are afraid of their baby being big so they don't dare to take iron tablets every day..2

## 2. METHOD

The design of this research is a descriptive analytical research method, in this case the researcher attempts to find the relationship between the independent variable and the dependent variable using a cross sectional research design. The population in this study were all pregnant women who were registered to make antenatal care visits to the Batang Kuis Community Health Center. Pregnant women's classes were held at Pustu and Poskesdes in the working area of the Batang Kuis Community Health Center, totaling 180 pregnant women. Data on pregnant women from December 2022 to February 2023. This research is quantitative research with non-random sampling technique using accidental sampling technique, namely sampling carried out by selecting samples that are found by chance, namely all pregnant women with a gestational age of over 4 weeks. , made an antenatal care visit at the Batang Kuis Community Health Center and attended the pregnant women's class which was held at the community health center and village health post in the working area of the Batang Kuis Community Health Center. Data analysis techniques used in this research are Univariate Analysis and Bivariate Analysis.

### 3. RESULTS AND DISCUSSION

#### Research Results

##### Univariate Data Analysis

Based on the results of research at the Batang Kuis Health Center in Deli Serdang Regency on 124 respondents, the following were obtained:

#### 1. Description of the Dominant Factors Causing Low Compliance of Pregnant Women Consuming Iron Tablets in the Working Area of the Batang Kuis Health Center, Deli Serdang Regency in 2022.

**Table 1** Frequency Distribution of Respondents regarding Pregnant Women's Compliance with Consuming Iron Tablets at the Batang Kuis Community Health Center

Compliance with Iron Consumption	Frequency	Percentage
Obedient	21	16.9
Not obey	103	83.1
Amount	124	100

Based on table 1, it shows that there are more pregnant women who are not compliant in consuming iron tablets as much as 83.1% compared to pregnant women who are compliant in consuming iron tablets as much as 16.9%. The research results show that the dominant factor causing non-compliance is influenced by lack of knowledge. Based on data obtained from the Batang Kuis Community Health Center, the iron tablets given to pregnant women are 90 tablets during pregnancy or 30 tablets per trimester of pregnancy. The dose that must be consumed is 60 mg per day.

#### 2. Description of the dominant predisposing factors influencing the compliance of pregnant women with consuming iron tablets in the working area of the Batang Kuis Health Center, Deli Serdang Regency in 2022.

**Table 2** Frequency Distribution of Predisposing Factors that Influence Pregnant Women's Compliance in Consuming Iron Tablets at the Batang Kuis Community Health Center

Variable	Frequency	Percentage
<b>Respondents' Knowledge</b>		
- Good	25	20.2
- Not enough	99	79.8
<b>Respondent's Education</b>		
- Tall	41	33.1
- Low	83	66.9
<b>Respondent's Occupation</b>		
- Work	24	19.4
- Doesn't work	100	80.4
<b>Parity</b>		
- Primipara	29	23.4
- Multipara	95	76.6
<b>Amount</b>	<b>124</b>	<b>100</b>

Table 2 shows from the predisposing factors that knowledge of pregnant women is still low regarding compliance in consuming iron tablets as much as 79.8%. Meanwhile, in terms of education, the majority of pregnant women have low education, namely elementary school and junior high school, 66.9%. Judging from the respondents' work, the majority of pregnant women do not work, 80.4%. At parity, the majority of pregnant women have given birth to more than one child or are multiparous, 76.6%. The results of the research show that poor knowledge is influenced by low education, the work of respondents, the majority of whom are unemployed, is influenced by low education, parity with the majority being multiparous is influenced by insufficient knowledge, low education, and not working. Multipara causes respondents to be unable to carry out activities that can produce economic value.

**3. Description of the dominant enabling factors influencing the compliance of pregnant women with consuming iron tablets in the working area of the Batang Kuis Health Center, Deli Serdang Regency in 2022.**

**Table 3** Frequency Distribution of Possible Factors that Influence Pregnant Women's Compliance in Consuming Iron Tablets at the Batang Kuis Community Health Center

Variable	Frequency	Percentage
<b>Residence</b>		
- Travel distance ≤ 25 minutes	48	8.7
- Travel distance > 25 minutes	76	61.3
<b>Socioeconomic</b>		
- Tall	35	28.2
- Low	89	71.8
<b>Quantity of ANC Visits</b>		
- Organized	40	32.3
- Irregular	84	67.7
<b>ANC quality</b>		
- Quality	60	48.4
- Not Quality	64	51.6
<b>Amount</b>	<b>124</b>	<b>100</b>

Table 3 shows that from the enabling factors, the majority of pregnant women's residence takes >25 minutes to go to the Batang Kuis Community Health Center, 61.3%. The majority of socio-economic conditions for pregnant women are low at 71.8%. The majority of ANC visits made by pregnant women were irregular as much as 67.7% with the average quality of ANC being poor at 51.6%. The research results showed that the travel distance of > 25 minutes from the respondent's house to the Batang Kuis health center was one of the causes of the irregular quantity of ANC visits. Irregular ANC visits cause respondents not to receive quality services and maximum information from health workers, which affects the compliance of pregnant women in consuming iron tablets.

**4. Description of the dominant reinforcing factors influencing the compliance of pregnant women with consuming iron tablets in the working area of the Batang Kuis Health Center, Deli Serdang Regency in 2022.**

**Table 4.** Frequency Distribution of Strengthening Factors that Influence Pregnant Women's Compliance in Consuming Iron Tablets at the Batang Kuis Community Health Center

Variable	Frequency	Percentage
<b>Family/Community Support</b>		
- Good	42	33.9
- Not enough	82	66.1
<b>Role of Health Workers</b>		
- Good	90	72.6
- Not enough	34	27.4
<b>Respondent Motivation</b>		
- Tall	35	28.2
- Low	89	71.8
<b>Amount</b>	<b>124</b>	<b>100</b>

Table 4 shows that from the strengthening factors, the majority of family/community support for pregnant women's compliance in consuming iron tablets is less supportive at 66.1%. The role of health workers is good in providing services to pregnant women who consume iron tablets as much as 72.6%. while the motivation of pregnant women towards compliance in consuming iron tablets is still low, namely 71.8%. The results of the research show that family/community support for respondents is lacking in consuming iron tablets because the family/community does not have much time to provide support because they are busy with income-earning activities outside the home. Lack of family/community support causes respondents to lack motivation to comply with taking iron tablets, because they feel that no one reminds them and provides support. The role of health workers is good,

but because respondents do not regularly make ANC visits, the information conveyed by health workers is not well absorbed.

### Bivariate Analysis

The bivariate analysis carried out aims to determine the factors related to predisposing factors, enabling factors and reinforcing factors in the compliance of pregnant women with consuming iron tablets in the working area of the Batang Kuis Health Center, Deli Serdang Regency. Predisposing variables are knowledge, education, employment and parity. Enabling variables include place of residence, socio-economics, quantity of ANC visits and ANC quality, while reinforcing variables include family/community support, the role of health workers and motivation. Clearly, the results of the bivariate analysis will be presented in the following table:

#### 1. The relationship between predisposing factors that dominantly influence pregnant women's compliance with taking iron tablets

**Table 5** Relationship between respondents' knowledge of compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	Respondents' Knowledge				Amount		P Value	OR (95 % CI)
	Good		Not enough		n	%		
	n	%	n	%			n	%
Obedient	17	68.0	4	4.0	21	16.9	0.000	50.469 (13.66-186.3)
Not obey	8	32.0	95	96.0	103	83.1		
<b>Total number</b>	<b>25</b>	<b>100</b>	<b>99</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between respondents' knowledge and compliance in consuming iron tablets shows that respondents who lack knowledge are more at risk of not complying in consuming iron tablets (96%), while only (4.0%) respondents are compliant with less knowledge. The results of statistical tests showed that knowledge had a significant relationship with compliance in consuming iron tablets, p-value = 0.000 (<0.05), from the odds ratio analysis there was a 50.469 times chance of non-compliance in consuming iron tablets compared to mothers who had good knowledge (OR 50.469 95% CI 13.66-186.3).

**Table 6** Relationship between respondents' education and compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	Respondent's Education				Amount		P Value	OR (95 % CI)
	Tall		Low		n	%		
	n	%	n	%			n	%
Obedient	10	24.4	11	13.3	21	16.9	0.193	2.111 (0.813-5.483)
Not obey	31	75.6	72	68.7	103	83.1		
<b>Total number</b>	<b>41</b>	<b>100</b>	<b>83</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between respondent education and compliance in consuming iron tablets shows that respondents with low education are more at risk of not complying with consuming iron tablets (68.7%), while only (13.3%) respondents with low education are compliant. The results of statistical tests showed that education did not have a significant relationship with compliance in consuming iron tablets, p-value = 0.193 (<0.05), from the odds ratio analysis there was a 2.111 times chance of not complying in consuming iron tablets compared to mothers with higher education (OR 2.111 95% CI 0.813-5.483).

**Table 7** Relationship between respondents' employment and compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	Respondent's Occupation				Amount		P Value	OR (95 % CI)
	Work		Doesn't work		n	%		
	n	%	n	%			n	%
Obedient	7	29.2	14	14.0	21	16.9	0.140	2.529 (0.889-7.198)
Not obey	17	70.8	86	86.0	103	83.1		
<b>Total number</b>	<b>24</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>124</b>	<b>100</b>		

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The relationship between respondents' work and compliance in consuming iron tablets shows that respondents who do not work are at greater risk of not complying with consuming iron tablets as much as (68.7%), while respondents who are compliant in consuming iron tablets are only (14.0%) among respondents who do not work. The results of statistical tests showed that work did not have a significant relationship with compliance in consuming iron tablets,  $p$ -value = 0.140 ( $<0.05$ ), from the odds ratio analysis there was a 2.529 times chance of not complying in consuming iron tablets compared to working mothers (OR 2.529 95% CI 0.889-7.198).

**Table 8** Relationship between respondent parity and compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	Respondent's Parity				Amount		P Value	OR (95 % CI)
	Primipara		Multipara		n	%		
	n	%	n	%			n	%
<b>Obedient</b>	9	31.0	12	12.6	21	16.9	0.042	3.113 (1.153-8.398)
<b>Not obey</b>	20	32.0	83	87.4	103	83.1		
<b>Total number</b>	<b>29</b>	<b>100</b>	<b>95</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between respondent parity and compliance in consuming iron tablets shows that respondents who gave birth more than once or were multiparous were more at risk of not complying with consuming iron tablets as much as (87.4%), while respondents were compliant in consuming iron tablets only (12.6%) of respondents with primiparous parity. The results of statistical tests showed that multiparous parity had a significant relationship with compliance in consuming iron tablets,  $p$ -value = 0.042 ( $<0.05$ ), from the odds ratio analysis there was a 3.113 times chance of non-compliance in consuming iron tablets compared to mothers with primiparous parity (OR 3.113 95% CI 1.153-8.398).

## 2. The relationship between the dominant enabling factors influencing pregnant women's compliance with taking iron tablets.

**Table 9** Relationship between where respondents live and compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	Residence				Amount		P Value	OR (95 % CI)
	≤ 25 menit		>25 mnt		n	%		
	n	%	n	%			n	%
<b>Obedient</b>	15	31.9	6	6.6	21	16.9	0.001	6.656 (2.227-19.89)
<b>Not obey</b>	32	68.1	71	93.4	103	83.1		
<b>Total number</b>	<b>25</b>	<b>100</b>	<b>99</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between where respondents live and compliance in consuming iron tablets shows that respondents who live with a distance of >25 minutes to the Batang Kuis Community Health Center are at greater risk of not complying with consuming iron tablets (93.4%), while respondents are only compliant in consuming iron tablets. (6.6%) respondents whose residence is >25 minutes away. The statistical test results showed that residence with a distance of >25 minutes had a significant relationship with compliance in consuming iron tablets,  $p$ -value = 0.001 ( $<0.05$ ), from the odds ratio analysis there was a 6.656 times chance of not complying with consuming iron tablets compared to mothers who live within a distance of <25 minutes (OR 6.656 95% CI 2.227-19.89).

**Table 10** Respondents' socio-economic relationship to compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	Socioeconomic				Amount		P Value	OR (95 % CI)
	Tall		Low		n	%		
	n	%	n	%			n	%
<b>Obedient</b>	12	34.3	9	10.1	21	16.9	0.003	4.638 (1.739-12.36)
<b>Not obey</b>	23	65.7	80	89.9	103	83.1		
<b>Total number</b>	<b>35</b>	<b>100</b>	<b>89</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between respondents' socio-economics and compliance in consuming iron tablets shows that respondents with low socio-economics are more at risk of not complying with consuming iron tablets (89.9%), while respondents with low socio-economics are only (10.1%) compliant in consuming iron tablets. . The results of statistical tests showed that socioeconomic had a significant relationship with compliance in consuming iron tablets, p-value = 0.003 (<0.05), from the odds ratio analysis there was a 4.638 times chance of non-compliance in consuming iron tablets compared to mothers with high socioeconomic status ( OR 4.638 95% CI 1.739-12.36).

**Table 11** Relationship between the quantity of respondents' ANC visits and their compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	ANC visit				Amount		P Value	OR (95 % CI)
	Regular		Irregular		n	%		
	n	%	n	%	n	%		
<b>Obedient</b>	1	2.5	20	23.8	21	16.9	0.007	0.082 (0.011-0.636)
<b>Not obey</b>	39	97.9	64	76.2	103	83.1		
<b>Total number</b>	<b>40</b>	<b>100</b>	<b>84</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between the quantity of respondents' ANC visits and their compliance in consuming iron tablets shows that respondents who do not regularly attend ANC visits are at greater risk of not complying with consuming iron tablets as much as (76.2%), while respondents in the compliant category in consuming iron tablets are only (23.8%) who make irregular ANC visits. The results of statistical tests showed that the quantity of ANC visits had a significant relationship with compliance in consuming iron tablets, p-value = 0.007 (<0.05), from the odds ratio analysis there was a 0.082 chance of not complying in consuming iron tablets compared to mothers who regularly attended visits. ANC (OR 0.082 95% CI 0.011-0.636).

**Table 12** Relationship between respondents' ANC quality and compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	ANC quality				Amount		P Value	OR (95 % CI)
	Quality		Not Quality		n	%		
	n	%	n	%	n	%		
<b>Obedient</b>	16	26.7	5	7.8	21	16.9	0.011	4.291 (1.461-12.60)
<b>Not obey</b>	44	73.3	59	92.2	103	83.1		
<b>Total number</b>	<b>60</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between ANC quality and compliance in consuming iron tablets shows that respondents who received low-quality ANC were more at risk of not complying with consuming iron tablets as much as (92.2%), while respondents who were compliant in consuming iron tablets only (7.8%) received the service. ANC is not qualified. The results of statistical tests showed that the quality of ANC had a significant relationship with compliance in consuming iron tablets, p-value = 0.011 (<0.05), from the odds ratio analysis there was a 4.291 times chance of not complying in consuming iron tablets compared to mothers who received quality service ( OR 4.291 95% CI 1.461-12.60).

### 3. The relationship between reinforcing factors that dominantly influences pregnant women's compliance with taking iron tablets

**Table 13** Relationship between family/community support and compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	Support				Amount		P Value	OR (95 % CI)
	Good		Not enough		n	%		
	n	%	n	%	n	%		
<b>Obedient</b>	10	23.8	11	13.4	21	16.9	0.227	2.017 (0.778-5.229)
<b>Not obey</b>	32	76.2	71	86.6	103	83.1		
<b>Total number</b>	<b>42</b>	<b>100</b>	<b>82</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between family/community support and compliance in consuming iron tablets shows that respondents who received less support from family and community were more at risk of not complying with consuming iron tablets as much as (86.6%), while respondents were compliant in consuming iron tablets only (13.4%) who lack family/community support. The results of statistical tests showed that family support did not have a significant relationship with compliance in consuming iron tablets,  $p$ -value = 0.227 ( $<0.05$ ), from the odds ratio analysis there was a 2.017 times chance of non-compliance in consuming iron tablets compared to mothers who received family support (OR 2.017 95% CI 0.778-5.229).

**Table 14** Relationship between the role of health workers on compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	The role of health workers				Jumlah		P Value	OR (95 % CI)
	Good		Not enough		n	%		
	n	%	n	%	n	%		
Obedient	20	22.2	1	4.8	21	16.9	0.022	9.429 (1.213-73.28)
Not obey	70	77.8	33	97.1	103	83.1		
<b>Total number</b>	<b>90</b>	<b>100</b>	<b>34</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between the role of health workers and compliance in consuming iron tablets shows that the role of health workers is more or less at risk for respondents who are not compliant in consuming iron tablets as much as (97.1%), while only (4.8%) respondents are compliant in consuming iron tablets. the role of health workers is good. The results of statistical tests showed that the role of health workers had a significant relationship with compliance in consuming iron tablets,  $p$ -value = 0.022 ( $<0.05$ ), from the odds ratio analysis there was a 9.429 times chance of non-compliance in consuming iron tablets compared to mothers who received role support. from good health workers (OR 9.429 95% CI 1.213-73.28).

**Table 15** Relationship between respondents' motivation and compliance with consuming iron tablets at the Batang Kuis Health Center

Compliance with Iron Tablet Consumption	Motivation				Jumlah		P Value	OR (95 % CI)
	Tall		Law		n	%		
	n	%	n	%	n	%		
Obedient	17	48.6	4	4.5	21	16.9	0.000	20.06 (6.032-66.77)
Not obey	18	51.4	85	95.5	103	83.1		
<b>Total number</b>	<b>35</b>	<b>100</b>	<b>89</b>	<b>100</b>	<b>124</b>	<b>100</b>		

The relationship between respondent motivation and compliance in consuming iron tablets shows that respondents who have low motivation are more at risk of not complying with consuming iron tablets (95.5%), while respondents who are compliant in consuming iron tablets are only (4.5%). The results of statistical tests showed that motivation had a significant relationship with compliance in consuming iron tablets,  $p$ -value = 0.000 ( $<0.05$ ), from the odds ratio analysis there was a 20.06 times chance of not complying in consuming iron tablets compared to mothers who had motivation (OR 20.06 95% CI 6.032-66.77).

## Discussion

### The dominant predisposing factors influence pregnant women's compliance with taking iron tablets

Predisposing factors are factors that can facilitate behavior in pregnant women that can influence compliance in consuming iron tablets, namely knowledge, education, employment and parity. Based on the research results, there is a relationship between respondents' knowledge and compliance in consuming iron tablets, indicating that respondents who lack knowledge are more at risk of not complying in consuming iron tablets (96%). The statistical test results obtained P Value = 0.000, meaning that there is a significant relationship between compliance in consuming iron tablets and knowledge. The results of further analysis showed OR= 50,469, meaning that respondents who lacked knowledge had a greater risk of not complying with taking iron tablets by 50,469 times compared to respondents who had good knowledge.

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### **Dominant enabling factors influencing pregnant women's compliance with taking iron tablets**

Enabling factors are factors that make it possible to facilitate behavior, including place of residence, socio-economics, quantity of ANC visits, quality of ANC. The results of the research show that there is a relationship between where the respondent lives and compliance in consuming iron tablets, indicating that respondents who live > 25 minutes away are at greater risk of not complying with consuming iron tablets (93.4%). The statistical test results obtained P Value = 0.001, meaning that there is a significant relationship between compliance in consuming iron tablets and place of residence. The results of further analysis showed that OR= 6,656, meaning that respondents who lived with a travel distance of >25 minutes had a greater risk of non-compliance with consuming iron tablets, 6,656 times higher than respondents who lived with a travel distance of <25 minutes.

### **Dominant reinforcing factors influence pregnant women's compliance with taking iron tablets**

Reinforcing factors are factors that encourage or strengthen the behavior of pregnant women to influence pregnant women's compliance with taking iron tablets, including family support, the role of health workers and motivational relationships.

### **The most dominant factor influencing pregnant women's compliance with consuming iron tablets**

Based on the research results, it shows that the majority of pregnant women's compliance in consuming iron tablets in the Batang Kuis Health Center Working Area is categorized as non-compliant (83.1%). This research shows that the cause of low compliance of pregnant women in consuming iron tablets is due to several factors which result in pregnant women not complying in consuming iron tablets, predisposing factors, enabling factors and reinforcing factors. Compliance is a form of behavior shown by a person directly or indirectly refers to an individual's behavior in accordance with the actions recommended by a health practitioner or information obtained from information sources.

## **4. CONCLUSION**

Based on the research results, it can be concluded as follows: The dominant predisposing factor influencing the compliance of pregnant women with consuming iron tablets in the working area of the Batang Kuis Health Center, Deli Serdang Regency in 2022 is the knowledge variable with a p value of 0.001 and an Odds ratio Exp (B) value of 179.5, while The education variable has a p value of 0.447, an Odds ratio Exp (B) value of 2.541 and a parity p value of 0.300, an Odds ratio Exp (B) value of 3.913 is a confounding variable. There are no dominant enabling factors influencing the compliance of pregnant women with consuming iron tablets in the Batang Kuis Health Center working area in 2022. In the enabling factors from the research results there are confounding variables, namely socio-economic variables with a p value of 0.513 and an Odds ratio Exp (B) 2.191, variable quantity of ANC visits with a p value of 0.123 and Odds ratio Exp (B) 0.050, ANC quality variable with a p value of 0.088 and Odds ratio Exp (B) 8.434. There are no dominant reinforcing factors influencing the compliance of pregnant women with consuming iron tablets in the working area of the Batang Kuis Health Center, Deli Serdang Regency in 2022. In the reinforcing factors from the research results, there are confounding factors, namely the family/community support variable with a p value of 0.561 and the Odds ratio Exp (B) 2.168, variable for the role of health workers with a p value of 0.183 and Odds ratio Exp (B) 15.17. while the motivation variable with a p value of 0.008 and Odds ratio Exp (B) 37.83 is the controlling variable. The most dominant factor influencing the compliance of pregnant women with consuming iron tablets in the working area of the Batang Kuis Health Center, Deli Serdang Regency in 2022 is the knowledge variable with a p value of 0.001 and an OR value of 179.5, which means it has a very significant influence on the causes of low compliance of pregnant women with consuming iron tablets. iron..

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