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The Relationship Between Family Support and Compliance of Pregnant Women in the Second Trimester in Consuming Iron (Fe) Tablets in the Working Area of the Mandomai Public Health Center

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Abstract. *Anemia during pregnancy remains a major public health concern and is commonly associated with iron deficiency. Iron (Fe) tablet supplementation is a key strategy to prevent anemia; however, adherence among pregnant women remains suboptimal. This study aimed to analyze the relationship between family support and adherence to iron tablet consumption among second-trimester pregnant women in the working area of UPT Puskesmas Mandomai. A quantitative analytic study with a cross-sectional design was conducted involving 30 pregnant women selected using total sampling. Data were collected using a structured questionnaire assessing respondents' characteristics, family support, and adherence to iron tablet consumption. Univariate analysis was performed to describe variable distributions, while bivariate analysis was conducted using Kendall's tau-b correlation test. The results showed that 50% of respondents were non-adherent to iron tablet consumption, and 50% reported receiving no family support. Bivariate analysis revealed a statistically significant and very strong association between family support and adherence to iron tablet consumption ($\tau = -0.928$; $p < 0.001$). The negative correlation reflected the coding direction, indicating that better family support was associated with higher adherence. These findings suggest that family support plays an important role in promoting adherence to iron supplementation during pregnancy. Family-centered approaches in antenatal care may enhance adherence and contribute to the prevention of anemia among pregnant women.*

Keywords: *Adherence; Anemia; Family Support; Iron Tablets; Pregnant Women.*

1. INTRODUCTION

Anemia in pregnancy remains a significant public health problem, particularly in developing countries, due to its serious consequences for both maternal and fetal health. Pregnant women with anemia are at increased risk of obstetric complications such as postpartum hemorrhage, preterm birth, low birth weight, and increased maternal and neonatal mortality (Lubis, 2024). These adverse outcomes highlight the importance of effective preventive strategies to maintain adequate maternal nutritional status throughout pregnancy (Asmari et al., 2021).

Iron deficiency is the most common cause of anemia during pregnancy. Physiological changes during pregnancy, including increased blood volume and the demands of fetal growth, substantially raise iron requirements (Tambunan & Wahyuni, 2020). To address this condition, iron supplementation in the form of iron (Fe) tablets has been widely implemented as a standard component of antenatal care services. Regular consumption of iron tablets is therefore essential to prevent iron-deficiency anemia and support healthy pregnancy outcomes (Safitri et al., 2024; Sari et al., 2025).

Despite the availability of iron supplementation programs, adherence to iron tablet consumption among pregnant women remains suboptimal (Chusniyati et al., 2022). Non-

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adherence is frequently associated with side effects such as nausea, dizziness, and gastrointestinal discomfort, as well as misconceptions regarding the importance of iron supplementation. As a result, many pregnant women fail to consume iron tablets consistently, limiting the effectiveness of anemia prevention programs (Rabiatunnisa, 2024).

Adherence to iron tablet consumption is not solely determined by individual factors but is also influenced by social and environmental determinants. Internal factors include knowledge, attitudes, and personal experiences, while external factors involve support from the surrounding environment (Ratnasari et al., 2017). Among these external factors, family support plays a critical role, as family members often influence health-related decision-making during pregnancy (Wakano & Sumini, 2023).

Family support can be expressed through emotional encouragement, informational guidance, and practical assistance, such as reminding pregnant women to take iron tablets regularly or helping them manage side effects (Effandilus et al., 2025). Adequate family support may increase motivation and reinforce positive health behaviors, whereas insufficient support can lead to neglect of recommended health practices, including iron tablet consumption (Jabar et al., 2025; Rohmatika et al., 2025).

Preliminary findings from a study conducted in October 2025 in the working area of UPT Puskesmas Mandomai revealed notable challenges related to iron tablet adherence among pregnant women. Of the 30 pregnant women identified, only 15 reported consuming iron tablets, while the remaining 15 did not. This lack of adherence was associated with limited maternal knowledge and insufficient family support regarding the benefits of iron supplementation during pregnancy.

Although family support is recognized as an important determinant of maternal health behavior, its relationship with adherence to iron tablet consumption among second-trimester pregnant women in the working area of UPT Puskesmas Mandomai has not been systematically examined. Therefore, this study aims to analyze the relationship between family support and adherence to iron tablet consumption among second-trimester pregnant women, providing evidence to strengthen family-based interventions in maternal health programs.

2. RESEARCH METHOD

This study employed a quantitative analytic design with a cross-sectional approach to examine the relationship between family support and adherence to iron (Fe) tablet consumption among pregnant women in their second trimester. The study was conducted in the working area of UPT Puskesmas Mandomai. A cross-sectional design was selected because it allows the

simultaneous measurement of independent and dependent variables, making it appropriate for identifying associations between family support and adherence behavior at a specific point in time.

The study population consisted of all second-trimester pregnant women registered at UPT Puskesmas Mandomai during the study period. Given the relatively small population size, a total sampling technique was applied, whereby all eligible pregnant women were included as study participants. Data were collected using a structured questionnaire comprising sections on respondents' characteristics, level of family support, and adherence to iron tablet consumption. Family support was assessed based on emotional, informational, and instrumental components, while adherence was measured according to regularity of iron tablet intake as recommended by health guidelines.

Data analysis was performed using descriptive and inferential statistical methods. Univariate analysis was conducted to describe the distribution of respondents' characteristics, family support, and adherence levels. Bivariate analysis was then applied to examine the relationship between family support and adherence to iron tablet consumption using an appropriate statistical test based on data characteristics, with a significance level set at $p < 0.05$. The results were presented in the form of tables and narrative descriptions to facilitate interpretation.

3. RESULTS AND DISCUSSION

Univariate Analyze

Univariate analysis was conducted to describe respondents' characteristics, family support, and adherence to iron (Fe) tablet consumption among second-trimester pregnant women in the working area of UPT Puskesmas Mandomai. The results provide an overview of the distribution of key variables prior to further inferential analysis.

Age Group	Frequency (n)	Percentage (%)
< 20 years	7	23.3
20–35 years	18	60.0
> 35 years	5	16.7
Total	30	100.0

Figure 1. Distribution of Respondents by Age Group.

The majority of respondents were aged 20–35 years (60.0%), which is considered the optimal reproductive age. A smaller proportion were younger than 20 years (23.3%) or older than 35 years (16.7%). This distribution indicates that most respondents were within an age

range generally associated with lower obstetric risk, suggesting that non-adherence to iron tablet consumption cannot be explained solely by biological age factors.

Gravida Status	Frequency (n)	Percentage (%)
Primigravida	12	40.0
Multigravida	18	60.0
Total	30	100.0

Figure 2. Distribution of Respondents by Gravida Status.

More than half of the respondents (60.0%) were multigravida, while 40.0% were primigravida. Although multigravida women may have prior experience with antenatal care and iron supplementation, this experience does not necessarily translate into better adherence, indicating that experience alone is insufficient to ensure compliance with iron tablet consumption.

Educational Level	Frequency (n)	Percentage (%)
Primary school	12	40.0
Junior high school	11	36.7
Senior high school	7	23.3
Total	30	100.0

Figure 3. Distribution of Respondents by Educational Level.

Most respondents had low to moderate educational attainment, with 40.0% completing primary education and 36.7% junior high school. Only 23.3% had senior high school education. Lower educational levels may limit understanding of health information, which could affect awareness and acceptance of iron supplementation recommendations during pregnancy.

Family Support	Frequency (n)	Percentage (%)
Support from husband	12	40.0
Support from parents	3	10.0
No family support	15	50.0
Total	30	100.0

Figure 4. Distribution of Family Support.

Half of the respondents (50.0%) reported receiving no family support related to iron tablet consumption. Only 40.0% received support from their husbands, and a smaller proportion (10.0%) from parents. This finding highlights a substantial gap in family involvement, which may negatively influence health-related behaviors during pregnancy.

Adherence Status	Frequency (n)	Percentage (%)
Non-adherent	15	50.0
Adherent	15	50.0
Total	30	100.0

Figure 5. Distribution of Adherence to Iron (Fe) Tablet Consumption.

The results indicate that adherence and non-adherence were equally distributed among respondents. Half of the pregnant women did not consume iron tablets as recommended, despite being within the optimal reproductive age and having access to antenatal services. This pattern suggests that adherence is not merely influenced by demographic characteristics but is likely associated with psychosocial factors, particularly family support.

Bivariate Analyze

Bivariate analysis was conducted to examine the relationship between family support and adherence to iron (Fe) tablet consumption among second-trimester pregnant women. Given that the variables were measured on an ordinal scale and did not assume normal distribution, Kendall's tau-b correlation test was applied to assess the strength and direction of the association. Table 6 presents the results of the Kendall's tau-b correlation analysis between family support and adherence to iron tablet consumption.

Variables	Kendall's tau-b (r)	p-value
Family Support – Adherence to Fe Consumption	-0.928	0.000

Figure 6. Relationship Between Family Support and Adherence to Iron (Fe) Tablet Consumption.

The results of the Kendall's tau-b test show a statistically significant relationship between family support and adherence to iron tablet consumption ($p = 0.000$). The correlation coefficient ($r = -0.928$) indicates a very strong association between the two variables. The negative direction of the correlation reflects the coding pattern used in the analysis, where lower numerical values represented better family support and higher adherence levels. Substantively, this result indicates that higher levels of family support are associated with greater adherence to iron tablet consumption among pregnant women.

This strong association suggests that family support plays a crucial role in shaping adherence behavior during pregnancy. Pregnant women who receive support particularly from husbands or close family members are more likely to comply with iron supplementation recommendations. Family involvement may enhance adherence by providing reminders, emotional encouragement, and assistance in managing side effects related to iron tablet consumption.

From an analytical perspective, the magnitude of the correlation indicates that adherence to iron tablet consumption is not merely an individual behavioral choice but is strongly embedded in the social environment of pregnant women. The finding reinforces the

argument that interventions aimed at improving iron tablet adherence should not focus solely on individual education but should incorporate family-based approaches as an integral component of maternal health programs.

Discussion

The findings of this study indicate a statistically significant and very strong association between family support and adherence to iron (Fe) tablet consumption among second-trimester pregnant women. This result supports the theoretical framework of health behavior, which posits that individual compliance with medical recommendations is strongly influenced by social and environmental factors rather than personal knowledge alone.

Several previous studies have demonstrated that family support is a critical determinant of adherence to iron supplementation during pregnancy. A study by Gustini et al., (2025) found that pregnant women who received encouragement and reminders from family members were significantly more likely to consume iron tablets regularly compared to those without family involvement. Their findings emphasize that adherence improves when health behaviors are reinforced within the household environment, supporting the results of the present study.

Similarly, research conducted by Indawati & Sumini (2021) showed that husband support played a decisive role in maternal adherence to iron supplementation in rural populations. Pregnant women whose husbands actively participated in antenatal counseling and daily health practices exhibited higher compliance rates. This aligns with the current study, where respondents receiving husband support showed better adherence compared to those without any family support.

Previous studies have also highlighted that family support helps overcome common barriers to iron tablet consumption, such as side effects and negative perceptions. Galloway et al. (2002) reported that gastrointestinal discomfort and misconceptions about iron tablets were major reasons for non-adherence. However, women who received reassurance and practical assistance from family members were more likely to continue supplementation despite experiencing side effects. This finding supports the present study's observation that lack of family support coincides with high levels of non-adherence.

A study by Robot & Ilmiah (2025) demonstrated a significant relationship between family support and adherence to iron tablet consumption among pregnant women, with women receiving strong family support being more than twice as likely to adhere to supplementation recommendations. This national evidence strengthens the relevance of the present findings and

confirms that family support remains a key factor across different cultural and healthcare settings.

Despite the consistency of these findings with previous research, the very high correlation coefficient observed in this study should be interpreted cautiously. As noted by Polit and Beck (2021), strong correlations in cross-sectional studies with small sample sizes may overestimate the strength of associations. Therefore, while the direction and significance of the relationship are robust, causality cannot be inferred, and the magnitude of the association should not be generalized beyond the study population.

Overall, this study reinforces evidence from previous research that adherence to iron tablet consumption is a socially mediated behavior. Educational interventions targeting pregnant women alone may be insufficient if family members are not actively engaged. Integrating husbands and families into antenatal education programs may therefore be a more effective strategy to improve adherence and reduce anemia during pregnancy.

4. CONCLUSION

This study concludes that there is a statistically significant and strong relationship between family support and adherence to iron (Fe) tablet consumption among second-trimester pregnant women in the working area of UPT Puskesmas Mandomai. Pregnant women who received adequate family support particularly from husbands or close family members demonstrated higher adherence to iron supplementation compared to those who lacked family support.

The findings indicate that adherence to iron tablet consumption is not solely influenced by individual characteristics such as age, gravida status, or educational level, but is strongly shaped by the social environment of pregnant women. Family support functions as an important enabling factor that reinforces positive health behaviors, including compliance with antenatal nutritional recommendations.

Given the cross-sectional design and relatively small sample size, this study does not establish causality. However, the strength and consistency of the observed association suggest that family involvement should be considered a key component in strategies aimed at improving iron supplementation adherence. Integrating family-centered education and counseling into antenatal care services may enhance program effectiveness and contribute to the reduction of anemia among pregnant women.

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The heading should not be given a number and should instead be considered as a subsubsection heading.

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