



THE RELATIONSHIP BETWEEN HEALTH WORKERS' MOTIVATION AND SUPPORT AND PREGNANT WOMEN'S ADHERENCE TO IRON SUPPLEMENTS

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ABSTRACT

Anemia in pregnancy is defined as a hemoglobin (Hb) level below normal thresholds and is commonly associated with inadequate intake of essential micronutrients, such as iron, folic acid, and vitamin B12, which are important for erythropoiesis. Poor adherence to iron and folic acid supplementation remains a major contributor to maternal anemia. Therefore, internal motivation and healthcare provider support are key factors in ensuring effective nutritional interventions during pregnancy. This study aimed to examine the association between internal motivation and healthcare provider support with adherence to iron supplementation among pregnant women in Karang Tengah, Sukabumi City, in 2026. A correlational study with a cross-sectional design was conducted involving 80 pregnant women selected through total sampling. Data were collected using structured questionnaires, while adherence was measured using the Morisky Medication Adherence Scale (MMAS-8), which has demonstrated reliability Cronbach's alpha = 0.796. Data were analyzed using the Somers' d test. The results showed that most respondents had moderate motivation (55.0%), perceived healthcare provider support as inadequate (56.3%), and demonstrated low adherence (46.3%). Statistical analysis revealed significant associations between both variables and adherence ($p = 0.001$). In conclusion, both factors are significantly associated with adherence to iron supplementation among pregnant women.

Keywords: anemia in pregnancy; healthcare provider support; iron supplementation adherence; maternal health; motivation

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INTRODUCTION

Anaemia is a condition in which the haemoglobin level in the blood is lower than the normal range. This condition can result from a deficiency of nutrients essential for the formation of red blood cells, such as iron, folic acid, or vitamin B12 (Lailiyah et al., 2022). Anemia in women is often caused by insufficient intake or consumption of iron-rich foods, poor dietary habits, menstrual disorders, and other conditions (such as parasitic infections, malaria, and so on). In pregnant women, anemia is diagnosed if hemoglobin levels are <11 g/dL in the first and third trimesters, or <10.5 g/dL in the second trimester (Kemenkes RI, 2021).

The World Health Organization (WHO) has identified anemia as one of the ten most critical health issues of our time. In 2019, the WHO estimated that there were 303,000 maternal deaths, which translates to approximately 216 per 100,000 live births. Globally, 41.8 percent of pregnant women suffer from anemia, and about half of these cases are caused by iron deficiency (Putri et al., 2023). According to the World Health Organization (WHO), the percentage of women with iron deficiency ranges from 35 to 75 percent, and this figure tends to increase as pregnancy progresses. The WHO also notes that the prevalence of anaemia among pregnant women globally stands at 41.8 percent. This figure remains relatively high in Indonesia. Based on data from the 2021 Riskesdas survey, 78 percent of pregnant women suffer from anemia, marking an increase from 48.9 percent in 2019 (Kemenkes RI, 2021).

One of the key health services for pregnant women is the provision of at least 90 iron supplements during pregnancy. Iron supplements are essential for preventing and treating iron-deficiency anemia (Aryani & Kurniawati, 2022). The Indonesian government has implemented an iron supplement program (TTD) for pregnant women. The goal of this program is to prevent anemia, thereby maximizing the transfer of nutrients from the mother to her baby and improving fetal growth. In addition, taking TTD during pregnancy can support fetal development, birth height, and postnatal growth. It can also help address the issue of stunting (Kemenkes, 2020).

Improving the quality of health services for mothers and children is a top priority in human resource development in the city of Sukabumi. At the local level, the Karang Tengah subdistrict plays a strategic role in monitoring the health status of this vulnerable population. According to data from the Sukabumi Health Department for 2025, there were 1,560 pregnant women across the Karang Tengah subdistrict over the course of one year, and 46 of them suffered from anemia. This number highlights the urgency of providing accessible prenatal care facilities and targeted nutrition intervention programs to reduce maternal and infant mortality rates. According to the latest data from the Karang Tengah Community Health Center for the period of February – March 2026, there were 80 pregnant women and 57 pregnant women with anemia in the Karang Tengah Subdistrict within the service area of the Karang Tengah Community Health Center.

One of the key factors influencing pregnant women's adherence to iron supplements is internal motivation, which enables them to take the supplements regularly without needing to be reminded or encouraged by others, thanks to their understanding of the benefits of iron supplements in reducing the risk of anaemia (Wiyono et al., 2023). In addition to internal motivation, support from healthcare providers is also a factor that can promote adherence to iron supplements among pregnant women, including the quality of interactions with healthcare providers (such as a friendly attitude, adequate explanations, and encouragement), as well as their understanding and knowledge of the importance of iron supplementation and its potential side effects. (Pibriyanti et al., 2023). This support is crucial because it can influence pregnant women's knowledge and motivation to remain compliant, particularly in managing any side effects that may arise while taking the supplement (Agustina et al., 2024).

Considering the high incidence of anemia and the crucial role of motivation and support from health workers, this study aims to examine the relationship between intrinsic motivation of pregnant women and support provided by health workers on compliance with iron supplement consumption in the Karang Tengah subdistrict within the service area of the Karang Tengah Community Health Center in Sukabumi City in 2026. This study is expected to reveal the extent to which the intrinsic motivation of pregnant women and the active role of healthcare workers contribute to improving adherence to the intake of iron and folic acid tablets. Furthermore, the findings of this study are expected to serve as a reference for the Karang Tengah Community Health Centre in developing more effective nutrition intervention strategies that are tailored to the community's needs, with the hope of reducing anemia rates and supporting the achievement of maternal and child health targets in Sukabumi City.

METHOD

This study employed a correlational method with a cross-sectional approach. This design was chosen because all research variables were measured or observed at the same time or only once for each subject during interviews or through the completion of questionnaires. The study was conducted from February to July 2026, with the study population consisting of all pregnant women in the Karang Tengah subdistrict within the service area of the Karang Tengah Community Health Center in the city of Sukabumi. The sampling technique used was total sampling, meaning all members of the population meeting the study criteria were included as the sample. Based on this technique, the sample size for this study was 80 respondents. The inclusion criteria for this study

were pregnant women willing to participate by signing an informed consent form, as well as pregnant women in the first, second, and third trimesters who had already received iron supplements. The exclusion criteria included pregnant women who were absent during the research process and those not residing in the Karang Tengah subdistrict. By using the total sampling technique, the entire population meeting the criteria was included in the study, so the sample size was equal to the available population. The instrument used in this study was a closed-ended questionnaire, consisting of sections on motivation, support from health workers, and medication adherence. The validity test results for the 14-item motivation questionnaire showed a p-value of < 0.05 , and the reliability test results using Cronbach's alpha, showed a value of 0.888, whilst the validity test results for the healthcare worker support questionnaire, comprising 15 items, showed a p-value < 0.05 and the reliability test results showed a value of 0.817. Furthermore, the reliability test results for the compliance questionnaire using the MMAS-8, based on a previous study conducted by Yaner et al., (2020), were found to be reliable with a Cronbach's alpha value of 0.796. The bivariate analysis technique in this study used the somers'd test to examine the relationship between variables and was presented in the form of tables and narrative descriptions. All statistical analyses were carried out using the Statistical Package for the Social Sciences (SPSS). The research conducted has received ethical approval from the STIKES Sukabumi Committee under number:001500/KEP STIKES SUKABUMI/2026.

RESULT

Table 1.
Respondent characteristics (n=80)

Characteristics	F	%
Age (Years)		
< 20	4	5,0
20 – 35	63	78,8
>35	13	16,3
Education		
Not in School	3	3,8
Elementary School	10	12,5
Junior High School	19	23,8
Middle School	36	45,0
College	12	15,0
Working Status		
Working	13	16,3
Not Working	67	83,8
Parity		
Primipara (1 time)	39	48,8
Multipara (2-4 times)	40	50,0
Grandemultipara (>5 times)	1	1,3
Maternal Age (Weeks)		
Trimester 1 (1-13)	12	15,0
Trimester 2 (14-27)	42	52,5
Trimester 3 (28-40)	26	32,5
Family Income		
<UMR	62	77,5
>UMR	18	22,5
Sources of Information		
Healthcare Workers	58	72,5
Newspaper/Magazine	3	3,8
Electronic Media	5	6,3
Family Member	3	3,8
Cadre	8	10,0
Others	3	3,8
ANC Visit by Trimester		
Compliance	65	81,3
Non-Compliance	15	18,8

Table 1 presents the characteristics of respondents. The majority of pregnant women in Karang Tengah, within the working area of Karang Tengah Public Health Center, were aged 20–35 years (63 respondents; 78.8%). Based on educational level, most respondents had completed senior high school (36 respondents; 45.0%). In terms of employment status, the majority were unemployed (67 respondents; 83.8%). Regarding parity, most respondents were multiparous (2–4 pregnancies) (40 respondents; 50.0%). Based on gestational age, the majority were in the second trimester (14–27 weeks) (42 respondents; 52.5%). In terms of income, most respondents had earnings below the regional minimum wage (UMR Rp 3,192,807) (62 respondents; 77.5%). Regarding sources of information, the majority obtained information about anemia from healthcare providers (58 respondents; 72.5%). Finally, most respondents had appropriate antenatal care (ANC) visits by Trimester (65 respondents; 81.3%).

Table 2.
Univariate analysis (n=80)

Variables	f	%
Motivation		
Low	5	6,3
Moderate	44	55,0
High	31	38,8
Healthcare Workers Support		
Supporting	35	43,8
Not Supporting	45	56,3
Iron Supplements Adherence		
Low	37	46,3
Moderate	28	35,0
High	15	18,8

Table 2 shows that the majority of pregnant women had moderate motivation (55.0%), did not receive support from healthcare providers (56.3%), and had low adherence to iron supplementation (46.3%).

Table 3.
The relationship between motivation and adherence to iron supplementation among pregnant women

Motivation	Iron Supplementation Adherence						Total		P-Value
	Low		Moderate		High				
	f	%	f	%	f	%	f	%	
Low	5	6.3	0	0.0	0	0.0	5	6.3	0.001
Moderate	22	27.5	18	22.5	4	5.0	44	55.0	
High	10	12.5	10	12.5	11	13.8	31	38.8	

Based on Table 3, the analysis indicates a statistically significant relationship between maternal motivation and adherence to iron supplementation among pregnant women ($p = 0.001$). These findings suggest that higher levels of internal motivation are associated with better adherence to iron supplementation, indicating that motivation plays a critical role in influencing health behavior among pregnant women.

Table 4.
The relationship between healthcare provider support and pregnant women's adherence to iron supplementation

Health Workers Support		Iron Supplementation Adherence						Total		P-Value
		Low		Moderate		High				
		f	%	f	%	f	%	f	%	
Supporting		10	12.5	14	17.5	11	13.8	35	43.8	0,001
Not Supporting		27	33.8	14	17.5	4	5.0	45	56.3	

Table 4, the somers'd test demonstrates a statistically significant relationship between healthcare provider support and pregnant women's adherence to iron supplementation ($p = 0.001$). These findings indicate that healthcare provider support plays a significant role in improving adherence behaviour among pregnant women, suggesting that supportive interactions and guidance from

health professionals are critical components in promoting compliance with iron supplementation.

DISCUSSION

The results of the study indicate that the majority of pregnant women in the Karang Tengah subdistrict, within the service area of the Karang Tengah Community Health Center in Sukabumi City, have a moderate level of motivation regarding the consumption of iron supplements, amounting to 44 individuals (55.0%). This suggests that pregnant women possess a sufficiently strong internal motivation to maintain their own well-being and the health of their unborn babies, particularly in terms of preventing anemia during pregnancy (Umami, 2022). This finding is consistent with the results of a study conducted by Wiyono et al., (2023) which states that motivation is strongly associated with preventive behaviors against anemia in pregnant women. According to Watiah et al., (2024) motivation is influenced by various factors, such as level of knowledge, perceptions of the risks of anemia, previous pregnancy experiences, and information provided by healthcare providers. Pregnant women with high motivation typically have a better understanding of the importance of regular iron intake and are better able to overcome barriers such as discomfort after taking iron tablets (Juandri et al., 2024).

Support for pregnant women from health workers in the Karang Tengah Community Health Center's service area was largely lacking, with 45 individuals (56.3%) reporting a lack of support. A study conducted by Elizar et al., (2022) indicates that support from healthcare workers has a significant effect on the iron supplement intake behavior of pregnant women. Support from healthcare workers refers to the role of healthcare workers in offering and providing assistance in the form of information, direct assistance, or actions that provide emotional benefits or influence the behavior of the recipients of such assistance (Ayumar et al., 2023). Healthcare workers also play a crucial role in addressing mothers' concerns, such as the side effects of iron supplements so that they remain motivated to take the recommended medication (Sari & Yuliasari, 2024). Good communication between healthcare providers and pregnant women can also foster trust and improve adherence to health recommendations.

Compliance among pregnant women in taking iron supplements in the Karang Tengah subdistrict showed that the majority of respondents had low compliance, totaling 37 individuals (46.3%). This non-compliance may be influenced by various factors, such as side effects (nausea, constipation), lack of knowledge, and behavioural factors such as forgetfulness or insufficient family support (Eimer et al., 2023). Additionally, mothers' perceptions regarding the importance of iron supplements also influence compliance, with mothers who do not experience symptoms of anemia being more likely to neglect taking the supplements (Suri et al., 2022). This view is consistent with research conducted by Anggriani et al., (2025) which indicates that compliance among pregnant women in taking iron supplements is often low due to various factors, particularly among those with low levels of education.

Table 3 displays the outcomes of the statistical analysis regarding the connection between the motivation variable and pregnant women's compliance in taking iron supplements, using the Somers'd test, a p-value of 0.001 was obtained, which is <0.05 . Based on the rejection of the null hypothesis, H_0 is rejected, This confirms a relationship between motivation and pregnant women's adherence to iron tablets in Karang Tengah Subdistrict, which falls within the service area of the Karang Tengah Community Health Center in Sukabumi City. These findings align with the results of the study by Hia & Utami (2025) which confirmed the relationship between motivation and pregnant women's adherence to iron supplements at the Johar Baru Community Health Center in Central Jakarta. With 60 respondents and the Kendall's tau-B test, a p-value of 0.011 (<0.05) was obtained. These findings underscore the crucial role of motivation in shaping the health behaviors of pregnant women, as those with high motivation are typically more disciplined and consistently

take iron supplements as directed. Strong motivation helps pregnant women overcome potential obstacles, such as side effects or waning enthusiasm.

Table 4 presents the results of the statistical test regarding the relationship between healthcare provider support and pregnant women's adherence to iron supplement intake, using the Somers's d test, a p-value of 0.001 was obtained, which is <0.05 . Based on the rejection of the null hypothesis, H_0 is rejected, This indicates a significant relationship between healthcare worker support and pregnant women's adherence to iron supplementation in Karang Tengah Sub-district, within the service area of the Karang Tengah Community Health Centre, Sukabumi City. These findings are consistent with research conducted by Hia & Utami (2025) who found a relationship between healthcare worker support and pregnant women's adherence to iron tablet consumption at the Sewon II Community Health Centre, Bantul That study, which involved 44 respondents and used Kendall's Tau correlation test, yielded a p-value of 0.000 (<0.05). These findings confirm that the more intensive the support from healthcare workers, the higher the level of compliance among pregnant women in taking iron tablets. Such support includes providing information, offering encouragement, conducting monitoring, and possessing good social skills, so that pregnant women feel cared for and motivated to follow the recommendations given (Lyoba et al., 2020).

This study has several limitations that warrant consideration. The cross-sectional design limits the ability to establish a causal relationship between intrinsic motivation, support from healthcare workers, and adherence to iron supplementation. Furthermore, self-administered questionnaires are prone to response bias, particularly social desirability bias, which may reduce the accuracy of adherence measurements. Furthermore, the study was conducted at a single community health centre with a relatively small sample size, making it difficult to generalise the results to a larger population. Despite these limitations, the findings provide important implications for maternal health practice, highlighting the need to strengthen motivational strategies and enhance the role of healthcare providers through structured counseling and continuous support to improve adherence to iron supplementation among pregnant women.

CONCLUSION

This study demonstrates a significant relationship between internal motivation and healthcare provider support with pregnant women's adherence to iron supplementation in Karang Tengah, within the working area of Karang Tengah Public Health Center, Sukabumi City. These findings highlight that both psychological factors and external support play important roles in improving adherence behavior.

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