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The Correlation Between the Prevalence of Anemia in Pregnant Women and Their Awareness and Use of Iron Supplementation in the Work Area of the Curup Health Center

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ABSTRACT

In Indonesia, anemia during pregnancy remains a major public health issue due to its risks for both mother and baby. This study aims to analyze the relationship between anemia in third-trimester pregnant women and their knowledge and behavior regarding iron (Fe) tablet consumption. Conducted in the Curup Health Center area, this cross-sectional study used a descriptive analytical design with purposive sampling to select 35 pregnant women as respondents.Data were collected through hemoglobin testing using the Easy Touch GCHb device and questionnaires assessing knowledge and behavior. The results showed that 71.4% of respondents did not experience anemia, 60% demonstrated positive behavior in consuming Fe tablets, and 51.4% had sufficient knowledge about anemia and iron supplementation.The chi-square test indicated no significant relationship between knowledge and the incidence of anemia (p = 0.240). However, a significant relationship was found between behavior in consuming Fe tablets and the occurrence of anemia (p = 0.002).These findings suggest that while knowledge alone may not prevent anemia, consistent and proper behavior in taking Fe tablets has a stronger influence. Therefore, enhancing behavioral-based education and monitoring could help improve adherence to Fe tablet intake and reduce anemia prevalence among pregnant women.

***Keywords**: Anemia, Fe Tablets, Pregnant Women, Knowledge, Behavior*

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INTRODUCTION

One of the risk factors for maternal death is anemia. The World Health Organization (WHO) reports that 40% of maternal fatalities in developing nations are due to iron deficiency (Safiri et al., 2021). Anemia prevalence varies throughout ASEAN nations; in the Philippines, it is approximately 55%, in Thailand, it is 45%, in Malaysia, it is 30%, and in Singapore, it is 7%(Gantini et al., 2024) .

Hemoglobin levels below 11 g/dL during pregnancy are known as anemia, and they can raise the risk of problems during pregnancy and labor below 10 g/dl. A lack of one or more vital nutrients results in anemia, a condition with lower than normal hemoglobin, hematocrit, and red blood cell levels that can influence the development of deficiencies (Setyawati & Arifin, 2022) .

The frequency of anemia during pregnancy in Indonesia increased significantly from 37.1% in the 2013 RISKESDAS to 48.9% in 2019. Meanwhile, according to the 2023 Indonesian Health Survey (SKI) data, anemia affects 27.7% of pregnant women in Indonesia (Health Polytechnic of the Ministry of Health Medan, 2023).

Iron deficiency is the most common cause of anemia during pregnancy in Indonesia, accounting for up to 62.3% of cases. Uterine atony, hemorrhage, shock, early labor, delayed labor, uterine inertia, and miscarriage are all possible outcomes of this syndrome. The risks of iron deficiency anemia during pregnancy are 7%–10% for newborns, 30% for perinatal deaths, and 12%–28% for fetal deaths (Delfi Ramadhini, 2021).

According to data from the Bengkulu City Health Office in 2019, the prevalence of anemia in expectant mothers keeps rising annually. In 2015, the percentage of pregnant women with anemia was at 19.09%; by 2018, that number had sharply risen to 45%. According to earlier study findings (Zuliyanti & Krisdiyanti, 2022), the prevalence of anemia in pregnant women in the third trimester at the Bagelen Health Center, Purworejo Regency, was correlated with pregnancy spacing. This indicates that the two variables pregnancy spacing and the incidence of anemia in third-trimester pregnant women have a weak correlation.

In addition, according to research (Gantini et al., 2024) shows a P value <0.05. So Ha is accepted, meaning that there is a relationship between pregnant women's knowledge about anemia and compliance with consuming iron tablets in the Cidahu Health Center UPTD work area. This happens because of other factors such as community beliefs and culture. This is in accordance with the theory that age, education, experience and sources of information can influence a person's knowledge. The local socio cultural system will also indirectly influence a person's knowledge because the socio cultural system will influence a person's attitude in receiving information.

Both the mother and the newborn are impacted by anemia. It is possible that newborns will have low or no iron reserves, which will cause anemia. The high rates of maternal morbidity and death, elevated fetal morbidity and mortality, and elevated risk of low birth weight are all indicators of the effects of anemia on expectant mothers. Pregnant women are advised to take extra iron/Fe tablets to raise their blood count in order to prevent anemia. Fe supplements are beneficial for pregnant women since they can lower the risk of iron shortage and rapidly improve nutritional status(Ministry of Health, 2018) .

Previous research conducted in the Curup Health Center Work Area, Rejang Lebong Regency, Bengkulu, found a correlation between the incidence of anemia in pregnant women in the third trimester and their knowledge and behavior regarding Fe tablet consumption patterns. Anemia cases are still rising in the region, though. In order to ascertain and compare the extent of the association between the incidence of anemia in pregnant women in the third trimester that occurred in the Curup Health Center Work Area and the knowledge and behavior of Fe tablet use patterns, the researcher conducted this study.

METHODS

This study is analytical in nature and employs a cross-sectional methodology. The study's population and sample consisted of 35 third-trimester pregnant women who worked at the Puskesmas Curup. A questionnaire served as the study's tool. There are two types of data: main and secondary. Secondary data, such as information on the number of pregnant women, was gathered from the Curup Health Center report book, while primary data was collected directly from pregnant women through direct Hb level testing, knowledge and behavior surveys, and interviews. For both univariate and bivariate data analysis, the chi-square test was utilized.

RESULTS

A. Knowledge Level of Iron Supplement Tablet Use and the Third Trimester Anemia Incidence in Pregnant Women

In order to determine the significance of the link between two variables, bivariate analysis in this study employed the chi-square statistical test results analysis. The findings indicated that, at most, each of the ten anemic respondents had the highest level of knowledge, with four respondents (40%) falling into enough category. A maximum of 14 respondents, or 56% of the 25 respondents with normal hemoglobin levels, had enough knowledge levels. The chi-square test results show that the p value is 0.240 (p-value > 0.05). This can be interpreted into three categories with the following results:

Table 1. Knowledge Level of Iron Supplement Tablet Use and the Third Trimester Anemia Incidence in Pregnant Women

Level of Knowledge about Consumption Patterns of Iron Supplement Tablets	Hemoglobin Level				p-value
	Anemia		No Anemia		
Good	3	30%	9	36%	0.240
Enough	4	40%	14	56%	
Not enough	3	30%	2	8%	
Total	10	100%	25	100%	

B. Behavior Level in Relation to Iron Supplement Tablet Use and the Third Trimester Anemia Incidence in Pregnant Women

The study's findings demonstrated that the majority of the ten anemic respondents (80%) fell into the negative behavior categories. Of the 25 respondents who had normal hemoglobin levels, most were respondents with positive behavior categories, 76%. Based on the results of the chi-square test, the p-value = 0.002 (p-value> 0.05). RP of 12.6 with a 95% confidence interval of 2.0 to 76.7 indicates that in the respondents studied, 95% believed that RP was between 1.6 to 16 always more than one, meaning that behavior is a risk factor that influences the incidence of anemia in pregnant women.

Table 2. Behavior Level in Relation to Iron Supplement Tablet Use and the Third Trimester Anemia Incidence in Pregnant Women

Behavioral patterns of consuming iron supplements		Hemoglobin Level						
		Anemia		No Anemia		p-value	RP	CI
a.	Positive	2	20%	19	76%	0.002	12.6	2.0-76.7
b.	Negative	8	80%	6	24%			
Total		10	100%	25	100%			

DISCUSSION

A. Knowledge Level of Iron Supplement Tablet Use and the Third Trimester Anemia Incidence in Pregnant Women

According to the study's findings, respondents with a sufficient degree of knowledge (40%) had the highest rates of anemia. With a p-value of 0.240 (p-value>0.05), the study's findings show no correlation between the incidence of anemia in the third trimester of pregnancy and the degree of knowledge. The ability of the respondents to complete the knowledge questionnaire for pregnant women with anemia about the use of Fe tablets which includes details about Fe tablets, their functions, targets, and the consequences of not taking them as well as the symptoms of anemia determines the level of knowledge regarding the consumption of Fe tablets in this study.

Additionally, this study is supported by studies carried out by (Paulus et al., 2022) on Compliance with Fe Tablet Consumption, Knowledge and Environmental Factors on the Incidence of Anemia in Pregnant Women at the Biluhu Health Center, Gorontalo Regency. According to this study, there is no connection between pregnant women's anemia occurrence and their level of knowledge. p 0.674 (p-value ≥0.05). Furthermore, this finding aligns with previous research. (Khairunnisa; et al., 2022) on the relationship between age, knowledge and compliance with Fe tablet consumption with the incidence of anemia in pregnant women in the Sungai Jingah Health Center work area, Banjarmasin City, which stated that there was no relationship between knowledge and the incidence of anemia in pregnant women (p-value = 0.639> 0.05).

This is because initially the mother had anemia and had regular pregnancy check-ups so that from this incident the pregnant woman got information or experience that was stored in her memory, making the mother know the importance of consuming foods high in iron or being obedient in taking Fe tablets so that anemia does not occur.According to the assumption, The elements that affect the degree of expertise and hemoglobin levels in this study were obtained by most respondents with sufficient knowledge and mostly normal hemoglobin levels. There are The elements that affect the degree of expertise but are not indicators measured by researchers, namely information and mass media. Low information about preventing anemia can impact the anemia status of expectant mothers, therefore it is important to examine the sources of information where respondents usually get information.

In addition, some respondents still stop taking Fe tablets because they experience various side effects such as dizziness and nausea. Pregnant women assume that nausea and vomiting following the use of Fe pills are incorrect because they are unaware of the tablets' negative effects. Furthermore, a number of variables contribute to respondents' ignorance of the significance of taking Fe pills, including the fact that they are working in the fields with their husbands and thus lack access to information, making it challenging for medical professionals to contact them. Respondents can gain a thorough understanding of the use of iron supplements and the prevalence of anemia in expectant mothers with the correct information.

B. Behavior Level in Relation to Iron Supplement Tablet Use and the Third Trimester Anemia Incidence in Pregnant Women

According to the study's findings, 60% of respondents exhibit positive behavior. At the Talang Benih Health Post, there is a correlation between behavior and the prevalence of anemia in pregnant women, as indicated by the square test result of $p < 0.002$. The majority of individuals with good behavioral knowledge have normal hemoglobin levels, which explains this. A study by (Dehghani et al., 2024) demonstrated that the prevalence of anemia in pregnant Iranian women was considerably decreased by adherence to iron supplement usage. The hemoglobin levels of pregnant women who took at least 90 Fe tablets were higher than those of noncompliant mothers.

Furthermore, this study supports a study by (Masrikhiyah et al., 2024)) on the association between the incidence of anemia in pregnant women in the third trimester and knowledge, behavior, and food intake related to the consumption of iron tablets. According to the study's findings, the occurrence of anemia in pregnant women during the third trimester was correlated with their use of Fe pills.The hypothesis of the Health Belief Model (HBM) states, health behavior is influenced by a person's perception of susceptibility to disease, perception of the benefits of action, perceived barriers, and the presence of cues to action . In this context, the behavior of consuming Fe tablets is influenced by the mother's perception of the risk of anemia and the benefits of preventing it through iron supplementation (Yuliani Ririn Eka, 2024) .

The perception that Fe tablets are only for therapy, not prevention, and adverse effects like nausea, constipation, and metallic taste are barriers to the usage of Fe tablets. Therefore, to raise

pregnant women's knowledge and compliance, a need-based education strategy is advised. Therefore, taking iron supplements on a regular and disciplined basis is crucial for preventing anemia in expectant mothers. In addition to raising awareness, intervention measures should enhance behavior through family support, regular monitoring, and counseling.

CONCLUSIONS

According to the research, the prevalence of anemia at the Talang Benih Health Post, the Curup Community Health Center's operational area, is influenced by a number of factors, including health behavior, knowledge level, adherence to Fe pill use, and the sociocultural context. The study's findings demonstrate that while knowledge by itself does not have a significant link with the occurrence of anemia (p=0.240), the practice of taking Fe tablets does (p=0.002). Knowledge is only a supporting element that might not be successful if it is not combined with suitable conduct, but behavior is a crucial determinant in the endeavor to prevent anemia.

These results highlight the necessity for programs that prioritize behavior change techniques through methods including counseling, consumption monitoring, and bolstering family support in addition to knowledge instruction. This tactic is consistent with the Health Belief Model (HBM) paradigm, which holds that perceptions of risk and benefit have a significant impact on health-related behaviors.

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