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RISK FACTORS RELATED TO THE EVENT OF ANAEMIA IN PREGNANT MOTHERS

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ABSTRACT
Anaemia poses a significant health risk for pregnant women, increasing the likelihood of severe complications such as premature delivery, low birth weight, and maternal fatalities. This study investigates risk factors associated with anaemia in pregnancy using a case-control design with a quantitative approach. The participants included 200 medical records of pregnant women including 100 medical records of pregnant women who experienced anaemia during pregnancy and 100 medical records of pregnant women who did not experience anaemia, selected based on specific criteria, inclusion criteria in the study: Medical records of pregnant women at RSUD Dr. Moewardi Surakarta from 2023 to 2024, including maternal age, gestational age, parity, circumference of upper arm status, ANC visits, education level, employment status and haemoglobin values. Exclusion criteria in the study: Incomplete medical records of pregnant women. Secondary data from medical records were analysed using chi-square tests with a significance level of $p<0.05$. The findings revealed that gestational age ($p=0.038$), parity ($p=0.028$), and chronic energy deficiency status or CED ($p=0.003$) significantly influenced anaemia incidence. Conversely, maternal age ($p=0.987$), frequency of ANC visits ($p=0.190$), education level ($p=0.537$), and occupation ($p=0.474$) showed no significant associations. The study concludes that gestational age, parity, and CED status are key risk factors for anaemia in pregnancy, emphasizing the need for targeted health interventions to address these determinants and reduce anaemia prevalence.

Keywords: anaemia; pregnant women; risk factors

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INTRODUCTION

Pregnancy is a very critical period for the growth and development of the foetus, in addition to having a higher risk of experiencing various health problems, both for the mother and foetus (Baity & Rahayuningsih, 2023). Nutritional deficiencies during this period can have a serious impact on the health of the baby and mother. Anaemia, as one of the most common and complex micronutrient deficiency problems worldwide, is often one of the biggest challenges pregnant women face (Tanziha et al., 2021). Anaemia is a universal health problem that can occur at any age (Nugraheni et al., 2023). Specifically, anaemia is diagnosed in pregnant women when their haemoglobin levels fall below 11 g/dl (Amini et al., 2018).

Anaemia during pregnancy can lead to severe complications, affecting both mother and baby. For the mother, anaemia can increase the risk of preterm delivery or postpartum haemorrhage, while for the baby, anaemia can lead to low birth weight or stunt their growth (Qiao et al., 2024). Data reported by the World Health Organisation (WHO) in 2018 revealed that approximately 35-75% of pregnant women suffer from iron deficiency, with prevalence rates increasing with gestational age. This condition has serious health impacts, the risks include an increase in foetal mortality by 12-28%, an increase in perinatal mortality by 30%, and an increase in neonatal mortality by 7-10% (Hutahaean et al., 2020). As stated by the World

Health Organisation (WHO), by 2023, data from the WHO shows that around 37% of pregnant women around the world lack red blood cells (WHO, 2023).

Anaemia is a significant health challenge worldwide, particularly impacting pregnant women, who are the most vulnerable group to its effects. In Indonesia, anaemia is a frequent complication among pregnant women, with a prevalence of 48.9% among pregnant women (MOH R1, 2018). In Central Java Province, 57.1% of pregnant women were anaemic, highlighting a significant public health problem (Emiliana and widyawati, 2023). Data from Dr Moewardi Hospital from 2018 to 2024 shows that the incidence of anaemia is high among pregnant women with a prevalence of 52.1%. It is crucial to understand in depth the factors that cause anaemia during pregnancy in this situation, as this alarming statistic emphasises its significance. Anaemia in pregnant women increases the risk of severe health problems, such as maternal mortality, low birth weight, and premature delivery (Chalas E, 2020).

A significant cause of anaemia is iron deficiency, with a higher prevalence in women of childbearing age due to menstrual blood loss and increased nutritional needs during pregnancy (Ariani et al., 2021). According to (Arfan et al., 2024), factors associated with anaemia during pregnancy are occupation, maternal age, parity, and maternal nutritional status during pregnancy. In addition, according to (Dewi & Mardiana, 2021) Anaemia in pregnancy can be influenced by gestational age. The prevalence of anaemia is also significantly influenced by the educational background of pregnant women, as research shows that this condition is more common in communities with high levels of malnutrition, close pregnancy spacing, and even low levels of maternal education.

The incidence of anaemia among pregnant women at Dr Moewardi Hospital is high, but there is limited research on the specific factors that contribute to this condition. Identifying these factors is crucial to advancing efficient programs to prevent and treat anaemia during pregnancy. This study seeks to explore the connection between maternal age, gestational age, and parity, CED status, ANC visits, the connection between the occurrence of anaemia in pregnant women and factors such as their level of education and employment status at RSUD Dr. Moewardi Surakarta. Based on the above description, this study contributes to reducing morbidity and mortality related to anaemia in pregnant women at RSUD Dr. Moewardi, Additionally, it contributes to enhancing the health outcomes for both mothers and fetuses in this situation.

METHOD

This research employs a quantitative approach with a case-control design, analyzing and comparing the characteristics of individuals who experience health problems (cases) with healthy individuals (controls) to determine what the occurrence of anemia in pregnant women at Dr. Moewardi Surakarta Hospital is linked to various risk factors in 2023-2024. This study was conducted from September 2023 to October 2024. The data for this study were gathered between September and October 2024 at RSUD Dr. Moewardi Surakarta. The study population consisted of medical records of pregnant women at RSUD Dr Moewardi Surakarta in 2023 to 2024. Inclusion criteria in the study: Medical records of pregnant women at RSUD Dr. Moewardi Surakarta from 2023 to 2024, including maternal age, gestational age, parity, circumference of upper arm status, ANC visits, education level, employment status and haemoglobin values. Exclusion criteria in the study: Incomplete medical records of pregnant women. The sample size was 200 medical records of pregnant women including 100 medical records of pregnant women who experienced anaemia during pregnancy and 100 medical records of pregnant women who did not experience anaemia, data collection was carried out

based on inclusion and exclusion criteria.Data collection methods in this study used secondary data with medical record instruments for pregnant women. The analytical techniques used in this study included both univariate and bivariate analyses. Univariate analysis was conducted to explore the frequencies and percentages of the data, while bivariate analysis was employed to evaluate the relationships between two variables through the chi-square test. The significance of the results was determined using the p-value, where values less than 0.05 indicated statistical significance, offering substantial evidence to reject the null hypothesis and indicating a meaningful association between the variables. Data collection took place after securing approval from the Faculty of Health Sciences at the University of Muhammadiyah Surakarta and Dr. RSUD. Moewardi Surakarta. The Research Ethics Committee of Dr Moewardi Surakarta Hospital granted approval for this study with number: 2.238/IX/HREC/2024.

RESULT

Table 1.
The distribution of frequency and percentage among pregnant women according to the research variables (n=200)

Variable	Case		Control		Total	
	f	%	f	%	f	%
Mum's Age						
<20 Years	6	6.0	6	6.0	12	6.0
20 – 35 Years	68	68.0	69	69.0	137	68.5
>35 Years	26	26.0	25	25.0	51	25.5
Usia Kehamilan						
1st Trimester	16	16.0	22	22.0	38	38.0
2nd Trimester	13	13.0	24	24.0	37	37.0
3rd Trimester	71	17.0	54	54.0	125	125.0
Parity						
Nulliparous	26	26.0	40	40.0	66	66.0
Primipara	30	30.0	33	33.0	63	63.0
Multiparous	44	44.0	27	27.0	71	71.0
CED Status						
CED	33	33.0	14	14.0	47	47.0
Not CED	67	67.0	86	86.0	153	153.0
ANC Visits						
<4 Times	33	33.0	43	43.0	76	76.0
>4 Times	67	67.0	57	57.0	124	124.0
Education Level						
Elementary School	6	6.0	4	4.0	10	5.0
Junior High School	17	17.0	11	11.0	28	14.0
Senior High School	48	48.0	51	51.0	99	49.5
Bachelor	29	29.0	34	34.0	63	31.5
Employment Status						
Employed	55	55.0	61	61.0	116	58.0
Not Employed	45	45.0	39	39.0	84	42.0

Based on the results of data analysis in Table 1, the majority of pregnant women in this study, both anaemic and non-anaemic, were aged between 20 and 35 years, 68.0% and 69.0% of each group respectively. Most of the anaemic pregnant women (71.0%) were in the third trimester of pregnancy, while 44.0% were multiparous. 33.0% of anaemic pregnant women had Chronic Energy Deficiency (CED), and 67.0% had more than 4 antenatal care (ANC) visits. 48.0% of anaemic women and 51.0% of non-anaemic women had a high school

education. Finally, the majority of anaemic (55.0%) and non-anaemic (61.0%) pregnant women were employed.

Table 2.
The relationship between the age of pregnant women and the occurrence of anaemia during pregnancy

Variable	Occurrence of Anaemia				Total		P-value
	Anemic		Not Anemic				
	f	%	f	%	f	%	
Mom's Years							
<20 Years	6	6.0	6	6.0	12	6.0	
20 – 35 Years	68	68.0	69	69.0	137	68.5	0,987
>35 Years	26	26.0	25	25.0	51	25.5	

The findings presented in Table 2 of the study above show that the percentage of anaemia incidence in pregnant women is mostly aged 20 to 35 years, with a proportion of 68 pregnant women (68.0%) in mothers who experience anaemia, while in mothers who do not experience anaemia there are 69 pregnant women. (69,0%). The result of the chi-square test, which yielded a p-value of 0.987, indicates that there is no significant relationship between the age of pregnant women and the incidence of anaemia.

Table 3.
The relationship between anaemia and gestational age among pregnant women

Variable	Occurrence of Anaemia				Total		P-value
	Anemic		Not Anemic				
	f	%	f	%	f	%	
Pregnancy Age							
1st Trimester	16	16.0	22	22.0	38	38.0	
2nd Trimester	13	13.0	24	24.0	37	37.0	0,038
3rd Trimester	71	71.0	54	54.0	125	125.0	

The results of this study indicate that the risk of anaemia among pregnant women varies at different stages of pregnancy. Specifically, among 200 respondents, the incidence of anaemia was notably higher during the third trimester, with 71 pregnant women (71.0%) affected. In contrast, the majority of women without anaemia were also in the third trimester, totaling 54 women (54.0%). The Chi-Square statistical test indicated a significant association between the trimester of pregnancy and the occurrence of anaemia (p-value = 0.038), demonstrating a statistically significant relationship across all three trimesters.

Table 4.
The relationship between parity and the occurrence of anemia in pregnant women

Variable	Occurrence of Anaemia				Total		P-Value
	Anemic		Not Anemic				
	f	%	f	%	f	%	
Parity							
Nulliparous	26	26.0	40	40.0	66	66.0	
Primipara	30	30.0	33	33.0	63	63.0	0,028
Multiparous	44	44.0	27	27.0	71	71.0	

The findings indicated that the multiparous group had a higher tendency of experiencing anaemia with a proportion of 44 pregnant women (44.0%) compared to the nulliparous group of 26 pregnant women (26.0%) and the primiparous group of 30 pregnant women (30.0%). In the non-anaemia group, most of the pregnant women were nulliparous, with 40 women (40.0%) in this category. The chi-square test showed a statistically significant relationship

between parity and the occurrence of anaemia, as evidenced by a p-value of 0.028, suggesting a meaningful correlation between these two variables.

Table 5.
The relationship between the status of CED and the occurrence of anaemia in pregnant women

Variable	Occurrence of Anaemia				Total		P-Value
	Anemic		Not Anemic				
	f	%	f	%	f	%	
CED Status							
CED	33	33.0	14	14.0	47	47.0	0,003
Not CED	67	67.0	86	86.0	153	153.0	

The results showed that the measurement of CED status with the incidence of anaemia in 200 pregnant women respondents showed that pregnant women with CED status had a higher proportion of anaemia with a proportion of 33 pregnant women (33.0%) compared to the group that did not experience anaemia in 14 pregnant women. (14,0%). The statistical analysis showed a strong correlation between CED status and the incidence of anaemia. The p-value of 0.003, which is considerably lower than the standard significance level (α = <0.05), supports this relationship. This implies that pregnant women with CED status are more likely to experience anaemia compared to those who do not have this condition.

Table 6.
The relationship between antenatal care visits and anaemia in pregnant women

Variabel	Occurrence of Anaemia				Total		P-Value
	Anemic		Not Anemic				
	f	%	f	%	f	%	
ANC Visits							
<4 Times	33	33.0	43	43.0	76	76.0	0,190
>4 Times	67	67.0	57	57.0	124	124.0	

The analysis revealed that 100 respondents were found to have anaemia and 100 respondents who did not experience anaemia out of a total of 200 respondents. In the group with less than 4 ANC visits, 33 pregnant women (33.0%) experienced anaemia and 43 pregnant women (43.0%) did not experience anaemia. Whereas in the group who had ANC visits more than 4 times, the percentage of anaemia was higher, with a proportion of 67 pregnant women (67.0%) and 57 pregnant women (57.0%) not experiencing anaemia. The chi-square test yielded a p-value of 0.190, which is greater than the conventional significance threshold of α = 0.05. This indicates that there is no statistically meaningful relationship between the frequency of ANC visits and the incidence of anaemia in pregnant women.

Table 7.
The relationship between Level of Education and Incidence of Anaemia in Pregnant Women

Variabel	Occurrence of Anaemia				Total		P-Value
	Anemic		Not Anemic				
	f	%	f	%	f	%	
Education Level							
Elementary School	6	6.0	4	4.0	10	5.0	
Junior High School	17	17.0	11	11.0	28	14.0	0,537
Senior High School	48	48.0	51	51.0	99	49.5	
Bachelor	29	29.0	34	34.0	63	31.5	

The findings revealed that the majority of respondents with anaemia had completed high school, accounting for 48 pregnant women (48.0%). A comparable pattern was noted in the

group of pregnant women who did not have anaemia, where most also held a high school or vocational school education, comprising 51 women (51.0%). Based on the results of the chi-square statistical test, no significant relationship was found between education level and the occurrence of anaemia, as evidenced by a p-value of 0.537, which is higher than the standard significance threshold of α = <0.05.

Table 8.
Relationship between employment status and the incidence of anaemia in pregnant women at Dr. Moewardi Surakarta Hospital

Variabel	Occurrence of Anaemia				Total		P-Value
	Anemic		Not Anemic				
	f	%	f	%	f	%	
Employment Status							
Employed	55	55.0	61	61.0	116	58.0	0,474
Not Employed	45	45.0	39	39.0	84	42.0	

The analysis revealed that a majority of the anaemic mothers were employed, with 55 pregnant women (55.0%) working. Similarly, the majority of non-anaemic pregnant women were also employed, with 61 women (61.0%) working. The results of the chi-square test showed a p-value of 0.474 (α = <0.05), which indicates that there is no significant difference in the probability of experiencing anaemia between employed and unemployed individuals. This suggests that a person's occupation does not notably influence the prevalence of anaemia in pregnant women.

DISCUSSION

Relationship between maternal age and anaemia incidence

The statistical analysis yielded a p-value of 0.987 (p>0.05), suggesting the acceptance of the null hypothesis (Ho) and the rejection of the alternative hypothesis (Ha). This finding suggests that no significant association exists between the age of pregnant women and the occurrence of anaemia among expectant mothers treated at Dr. Moewardi Surakarta Hospital. Furthermore, the analysis highlighted that the majority of both anaemic and non-anaemic mothers fell within the 20 to 35-year age range. This is based on the theory in the study (Malisngorar et al., 2019), the age range of 20-35 years is considered ideal for pregnancy because at that age, the female reproductive organs are generally in the most optimal condition to support fetal growth and development. The results of this study are reinforced by previous research conducted by (Tempali et al., 2024), which states that there is no significant relationship between age and the incidence of anaemia at Sangurara Health Centre, Palu City with p=0.237. For those under 20, both physical and emotional maturity are still developing, leading to less attention to nutritional needs during pregnancy. On the other hand, women over 35 experience a decline in immune function and a higher risk of health issues. Adequate nutritional supplementation is essential, especially for women under 20 and over 30, as the nutrients support not only the mother's own growth but also the development of the fetus (Masturoh et al., 2022).

Relationship between gestational age and anaemia incidence

The findings obtained from the Chi-Square statistical analysis revealed a p-value amounting to 0.038, indicating a significant association between gestational age and anaemia incidence. The findings indicate that the stage of pregnancy plays a significant role in determining the likelihood of developing anaemia, with each trimester potentially having a unique impact. Previous research also supports these findings, suggesting that closer health monitoring and appropriate nutritional interventions are needed, especially in the third trimester (Sari et al., 2021). This is also in line with research (Yelini & Bakara, 2023), The statement highlights a

connection between the duration of pregnancy (gestational age) and the likelihood of pregnant women experiencing anaemia, where young gestational age requires more nutritional intake, so young pregnant women tend to be more susceptible to anaemia. They are also very susceptible to infection and bleeding, even if the bleeding is only slight. The likelihood of anaemia among pregnant women escalates notably during the third trimester. This condition is primarily driven by the fetus's rapidly growing nutritional demands, particularly for iron, coupled with the depletion of the mother's iron reserves. This research is supported by theory in research (Igbinosa et al., 2022) which states that during pregnancy, mothers need sufficient additional iron, with an average daily requirement of 27 mg. However, this requirement increases dramatically as the pregnancy progresses, totalling around 1000-1200 mg during pregnancy.

Relationship between parity and anaemia incidence

The findings indicated that the incidence of anemia was more prevalent in the multiparous group, with a rate of 44.0%, and a p-value of 0.028, demonstrating a statistically significant association between parity and the occurrence of anemia. Multiparous pregnant women are those who have experienced more than one pregnancy. Each pregnancy can deplete nutrient reserves, especially iron, which is needed to support foetal growth. Research shows that multiparous women tend to have lower iron stores compared to previous pregnancies, This could potentially elevate the likelihood of developing anaemia in future pregnancies. A similar finding was observed in a study conducted by (Yusta et al., 2021), the statistical analysis, which yielded a p-value of 0.000, demonstrated a strong and statistically significant correlation between parity and the incidence of anaemia. This study's findings suggest that pregnant women with higher parity are more likely to experience greater iron deficiency, consequently elevating their risk of anaemia. The results of this study are additionally reinforced by previous research conducted by (Riyani et al., 2020) The study indicates a notable correlation between parity and the prevalence of anaemia in pregnant women, with a p-value of 0.003. Parity significantly influences the development of iron deficiency anaemia in this population. Women with multiple pregnancies and births are more susceptible to anaemia, as the repeated pregnancies deplete the body's iron stores, contributing to iron deficiency. This is also supported by the theory in the study (Amarasinghe et al., 2022) which states that factors such as a short interval between one birth and the next It has the potential to raise the likelihood of anaemia among women during pregnancy.

Relationship between CED Status and anaemia incidence

The results of the statistical test indicated a noteworthy correlation between CED status and anaemia incidence. The p-value of 0.003 is significantly lower than the typical significance threshold ($\alpha = 0.05$), suggesting a strong correlation between the two variables, where pregnant women with CED status are more likely to experience anaemia than pregnant women with CED status who do not experience anaemia. This is in line with the findings of research conducted by (Subriah et al., 2021), the results of this study indicate that there is a very strong relationship between CED and anaemia in pregnant women in the Baitussalam Puskesmas area with a p-value of 0.000. The results of this study also support research conducted by (Qomarasari et al., 2023) which states that there is a relationship between CED status and anaemia status in pregnant women at El'mozza Clinic with a p-value of 0.002. These results are supported by the theory in research (Novitasari & Pratiwi, 2019), which states that until now, there are still many women of childbearing age, especially pregnant women, who experience chronic malnutrition. This condition is characterised by an upper arm circumference smaller than 23.5 cm, which indicates low body energy reserves.

Relationship between ANC visits and anaemia incidence

The chi-square statistical test results indicated no statistically significant correlation between the frequency of ANC visits and the occurrence of anaemia, with a p-value of 0.190. This aligns with the researcher's hypothesis that the number of visits made by pregnant women does not influence their risk of developing anaemia. These findings are further supported by similar conclusions from previous studies (Adriana, 2022) It is stated that no significant correlation exists between the frequency of ANC visits and the occurrence of anaemia in pregnant women at Puskesmas Batu-Batu, Soppeng Regency, in 2021, with a p-value of 0.049. The results of this study further lend support to the research conducted (Malaka et al., 2023) It is stated that there is no relationship between ANC visits and the occurrence of anemia (p = 1.00). This study is supported by the theory proposed by (Putri et al., 2023), Although the frequency of ANC visits is not directly linked to the occurrence of anemia, it remains crucial for pregnant women to schedule routine ANC visits in order to monitor fetal growth and detect pregnancy complications early.

This is also supported by the theoretical framework in the study (Mariani et al., 2024), Antenatal care visits are a strategic moment to provide comprehensive nutrition education, so that pregnant women can prevent anaemia and maintain health during pregnancy. Essential for pregnant women to have a minimum of four hemoglobin tests during the first trimester, one in the second trimester, and two during the third trimester. The third trimester is regarded as the period with the greatest risk of anemia for pregnant women. This is likely due to the increased nutritional demands of the rapidly developing fetus and the mother's increased blood volume. Previous research theory in research (Widiyaningsih, 2023), states that the frequency of counseling during Antenatal Care (ANC) visits is still not effective enough to increase the understanding of pregnant women, especially regarding anaemia and its prevention efforts.

Relationship between level of education and anaemia incidence

The chi-square test analysis of the statistical results indicated that there was no meaningful correlation between the level of education and the occurrence of anaemia. This conclusion was supported by a p-value of 0.537, which exceeds the commonly accepted significance threshold of $\alpha = 0.05$. Education level is often considered an important indicator of public health, as higher education is usually associated with better health knowledge, access to information, and the ability to make better health decisions. Similarly, personal experiences such as previous pregnancies, health care experiences during pregnancy can be a source of knowledge for mothers (Hariyanto & Rahayuningsih, 2023). However, in this case, While the majority of respondents with anaemia had completed high school, this alone is insufficient to establish a direct link between education and the occurrence of anaemia.

This finding is in line with research conducted by (Sari, 2020), this shows that there is no significant relationship between education level and the incidence of anaemia in pregnant women in the working area of Puskesmas Wara Selatan in 2018, as the p-value of 0.794 exceeds the significance threshold of 0.05. Furthermore, these results align with the theory presented in previous research conducted by (Lipoeto et al., 2020) The study highlights that the level of education plays a crucial role in determining the likelihood of anaemia. Women who have attained higher levels of education are more likely to possess greater knowledge and better access to resources that help in managing anaemia. Similarly, the theory discussed in the research supports this finding (Rahayuningsih et al., 2021) which states that pregnant women with low education levels sometimes do not have enough information about their

health. As a result, they may not know how to maintain a healthy pregnancy. In contrast, highly educated people tend to be more rational.

Highly educated mothers tend to undergo routine pregnancy check-ups more often to maintain their own health and the health of the unborn baby. The theory in research mmarhsconducted by (Aulya et al., 2020) states that to achieve success in efforts to prevent anaemia in pregnant women, it is necessary to increase understanding of anaemia through various extension methods tailored to the characteristics of each individual. Thus, important information about anaemia can be delivered effectively to all target groups, regardless of their level of education and social background. The theory in the study (Rohim et al., 2016) also states that efforts to prevent and overcome anaemia can be done through various means, including health education that aims to increase individual knowledge.

Relationship between employment status and anaemia incidence

According to the analysis, there was no substantial correlation observed between individuals who were employed, accounting for 55.0%, and those who were unemployed, representing 45.0% pregnant women on the incidence of anaemia. The calculated p-value, which is 0.474, exceeds the commonly accepted significance threshold of $\alpha = 0.05$ which indicates that both working and non-working individuals have the same possibility of experiencing anaemia. It indicates that employment status does not have a substantial connection to the occurrence of anaemia among pregnant women. Generally, employment status is linked to various factors, such as access to resources like health-related knowledge, proper nutrition, and essential healthcare services. However, in the context of pregnant women, employment does not always contribute positively to health. Research suggests that working pregnant women may experience higher levels of stress, fatigue and lack of time for self-care, which may contribute to the risk of anaemia.

The findings of this study are in line with the results obtained in a previous study conducted by ('Aisyah et al., 2023), Chi-square test results did not find a significant relationship between employment and the incidence of anaemia in pregnant women with a p-value of 0.746 and an odds ratio of 0.66. This study proves that whether a mother works or not, does not affect the likelihood of her experiencing anaemia during pregnancy. Furthermore, the findings of this study align with previous research in the field (Pratiwi et al., 2023) There was no association between maternal employment status and the incidence of anaemia in pregnant women. In this study, it is mentioned that unemployed mothers are likely to have a greater workload if they act as housewives and have more than one child, It is therefore crucial to give careful consideration to maintaining and prioritizing one's health conditions during pregnancy when doing various activities. Meanwhile, working mothers have a double workload

CONCLUSION

The findings of this research highlight a significant correlation between gestational age, parity, and chronic energy deficiency (CED) status with the prevalence of anaemia among pregnant women. Specifically, being in the third trimester of pregnancy, having multiparous parity (more than three children), and experiencing chronic energy deficiency (measured by upper arm circumference less than 23.5 cm) were identified as primary risk factors contributing to the occurrence of anaemia. Conversely, other factors such as maternal age, the frequency of antenatal care visits, education level, and employment status did not exhibit a statistically significant association with anaemia in pregnant women. These results underscore critical insights for designing effective strategies to prevent and manage anaemia during pregnancy. More intensive interventions need to be focused on groups of pregnant women

with advanced gestational age, high parity, and poor nutritional status

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