

The Relationship Between Family Economic Level and the Incidence of Anemia in Pregnant Women

Huda Rohmawati^{1*}, Nara Lintan Mega Puspita², Alfika Awatiszahro³, Agung Nugroho⁴

^{1,2,3,4} Department of Midwifery, Faculty of Health Sciences, Universitas Kediri, Indonesia

*Corresponding Author: huda.rohma@unik-kediri.ac.id

ABSTRACT

Nutritional Anemia is a health problem that plays a role in causing high Maternal Mortality Rates (MMR), Infant Mortality Rates (IMR) as well as low work productivity, sports performance and learning ability. Therefore, overcoming nutritional anemia is one of the potential programs to improve the quality of human resources, which has been implemented by the government since Long Term Development I. Research Objectives: To determine the relationship between the socio-economic level of the family and the incidence of anemia in pregnant women at RSIA Trisna Medika Tulungagung. The design used in this research is based on the scope of the research, including the type of inferential research. The research results showed that 13 (86.7%) respondents who had lower class economic status experienced pregnancy anemia. After carrying out statistical tests with Mann Whitney using SPSS, the results were $\rho = 0.000 < 0.05$, then H1 was accepted or H0 was rejected, meaning that there was a positive relationship between the two variables, namely the more respondents who had lower class economic status, the more people experienced anemia and The correlation coefficient value is 0.673, meaning there is a strong relationship between the socio-economic level of the family and the incidence of anemia in pregnant women at RSIA Trisna Medika Tulungagung. There is a relationship between the socio-economic level of the family and the incidence of anemia in pregnant women at RSIA Trisna Medika.

Keywords: anemia, family economic level, knowledge, pregnant woman

Received March 5, 2024; Revised April 10, 2024; Accepted May 10, 2024



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BACKGROUND

Nutritional Anemia is a health problem that plays a role in causing high Maternal Mortality Rates (MMR), Infant Mortality Rates (IMR) as well as low work productivity, sports performance and learning ability. Therefore, overcoming nutritional anemia is one of the potential programs to improve the quality of human resources, which has been implemented by the government since Long Term Development I (Ministry of Health, 2012).

Currently, the maternal mortality rate and perinatal mortality rate in Indonesia are still very high. According to the Indonesian Demographic and Health Survey (2013), the maternal mortality rate is 307 per 100,000 live births. The high death rate is caused, among other things, by the poor health and nutritional status of mothers during pregnancy, as can be seen from the high incidence of iron deficiency anemia in pregnant women, namely 63.5%. The target for 2013 is to reduce MMR to 189 per 100,000 live births and reduce the incidence of anemia in pregnant women to around 35% (Gillespie & Flanders, 2010).

Anemia can be defined as a mother's condition with hemoglobin (Hb) levels in her blood of less than 12 gr% (Wiknjosastro, 2005). Meanwhile, anemia in pregnancy is a mother's condition with hemoglobin levels below 11 gr% in the first and third trimesters or levels <10.5 gr% in the second trimester (Saifuddin, 2002).

Anemia in pregnancy is caused by many women starting pregnancy with insufficient food reserves, while their additional needs are higher than usual, resulting in nutritional deficiencies. Malnutrition will result in the speed of hemoglobin formation and its concentration in the blood circulation decreasing, resulting in anemia. Besides that, in pregnant women the number of blood cells increases to be able to compensate for the growth of the fetus in the uterus, but the increase in blood cells is not balanced with the increase in blood volume, resulting in hemodilution accompanied by physiological anemia (Manuaba, 1998).

According to WHO, the incidence of anemia in pregnancy ranges from 20% to 89%, setting Hb 11 gr% as the basis. The results of the 2012 Household Health Survey (SKRT) show that 51% of pregnant women suffer from anemia. Meanwhile, the 2012 target for the incidence of anemia is 50% (Ministry of Health of the Republic of Indonesia, 2001). Based on data from the East Java Health Service in 2015, the incidence of anemia in pregnant women was 55%. Data obtained by researchers from the Tulungagung Health Service in 2018 showed that the incidence of pregnant women experiencing anemia was 511 or 41% of 1246 pregnant women. Meanwhile, the target for 2018 was that the incidence of anemia was 476 or 38.2% of 1246 pregnant women.

Data obtained by researchers from medical records showed that the incidence of anemia in pregnant women was 125 or 42.51% of all 294 pregnant women who were examined at RSIA Trisna Medika. This means that the number of pregnant women who are anemic does not meet the target of the Tulungagung District Health Service of 38.2%.

Anemia can occur in every pregnant woman, which is why this incident must always be watched out for. Anemia in pregnancy is a national and even international problem. Anemia in pregnant women has a big influence on the quality of human resources (Manuaba, 1998). Anemia that occurs during pregnancy has consequences for the mother and fetus. For mothers, anemia will reduce the mother's immune system, making her susceptible to infection.

Apart from that, the consequences that can occur during the first trimester of pregnancy are: abortion, missed abortion, and congenital abnormalities. Anemia in the second trimester of pregnancy can cause: premature labor, antepartum hemorrhage, impaired fetal growth in the uterus, intrauterine asphyxia and death, low birth weight (LBW) babies, gestosis, susceptibility to infection, low IQ and can even result in death. During birth, anemia

can cause both primary and secondary disorders, the fetus will be born with anemia and labor will result in the mother getting tired quickly. During post partum anemia can cause uterine atony, retained placenta, wounds that are difficult to heal, febrile puerperalis and uterine involution disorders.

Due to the still high incidence of anemia in pregnant women, the government is making various efforts to reduce the incidence of anemia, namely by carrying out activities that include education about the importance of nutrition for pregnant women, preventing anemia, carrying out early detection of pregnant women suffering from anemia by checking Hb, and giving blood supplement tablets.

Based on the initial data above, researchers are interested in conducting research on the relationship between family socio-economic level and the incidence of anemia in pregnant women at RSIA Trisna Medika Tulungagung.

METHODS

The design used in this research is based on the scope of the research, including the type of inferential research. The population in this study was all 125 pregnant women who were examined at RSIA Trisna Medika Tulungagung. The sample size in this study was 32 people. The sampling technique in this research is Non Probability sampling, namely consecutive sampling, namely taking samples based on research criteria and the specified time. The Independent Variable (X) in this research is socio-economic level. Dependent Variable (Y) is the incidence of anemia in pregnant women at RSIA Trisna Medika Tulungagung. Data was collected using research instruments, namely the dependent variable (socioeconomic) using an open questionnaire and the dependent variable (incidence of anemia in pregnant women) was by looking at the register of pregnant women. This research is a correlational analytical research with a cross sectional approach. Data were analyzed using univariate analysis and bivariate analysis.

RESULTS

Characteristics of Respondents

Data from the results of the following study describe the distribution and characteristics of respondents from each group which includes age and sources of information obtained about incident of anemia presented in the following table.

Table 1. Characteristics of Respondents Based on Economic Status

No	Economic Status	Total	Percentage (%)
1.	Under	15	46,9
2.	Intermediate	7	21,8
3.	Over	10	31,3
	Total	32	100

Based on Table 1, it can be seen that almost half of the respondents' economic status was lower class, numbering 15 respondents (46.9%).

Table 2. Characteristics of Respondents Based on Anemia Incident

No	Anemia incidence	Total	Percentage (%)
1.	Anemia	17	53,1
2.	Not anemic	15	46,9
	Total	32	100

Based on Table 3.1, it can be seen that the majority of respondents experienced anemia, numbering 17 respondents (53.1%).

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Table 3 Cross Tabulation of the Relationship Between Family Socioeconomic Level and the Incidence of Anemia in Pregnant Women

Status Economy	Anemia Occurrence					Total
	Anemia		Not anemic			
	Σ	%	Σ	%	Σ	%
Under	13	86,7	2	13,3	15	100
Intermediate	3	42,9	4	57,1	7	100
Over	1	10	9	90	10	100
Total	17	53,1	15	46,9	32	100

The results of the analysis and interpretation of data in table 1 showed that 13 (86.7%) respondents who had lower class economic status experienced pregnancy anemia. After carrying out statistical tests with Mann Whitney using SPSS, the results were $\rho = 0.000 < 0.05$, then H1 was accepted or H0 was rejected, meaning that there was a positive relationship between the two variables, namely the more respondents who had lower class economic status, the more people experienced anemia and The correlation coefficient value is 0.673, meaning there is a strong relationship between the socio-economic level of the family and the incidence of anemia in pregnant women at RSIA Trisna Medika.

DISCUSSION

Family Socioeconomic Level Data

Based on Table 2.4, it can be seen that almost half of the respondents' economic status was lower class, numbering 15 respondents (46.9%). The economic status of respondents is influenced by work, it can be seen in table 1.3 that almost half of the respondents do not work/housewives (37.5%). Where the respondent does not have the income to meet daily living needs. The family's monthly income only comes from the husband, so they do not have additional income to meet the mother's needs during pregnancy.

This is in accordance with the theory of Friedman (2004) which states that work is a symbol of a person's status in society. Bridge work to earn money to meet living needs and to get the desired health service location. Meanwhile, income is the result obtained from work or business that has been carried out. Income will influence a person's lifestyle. Families who have a high economic status or income will practice a luxurious lifestyle, for example, they are more consumptive because they can afford to buy everything they need compared to families in a lower economic class.

Economic status is also influenced by educational factors, as seen in table 1.2, it can be seen that almost half of the respondents had elementary school education, 12 people (37.5%). The respondent's education includes basic education where respondents who have basic education will have less income compared to respondents who have higher education. This is because the monthly wages received by respondents depend on the level of education they have.

The higher a person's level of education, the easier it is to get a job, so the more income they earn. On the other hand, insufficient education will hinder the development of a person's attitude towards newly recognized values (Friedman, 2004).

Almost half of the respondents had an income of less than Rp. 1,000,000 per month for 15 respondents (46.9%). This income is currently still not sufficient to meet daily needs because the price of basic necessities is currently increasingly expensive. Apart from that, it was supported by almost half of the respondents' family members, namely 1 – 3 people, totaling 15 respondents (46.9%). The large number of family members causes the nutritional needs of pregnant women to be inadequate because the family will share it with other needs even though the family income each month is only less than 1,000,000 which is used to meet the children's educational needs, food and other needs.

Income is closely related to nutritional consumption in the family, the higher the family income, the more nutritional needs for the family will be met (Notoatmodjo, 2003). Family income increases, family nutritional conditions improve. On the other hand, if family income decreases, problems of malnutrition related to anemia will arise (Siswono, 2004).

Data on the incidence of anemia in pregnant women

Based on Table 3.1, it can be seen that the majority of respondents experienced anemia, numbering 17 respondents (53.1%). Low hemoglobin levels in the blood are known as anemia. There are many causes of anemia, the most common of which are bleeding, malnutrition, bone marrow disorders, chemotherapy treatment and congenital hemoglobin abnormalities (Perry & Potter, 2005).

Pregnant women who have low Hb levels are mostly respondents aged 20 - 25 years, amounting to 18 respondents (51.4%), where this young age causes respondents to be less mature in selecting and filtering material or information received because increasing a person's age will influence intellectual ability to receive information. So that pregnant women do not know about food consumption that can affect Hb levels. Age is a variable that is always considered in epidemiological investigations. Age is a person's level of maturity so that those of reproductive age will have better knowledge and know about balanced nutrition for consumption (Notoatmodjo, 2003).

In addition, almost half of the family income is less than 1,000,000 per month for 15 respondents (46.9%). Low family income causes the family's ability to buy food that contains sufficient nutritional deficiencies, which can affect a person's Hb levels. Most families rarely consume meat, even though the greatest source of iron lies in meat compared to green vegetables.

Increasing economic status will increase income, so that the body's energy and protein intake needs can be met. Families with low economic status will result in reduced energy and protein input. Economic status determines the level of participation in contributing to improving community health (Ayu. et al, 2022).

The high prevalence of anemia in society has been going on for a long time or is chronic. Therefore, it is necessary to prevent and control anemia by consuming foods that contain lots of iron or taking blood supplement tablets (Ministry of Health, 2001).

Body weight is always closely related to upper arm circumference in pregnant women. Based on table 5.4, it was found that half of the respondents experienced a weight gain of <11 kg, totaling 16 respondents (50%), where thin body weight was identical to an upper arm circumference of less than 23.5 cm.

LILA size is closely related to the mother's weight during pregnancy from the first trimester to the third trimester. The advantage is that when compared to body weight measurements, the LILA measurement better describes the condition or nutritional status of pregnant women themselves. As we know, body weight during pregnancy is the cumulative weight between the increase in the weight of the body's organs and the blood volume of the mother and the weight of the fetus she is carrying. We do not know for sure whether the mother's weight gain during pregnancy comes from the weight gain of the mother, fetus, or both (Bambang, 2005).

The low Hb levels of pregnant women were caused by almost half of the respondents' gestational age being in the first trimester, numbering 15 respondents (46.9%). Where in TM I the red blood cells experience hemodilution so that the red blood cells become thinner and have a low Hb level when the measurement is taken. The Hb levels of pregnant women can be influenced by half of the respondents being primigravida, numbering 16 respondents (50%). Where the lack of experience of pregnant women causes mothers to be less compliant in consuming blood supplement tablets during pregnancy so they have Hb levels that are less than normal.

Pregnant women should have hemoglobin (Hb) levels > 11 g/dl. If the mother experiences anemia, especially the most frequent cause is iron (Fe) deficiency, the risk of abnormal labor will increase, as will the risk of maternal infection and bleeding tendencies which will impact maternal and infant morbidity and mortality. The peak condition of iron deficiency anemia often occurs in the second and third trimesters. Most anemia in pregnant women is anemia due to iron deficiency. Iron nutritional anemia in pregnant women is generally caused by physiological changes due to pregnancy which are exacerbated by a lack of nutrients, vitamin B12, folic acid and vitamin C. Apart from increased needs, another risk factor that causes anemia in pregnant women is frequent consumption of foods that contain substances that can inhibit iron absorption, such as caffeine and tannin (Besral & Saliar, 2007).

Analysis of the Relationship Between Family Socioeconomic Level and the Incidence of Anemia in Pregnant Women

The results of the analysis and interpretation of data in table 5.13 showed that (86.7%) of respondents who had lower class economic status experienced pregnancy anemia. After carrying out statistical tests with Mann Whitney using SPSS, the results were $\rho = 0.000 < 0.05$, then H1 was accepted or H0 was rejected, meaning that there was a positive relationship between the two variables, namely the more respondents who had lower class economic status, the more people experienced anemia and The correlation coefficient value is 0.673, meaning there is a strong relationship between the socio-economic level of the family and the incidence of anemia in pregnant women at RSIA Trisna Medika.

Anemia can be caused by deficiency factors or lack of materials originating from outside, namely food, which are needed for the synthesis of HR components. In pregnant women, hemodilution or blood thinning will occur, iron deficiency anemia will occur. Iron loss can also be caused by parasitic infestations such as hookworms, schistosoma and possibly *Trichuris trichiura* (Syamsuni, 2006).

The low behavior of consuming blood supplement tablets during pregnancy is influenced by the low knowledge of pregnant women about blood supplement tablets. The low level of knowledge is influenced by the large number of respondents who have low education and have never received information about blood supplement tablets. This is in accordance with the statement from Kartono (2006) that if information develops very quickly then knowledge develops very quickly too. Sources of information will sharpen people's thinking thereby increasing one's knowledge.

Socioeconomic factors play a very important role, where adequate or good socioeconomic conditions will make it easier to find better health services. Economic factors are closely related to food consumption and access to health services. Most of the population can be said to still be inadequate for their own needs. This general situation is due to the low income they earn and the large number of family members with low incomes (Ministry of Health, 2001).

A person who has a high socio-economic status will find it easy to fulfill both primary needs (clothing, food, shelter and health) and secondary needs (radio, television, motorized vehicles, etc.). So it is very clear that people from high socio-economic status will be able to provide encouragement for the emergence of awareness to maintain health compared to people from low socio-economic status who only think about how to fulfill their daily needs.

Malnutrition is one of the factors causing anemia in pregnant women. Anemia in pregnancy is caused by many women starting pregnancy with insufficient food reserves, while their additional food requirements are higher than usual, resulting in nutritional deficiencies. Malnutrition will result in the speed of hemoglobin formation and its concentration in the blood circulation decreasing, resulting in anemia.

CONCLUSION

Based on the research results, it was concluded that the economic level of pregnant women was found to have a lower economic status and the majority of pregnant women experienced anemia. So there is a positive and strong relationship between the socio-economic level of the family and the incidence of anemia in pregnant women at RSIA Trisna Medika.

REFERENCES

- Ayu, D. A., Sinaga, A. F., Syahlan, N., Siregar, S. M., Sofi, S., Zega, S., Rusdi, A., Annisa, & Dila, T. A. (2022). Faktor - faktor yang menyebabkan hipertensi di kelurahan medan tenggara. *Kesehatan Masyarakat*, 10(2), 136–147. <https://doi.org/10.14710/jkm.v10i2.32252>.
- Bambang S. Soedibjo. (2005). *Metodologi Penelitian*. Bandung : Universitas Nasional Pasim
- Besral, L. M., dan Saliar, J. (2007). Pengaruh Minum Teh terhadap Kejadian Anemia pada Usila di Kota Bandung. *MAKARA Kesehatan*, 11(1).
- Depkes RI. (2000). *Gizi Seimbang Menuju Hidup Sehat, Ibu Hamil Dan Menyusui*. Jakarta : Depkes.
- Depkes RI. (2001). *Buku Pedoman Pengenalan Tanda Bahaya pada Kehamilan, Persalinan dan Nifas*. Jakarta. Depkes.
- Departemen Kesehatan RI. (2001). *Survei Kesehatan Rumah Tangga (SKRT) 2001*. Badan Penelitian dan Pengembangan Kesehatan: Jakarta.
- Friedman. (2004). *Keperawatan Keluarga*. EGC. Jakarta.
- Gillespie, J. R dan F. B. Flanders. (2010). *Modern Livestock and Poultry Production: Feeding, Manajement, Housing and Enquipment*. 8th ed. Delmar, Ltd. New York, USA. Hal: 674-695.
- Kartono. (2006). *Pemimpin dan Kepemimpinan*, Jakarta : PT, Raja Grafindo.
- Manuaba, IBG. (2006). *Ilmu Kebidanan, Penyakit Kandungan dan Keluarga Berencana untuk Pendidikan Bidan*. Jakarta : EGC.
- Notoatmodjo, Soekidjo. (2003). *Pendidikan Dan Perilaku Kesehatan*. Rineka Cipta, Jakarta.
- Saiffudin, dkk. (2002). *Buku Acuan Nasional Pelayanan Maternal dan Neonatal*. Jakarta : YBP Sarwono Prawirohardjo.
- Siswono, T. Y. (2004). *Mendorong Berpikir Kreatif Siswa Melalui Pengajuan Masalah (Problem Posing)*. Konferensi Nasional Matematika XII, Universitas Udayana , Denpasar, Bali.
- Syamsuni, (2006), *Farmasetika Dasar Dan Hitungan Farmasi*, Penerbit Buku Kedokteran EGC, Jakarta.
- Winkjosostro, Hanifa. (2005). *Ilmu Kebidanan*. Jakarta : EGC.