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Original Research

Trend of Anemia Prevalence in Pregnant Women in the Working Area of Sukosari Health Center, Madiun City, 2018-2022

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ABSTRACT

Pregnancy anemia poses a significant national challenge due to its adverse impact on human resource (HR) quality. Without proper management, it can lead to maternal and fetal complications, even death. This study aimed to determine the trend of anemia prevalence of pregnant women from 2018-2022 in the working area of Sukosari Health Center, Madiun City. Conducted as descriptive quantitative research with predictive elements, it encompassed 2157 pregnant women in the center's jurisdiction. Utilizing the total population as the sample, data was collected from maternal LB3 documents. Trendline analysis in MS Office Excel revealed the trend and prediction of the anemia prevalence in the following year by displaying the equation display on chart. The results showed a trend and prediction of the anemia prevalence for pregnant women at the end of 2023, the total Sukosari Health Center increased. The trend and prediction of the prevalence of pregnant women in each village and each trimester of pregnancy also increased. The highest increase in the anemia prevalence for pregnant women occurred in Klegen Village and in the first trimester of pregnancy. From these results, it can be concluded that the trend of anemia prevalence of pregnant women at the health center has increased and exceeds the target set by the Madiun City Health Office, which is <15%. This condition needs to be monitoring and paid special attention to by increasing education on the prevention and treatment of anemia among adolescent girls and pregnant women, monitoring and evaluating the program of giving blood-added tablets, and maximizing local area monitoring of pregnant women. Innovative efforts can also be made in the form of taking blood tablets together on the opening day of pregnancy check-up services and during the implementation of classes for pregnant women and organizing classes for brides-to-be at health centers.

Keywords: Anemia; pregnant women; trend; prevalence

1. INTRODUCTION

Anemia in pregnancy is a national problem because it has a huge impact on the quality of human resources (HR).[1] Some pregnant women with anemia do not experience symptoms, however, as gestational age increases, symptoms may appear and even get worse. The World Health Organization (WHO) states that the incidence of anemia in pregnant women in the world is around more than 30% and the main cause is a deficiency of iron and folic acid. Based on 2018 Riskesdas data, the incidence of anemia in pregnant women in Indonesia reached 48.9%. In East Java Province, the incidence of anemia in pregnant women is 25.3%. Meanwhile, in Madiun City, the incidence of anemia in pregnant women has increased from 21.73% in 2021 to 26.7% as of September 2022. Physiologically, anemia often occurs

in pregnant women in the third trimester, this is due to a higher increase in plasma volume. compared to an increase in erythrocyte mass.[2] Anemia in pregnant women is also often caused by a lack of iron, folic acid and vitamin B12. Anemia in pregnant women must be watched out for because it can have a bad impact on the mother and fetus. Several efforts have been made by the government to prevent the incidence of anemia by implementing a blood supplementation tablet (TTD) program for young women. Efforts to prevent anemia in women of childbearing age (WUS) are carried out through the Healthy Productive Women Workers Movement (GP2SP) in the form of providing blood supplement tablets (TTD) to female workers by health workers at the company clinic where they work. The strategy to prevent anemia in prospective brides and grooms is carried out by the Office of Religious Affairs (KUA) and local health officers to carry out pre-wedding health consultations.[3] The implementation of integrated antenatal care is an effort to prevent anemia in pregnant women including 10 T services with a minimum of 6 visits during pregnancy. Providing blood supplement tablets (TTD) during pregnancy up to 42 days after delivery is a concrete step for the government to prevent anemia.[4] Classes for pregnant women are also carried out to provide an understanding of the risk of anemia in pregnant women. Good knowledge and positive attitudes can support pregnant women's behavior to prevent anemia.[5]

The general aim of this research is to determine the trend in the prevalence of anemia in pregnant women in the working area of the Sukosari Health Center, Madiun City in 2018-2022. Meanwhile, the specific aim of this research is to determine the trend in the total prevalence of anemia in pregnant women at the Sukosari Community Health Center, in each sub-district in the first, second and third trimesters in the working area of the Sukosari Community Health Center, Madiun City in 2018-2022.

2. METHODS

This research is descriptive quantitative research with a prediction study. This research was carried out at the Sukosari Health Center, Madiun City from February 2023 to April 2023. The population of this study was all pregnant women in the working area of the Sukosari Health Center, Madiun City in 2018-2022 using total sampling. The variable of this study is the incidence of pregnancy anemia. The data collection instrument in this study was to use a master data table to recapitulate secondary data on anemia of pregnant women in the maternal LB3 Sukosari Community Health Center, Madiun City from January 2018 to December 2022. Analysis of this research data using prevalence analysis was calculated by calculating the number of cases of maternal anemia. pregnant divided by the number of pregnant women in the working area of the Sukosari Health Center, Madiun City, multiplied by 100. Then the trend of anemia prevalence in pregnant women is described using the trendline feature on the chart in the Ms. program. Office Excel. To find out the prediction of prevalence in the following year, the trendline format feature is used by displaying an equation display on a chart.

Researchers have received an ethical statement on March 24 2023 with No.EA/1506/KEPK-Poltekkes_Sby/V/2023. Researchers have also obtained research permits from the Madiun City Bakesbangpol Service, the Madiun City Health, Population Control & Family Planning Service and the Madiun City Sukosari Health Center.

3. RESULTS

3.1 Trend of Anemia Prevalence in Pregnant Women at Sukosari Health Center, Madiun City, 2018-2022.

Figure 1 shows that the trend in the prevalence of anemia in pregnant women at the Sukosari Community Health Center has increased from year to year. From the results of calculating the predicted prevalence of anemia in pregnant women using the formula y = 3.05x + 9.19, y = (3.05x6) + 9.19, the prevalence of anemia in pregnant women at the Sukosari Community Health Center will increase to 27.5% at the end of 2023.

3.2 Trends in the Prevalence of Anemia in Pregnant Women in Each Subdistrict in the Working Area of the Sukosari Health Center, Madiun City, 2018-2022.

Figure 2 shows that the highest prevalence trend of anemia in pregnant women is found in the Klegen sub-district area.

From the results of the below calculations for the prevalence of anemia in pregnant women, it is known that the prevalence of anemia in pregnant women in all sub-districts in the working area of the Sukosari Community Health Center has increased (Table 1).

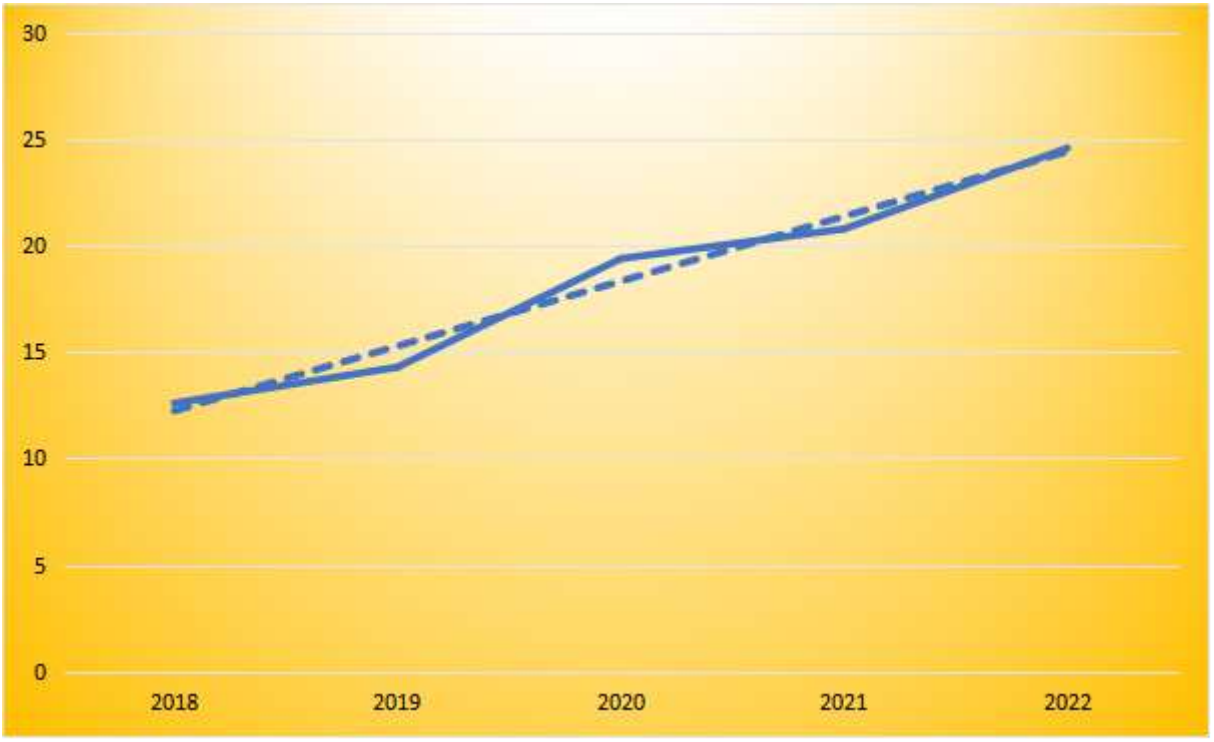

Figure 1. Trend of Anemia Prevalence in Pregnant Women at Sukosari Health Center

Table 1. Prediction of the prevalence of anemia in pregnant women in each subdistrict in the Sukosari Community Health Center working area at the end of 2023

Result	Kartoharjo	Oro-Oro Ombo	Klegen	Kanigoro	Sukosari
Prediction	y = 0.41x + 16.79 y = (0.41x6) + 16.79 19.3	y = 3.22x +8.56 y = (3.22x6) +8.56 27.89	y = 5.646x + 1.106 y = (5.646x6) + 1.106 34.9	y = 1.76x + 12.76 y = (1.76x6) + 12.76 23.3	y = 4.41x + 7.79 y = (4.41x6) + 7.79 34.3

3.3 Trends in the Prevalence of Anemia in Pregnant Women in Each Trimester of Pregnancy 2018-2022.

Figure 3 shows that the trend for the highest prevalence of anemia in pregnant women is found in the first trimester of pregnancy.

From the results of the following calculations for the prevalence of anemia in pregnant women, it is known that the prevalence of anemia in pregnant women in all trimesters of pregnancy has increased (Table 2).

4. DISCUSSION

4.1 Trend of Anemia Prevalence in Pregnant Women at Sukosari Health Center, Madiun City, 2018-2022.

From the research results, it was found that the trend in the prevalence of anemia in pregnant women at the Sukosari Community Health Center has increased from year to year. Of course, this is quite concerning and requires immediate treatment, considering that the impact of this anemia is quite large for both the mother and fetus. This of course greatly affects the survival of mothers and babies born in the

Table 2. Prediction of anemia prevalence in pregnant women in each trimester of pregnancy at the end of 2023

Result	Trimester I	Trimester II	Trimester III
Prediction	y = 4.8488x + 6.5985 y = (4.8488x6) + 6.5985 35.7	y = 1.4505x + 18.191 y = (1.4505x6) + 18.191 26.9	y = 2.434x + 3.5027 y = (2.434x6) + 3.5027 18.1

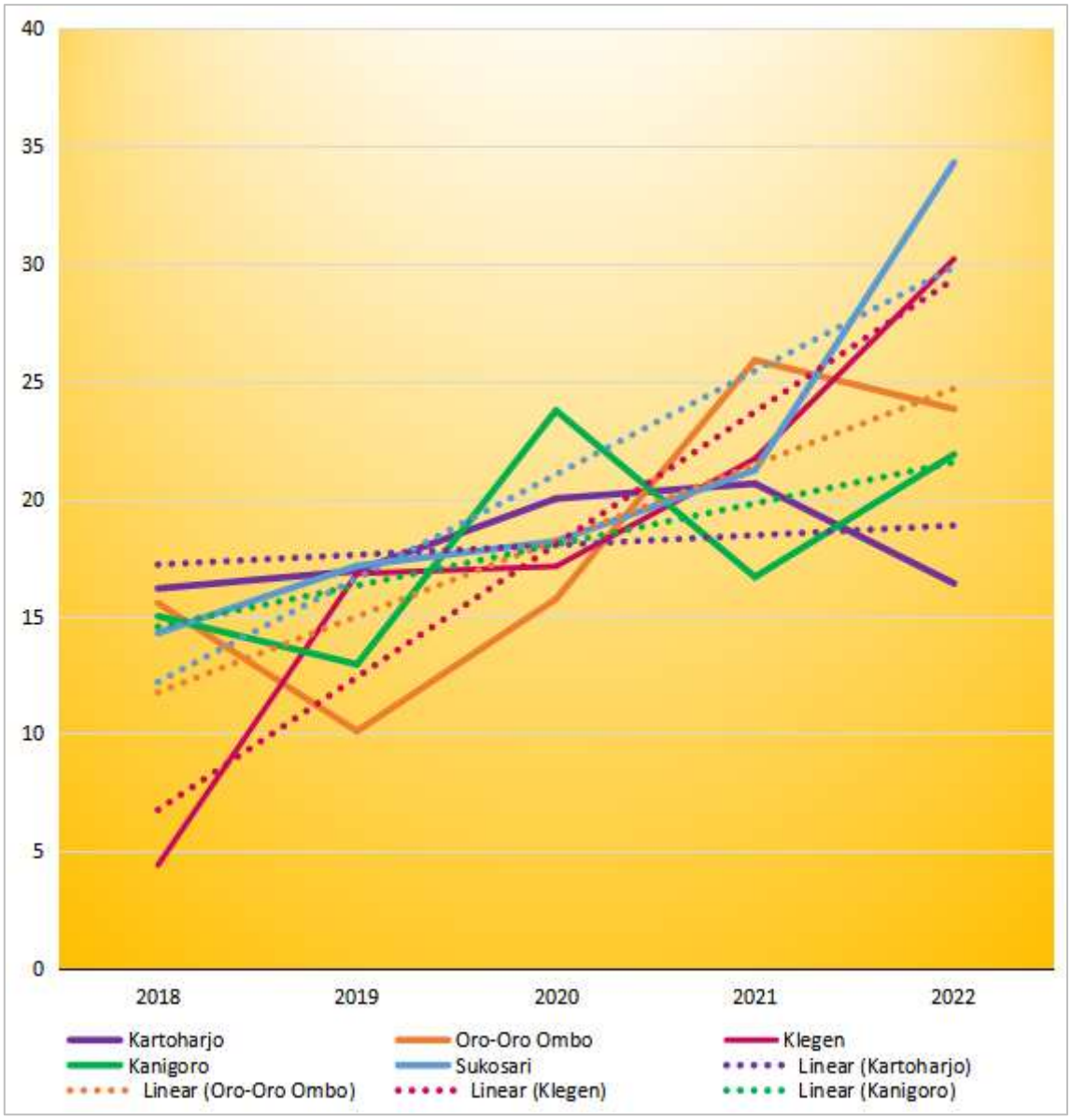

Figure 2. Trend of Prevalence of Anemia in Pregnant Women in Each Subdistrict

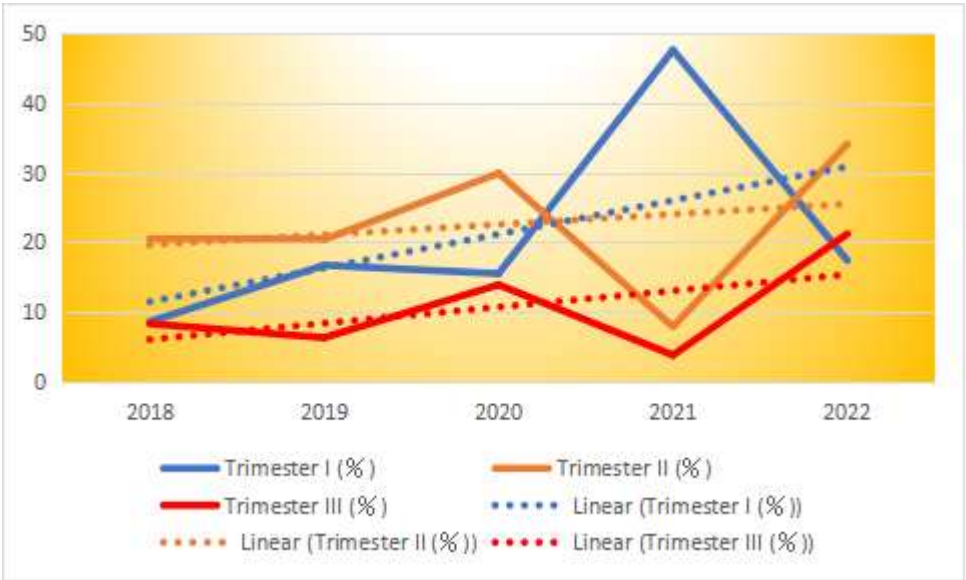

Figure 3. Trend of Prevalence of Anemia in Pregnant Women in Each Trimester of Pregnancy

future. During pregnancy, anemia can cause miscarriage, premature labor, fetal growth and development restrictions, infection, threat of cord decompensation (Hb<6 g/dl), hydatidiform mole, antepartum hemorrhage and premature rupture of membranes (KPD). Apart from that, during pregnancy, anemia can also cause pregnant women to have difficulty breathing, fainting, fatigue, increased heart rate, difficulty sleeping, perinatal infections, and an increased risk of pre-eclampsia.[6] Anemia can also increase the risk of pregnant women experiencing hyperemesis gravidarum.[7] During labor, anemia can cause impaired pushing strength, long first stage, long second stage, retained placenta and bleeding due to uterine atony. Anemic pregnant women are also known to have a three times greater risk of giving birth prematurely. During labor, anemia can cause problems with pushing strength, long first stage, long second stage, retained placenta and bleeding due to uterine atony. Anemic pregnant women are also known to have a three times greater risk of giving birth prematurely.[8] During the postpartum period, anemia also increases the risk of infection, postpartum bleeding, and reduced milk production.[9] In one study, the incidence of severe anemia in pregnant women in the third trimester was reported to cause congestive heart failure.[10] Apart from that, anemia in mothers Pregnancy also influences the choice of contraception, because not all contraceptives can be used by mothers with anemia. Contraception that can be used by mothers with anemia include the levonogestrel IUD (LNG-IUD), implants, progestin injectable contraceptives (KSP), and progestin pill contraceptives (KPP).[11]

Apart from having a bad impact on pregnant women, anemia also has a bad impact on the fetus they are carrying. Anemia in pregnant women can result in the death of the baby in the womb, premature birth, low birth weight (LBW), the birth of a fetus with a lack of blood, congenital abnormalities, the baby being susceptible to infection (risk of death at birth) and low intelligence. The frequent impact of anemia in pregnant women on pregnancy outcomes is that babies experience intrauterine growth retardation (IUGR) and low birth weight (LBW). Pregnant women who experience blood deficiency have a four times higher chance of giving birth to babies with low birth weight (LBW).[12]

Various efforts have been made by the Sukosari Community Health Center to prevent and deal with the problem of anemia in pregnant women, including providing TTD to teenagers and women of childbearing age, health screening of prospective brides and grooms, implementing integrated ANC according to standards, implementing classes for pregnant women, and providing PMT to pregnant women with KEK. and anemia. Innovative activities that can be carried out to support existing efforts can include taking blood supplement tablets together on opening days for pregnancy examination services and during pregnancy classes.

4.2 Trends in the Prevalence of Anemia in Pregnant Women in Each Subdistrict in the Working Area of the Sukosari Health Center, Madiun City, 2018-2022.

The results of the study showed that an increase in the prevalence of anemia in pregnant women occurred in all sub-districts in the working area of the Madiun City Sukosari Health Center, namely Kartoharjo Subdistrict, Oro-Oro Ombo Subdistrict, Klegen Subdistrict, Kanigoro Subdistrict and Sukosari Subdistrict. The highest trend in the prevalence of anemia in pregnant women occurs in Klegen Subdistrict, which significantly influences the increasing trend in the prevalence of anemia in the Sukosari Community Health Center, for this reason the community health center needs to determine priority areas in handling the problem of anemia in pregnant women. Determining priority areas is useful to make it easier for the puskesmas to plan efforts to improve services.[13] Demographically, Klegen Village has two elite residential areas and the majority of the population works so they tend to be reluctant to go to the puskesmas. This means that prospective brides and pregnant women in the Klegen sub-district area do not receive health screening services for prospective brides and grooms and pregnancy examination services that meet standards.

4.3 Trends in the Prevalence of Anemia in Pregnant Women in Each Trimester of Pregnancy 2018-2022.

From the research results, it was found that the prevalence of anemia in pregnant women in the Sukosari Community Health Center working area from 2018 to 2022 tends to increase in all trimesters of pregnancy. The increasing trend in the prevalence of anemia in pregnant women is highest in the first trimester of pregnancy. This is certainly quite surprising, considering that theoretically anemia in pregnant women often occurs in the third trimester of pregnancy, where blood thinning (hemodilution) occurs with an increase in volume of 30% to 40% and the peak occurs at 32 to 34 weeks of gestation so that the increase in plasma volume is higher than the

increase in erythrocyte mass. The high trend in the prevalence of anemia in first trimester pregnant women is possible due to various reasons, including women's lack of knowledge in preparing for their pregnancy. If before pregnancy, a woman has experienced anemia, then during pregnancy she is more at risk of experiencing pregnancy anemia. Another possibility that causes the high prevalence of anemia in pregnant women in the first trimester is the symptoms of nausea and vomiting which often occur during this period, which can lead to reduced nutritional intake in pregnant women. First trimester pregnant women who experience nausea and vomiting tend to be reluctant to consume blood supplement tablets. This is in line with the results of research which states that there is a relationship between compliance with the consumption of blood supplement tablets and the incidence of anemia in pregnant women in the first trimester.[14]

The trend of high prevalence of anemia in the first trimester of pregnancy indicates that efforts to prevent anemia before pregnancy have not been implemented optimally. Providing blood supplement tablets to adolescent girls and women of childbearing age is very important in preventing anemia. Then it is necessary to monitor and evaluate the program for providing blood supplement tablets to young women on a regular basis to ensure the accuracy and suitability of program implementation, so that this good program can produce good outcomes. Apart from that, it is necessary to carry out special innovative programs for prospective brides and grooms in the form of prospective bride and groom classes. Classes for prospective brides and grooms at community health centers can be a solution in an effort to prepare women's health before pregnancy. So, it is hoped that women who are in good health before pregnancy will later be better prepared to undergo pregnancy and will be able to produce a healthy and high-quality generation.

5. CONCLUSION

Based on the research results, it can be concluded that the trend in the prevalence of anemia in pregnant women in the Sukosari Community Health Center working area has increased from year to year in the last 5 years (2018-2022), where the highest trend in the prevalence of anemia in pregnant women is found in the Klegen Village area. Meanwhile, the trend for the highest prevalence of anemia in pregnant women based on trimester of pregnancy was found in the first trimester of pregnancy. This condition is quite worrying, so you need to be careful and pay special attention. Some suggestions for the Sukosari Community Health Center include increasing promotional efforts in the form of education on the importance of consuming blood supplement tablets for adolescent girls and women of childbearing age at school through UKS activities, maximizing monitoring and evaluation of the program for providing blood supplement tablets to adolescent girls so that a good program can produce good outcomes. It would also be good to hold classes for prospective brides and grooms at community health centers, maximize the assistance program for pregnant women in the working areas of community health centers and implement innovative efforts in the form of taking blood supplement tablets together on opening days for pregnancy check-up services and during classes for pregnant women.

Conflict of Interest

The authors declare no conflict of interest

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