

Factors Associated with the Pregnancy-Related Anemia Incident

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ABSTRACT

Pregnant women frequently encounter issues such as too close or ≤ 2 year birth spacing, age between 20 and 35, and dangerous parity, namely ≥ 4 , which can cause anemia. Finding the variables linked to the prevalence of anemia in expectant mothers is the main goal of this literature study. A review of the literature is the research method employed. The PICOS framework is employed in the article search technique. Google Scholar, Science Direct, and Pubmed Central (PMC) are the databases that are used. Search results were restricted to the years 2018 through 2022, and pertinent articles were hand-picked based on the study questions. The terms (Incidence of Anemia in Pregnant Women) AND (Related Factors) are utilized. Following their discovery, base on the journals were evaluated.

Keywords: Anemia, Incident, Related Factors

BACKGROUND

Pregnant women's anemia is a national concern due to its reflection of the socioeconomic well-being of society and its significant impact on the caliber of human resources. Pregnant women frequently experience the following issues: weariness, lethargy, breathing difficulties during activities, pale skin and facial surfaces, easy dizziness, and fainting (Wasnidar, 2020). This is because mothers must demonstrate their fertility when they marry at the age of ≤ 20 and because fertilization causes the body's iron reserves to drop at the age of > 35 . Similar to the previous example, a close spacing between pregnancies also results in anemia because the family cannot achieve eating guidelines that contain complete.

According to the World Health Organization (WHO) (2021), 41.8% of pregnant women worldwide suffer from anemia. Anemia is projected to affect 48.2% of pregnant women in Asia, 57.1% in Africa, 24.1% in America, and 25.1% in Europe. According to Basic Health Research (Riskesdas) (2021), 37.1% of Indonesian pregnant women had anemia. In Indonesia, 85% of tablets containing Fe will be available by 2021. Comparing this percentage to 2020, which was 83.3%, shows an increase. The incidence of anemia is still high even though the government has put in place a program to control it. The program entails giving pregnant women 90 Fe tablets during their pregnancy in an effort to lower the rate of anemia in pregnant women.

According to the Ministry of Health (2021), anemia is more common among pregnant women in Indonesia, where it ranges from 20 to 80%, however numerous studies generally indicate that the percentage is more than 50%. Conversely, as per the Ministry of Health of the Republic of Indonesia (2018), the percentage is 40.1% in Indonesia and 8% in developed nations (Ministry of Health, 2021). According to BPS East Java Province (2022), approximately 42.6% of pregnant women have iron deficiency anemia (BPS East Java

Province, 2018). Thirty-six percent of pregnant women in Kediri City had anemia, according to data from the Kediri City Health Service (2022) (Kediri City Health Service, 2022).

Factors related to the incidence of anemia in pregnant women include maternal age, pregnancy interval and parity. Pregnant women aged 20 years and over 35 years suffer from anemia at 74.1%, while mothers aged 20 to 35 years are at 50.5%. This is because in pregnant women aged < 20 years there will be competition for food between the baby and the mother who is still growing and there is hormonal growth that occurs during pregnancy. Meanwhile, in pregnant women aged > 35 years, there is a decrease in iron reserves in the body due to fertilization. So a woman's age at the time of pregnancy should not be too young and not too old, those aged less than 20 years and more than 35 years are at high risk of giving birth (Deprika, 2020).

Apart from that, parity or number of births is also related to anemia. Mothers who have more than 4 pregnancies can also increase the risk of experiencing anemia. The prevalence of anemia in the parity 0 group is lower than parity 5 and above. Pregnant women with high parity have a 1,454 times greater risk of experiencing anemia compared to those with low parity. Because too many pregnancies can deplete nutritional reserves, including iron, in the mother's body. The more often a woman gives birth, the greater the risk of blood loss and this will result in a decrease in Hb levels. Every time a woman gives birth, the amount of iron lost is estimated at 250 mg. This will be even more severe if the birth interval is relatively short (Deprika, 2020).

Apart from that, the distance between pregnancies in pregnant women is also a factor in the occurrence of pregnancy anemia. The highest proportion of deaths occurs in mothers with a priority of 1-3 children and if we look at the gestational spacing it turns out that a gap of less than 2 years shows a higher proportion of maternal deaths. Pregnant women who are too close are at risk of developing anemia during pregnancy. Because pregnant women's iron reserves have not yet recovered. Ultimately it is reduced for the needs of the fetus it contains (Deprika, 2020).

The solution to overcome the problem above is that pregnant women need to be able to routinely check their pregnancies at least 4 times during pregnancy to get Fe tablets and other vitamins from health workers, eat nutritious food 3 times a day with 2 times larger portions, get enough rest, Always maintain cleanliness, exercise, consume more and varied foods that are rich in folic acid, vitamin C, and high levels of iron in order to prevent anemia in pregnancy. Apart from that, health workers, especially midwives, must be able to provide nutritional education through counseling in order to increase information and knowledge about preventing pregnancy anemia. Apart from that, pregnant women also need to access various information related to how to prevent anemia in pregnancy, both from the internet, print media, fellow pregnant women, and health workers about preventing anemia in pregnancy.

Apart from that, health workers, especially midwives, can provide nutritional education through health education to pregnant women about how to prevent anemia in pregnancy. Because health workers, especially midwives, play an important role as educators, such as providing nutrition education in the form of consuming foods high in Fe and consuming iron tablets or blood supplement tablets for 90 days. Education is not only given when women are pregnant, but when they are not yet pregnant. Apart from that, midwives can also act as counselors or as a source of consultation for pregnant women regarding how to prevent anemia in pregnancy.

Based on the background of the problem above, researchers are interested in conducting research with the title "Factors Associated with the Incidence of Anemia in Pregnant Women".

METHODS

The PICOS framework is employed in the article search technique. Science Direct, Pubmed Central, and Google Scholar are the databases that are used. The terms (Incidence of Anemia in Pregnant Women) AND (Related Factors) are utilized. Ten journals were examined. Pregnant women met the inclusion criteria for this literature study. Articles in English, inappropriate titles, years (less than the last five years), not available without payment, only abstracts or partial text, no pregnant women in the sample, and reviews of theories, opinions, articles, and literature were the exclusion criteria for this study.

A literature search through Science Direct publications using the keywords (Breast Milk Production) AND (Oxytocin Massage, Marmet Technique) found related articles identified in 2,483 journals, and the Wiley online library found related articles identified in 1,316 journals. These results are based on the findings of a literature search through Google Scholar publications, which yielded 326 related articles and 326 journals. There were 4,125 journals in the literature found using Google Scholar, the Wiley online library, and Science Direct. 2,397 articles where the title did not match were removed from the 3,508 articles that were included in the literature that could be identified by the title. The essay was written more than five years ago, therefore it could not have.

RESULTS

Age of the Pregnant Mother

It is known that most respondents in the age group (20–35 years) are not at danger based on the findings of the literature research. This demonstrates that when the mother ages, she behaves well by taking Fe tablets on a regular basis, eating foods high in iron, and participating in ANC on a regular basis. This is carried out because folic acid and iron anemia can be avoided with iron blood supplement pills. It is advised that expectant mothers take 90 iron tablets or more per month. In the meanwhile, the purpose of ANC visits is to ensure a healthy pregnancy with physical examinations, supplementation, and health education for expectant mothers. Frequent prenatal checkups enable the early identification of a number of pregnancy risk factors.

Study by Sarwinanti (2020) in her study journal supports the findings of this literature by demonstrating that 49 (64%) of the respondents in the age group, or the majority of respondents, were not at danger. According to Detty's research journal, over half of the respondents, or 20 (36%) of the respondents in the age group, are not at risk, which is consistent with his study findings from 2020. In accordance with Annisa's research (2020), data from her research journal indicates that 17 (45%) of the respondents in the age group, or over half of the total, are not at risk. His study journal indicates that the majority of respondents, or 28 (51%) of respondents in the age group, are not at risk, which is consistent with May's (2021) research.

This is also in line with Tessa's (2019) research, her research journal shows that the age of pregnant women is known to almost half of the respondents, with 21 (43%) respondents in the 20-35 year category. Also in line with Lilik's (2019) research, his research journal shows that almost half of the respondents, 33 (37%) of respondents, were in the 20-35 year age category. Also in line with Wasfaedy's (2020) research, his research journal shows that almost half of the respondents, 10 (36%) of the respondents, were in the 26-35 year age category.

The younger and older a pregnant woman is, the nutritional needs she needs will be affected. Young people need a lot of additional nutrition because apart from being used for their own growth and development, they also have to share it with the fetus that is being conceived and

age is an indicator of maturity in every decision making which refers to every experience and greatly influences the knowledge of pregnant women about anemia in pregnancy (Nurhayati, 2019).

In the opinion of researchers, an age of less than 20 years or more than 35 years will trigger anemia, because mothers who are less than 20 years old have their reproductive organs not yet ready, which will affect the nutritional supply of pregnant women. Meanwhile, pregnant women who are over 35 years old will also have an impact on their nutritional needs due to less than optimal organ function. And there is a higher risk of bleeding which can later cause anemia. However, pregnant women aged 20-35 years can also experience anemia. This is due to mothers who do not comply with taking Fe tablets, mothers who do not like to consume vegetables and fruit, or mothers who do not regularly carry out ANC. Apart from that, pregnant women of risky age do not experience anemia due to good maternal behavior, such as consuming Fe tablets regularly, consuming foods rich in iron, and regularly doing ANC. Iron Tablets Blood supplement tablets can prevent iron anemia and folic acid anemia. Pregnant women are recommended to consume a minimum of 90 iron tablets during pregnancy. Meanwhile, ANC visits are to produce a healthy pregnancy through physical examinations, provision of supplements and health education for pregnant women. Regular antenatal visits result in immediate detection of various pregnancy risk factors, one of which is anemia.

Parity

Based on the results of the literature reviewed, it is known that the majority of respondents with parity are not at risk, namely 1-3 children. This is supported by the behavior of mothers who always access information both from the public and through other mass media such as leaflets, newspapers, other health magazines and even health workers regarding safe parity. So that in this way the mother can know a safe parity, namely 2-3 children and not experience anemia. Wahyu (2020), states that parity 2-3 is the safest parity from the perspective of maternal mortality. In theory, according to Manuaba (2019), parity who are not at risk can also experience anemia. This is because parity is not the only factor that causes anemia, but there are other factors, namely basic factors (socioeconomic, knowledge, education and culture) and direct factors (pattern of blood supplement tablet consumption, infection and bleeding). The factor that is most likely to influence is the distance between pregnancies because even though pregnant women with parity are not at risk, pregnancies that are too close together can cause anemia.

The results of this literature are supported by research by May (2021), in his research journal showing that the majority of respondents, 31 (56%) of respondents in the parity category, were not at risk. In line with Tessa's (2019) research, her research journal shows that almost all respondents were 45 (92%) in the parity category ≤ 4 . In line with Yuliska's (2019) research, her research journal showed that most of the respondents were 16 (53%)) respondents in the low parity category. In line with research by Detty (2020), his research journal shows that almost half of the respondents, 19 (34%) respondents in the parity category, are not at risk. In line with Annisa's (2020) research, her research journal shows that the majority of respondents, 22 (58%) of respondents, were in the low parity category. In line with Putri's research (2018), her research journal shows that almost half of the respondents, 18 (45%) of respondents, were in the low risk category. In line with Sukmawati's (2021) research, her research journal shows that the majority of respondents, 43 (61%) of respondents, were in the low parity category.

Wahyu (2020), states that parity 2-3 is the safest parity from the perspective of maternal mortality. Parity 1 and high parity (more than 3) have higher maternal mortality rates. Higher parity, higher maternal mortality. The risk at parity 1 can be managed with better obstetric care, while the risk at high parity can be reduced or prevented with family planning. Some

pregnancies at high parity are unplanned. Parity influences the incidence of anemia in pregnancy, the more often a woman is pregnant and gives birth, the greater the risk of experiencing anemia because pregnancy depletes iron reserves in the body.

In the opinion of researchers, the parity of high-risk mothers can influence the incidence of anemia in pregnant women in the third trimester. This is because mothers who have parity 1 are less prepared to face childbirth because the mother has never given birth and is less prepared for her physical and psychological conditions before giving birth, so that the mother is vulnerable to experiencing various complications such as anemia and bleeding. Meanwhile, mothers who have parity > 3 are because the muscles in the area of their reproductive organs have become loose, especially in the abdominal wall and uterine wall, so this condition will easily cause various kinds of complications resulting in anemia and bleeding.

Apart from that, high maternal parity is caused by the mother's lack of knowledge about the further consequences of high parity, the mother's lack of experience, inadequate information from the community, health workers and from community health center officials or through other mass media such as leaflets, newspapers, other health magazines. For this reason, it is recommended for mothers to seek more information about family planning to prevent high parity. This information can be obtained anywhere, whether in community health centers, or other mass media, such as leaflets, other health magazines. So parity 1-3 is a parity that is good for the health of the mother and fetus in the womb. Pregnant women with high parity are at greater risk of experiencing anemia than those with low parity.

Pregnancy Spacing

Based on the results of the literature review, it is known that with oxytocin massage and the marmet technique, breast milk can flow smoothly by 15 (100%). So postpartum mothers always use these two techniques when breast milk production is low.

Based on the results of the reviewed literature, it is known that the majority of respondents whose pregnancy interval was not at risk or ≥ 2 years. This shows that mothers whose birth spacing is not at risk or ≥ 2 years is because the muscles in the area of their reproductive organs have become loose, especially in the abdominal wall and uterine wall, so that from this situation it will easily cause various kinds of complications which result in anemia and bleeding. The Ministry of Health (2020), explains that planning for pregnancy or childbirth is very important for each couple to reduce the pregnancy gap to ≥ 2 years to be able to overcome the incidence of anemia in pregnant women, by consuming foods rich in protein, iron and folic acid.

The results of this literature are supported by research by May (2021), in his research journal showing that almost half of the respondents, 27 (49%) of respondents in the distance category, were not at risk. In line with Putri's research (2018), her research journal shows that almost half of the respondents, 17 (43%) of respondents, were in the low risk category. In line with Yuliska's research (2019), her research journal shows that the majority of respondents, 19 (63%) of respondents, were in the low category. In line with Tessa's research (2019), her research journal shows that almost half of the respondents, 23 (47%) of respondents, were in the birth distance category ≥ 2 years. In line with Sukmawati's (2021) research, her research journal shows that the majority of respondents, 43 (61%) of respondents, were in the pregnancy interval category ≥ 2 years. In line with Wasfaedy's (2020) research, his research journal shows that almost all respondents, 25 (89%) of them, were in the pregnancy distance category ≥ 2 years.

Abrori (2016), said that one of the causes of anemia is a short pregnancy interval of <2 years, because it requires additional iron to increase the number of red blood cells and form fetal and placental red blood cells. If Fe reserves are minimal, then each pregnancy will deplete Fe supplies in the body and ultimately cause anemia in subsequent pregnancies. According to Abrori (2016), pregnancies that are too close together cause anemia, because the mother's

condition has not yet recovered and the fulfillment of nutritional needs is not optimal, she must fulfill the nutritional needs of the fetus she is carrying. Pregnancy or childbirth planning is very important for each couple to reduce the pregnancy gap of ≥ 2 years and the incidence of anemia in pregnant women, by consuming foods rich in protein, iron and folic acid.

According to the researchers' analysis, it is important to pay attention to a good pregnancy interval of at least 2 years so that the mother's body is ready to accept the fetus again without having to produce reserves of iron. After the postpartum period, the period after this is done. Physiologically, the condition of the female reproductive organs has recovered. But it all comes back to physical and psychological readiness, especially on the part of women. Apart from that, too close a distance will cause the quality of the fetus or child to be low and the mother will not get the opportunity to repair her own body. If the mother's nutritional intake is not met, it can affect CED in pregnant women and cause anemia.

Incidence of Anemia in Pregnant Women

Based on the results of the reviewed literature, it is known that the incidence of anemia in pregnant women is in the occurring category. This is caused by maternal age < 20 years > 35 years, close pregnancy spacing and even high parity. The results of this research are supported by Putri's research (2018), in her research journal showing that the majority of respondents, 23 (58%) of respondents, were in the severe anemia category. In line with Yuliska's research (2019), her research journal shows that almost half of the respondents, 11 (40%) of the respondents, were in the anemia category. In line with Tessa's research (2019), her research journal shows that the majority of respondents, 26 (53%) of respondents, were in the anemia category. In line with Lilik's (2019) research, his research journal shows that a small percentage of respondents, 18 (20%) of respondents, were in the moderate anemia category.

In line with research by Detty (2020), his research journal shows that the majority of respondents, 29 (52%) of respondents, were in the anemia category. In line with Wasfaedy's research (2020), his research journal shows that a small percentage of respondents, 3 (48%) of respondents, were in the anemia category. In line with Sarwinanti's research (2020), her research journal shows that almost half of the respondents, 28 (36%) of respondents, were in the anemia category. In line with Annisa's research (2020), her research journal shows that almost half of the respondents, 13 (34%) of respondents, were in the anemia category. In line with May's research (2021), his research journal shows that the majority of respondents, 29 (53%) of respondents, were in the anemia category. In line with Sukmawati's research (2021), her research journal shows that almost half of the respondents, 30 (43%) of respondents, were in the anemia category.

Anemia in pregnancy is anemia due to iron deficiency. Iron deficiency anemia in pregnant women is a health problem experienced by women throughout the world, especially in developing countries (WHO, 2021). Anemia and chronic energy deficiency in pregnant women are the main causes of bleeding and infection (Sulistyoningsih, 2019). Anemia in pregnancy is a national problem because it reflects the social and economic welfare of society, and has a huge influence on the quality of human resources. Pregnancy anemia is called "potential danger to mother and child", which is why anemia requires serious attention from all parties involved in health services (Manuaba, 2019). Anemia in pregnancy has an adverse effect on the mother, whether in pregnancy, it is an approach, observation or collection at one time, meaning that each research subject is only observed once (Notoatmodjo, 2019).

Factors Most Associated with the Incidence of Anemia in Pregnant Women

Based on the results of the reviewed literature, it is known that the factors age, parity and birth spacing are related to the incidence of anemia in pregnant women. This shows that as the mother's age becomes more mature, the mother's behavior is good, such as consuming Fe

tablets regularly, consuming foods rich in iron, and regularly doing ANC. Apart from that, the behavior of mothers who always access information both from the public and through other mass media such as leaflets, newspapers, other health magazines and even health workers is related to safe parity, namely 1-3. Apart from that, mothers whose birth interval is not at risk or ≥ 2 years is because the muscles in the area of their reproductive organs have become loose, especially in the abdominal wall and uterine wall, so this situation will easily cause various kinds of complications resulting in anemia and bleeding.

Factors related to the incidence of anemia in pregnant women include maternal age, pregnancy interval and parity. Pregnant women aged 20 years and over 35 years suffer from anemia at 74.1%, while mothers aged 20 to 35 years are at 50.5%. This is because in pregnant women aged < 20 years there will be competition for food between the baby and the mother who is still growing and there is hormonal growth that occurs during pregnancy. Meanwhile, in pregnant women aged > 35 years, there is a decrease in iron reserves in the body due to fertilization. So a woman's age at the time of pregnancy should not be too young and not too old, those aged less than 20 years and more than 35 years are at high risk of giving birth (Deprika, 2020).

Apart from that, the distance between pregnancies in pregnant women is also a factor in the occurrence of pregnancy anemia. The highest proportion of deaths occurs in mothers with a priority of 1-3 children and if we look at the gestational spacing it turns out that a gap of less than 2 years shows a higher proportion of maternal deaths. Pregnant women who are too close are at risk of developing anemia during pregnancy. Because pregnant women's iron reserves have not yet recovered. Ultimately it is reduced for the needs of the fetus it contains (Deprika, 2020).

DISCUSSION

The answer to the aforementioned issue is that in order to prevent anemia during pregnancy, pregnant women must be able to regularly check their pregnancy at least four times during the pregnancy, receive Fe tablets and other vitamins from medical professionals, eat nutrient-dense food three times a day in portions that are twice as large, get enough rest, maintain cleanliness at all times, exercise, and consume a wider variety of foods that are high in iron, vitamin C, and folic acid. Aside from that, health professionals particularly midwives need to be able to expand information and expertise regarding preventing pregnant anemia by offering nutritional education through counseling. In addition, expectant mothers must have access to a variety of resources for the prevention of anemia.

In addition, health professionals particularly midwives can teach expectant mothers about dietary management and how to avoid anemia throughout pregnancy. Due to the fact that health professionals, particularly midwives, have a significant responsibility in education. Examples of this include educating patients about nutrition by recommending foods high in iron and taking iron or blood supplements for a period of 90 days. Not only are women offered education when they are pregnant, but also when they are not. In addition, midwives can provide pregnant women with advice on how to avoid anemia during their pregnancy or serve as counselors.

Apart from that, parity or number of births is also related to anemia. Mothers who experience more than 4 pregnancies can also increase the risk of experiencing anemia. The prevalence of anemia in the parity 0 group is lower than parity 5 and above. Pregnant women with high parity have a 1,454 times greater risk of experiencing anemia compared to those with low parity. Because too many pregnancies can deplete nutritional reserves, including iron, in the mother's body. The more often a woman gives birth, the greater the risk of blood loss and this will result in a decrease in Hb levels. Every time a woman gives birth, the amount of iron lost

is estimated at 250 mg. This will be even more severe if the birth interval is relatively short (Deprika, 2020).

CONCLUSION

It is known that most respondents in the age group (20–35 years) are not at danger based on the findings of the literature research. Most responders who do not have risk parity that is, those with 1-3 children know parity. The majority of responders are aware of the gap between pregnancies, which is either ≥ 2 years or not at risk. Pregnant women's incidence of anemia is recognized to be correlated with age, parity, and birth spacing, according to the results of the reviewed literature. It is advised that expectant mothers obtain a variety of information regarding preventing anemia during pregnancy from the internet, print media, other expectant mothers, and medical professionals.

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