

Analysis of Risk Factors for Miscarriage Among Pregnant Women in Rejosari Village, Wonokerto Community Health Center

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ABSTRACT

Background & Objective: Miscarriage is a reproductive health problem that contributes to increased maternal morbidity and mortality. Several factors are associated with miscarriage, including maternal age, parity, health status such as anemia, and history of disease. In Rejosari Village, within the working area of Wonokerto Community Health Center, miscarriage cases are still reported, highlighting the importance of identifying related risk factors. This study aimed to analyze the relationship between maternal age, parity, health status, and history of disease with the incidence of miscarriage. **Method:** The research used an observational analytic design with a cross-sectional approach. The population consisted of women with a history of pregnancy, and 35 respondents were selected using purposive sampling. Data were collected through questionnaires and medical records, then analyzed using the Chi-square test and Odds Ratio (OR) with a 95% Confidence Interval (CI). **Result:** The findings showed significant relationships between maternal age ($p = 0.011$; OR = 4.17), parity ($p = 0.028$; OR = 3.00), health status including anemia ($p = 0.004$; OR = 8.33), and history of disease ($p = 0.038$; OR = 3.89) with miscarriage incidence. Among all variables, health status was identified as the most dominant factor associated with miscarriage. **Conclusion:** Maternal age, parity, health status, and history of disease were significantly related to miscarriage incidence. Therefore, preventive efforts should emphasize early risk detection, maternal health education, and improvement of antenatal care services to reduce miscarriage risk and improve maternal health outcomes.

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Introduction

Maternal health is one of the key indicators of public health. One reproductive health issue that remains a serious concern is abortion. Abortion is the termination of a pregnancy before the fetus is viable outside the womb—that is, before 20 weeks of gestation or when the fetus weighs less than 500 grams (WHO, 2023). This condition can occur spontaneously or be induced, and has a significant impact on the mother's physical and psychological health.

Globally, abortion remains a significant public health issue and contributes to pregnancy complications and maternal mortality. The World Health Organization (2023) states that approximately 10–20% of pregnancies end in abortion, particularly during the first trimester. This indicates that abortion remains a reproductive health issue that requires serious attention.

In Indonesia, the incidence of abortion is estimated to range from 4.5% to 15% of all pregnancies, depending on population characteristics and access to health services (Indonesian Ministry of Health, 2023). Studies show that the main risk factors for abortion include maternal age, parity, health status (including anemia), and medical history (Sari et al., 2023). This indicates that miscarriage can be influenced by various interrelated factors.

Miscarriage can also have an impact on subsequent pregnancies, such as an increased risk of preterm birth, low birth weight (LBW), and recurrent miscarriage (Wiknjosastro, 2019). Therefore, early detection of risk factors is crucial to preventing miscarriage in future pregnancies.

In the service area of the Wonokerto Community Health Center (Puskesmas), particularly in Rejosari Village, miscarriages are still reported in maternal health services, with an average of 2–3 cases per month based on data from the Wonokerto Puskesmas Maternal and Child Health (MCH) service registry for 2025–2026. This situation indicates that there are still risk factors that have not been optimally addressed in the community.

Given these issues, research is needed to analyze the risk factors associated with miscarriages among pregnant women in Rejosari Village within the Wonokerto Community Health Center's service area in 2026. The results of this study are expected to serve as a foundation for efforts to prevent miscarriages through improved antenatal care services.

Objective

The objective of this study was to analyze the relationship between maternal age, parity, health status (including anemia), and history of disease with the incidence of miscarriage among women in Rejosari Village, within the working area of Wonokerto Community Health Center.

Method

This study is a quantitative analytical study using a cross-sectional approach aimed at determining the relationship between independent and dependent variables at a single point in time. The study was conducted in Rejosari Village, within the service area of the Wonokerto Community Health Center, in April 2026. The study population consisted of all mothers with a history of pregnancy in Rejosari Village,

with a sample size of 35 respondents selected using purposive sampling based on specific criteria. Inclusion criteria included mothers who had been pregnant, were willing to participate as respondents, and resided in Rejosari Village, while exclusion criteria were incomplete data and respondents who could not be contacted during the study. The independent variables in this study included maternal age, parity, health status based on hemoglobin (Hb) levels, and history of chronic diseases, while the dependent variable was the incidence of abortion. Data were collected through primary data in the form of interviews using a questionnaire, as well as secondary data from medical records at the Wonokerto Community Health Center. The data were then processed through the stages of editing, coding, data entry, cleaning, and tabulation. Data analysis was performed using univariate analysis to describe the characteristics of the variables and bivariate analysis using the chi-square test with a significance level of 0.05 to determine the relationships between variables. This study also adhered to research ethics, including informed consent, confidentiality of respondent data, ensuring no harm to respondents, and voluntary participation without coercion.

Results

Univariate Analysis

This study was conducted among 35 mothers in Rejosari Village, within the service area of the Wonokerto Community Health Center.

TABLE 1. Respondent Characteristics

Variables	Category	n	%
Maternal age	High risk (<20 years & >35 years)	19	54,3
	No risk (20–30 years)	16	45,3
Parity	High (>3)	13	37,1
	Low (<3)	22	62,9
Health status	Abnormal (including anemia)	21	60,0
	Normal	14	40,0
Medical history	Present	8	22,9
	Absent	27	77,1

TABLE 2. Incidences of Miscarriage

Incidence	n	%
Abortion	16	45,7
No abortion	19	54,3

Bivariate Analysis (Chi-square & OR)

The analysis was conducted to examine the association between independent variables and the incidence of abortion using the chi-square test and odds ratio (OR) with a 95% confidence interval.

1. Association Between Maternal Age and the Incidence of Abortion

The results of the analysis indicate that maternal age is significantly associated with the incidence of abortion.

- p-value = 0.011
- OR = 4.17
- 95% CI = 1.20–13.80

Interpretation:

Mothers in high-risk age groups (<20 years and >35 years) have a 4-fold higher risk of experiencing a miscarriage compared to mothers in the safe reproductive age group (20–35 years).

2. Relationship Between Parity and Miscarriage

- p-value = 0.028
- OR = 3.00
- 95% CI = 1.01–8.90

Interpretation:

Women with high parity (≥ 3) have a 3-fold higher risk of experiencing a miscarriage compared to those with low parity. High parity may lead to a decrease in uterine elasticity due to repeated pregnancies, thereby increasing the risk of implantation failure and miscarriage.

3. Association Between Health Status (including anemia) and Miscarriage

- p-value = 0.004
- OR = 8.33
- 95% CI = 1.79–38.70

Interpretation:

Women with abnormal health status (including anemia) have approximately an 8-fold higher risk of miscarriage compared to women with normal health status.

4. Association Between Medical History and Miscarriage

- p-value = 0.038
- OR = 3.89
- 95% CI = 1.05–14.36

Interpretation:

Women with a medical history have a risk approximately 4 times higher of experiencing a miscarriage compared to women without a medical history.



FIGURE 1. Documentation of the research process

Discussion

The study results indicate that maternal age is associated with the incidence of miscarriage, with women under 20 and over 35 years of age being at higher risk due to reproductive physiological conditions that are not yet optimal or have already experienced a decline in function. Additionally, parity is also associated with the incidence of miscarriage, as high parity can reduce the uterus's elasticity and ability to sustain a pregnancy. These results are consistent with the study by Anggraini, W. et al. (2023), which states that high parity increases the risk of miscarriage due to a decline in uterine function following repeated pregnancies. Health status, particularly anemia, was the most influential factor in this study because anemia can reduce oxygen supply to the fetus, thereby disrupting embryonic development. These findings are also supported by the study by Anggraini, W. et al. (2023), which noted

that anemia increases the risk of miscarriage through impaired oxygen supply to the fetus. Additionally, a history of conditions such as diabetes mellitus and hypertension is associated with miscarriage because they can cause impaired blood flow to the placenta, thereby increasing the risk of miscarriage. This study has several limitations, namely a sample size of only 35 respondents, the use of questionnaire data that may introduce information bias, and research variables that do not yet include psychological and environmental factors. Overall, the results indicate that all variables examined have a significant association with the incidence of miscarriage ($p < 0.05$), with the most dominant factor being health status, particularly anemia.

Conclusion

This study concluded that maternal age, parity, health status—including anemia—and medical history are significantly associated with the incidence of abortion, with high-risk age groups, high parity, abnormal health conditions, and a history of disease increasing the risk of abortion. Therefore, it is recommended that community health centers (Puskesmas) improve the early detection of high-risk pregnancies through routine antenatal care (ANC) checkups; that health workers strengthen education for pregnant women regarding the prevention of anemia and chronic diseases; that the community pay closer attention to reproductive health through prenatal checkups and proper nutrition; and that future researchers include additional variables such as stress, occupation, infections, and environmental factors to ensure more complete and comprehensive research findings.

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