



The Relationship Between Health Educator Mentoring and Pregnancy Risk Status Among Pregnant Women at The Kedungwuni I Community Health Center in Pekalongan

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Abstract

High-risk pregnancy contributes to maternal and fetal complications when risk factors are not identified and managed early. Community-based health educator mentoring may support early detection, health education, antenatal care adherence, and timely referral. This study examined the relationship between health educator mentoring and pregnancy risk status among pregnant women at Kedungwuni I Community Health Center, Pekalongan. An analytical observational study with a cross-sectional design was conducted from June to July 2026 among 78 first- and second-trimester pregnant women selected using total sampling. Data were collected using the Poedji Rochjati Score Card and a cadre mentoring questionnaire, then analyzed using univariate and chi-square tests. Good mentoring was reported in 43.6% of participants, while 64.1% were classified as low-risk pregnancies. Among low-risk women, 62% received good mentoring. A significant relationship was identified between mentoring and pregnancy risk status ($p = 0.000$; $r = -0.583$), indicating an inverse association. Better health educator mentoring was associated with lower pregnancy risk status. Strengthening consistent community-based mentoring may support early risk identification and improve maternal health monitoring in primary care settings.

Keywords: antenatal care, health educator mentoring, health cadres, pregnancy risk status, pregnant women.



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INTRODUCTION

Maternal mortality remains a major indicator of the performance, accessibility, and quality of maternal health services because maternal deaths may occur during pregnancy, childbirth, or the postpartum period as a consequence of pregnancy-related conditions or their management. Globally, the maternal mortality ratio remained at 223 deaths per 100,000 live births in 2020, which was substantially higher than the Sustainable Development Goals target of fewer than 70 deaths per 100,000 live births by 2030 (WHO, 2022). Achieving this target requires a sustained annual reduction in maternal mortality of approximately 11.6%, emphasizing the need for effective preventive strategies throughout the continuum of maternal care (WHO, 2022). Accordingly, strengthening early identification, monitoring, education, and timely management of pregnancy-related risks remains essential for reducing preventable maternal morbidity and mortality (Gholami et al., 2022; Ningrum et al., 2024).

In Indonesia, maternal mortality has fluctuated considerably in recent years, with 4,221 maternal deaths recorded in 2019, increasing to 4,627 cases in 2020 and 7,389 cases in 2021, before declining to 3,572 cases in 2022, rising again to 4,482 cases in 2023, and decreasing to 4,150 cases in 2024 (Kemenkes RI, 2025). At the provincial level, Central Java showed a declining maternal mortality ratio from 199 per 100,000 live births in 2021 to 100.41 in 2022, 76.15 in 2023, and 74.73 per 100,000 live births in 2024 (Dinkes Jawa Tengah, 2025). Despite this downward trend, the maternal mortality ratio remained above the SDG target, indicating that further acceleration of maternal health interventions is still required. In Pekalongan Regency, 18 maternal deaths were reported in 2024, placing the regency fifth highest in Central Java, while Kedungwuni I Community

Health Center recorded four maternal deaths, the highest number among community health centers in the regency (Dinkes Pekalongan, 2025).

Maternal deaths are not limited to the intrapartum period because many life-threatening complications originate during pregnancy, particularly among women with identifiable high-risk conditions. High-risk pregnancy is characterized by maternal, fetal, obstetric, or medical factors that increase the probability of adverse outcomes, including maternal age at the extremes of the reproductive period, chronic disease, anemia, chronic energy deficiency, short pregnancy intervals, and socioeconomic vulnerability (Damayanty et al., 2024). Other determinants include parity, nutritional status, previous obstetric history, blood pressure, and the Indonesian “4T” risk concept comprising pregnancy at too young an age, too old an age, too short a birth interval, and too many previous births (Putri & Ismiyatun, 2020). Recent evidence further demonstrates that maternal characteristics and underlying health conditions substantially influence the probability of high-risk pregnancy and pregnancy-related complications (Kalantari et al., 2024; Amin et al., 2025).

When high-risk pregnancies are not detected and managed at an early stage, they may progress to serious maternal and fetal complications, including miscarriage, obstructed labor, antepartum hemorrhage, intrauterine fetal death, preeclampsia, preterm birth, low birth weight, and maternal or neonatal death (Christiana & Kurniawati, 2022). Early risk recognition is therefore fundamental because appropriate antenatal surveillance enables health professionals to identify complications before they develop into obstetric emergencies. Antenatal education has also been shown to improve maternal knowledge concerning pregnancy complications and high-risk conditions, thereby supporting earlier recognition of warning signs and appropriate health-seeking behavior (Gholami et al., 2022; Heim & Makuch, 2024). Consequently, systematic risk assessment combined with continuous antenatal monitoring and health education represents an important strategy for reducing preventable adverse pregnancy outcomes.

One strategy implemented to prevent and control high-risk pregnancy is the mentoring of pregnant women through community-based maternal health programs involving health cadres or community health workers. Such mentoring constitutes a promotive and preventive approach intended to improve maternal knowledge, awareness, adherence to antenatal care, and timely utilization of maternal health services (BKKBN, 2023). Health cadres may accompany pregnant women from early pregnancy through the postpartum period by conducting monitoring, providing health education and motivation, encouraging antenatal attendance, and facilitating referral when pregnancy danger signs are identified (Inayah et al., 2022). International evidence similarly indicates that community health worker involvement, including counseling and home visits, can strengthen antenatal care utilization and improve maternal health behaviors, particularly in community-based settings (Dhillon et al., 2023; Kayentao et al., 2023).

The effectiveness of health educator mentoring may be explained by the close social relationship between community health workers and pregnant women, which allows health information to be delivered repeatedly and in a culturally and socially acceptable manner. Through home visits and direct interaction, cadres can identify pregnant women, monitor antenatal examination compliance, provide education regarding nutrition and pregnancy danger signs, encourage delivery at appropriate health facilities, and connect pregnant women with professional health services (Arimas et al., 2025). Coordinated counseling provided by community health workers has been associated with better maternal health outcomes, while improved maternal health literacy may enhance a woman’s ability to recognize health problems and make appropriate decisions regarding care-seeking (Gopalakrishnan et al., 2024; Ningrum et al., 2024). These findings support the strategic position of community health cadres as health educators and facilitators of early detection, particularly among pregnant women who may be vulnerable to pregnancy-related risks.

Previous studies have predominantly examined the role of health cadres in relation to antenatal care attendance, maternal knowledge, counseling, or monitoring of pregnant women rather than pregnancy risk status as the primary outcome. Ismawati (2020) reported an association between the role of cadre mentors and adherence to pregnancy examinations among high-risk pregnant women, while Ayuni and Sjaaf (2023) found that antenatal care compliance reached 82% among high-risk pregnant women receiving good cadre support. More recent international studies have similarly demonstrated that antenatal education, community health worker counseling, and structured home visits can improve maternal knowledge, service utilization, and pregnancy-related health behaviors

(Kayentao et al., 2023; Gopalakrishnan et al., 2024; Heim & Makuch, 2024). However, evidence specifically examining whether the quality of health educator mentoring is associated with the pregnancy risk status of pregnant women remains limited, particularly within Indonesian primary health-care settings.

This research gap is particularly relevant at Kedungwuni I Community Health Center in Pekalongan, where a preliminary study conducted on October 23, 2025, identified 817 pregnant women during the January–September 2025 period, of whom 199 women, or 24%, were categorized as having high-risk pregnancies. The identified risk factors included maternal age below 20 years or above 35 years, pregnancy intervals of less than two years, anemia, hypertension, chronic energy deficiency, and a history of cesarean delivery. Although Kedungwuni I Community Health Center has implemented a pregnancy mentoring program involving health cadres, the relationship between such mentoring and pregnancy risk status in this population has not yet been scientifically established. Therefore, this study was conducted to determine the relationship between health educator mentoring and pregnancy risk status among pregnant women in the working area of Kedungwuni I Community Health Center, Pekalongan.

RESEARCH METHODS

This study employed an analytical observational design with a cross-sectional approach to examine the relationship between health educator mentoring and pregnancy risk status among pregnant women. The study was conducted in the working area of Kedungwuni I Community Health Center, Pekalongan, from June to July 2026. The study population consisted of all pregnant women in the first and second trimesters, totaling 78 participants, and all eligible participants were included using a total sampling technique. Pregnancy risk status was assessed using the Poedji Rochjati Score Card (*Kartu Skor Poedji Rochjati* [KSPR]), while health educator mentoring was measured using a cadre mentoring questionnaire.

The collected data were analyzed using univariate and bivariate statistical analyses. Univariate analysis was performed to describe the distribution and characteristics of each study variable, whereas bivariate analysis using the chi-square test was conducted to determine the relationship between health educator mentoring and pregnancy risk status. Statistical significance was assessed based on the results of the chi-square analysis in accordance with the study objectives. Ethical approval for this study was obtained from the Health Research Ethics Committee of the Faculty of Medicine, Universitas Diponegoro, Semarang, under approval number 015/EC/KEPK/FK-UNDIP/V/2026.

RESULTS AND DISCUSSION

Characteristics of Pregnant Women in the Working Area of Kedungwuni I Community Health Center, Pekalongan

The study involved 78 pregnant women in the first and second trimesters residing in the working area of Kedungwuni I Community Health Center, Pekalongan. The maternal characteristics assessed included age, parity, pregnancy interval, and maternal height, all of which represent important components in the assessment of pregnancy risk. Most respondents were within the low-risk reproductive age category, were multigravida, had an ideal pregnancy interval, and had a maternal height above 145 cm. These characteristics are clinically relevant because maternal demographic and obstetric profiles may contribute to differences in pregnancy risk and maternal outcomes (Amin et al., 2025; Damayanty et al., 2024).

Regarding maternal age, 73 respondents (93.6%) were aged 20–35 years and were therefore classified in the low-risk age category, whereas only five respondents (6.4%) were younger than 20 years or older than 35 years. This finding indicates that the study population was predominantly composed of women within the generally accepted optimal reproductive age range. Maternal age is an important determinant of pregnancy outcomes because both very young and advanced maternal age are associated with greater vulnerability to obstetric complications. Hapisah et al. (2024) similarly emphasized that maternal age is associated with conditions occurring during pregnancy, delivery, the postpartum period, and the neonatal period.

The predominance of respondents aged 20–35 years may partially explain the relatively favorable baseline reproductive profile observed in this population. During this age period, the

reproductive system is generally more physiologically prepared for pregnancy than at the extremes of reproductive age, whereas pregnancy occurring at younger or older ages may require more intensive monitoring. Previous evidence has shown that maternal characteristics, including age, are associated with the occurrence of high-risk pregnancy and pregnancy-related complications (Amin et al., 2025; Holila et al., 2023). Therefore, although only 6.4% of respondents belonged to the high-risk age group, age should remain an essential component of routine antenatal risk screening.

Parity was another important characteristic identified in this study, with 65 respondents (83.3%) classified as multigravida, 11 respondents (14.1%) as primigravida, and two respondents (2.6%) as grandemultigravida. The predominance of multigravida women indicates that most participants had previous pregnancy experience, which may influence their knowledge, perceptions, and responses to pregnancy-related health information. However, previous pregnancy experience does not necessarily eliminate the possibility of pregnancy complications because obstetric risk is influenced by multiple maternal and clinical factors. Komariah and Nugroho (2020) demonstrated that parity, together with maternal age and knowledge, is associated with pregnancy complications.

Grandemultigravidity was observed in only two respondents (2.6%), but this characteristic remains important in pregnancy risk assessment because repeated pregnancies may be accompanied by increased obstetric vulnerability. High parity may be associated with reduced uterine muscle efficiency and may contribute to complications such as hemorrhage and other adverse obstetric conditions. Therefore, parity should not be interpreted solely according to whether a woman has previous pregnancy experience but should be considered together with age, pregnancy interval, medical history, and other risk factors. The multidimensional nature of pregnancy risk has also been highlighted by studies showing that maternal characteristics interact with nutritional, obstetric, and medical conditions in determining pregnancy outcomes (Damayanty et al., 2024; Kalantari et al., 2024).

Table 1. Distribution of Maternal Age, Parity, Pregnancy Interval, and Height Among Pregnant Women in the Working Area of Kedungwuni I Community Health Center, Pekalongan

Variable	Category	Frequency (n)	Percentage (%)
Age	Low risk: 20–35 years	73	93.6
	High risk: <20 and >35 years	5	6.4
Parity	Primigravida	11	14.1
	Multigravida	65	83.3
	Grandemultigravida	2	2.6
Pregnancy interval	Not ideal: <2 years and >10 years	0	0
	Ideal: ≥2 years	78	100
Maternal height	Short: ≤145 cm	0	0
	Normal: >145 cm	78	100
Total		78	100

Source: Primary data

Pregnancy interval showed a particularly homogeneous distribution because all 78 respondents (100%) had an ideal pregnancy interval of at least two years, while no respondent was classified as having a non-ideal interval of less than two years or more than ten years. This finding indicates that pregnancy spacing was not a differentiating risk characteristic among the participants in this study. An adequate interval between pregnancies provides the maternal body with an opportunity to recover physiologically and restore nutritional reserves before a subsequent pregnancy. Ardela et al. (2023) emphasized the importance of pregnancy spacing in maternal health, particularly in relation to anemia prevention among pregnant women.

Although no participant in the present study had a non-ideal pregnancy interval, pregnancy spacing remains relevant in the broader assessment of pregnancy risk. A pregnancy occurring less than two years after a previous pregnancy may reduce the time available for maternal physiological and nutritional recovery, whereas an excessively long interval may coincide with increasing maternal age and changes in reproductive health. Therefore, the absence of non-ideal spacing in this sample should be interpreted as a favorable characteristic rather than evidence that pregnancy interval is

unimportant as a screening variable. Early identification of pregnancy-related risk factors remains necessary because pregnancy risk can arise from several characteristics simultaneously rather than from a single determinant (Putri & Ismiyatun, 2020; Holila et al., 2023).

Maternal height also demonstrated a homogeneous pattern, with all 78 respondents (100%) having a height greater than 145 cm and no respondent classified as short at 145 cm or less. Consequently, short maternal stature was not present as a pregnancy risk characteristic in this population. Maternal anthropometry remains clinically relevant because body dimensions may be associated with pelvic capacity, nutritional status, and obstetric outcomes. The absence of short stature among the participants therefore represents another relatively favorable baseline characteristic of the study population.

Maternal short stature has previously been associated with an increased likelihood of cephalopelvic disproportion, which may contribute to obstructed labor and the need for operative delivery. Toh-Adam et al. (2012) identified short maternal stature as an independent risk factor for cephalopelvic disproportion, supporting the continued inclusion of height in obstetric risk assessment. In the present study, however, all respondents had a height above 145 cm, meaning that this specific anthropometric risk factor did not contribute to variation in pregnancy risk status among the participants. Nevertheless, normal maternal height should not be interpreted as guaranteeing a complication-free pregnancy because other obstetric, metabolic, nutritional, and medical factors may still influence pregnancy outcomes (Kalantari et al., 2024).

Overall, the characteristics of the respondents indicate a predominantly favorable maternal profile, characterized by reproductive age of 20–35 years in 93.6% of participants, multigravida status in 83.3%, ideal pregnancy intervals in 100%, and normal maternal height in 100%. Nevertheless, these findings should not be interpreted as indicating an absence of pregnancy risk because pregnancy risk status is determined through a combination of demographic, obstetric, nutritional, and medical factors rather than through a single characteristic. Previous studies have shown that high-risk pregnancy may involve maternal age, parity, previous obstetric history, anemia, hypertension, nutritional conditions, and other maternal disorders (Alhidayati et al., 2023; Damayanty et al., 2024; Amin et al., 2025). Therefore, systematic risk screening and continuous antenatal monitoring remain necessary even in populations in which most women demonstrate favorable baseline characteristics.

Health Educator Mentoring Among Pregnant Women in the Working Area of Kedungwuni I Community Health Center, Pekalongan

The findings showed that health educator mentoring among pregnant women in the working area of Kedungwuni I Community Health Center was predominantly categorized as good. Of the 78 pregnant women included in this study, 34 participants (43.6%) received good mentoring, 25 participants (32.1%) received adequate mentoring, and 19 participants (24.4%) received poor mentoring. This distribution indicates that although the largest proportion of participants had received good mentoring, more than half of the respondents remained within the adequate or poor mentoring categories when these groups were considered together. The finding is consistent with Arimas et al. (2025), who reported that health cadres play an important role in monitoring pregnant women at risk and that most cadres in their study demonstrated a good level of involvement.

Health educator mentoring represents an important community-based component of maternal health services because cadres serve as a link between pregnant women, families, and professional health-care providers. Their activities may include identifying newly pregnant women, conducting home visits, encouraging antenatal examinations, providing health information, monitoring adherence to recommendations, and facilitating referral when potential pregnancy complications are identified. Community-based mentoring is therefore not limited to the provision of information but also involves continuous interpersonal support intended to promote appropriate maternal health behavior (Irianti & Astiriyani, 2025; Arimas et al., 2025). This role is particularly relevant in primary health-care settings, where continuous monitoring at the household level may complement services delivered by midwives and other health professionals.

The relatively high proportion of respondents who received good mentoring may reflect the active involvement of community health cadres in maternal health programs implemented in the working area of Kedungwuni I Community Health Center. Health cadres are members of the community who have social proximity to pregnant women, which may facilitate communication,

trust, and repeated delivery of health information. Indrilia et al. (2021) demonstrated that active participation of health cadres is an important component of community health service implementation, while Anggraeni et al. (2026) emphasized the contribution of cadre support to antenatal care adherence and preparedness for referral. Thus, the involvement of cadres can provide a community-based support system that enables pregnant women to remain connected with formal maternal health services.

Nevertheless, the presence of 25 respondents (32.1%) in the adequate mentoring category and 19 respondents (24.4%) in the poor mentoring category indicates that the quality or intensity of mentoring was not uniform across all participants. Variation in mentoring may arise from differences in the frequency of interaction, completeness of educational activities, continuity of home visits, accessibility of cadres, or the ability of cadres to recognize and communicate pregnancy-related risks. Ismawati (2020) highlighted the importance of cadre mentoring in promoting adherence to pregnancy examinations among women with high-risk pregnancies, while Arifah (2025) similarly identified the role of health cadres in supporting antenatal care attendance. These findings suggest that mentoring effectiveness depends not only on the existence of a cadre program but also on how consistently and comprehensively mentoring activities are implemented.

One of the principal functions of health educator mentoring is to strengthen maternal knowledge and awareness regarding pregnancy-related risks and the importance of routine antenatal care. Appropriate education may enable pregnant women to better recognize warning signs, understand recommended health behaviors, and seek professional care before complications become severe. Educational interventions have been shown to improve pregnant women's knowledge regarding hypertensive disorders and other pregnancy-related conditions, demonstrating the importance of structured maternal health education (Gholami et al., 2022). Heim and Makuch (2024) further demonstrated that antenatal educational interventions can be applied specifically to women with high-risk pregnancies, supporting the integration of education into routine antenatal consultation and mentoring.

Table 2. Distribution of Health Educator Mentoring Among Pregnant Women in the Working Area of Kedungwuni I Community Health Center, Pekalongan

Health educator mentoring	Frequency (n)	Percentage (%)
Good	34	43.6
Adequate	25	32.1
Poor	19	24.4
Total	78	100

Source: Primary data

The data presented in Table 2 demonstrate that good mentoring constituted the largest single category, accounting for 43.6% of all pregnant women. However, this proportion also indicates that good mentoring had not yet been experienced by the majority of the study population, because 56.5% of respondents were distributed between the adequate and poor categories based on the reported percentages. This pattern highlights the continuing need to strengthen the consistency, frequency, and content of community-based maternal mentoring activities. Chabibah et al. (2022) and Christiana and Kurniawati (2022) similarly emphasized the value of continuous assistance involving families, health workers, or community-based companions in supporting women with pregnancy-related risks.

The role of health educators becomes particularly important when mentoring includes counseling and active follow-up rather than one-directional information delivery. Gopalakrishnan et al. (2024) found that coordinated counseling delivered by community health workers was associated with maternal health outcomes, suggesting that structured interpersonal communication can influence maternal health behavior. Similarly, Dhillon et al. (2023) demonstrated the importance of community health workers in the utilization of antenatal care services, particularly in resource-constrained community settings. These findings support the assumption that good-quality mentoring may contribute to more consistent use of antenatal services by ensuring that pregnant women receive both information and practical encouragement to access care.

Home-based contact may further strengthen the effectiveness of mentoring because health educators can observe the maternal environment, identify barriers to care, and reinforce health messages in a familiar setting. Evidence from a cluster randomized trial in Mali showed that community health worker home visits were associated with antenatal care and institutional delivery outcomes, reinforcing the potential contribution of proactive community outreach to maternal health services (Kayentao et al., 2023). Community-based visits may also provide opportunities to identify pregnant women who fail to attend routine services and to facilitate earlier referral when health concerns emerge. Therefore, mentoring that incorporates regular home visits may provide broader benefits than health education delivered only during facility-based encounters.

The educational component of mentoring is also closely related to maternal health literacy, which influences the ability of pregnant women to obtain, understand, evaluate, and use health information. Ningrum et al. (2024) reported that improving maternal health literacy among pregnant women is important for supporting appropriate health decisions, particularly among vulnerable populations, while Putri and Lu (2024) conceptualized maternal health literacy as an important capability affecting pregnancy-related health behavior. Digital and mobile health interventions have likewise been associated with improvements in antenatal care utilization and skilled delivery care in low- and middle-income countries (Rahman et al., 2022). These findings imply that cadre mentoring may be strengthened through a combination of interpersonal education, printed or digital information, and repeated reinforcement of key maternal health messages.

Health cadres may also facilitate early detection by encouraging women to communicate symptoms and by directing those with suspected risk factors to appropriate professional services. Training cadres to recognize high-risk pregnancy has therefore been considered an important strategy for improving community-level maternal surveillance, as demonstrated through cadre training programs aimed at early detection of high-risk pregnancy (Amelia et al., 2024). When cadres possess adequate knowledge and communication skills, they can encourage pregnant women to seek antenatal assessment before a potentially preventable condition progresses to a more serious complication. This preventive function is consistent with the broader concept of community health worker mentoring, in which cadres support but do not replace professional clinical assessment.

Overall, the finding that 43.6% of respondents received good mentoring indicates that the cadre-based mentoring program at Kedungwuni I Community Health Center has established an important foundation for community-based maternal health support. Nevertheless, the remaining 32.1% with adequate mentoring and 24.4% with poor mentoring indicate that opportunities remain to improve the reach and quality of these activities across the entire pregnant population. Strengthening cadre competence, continuity of contact, maternal health education, home visitation, antenatal care motivation, and referral support may increase the effectiveness of mentoring and reduce disparities in the assistance received by pregnant women (Ayuni & Sjaaf, 2023; Arimas et al., 2025; Gopalakrishnan et al., 2024). Accordingly, health educator mentoring should be viewed as a structured and continuous community intervention that complements professional antenatal services and supports early identification and management of pregnancy-related health risks.

Pregnancy Risk Status Among Pregnant Women in the Working Area of Kedungwuni I Community Health Center, Pekalongan

The findings showed that most pregnant women in the working area of Kedungwuni I Community Health Center were classified as having a low pregnancy risk. Of the 78 respondents, 50 women (64.1%) were categorized as low risk, whereas 28 women (35.9%) were categorized as high risk, and no respondent was classified as having a very high-risk pregnancy. This distribution indicates that although low-risk pregnancy predominated in the study population, more than one-third of the respondents still required greater clinical attention because they belonged to the high-risk category. The finding is consistent with Amin et al. (2025), who reported that most pregnant women in their study did not experience high-risk pregnancy, although a substantial proportion continued to present identifiable pregnancy-related risk factors.

Pregnancy risk status reflects the presence and accumulation of maternal, obstetric, and medical conditions that may increase the probability of adverse outcomes for the mother, fetus, or both. In the Indonesian maternal health context, the Poedji Rochjati Score Card (*Kartu Skor Poedji Rochjati* [KSPR]) categorizes pregnancy into low-risk pregnancy, high-risk pregnancy, and very high-risk

pregnancy according to identified risk factors (Putri & Ismiyatun, 2020). The classification enables health workers to distinguish women who can continue routine monitoring from those requiring closer surveillance, referral planning, or more intensive clinical management. Therefore, pregnancy risk classification is not merely descriptive but serves as a practical basis for early detection and appropriate maternal health intervention.

The predominance of low-risk pregnancy in 64.1% of respondents is consistent with the relatively favorable maternal characteristics identified in this study. Most respondents were aged 20–35 years, all had pregnancy intervals of at least two years, and all had maternal heights above 145 cm, thereby reducing the contribution of several demographic and anthropometric risk indicators to the overall pregnancy risk score. Nevertheless, low-risk classification does not mean that a pregnancy is completely free from the possibility of complications because maternal conditions may change as gestation progresses. Continuous antenatal monitoring therefore remains necessary even among women initially categorized as low risk, particularly because pregnancy complications may develop unexpectedly during subsequent trimesters (Kementerian Kesehatan Republik Indonesia, 2021; Hapisah et al., 2024).

The presence of 28 women (35.9%) in the high-risk category is clinically important because this proportion represents more than one-third of the study population. High-risk pregnancy may result from maternal age, parity, previous obstetric history, nutritional disorders, hypertension, anemia, metabolic conditions, or other maternal diseases that increase the probability of pregnancy complications (Damayanty et al., 2024; Holila et al., 2023). Handayani and Fauziah (2021) also demonstrated that high-risk pregnancy remains an important maternal health problem and may be associated with maternal knowledge regarding pregnancy risks. Therefore, women classified as high risk require systematic monitoring and appropriate intervention rather than being managed in the same manner as women without identified risk factors.

The absence of respondents in the very high-risk category represents a favorable finding but should be interpreted cautiously. A zero frequency in this category indicates that no participant met the study's KSPR criteria for very high-risk pregnancy at the time of assessment, rather than demonstrating that such pregnancies cannot occur within the health center population. Risk status can evolve during pregnancy as new clinical conditions emerge, including hypertension, bleeding, malpresentation, or other complications requiring referral. Consequently, repeated risk assessment throughout antenatal care remains essential to ensure that changes in maternal or fetal condition are identified as early as possible (Putri & Ismiyatun, 2020; Gholami et al., 2022).

Table 3. Distribution of Pregnancy Risk Status Among Pregnant Women in the Working Area of Kedungwuni I Community Health Center, Pekalongan

Pregnancy risk status	Frequency (n)	Percentage (%)
Low risk	50	64.1
High risk	28	35.9
Very high risk	0	0
Total	78	100

Source: Primary data

Pregnancy risk assessment should incorporate multiple determinants because no single characteristic can adequately represent the overall clinical condition of a pregnant woman. Maternal age, parity, birth spacing, nutritional status, previous cesarean delivery, anemia, hypertension, diabetes, infectious disease, and abnormal fetal presentation may contribute to the classification of pregnancy risk (Putri & Ismiyatun, 2020; Damayanty et al., 2024). Alhidayati et al. (2023) further demonstrated that maternal and pregnancy-related factors may be associated with adverse outcomes such as abortion, illustrating the importance of identifying vulnerable women before serious complications develop. For this reason, the 35.9% of high-risk pregnancies identified in this study should be regarded as an important target group for intensified antenatal monitoring and prevention.

Hypertensive disorders constitute one of the clinically important conditions that may increase pregnancy risk because they can progress to severe maternal and fetal complications when

inadequately recognized or managed. Improving pregnant women's understanding of hypertensive disorders is therefore essential for facilitating early recognition of symptoms, adherence to antenatal monitoring, and timely health-seeking behavior (Gholami et al., 2022). High-risk pregnancies may also be associated with adverse outcomes such as miscarriage, fetal distress, preterm birth, low birth weight, and maternal or fetal death, making early detection a central component of maternal safety. Thus, the proportion of high-risk women observed in the present study reinforces the need for continuous surveillance throughout pregnancy rather than risk assessment performed at only one point in time.

Nutritional and metabolic conditions also contribute to pregnancy risk and should be considered together with traditional obstetric indicators. Maternal obesity, for example, presents important challenges for pregnancy management because it is associated with multiple maternal and fetal health concerns requiring appropriate health policies and clinical management strategies (Kalantari et al., 2024). Among women at increased risk of gestational diabetes mellitus, targeted nutritional education has been shown to influence health beliefs, metabolic profiles, and quality of life, illustrating the importance of preventive interventions for high-risk pregnant women (Sharifat et al., 2024). These findings demonstrate that pregnancy risk status is multidimensional and may be influenced by modifiable factors that can potentially be addressed through education, monitoring, and appropriate antenatal management.

Maternal health literacy is another important component of pregnancy risk management because a woman's ability to recognize danger signs and interpret health information influences when and how she seeks professional care. Ningrum et al. (2024) emphasized the importance of improving maternal health literacy among pregnant women, while Putri and Lu (2024) described maternal health literacy as the capacity to access, understand, appraise, and use information relevant to maternal health decisions. Educational interventions may consequently complement clinical risk screening by strengthening women's capacity to recognize potentially dangerous conditions and comply with professional recommendations. This is particularly important among high-risk pregnant women, who may require more frequent contact with health-care providers and more rapid responses when warning signs occur.

Overall, the finding that 64.1% of respondents were categorized as low risk and 35.9% as high risk demonstrates that the maternal population at Kedungwuni I Community Health Center consisted of women with different levels of antenatal care needs. Although the predominance of low-risk pregnancies is encouraging, the substantial proportion of high-risk pregnancies means that early detection, health education, continuous monitoring, and timely referral remain essential components of maternal health care. Community-based health education and structured support may reinforce formal antenatal services by improving maternal awareness and encouraging appropriate utilization of professional care, particularly among women with identified risk factors (Ningrum et al., 2024; Heim & Makuch, 2024). Accordingly, pregnancy risk status should be interpreted dynamically and monitored throughout pregnancy so that women whose clinical condition changes can receive appropriate interventions before preventable complications become severe.

CONCLUSION

This study found that most pregnant women in the working area of Kedungwuni I Community Health Center had relatively favorable maternal characteristics, with 93.6% aged 20–35 years, 83.3% classified as multigravida, and all respondents having an ideal pregnancy interval and normal maternal height. Health educator mentoring was predominantly categorized as good (43.6%), while most respondents were classified as having low-risk pregnancies (64.1%). These findings indicate that community-based mentoring constitutes an important component of maternal health support, particularly in maintaining continuous monitoring, education, and early recognition of pregnancy-related risks.

A significant relationship was identified between health educator mentoring and pregnancy risk status among pregnant women ($p = 0.000$; $r = -0.583$). The negative correlation indicates that better health educator mentoring was associated with lower pregnancy risk status, with 62% of women in the low-risk category receiving good mentoring. Therefore, strengthening the quality, continuity, and coverage of health educator mentoring is important to support early risk detection and appropriate

maternal health monitoring. Community health centers should optimize the role of health cadres through structured education, regular monitoring, and timely referral support for pregnant women.

REFERENCES

- Alhidayati, Syukaisih, Amalia, R., & Arisha, P. (2023). Faktor-faktor yang berhubungan dengan kejadian abortus terhadap ibu hamil di Rumah Sakit Umum Daerah Bengkalis. *Al-Tamimi Kesmas: Jurnal Ilmu Kesehatan Masyarakat (Journal of Public Health Sciences)*, 12(2), 121–129. <https://doi.org/10.35328/kesmas.v12i2.2483>
- Amelia, I., Kartiwan, N. N., & Ramadhanti, J. (2024). Panah Srikandi: Program pelatihan bagi kader kesehatan untuk deteksi dini kehamilan berisiko tinggi. *Dharmakarya: Jurnal Aplikasi Ipteks untuk Masyarakat*, 13(2), 165–171. <https://doi.org/10.24198/dharmakarya.v13i2.51691>
- Amin, Y., Haswita, H., & Nuraeni, P. (2025). Analisis karakteristik dominan ibu hamil dan hubungannya dengan kehamilan resiko tinggi: Penelitian cross-sectional. *Jurnal Formil (Forum Ilmiah) Kesmas Respati*, 10(1), 86–96. <https://doi.org/10.35842/formil.v10i1.585>
- Anggraeni, E., Martini, M., Handayani, Y., & Agustiarini, A. (2026). Pendampingan ibu hamil resiko tinggi untuk deteksi dini masalah kehamilan di Desa Jenggik wilayah kerja Puskesmas Rarang. *Alamtana: Jurnal Pengabdian Masyarakat UNW Mataram*, 7(1), 109–135. <https://doi.org/10.51673/jaltn.v7i1.2791>
- Ardela, O. P., Riya, R., Sulastri, & Ningsih, N. K. (2023). Hubungan pengetahuan dan jarak kehamilan dengan pencegahan anemia pada ibu hamil di Puskesmas Putri Ayu Kota Jambi. *MAHESA: Malahayati Health Student Journal*, 3(9), 2810–2818. <https://doi.org/10.33024/mahesa.v3i9.11002>
- Arifah, E. S. (2025). Hubungan peran kader kesehatan terhadap kepatuhan kunjungan antenatal care di wilayah kerja Puskesmas Sipatana [Skrripsi, Universitas Muhammadiyah Gorontalo].
- Arikunto, S. (2019). *Prosedur penelitian: Suatu pendekatan praktik*. Rineka Cipta.
- Arimas, Z. A., Muhamad, Z., Ishak, F., & Katili, D. N. O. (2025). Hubungan peran kader kesehatan dengan pemantauan ibu hamil berisiko di wilayah kerja Puskesmas Kabila. *Al-Insyirah Midwifery: Jurnal Ilmu Kebidanan (Journal of Midwifery Sciences)*, 14(2), 265–274. <https://doi.org/10.35328/kebidanan.v14i2.3072>
- Astyandini, B., Khobibah, & Rosiana, H. (2023). Konflik beban ganda bidan di Puskesmas. *Midwifery Care Journal*, 4(2), 70–79. <https://doi.org/10.31983/micajo.v4i2.9716>
- Ayuni, I. Q., & Sjaaf, A. C. (2023). Hubungan peran kader terhadap kunjungan antenatal care pada ibu hamil resiko tinggi. *J-KESMAS: Jurnal Kesehatan Masyarakat*, 9(1), 110–118. <https://doi.org/10.35329/jkesmas.v9i1.3854>
- Badan Kependudukan dan Keluarga Berencana Nasional. (2023). *Peraturan Badan Kependudukan dan Keluarga Berencana Nasional Republik Indonesia Nomor 1 Tahun 2023 tentang pemenuhan kebutuhan alat dan obat kontrasepsi bagi pasangan usia subur dalam pelayanan keluarga berencana*.
- Chabibah, N., Arifiana, R., & Ayuanda, L. N. (2022). Cegah resiko tinggi pada ibu hamil dengan PENA SUASI (Pendampingan Keluarga dan Suami Siaga). *Batik-MU: Jurnal Pengabdian Masyarakat*, 2(1), 56–60. <https://doi.org/10.48144/batikmu.v2i1.1173>
- Christiana, I., & Kurniawati, I. (2022). Pendampingan ibu hamil resiko tinggi melalui program OSOC (One Student One Client) di wilayah Puskesmas Kelir Banyuwangi. *I-Com: Indonesian Community Journal*, 2(3), 712–719. <https://doi.org/10.33379/icom.v2i3.1892>
- Damayanty, S., Yudiyanto, A. R., Agussamad, I., & Larasati, R. (2024). Faktor-faktor yang mempengaruhi kehamilan risiko tinggi di Klinik Evie Kecamatan Babalan Kabupaten Langkat Provinsi Sumatera Utara tahun 2024. *OBAT: Jurnal Riset Ilmu Farmasi dan Kesehatan*, 2(3), 211–219. <https://doi.org/10.61132/obat.v2i3.675>
- Departemen Sosial Republik Indonesia. (2017). *Pedoman tenaga pendamping lapangan perempuan*. Departemen Sosial Republik Indonesia.
- Dhillon, P., Unisa, S., Gupta, A., Saraswat, A., Sulaiman, K. M., & Pedgaonkar, S. (2023). Utilisation of ANC services before and after the COVID-19 pandemic in selected resource-poor blocks of India: Role of community health workers in Swabhimaan programme area. *BMC Health Services Research*, 23, 864. <https://doi.org/10.1186/s12913-023-09781-1>

- Gholami, K., Norouzkhani, N., Kargar, M., Ghasemirad, H., Ashtiani, A. J., Kiani, S., Sajedi Far, M., Dianati, M., Salimi, Y., Khalaji, A., Honari, S., & Deravi, N. (2022). Impact of educational interventions on knowledge about hypertensive disorders of pregnancy among pregnant women: A systematic review. *Frontiers in Cardiovascular Medicine*, 9, 886679. <https://doi.org/10.3389/fcvm.2022.886679>
- Ghozali, I. (2018). *Aplikasi analisis multivariate dengan program IBM SPSS 25* (Ed. ke-9). Badan Penerbit Universitas Diponegoro.
- Gopalakrishnan, L., Patil, S., Fernald, L., Walker, D., & Diamond-Smith, N. (2024). Association between coordinated counseling from both ASHA and Anganwadi Workers and maternal health outcomes: A cross-sectional study from Madhya Pradesh and Bihar, India. *PLOS Global Public Health*, 4(11), e0003639. <https://doi.org/10.1371/journal.pgph.0003639>
- Handayani, F., & Fauziah, W. (2021). Determinan kejadian hamil resiko tinggi berdasarkan pengetahuan pada ibu hamil trimester III di Rumah Sakit Daerah Kabupaten Subang. *Jurnal Kampus STIKES YPIB Majalengka*, 9(2), 119–124. <https://doi.org/10.51997/jk.v9i2.128>
- Hapisah, H., Rusmilawaty, R., Sofia, N., Hipni, R., & Megawati, M. (2024). Usia ibu dan hubungannya dengan kondisi kehamilan, persalinan, postpartum dan kondisi neonatal. *Journal of Telenursing (JOTING)*, 6(2), 2699–2707. <https://doi.org/10.31539/joting.v6i2.13370>
- Haryani, W., & Setiyobroto, I. (2022). *Modul etika penelitian*. Jurusan Kesehatan Gigi Poltekkes Jakarta I.
- Heim, M. A., & Makuch, M. Y. (2024). Evaluation of a short in-person and online antenatal educational intervention for high-risk pregnant women linked to antenatal consultation. *European Journal of Midwifery*, 8, 3. <https://doi.org/10.18332/ejm/175927>
- Hidayat, A. A. A. (2009). *Metode penelitian keperawatan dan teknik analisis data*. Salemba Medika.
- Holila, Suprida, Yulizar, & Silaban, T. D. S. (2023). Faktor-faktor yang berhubungan dengan kehamilan risiko tinggi. *Jurnal Kesehatan dan Pembangunan*, 13(25), 48–56. <https://doi.org/10.52047/jkp.v13i25.153>
- Inayah, M., Nugroho, P. D. S., Himawan, F., Angkasa, M. P., & Pujiastuti, R. S. E. (2022). Empowering communities supporting motion mother sayang (GSI) in the early detection of pregnant mother of high risk pregnant woman. *Jurnal Lintas Pengabdian Masyarakat*, 2(1), 1–6.
- Indrawati, N. D., Damayanti, F. N., & Nurjanah, S. (2016). Peningkatan pengetahuan dan sikap ibu hamil resiko tinggi dengan penyuluhan berbasis media. *Prosiding Seminar Nasional & Internasional/Rakernas AIPKEMA 2016*.
- Indrilia, A., Efendi, I., & Safitri, M. E. (2021). Faktor-faktor yang memengaruhi peran aktif kader dalam pelaksanaan Posyandu di Kecamatan Simeulue Timur Kabupaten Simeulue. *Journal of Healthcare Technology and Medicine*, 7(2). <https://doi.org/10.33143/jhtm.v7i2.1772>
- Irianti, B., & Astiriyani, E. (2025). Optimalisasi kader dalam upaya mendukung proses persalinan aman dan nyaman melalui pelatihan penggunaan lembar balik. *Jurnal Pengabdian kepada Masyarakat (ABDIKEMAS)*, 7(1), 1–7. <https://doi.org/10.36086/j.abdikemas.v7i1.2861>
- Ismawati. (2020). *Hubungan peran kader pendamping ibu hamil risiko tinggi dengan kepatuhan pemeriksaan kehamilan pada ibu hamil risiko tinggi di Puskesmas Mejuwet Bojonegoro* [Skripsi, STIKES Insan Cendekia Medika Jombang].
- Kalantari, E., Tajvar, M., Naderimagham, S., & Takian, A. (2024). Maternal obesity management: A narrative literature review of health policies. *BMC Women's Health*, 24(1), Article 520. <https://doi.org/10.1186/s12905-024-03342-2>
- Kayentao, K., Ghosh, R., Guindo, L., Whidden, C., Treleaven, E., Chiu, C., Lassala, D., Traoré, M. B., Beckerman, J., Diakité, D., Tembely, A., Idriss, B. M., Berthé, M., Liu, J. X., & Johnson, A. (2023). Effect of community health worker home visits on antenatal care and institutional delivery: An analysis of secondary outcomes from a cluster randomised trial in Mali. *BMJ Global Health*, 8(3), e011071. <https://doi.org/10.1136/bmjgh-2022-011071>
- Kementerian Kesehatan Republik Indonesia. (2021). *Angka kematian ibu*. Kementerian Kesehatan Republik Indonesia.
- Kementerian Kesehatan Republik Indonesia. (2023). *Survei Kesehatan Indonesia 2023*. Kementerian Kesehatan Republik Indonesia.

- Kementerian Kesehatan Republik Indonesia. (2024). *Angka kematian ibu dan angka kematian bayi di Indonesia*. Kementerian Kesehatan Republik Indonesia.
- Komariah, S., & Nugroho, H. (2020). Hubungan pengetahuan, usia dan paritas dengan kejadian komplikasi kehamilan pada ibu hamil trimester III di Rumah Sakit Ibu dan Anak Aisyiyah Samarinda. *KESMAS UWIGAMA: Jurnal Kesehatan Masyarakat*, 5(2), 83–93. <https://doi.org/10.24903/kujkm.v5i2.835>
- Ningrum, E. W., Lusmilasari, L., Huriyati, E., Marthias, T., & Hasanbasri, M. (2024). Improving maternal health literacy among low-income pregnant women: A systematic review. *Narra J*, 4(2), e886. <https://doi.org/10.52225/narra.v4i2.886>
- Putri, A. P., & Lu, Y. Y. (2024). Maternal health literacy in pregnant women: A concept analysis. *Maternal and Child Health Journal*, 28, 1272–1282. <https://doi.org/10.1007/s10995-024-03945-z>
- Putri, I. M., & Ismiyatun, N. (2020). Deteksi dini kehamilan beresiko. *JKM (Jurnal Kesehatan Masyarakat) Cendekia Utama*, 8(1), 40–51. <https://doi.org/10.31596/jkm.v8i1.565>
- Rahman, M. O., Yamaji, N., Nagamatsu, Y., & Ota, E. (2022). Effects of mHealth interventions on improving antenatal care visits and skilled delivery care in low- and middle-income countries: Systematic review and meta-analysis. *Journal of Medical Internet Research*, 24(4), e34061. <https://doi.org/10.2196/34061>
- Sharifat, R., Borazjani, F., Araban, M., Pakpour, A. H., Ahmadi Angali, K., & Aiiashi, S. (2024). Nutritional education on health beliefs, metabolic profiles, and quality of life among high-risk pregnant women for gestational diabetes mellitus: A randomized controlled trial. *Scientific Reports*, 14, 27712. <https://doi.org/10.1038/s41598-024-78447-7>
- Toh-Adam, R., Srisupundit, K., & Tongsong, T. (2012). Short stature as an independent risk factor for cephalopelvic disproportion in a country of relatively small-sized mothers. *Archives of Gynecology and Obstetrics*, 285(6), 1513–1516. <https://doi.org/10.1007/s00404-011-2168-3>
- Zafman, K. B., Riegel, M. L., Levine, L. D., & Hamm, R. F. (2023). An interactive childbirth education platform to improve pregnancy-related anxiety: A randomized trial. *American Journal of Obstetrics and Gynecology*, 229(1), 67.e1–67.e9. <https://doi.org/10.1016/j.ajog.2023.04.007>