

ANALYSIS OF RISK FACTORS FOR EARLY DETECTION OF HIGH RISK PREGNANCY IN THE THIRD TRIMESTER

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ABSTRAK : ANALISIS FAKTOR DETEKSI DINI RISIKO TINGGI IBU HAMIL TRIMESTER III

Latar Belakang : Kehamilan memiliki risiko tinggi jika dipengaruhi faktor pemicu yang akan menyebabkan terjadinya komplikasi selama kehamilan dan bisa menimbulkan kehamilan yang patologis. Deteksi dini dalam pelayanan antenatal untuk menemukan ibu hamil berisiko agar dapat ditangani secara memadai untuk mencegah gangguan yang serius pada kehamilan. Faktor predisposisi risiko juga di kenali sejak awal sehingga dapat dilakukan upaya untuk mencegah gangguan yang lebih berat pada ibu maupun janin.

Tujuan untuk menganalisis hubungan pengetahuan, sikap, pendidikan dan keteraturan ANC dengan deteksi dini risiko tinggi ibu hamil trimester III di wilayah kerja puskesmas Sikumana, Kota Kupang Nusa Tenggara Timur. Metode yang digunakan jenis penelitian kuantitatif dengan pendekatan *cross sectional*. Populasi dalam penelitian ini adalah seluruh ibu hamil trimester III. Teknik pengambilan sampel dengan total sampling yaitu 51 orang ibu hamil trimester III. Data dikumpulkan melalui kues ioner kemudian dianalisis menggunakan uji statistik *Chi-Square*.

Hasil penelitian terdapat hubungan yang bermakna secara statistik antara pengetahuan (0,006), sikap (0,020), keteraturan ANC (0.020) dengan deteksi dini risiko tinggi ibu hamil trimester III sedangkan pendidikan (0,098) tidak ada kemaknaan secara statistic dengan deteksi dini risiko tinggi ibu hamil trimester III.

Kesimpulan : Penelitian ini menunjukkan adanya hubungan yang signifikan antara pengetahuan, sikap, serta keteraturan ANC dengan deteksi dini risiko tinggi ibu hamil trimester III dan pendidikan tidak ada hubungan dengan deteksi dini risiko tinggi ibu hamil trimester III.

Saran Pendidikan ini dapat diberikan melalui penyuluhan rutin di fasilitas kesehatan, pusat kesehatan terpadu (Posyandu), atau kunjungan rumah, dengan penekanan pada pentingnya pemeriksaan kehamilan (ANC) untuk memberikan perawatan dan pengawasan yang dapat mendeteksi tanda-tanda awal bahaya kehamilan, komplikasi, serta perencanaan dan tindakan yang tepat.

Kata Kunci : Keteraturan ANC, Pengetahuan, Pendidikan, Risiko Tinggi, Sikap

ABSTRACT

Background: Pregnancy has a high risk if influenced by triggering factors that will cause complications during pregnancy and can lead to pathological pregnancies. Early detection in antenatal care to find pregnant women at risk so that they can be treated adequately to prevent serious disorders in pregnancy. Predisposing risk factors are also recognized early so that efforts can be made to prevent more serious disorders in the mother and fetus. This study aims to analyze the relationship between knowledge, attitudes, education and regularity of ANC with early detection of high-risk pregnant women in the third trimester in the working area of the Sikumana Community Health Center, Kupang City, East Nusa Tenggara. This type of research is quantitative with a cross-sectional approach. The population in this study were all pregnant women in the third trimester. The sampling technique with a total sampling of 51 pregnant women in the third trimester. Data were collected through a questionnaire and then analyzed using the Chi-Square statistical test . The results of the study showed a statistically significant relationship between knowledge (0.006), attitude (0.020), regularity of ANC (0.020) with early detection of high-risk pregnant women in the third trimester, while education (0.098) had no statistical significance with early detection of high-risk pregnant women in the third trimester. Conclusion: This study shows a significant relationship between knowledge, attitude, and regularity of ANC with early detection of high-risk pregnant women in the third trimester and education has no relationship with early detection of high-risk pregnant women in the third trimester.

Suggestion This education can be provided through routine outreach at health facilities, integrated health posts (Posyandu), or home visits, with an emphasis on the importance of prenatal checkups (ANC) to provide

care and supervision that can detect early signs of pregnancy danger signs, complications, and appropriate planning and action.

Keywords: Regularity ANC, Knowledge, Education, High_Risk, Attitude

INTRODUCTION

Pregnancy with complications in pregnant women and childbirth is a serious problem, because the occurrence of these complications can cause direct death in pregnant or childbirth women. Mortality Rate Maternal Mortality Rate (MMR) generally decreased during the period 1991-2020 from 390 to 189 per 100,000 live births. This figure almost reached the 2024 RPJMN target of 183/100,000 live births. Although there is a tendency to decrease maternal mortality, efforts are still needed to accelerate the reduction to achieve the SGD's target of 70/100,000 live births in 2030. The number of maternal deaths in Indonesia in 2023 was 4,482 people. (Kementrian Kesehatan, 2023). Maternal deaths in Kupang city in 2023 were 3 cases. caused by bleeding and hypertension (Dinkes Kota Kupang, 2023).

Efforts to accelerate the decline in maternal mortality are carried out by ensuring that every mother is able to obtain quality health services, such as maternal health services, delivery assistance by trained health workers in health care facilities, postpartum care for mothers and babies, special care and referrals in the event of complications, and family planning (FP) services including postpartum family planning (Kementrian Kesehatan, 2023).

One cause of maternal mortality is high-risk pregnancy, a pregnancy that presents a higher risk of complications during pregnancy and delivery compared to a normal pregnancy. A pregnancy is considered high-risk if it is influenced by triggering factors that can lead to complications during pregnancy, even during labor and the postpartum period. To determine whether a pregnant woman is at high risk, early detection is performed through a history taking, prenatal examination, and supporting examinations (Astuti et al, 2017).

Regular prenatal checkups at community health centers by trained health workers are an effective solution to reducing mortality rates. Antenatal care (ANC) provides care and monitoring that can detect early signs of pregnancy danger signs, complications, and plan for them. The standard is a minimum of six checkups during pregnancy: one in the first trimester, two in the second trimester, and three in the third trimester. (Astuti, Asih Dwi, 2025)

Pregnancy complications are complex and can lead to death. In high-risk pregnancies, the normal outcome of the pregnancy and the birth of a healthy baby are threatened. Pregnant women have various health needs that must be met. If these needs are not met, mothers can experience extreme stress and anxiety. In cases of severe stress caused by pregnancy risks, catecholamines such as cortisol and epinephrine increase, which can increase pregnancy complications and negatively impact pregnancy outcomes (Turkem, Hulya, Bihter Akyn, Yasemin Erkal Aksoy, 2024).

Early detection of high risk can be done through the Pudji Rochyati Score Card in the KIA book, the Poedji Rochjati Score Card (KSPR), which is a score card used as a family-based antenatal screening tool to find risk factors for pregnant women, which then requires integrated efforts to avoid and prevent the possibility of obstetric complications during delivery (Susilowati, Elly Yanti, 2023).

Pregnant women included in the high-risk group are mothers who have a height of less than 145 cm, low weight, have a bad history of previous pregnancies and childbirth, a history of anemia, high blood pressure, fetal abnormalities and a history of chronic diseases, bleeding during pregnancy and non-medical factors. In addition, pregnant women who are too old (over 35 years old), too young (under 20 years old), too many (more than 4 times), and birth spacing less than 2 years) or known as 4 too (4T) can be a factor in high-risk pregnancies (Isnaini, L. C., Panggayuh, A., & Aristina, N. E, 2020) . The impacts caused by high-risk pregnancies are miscarriage, fetal distress, premature pregnancy, and poisoning during pregnancy (Susanti, E., Zainiyah, Z., Hasanah, F., Dewi, A. W., & Sakdiyah, H, 2020).

A preliminary survey at the Sikumana Community Health Center revealed that 37 (14%) pregnant women with complications occurred in 2022, increasing to 159 (59%) in 2023. Therefore, we are interested in examining the relationship between knowledge, attitudes, education, and regularity of ANC visits and early detection of high-risk pregnant women in the third trimester in the Sikumana Community Health Center's work area.

RESEARCH METHODS

This research is analytical with a quantitative approach. The research design used was *cross-sectional*. The study was conducted from January to February 2025. The population in this study were all pregnant women in their third trimester who came for check-ups at the Sikumana Community Health Center.

The sampling technique used total sampling. The instrument used was a questionnaire consisting of 25 questions on knowledge and 15 questions on attitudes.

This questionnaire was adopted from the Ministry of Health. Data were analyzed using univariate and bivariate analysis. Multivariate analysis was used to observe the frequency distribution of respondents' general characteristics.

Bivariate analysis was used to determine the relationship between the independent and dependent variables using chi-square.

RESEARCH RESULTS

General characteristics of respondents

The table data shows the characteristics of reproductive age at the age of 20-35 years as many as 38 (74.5%) respondents. The highest level of education of respondents is at the secondary level

as many as 27 (52.90%). The most respondents work as housewives as many as 42 (82.4%) respondents. The most parity of respondents is less than 3 as many as 33 (64.70%).

Table 1
Respondent characteristics based on age, education level, occupation and parity

Characteristics	F	%
Age		
< 20 years	0	0
20 years – 35 years	38	74.5
≥ 35 years	13	25.5
Education		
Base	17	33.3
Intermediate	27	52.9
Tall	7	13.7
Work		
Housewife	42	82.4
Private	7	13.7
Government employees	2	3.9
Parity		
<3 children	33	64.7
≥ 3 children	18	35.3

Table 2
Factors That Influence Early Detection Of High Risk Pregnancy In The Third Trimester In Sikumana Community Health Center

Characteristics	Early Risk Detection				Total		P value
	Low		Tall				
	F	%	F	%	F	%	
Knowledge							
Not enough	1	1.96	2	3.92	3	5.88	0.006
Enough	6	11.76	19	37.27	25	49.02	
Good	16	31.37	7	13.73	23	45.10	
Attitude							
Not enough	13	25.50	24	47.06	37	72.55	0.020
Good	10	19.60	4	7.84	14	27.45	
Education							
Base	5	9.80	12	23.53	17	33.33	0.098
Intermediate	16	31.37	11	21.57	27	52.90	
Tall	2	3.92	5	9.80	7	17.72	
ANC							
Irregular	3	5.88	12	23.53	15	29.41	0.020
Regular	20	39.21	16	31.37	36	70.59	

From the table data above, the knowledge of pregnant women with high-risk detection at the Sikumana Community Health Center is mostly in the sufficient knowledge category, namely 19

respondents (37.27%), the attitude of respondents with high-risk detection at the Sikumana Community Health Center is mostly in the poor attitude, namely 24 respondents (47.06%). At the level of education

with high-risk detection at the Sikumana Community Health Center, the most is secondary education level, as many as 16 respondents (31.37%), and for the regularity of ANC visits with high-risk detection at the Sikumana Community Health Center, the most is regular visits, namely 20 respondents (39.21%).

The results of the bivariate analysis using chi square showed that the variables that had statistical significance were knowledge (0.006), attitude (0.020), regularity of ANC (0.020), while education (0.098) had no statistical significance.

DISCUSSION

Relationship between Knowledge and Early Detection of High Risk Pregnant Women in the Third Trimester

Knowledge is the result of curiosity through sensory processes, particularly the eyes and ears, regarding a particular object. Knowledge, or cognitive, is a very important domain for shaping a person's actions (Over Behavior) (Notoatmodjo, 2012).

This study shows that there is a significant relationship between maternal knowledge and the detection of high risk in third trimester pregnant women with a p-value of 0.006.

The results of this study align with previous research, indicating a significant relationship between maternal knowledge and high-risk pregnancies at the Pulo Brayan Community Health Center in Medan, with a p-value of 0.001 (Sebayang, Wellina BR, 2023). Lack of knowledge can lead to poor behavior. Pregnant women who have good knowledge about high-risk pregnancies are more likely to be able to prepare for childbirth effectively (Fauziah, A.B., et al, 2023).

It is very important for pregnant women to get good knowledge Information about high-risk pregnancies helps mothers be more aware of their pregnancies. A high level of maternal knowledge also encourages them to have a healthy pregnancy, even if a high-risk pregnancy is discovered, it can be managed early (Sholikah, S.M, Fitria N., Elfira N.A, 2024).

Knowledge of the benefits of early detection of high-risk pregnancies leads to a positive attitude among pregnant women and influences them to seek early detection and ANC check-ups from health workers as early as possible. Early detection of high-risk pregnancies facilitates planning for pregnancy and delivery based on the mother's risk level (Windari, A. P. Sri Rahayu L, 2019).

Understanding the signs and symptoms of high-risk pregnancy also allows early recognition of

potential problems, thereby reducing the risk of dangerous complications, knowledge of pregnant women is key to making the right decisions regarding the health of the mother and fetus, as well as early recognition of danger signs that require immediate medical intervention (Lengkong, Marke et al, 2023).

Relationship between Attitude and Early Detection of High Risk Pregnant Women in the Third Trimester

The results of this study indicate a significant relationship between attitudes and early detection of high-risk pregnancy in third-trimester pregnant women, with a p-value of 0.020. Attitudes are a person's opinions or tendencies.

The results of this study are in line with research conducted by Sinaga (2021) who analyzed using the chi-square test and a significance limit of 0.05 obtained a p-value of $0.02 < 0.05$, this indicates that there is a significant relationship between maternal attitudes and the incidence of high-risk pregnancies. Pregnant women who have positive attitudes mostly do not experience high-risk pregnancies because the mothers check their pregnancies with health workers or other health facilities, so that pregnant women receive good counseling from health workers about preventing high-risk pregnancies. (Sinaga, V, 2021).

In line with the research conducted, the analysis showed a p-value of 0.027, indicating a relationship between maternal attitudes and the incidence of high-risk pregnancies. Mothers with negative attitudes were more likely to experience high-risk pregnancies. Meanwhile, mothers with positive attitudes were less likely to experience high-risk pregnancies (Sholikah, S.M, Fitria N., Elfira N.A, 2024).

The relationship between attitude and high pregnancy risk is defined as the potential tendency to react in a certain way when faced with a stimulus that requires a response. This attitude makes respondents think positively about the possible risks of pregnancy in women over 35. Statistical results indicate a significant relationship between attitude and pregnancy risk. (Sebayang, Wellina BR, 2023).

The Relationship between Education and Early Detection of High Risk Pregnant Women in the Third Trimester

The results of the study showed no association between education level and early detection of high-risk conditions, with a p-value of 0.098. Education plays a crucial role in obtaining health information, particularly maternal and child

health. A higher level of education is expected to provide reliable information to a mother. Providing education is a way for pregnant women to gain knowledge about antenatal care. A high level of education and sound knowledge will facilitate mothers' acceptance of information and regular antenatal visits.

This research is in line with research conducted which found that education does not influence the behavior of pregnant women in early detection of high-risk pregnancies at PMB Ika Mardiyanti (Mardiyanti, Ika, Yasi Anggasari, 2020).

The results of this study are not in line with the research conducted, namely there is a relationship between the education of pregnant women with high-risk events in the Pongangan sub-district area with a p-value of 0.002 (Ratnaningtyas, M.A., Fitri I, 2023). Other studies are also in line with the research conducted by Reza that there is a relationship between the level of education of pregnant women with high pregnancy risks with a p-value of 0.000. Pregnant women with low education have less knowledge about pregnancy and the quality of health services so that the quality of services that have been improved is still considered lacking or has not been implemented well, most ANC visits in pregnant women with low education are not regular as recommended by health workers (Reza, Hanif et al, 2024). The results of other studies are also in line showing that the research conducted shows a relationship between the level of education of mothers with the risk of 4T pregnancies in pregnant women in the working area of the Manna city health center (Anggraini, Heni, Mika O., Helleri F., Choralina Eliagita, Wita Lova ZareyHubun, 2024).

Education level is one of the factors that plays a role in pregnant women's decision to undergo prenatal checkups. The results of statistical tests showed a significant relationship between the education level of pregnant women and the regularity of ANC checkups, with a p-value of 0.028 (Wijaya, Johanna Fransiska, Claudia Tanamal, Julio Arif, Febriyanti Syahputri, 2023). Pregnant women with higher education will conduct their prenatal checkups appropriately and regularly to maintain their health and that of their fetus. The education level of high-risk pregnant women is one of the factors associated with increased knowledge, thus encouraging ANC behavior in pregnant women (Ruggieri, S., 2022). Health education should always be provided to pregnant women during prenatal checkups to motivate them to visit health facilities for their pregnancy checkups.

The Relationship between Regularity of ANC and Early Detection of High Risk Pregnant Women in the Third Trimester

The results of this study indicate a significant relationship between regular ANC visits and the detection of high-risk pregnant women, with a p-value of 0.020. ANC is a monitoring activity for pregnant women throughout pregnancy, with a minimum of once in the first trimester, twice in the second trimester, and three times in the third trimester, ensuring they can undergo labor. Routine antenatal care can help control risk factors and provide referrals for appropriate intervention.

The results of this study are not in line with the research conducted that there is no relationship between antenatal services and risk groups with a p-value of 0.11. It was found that all pregnant women received antenatal services even though the number of visits was less than four times (Shrestha, 2021).

The results of the study that are in line with the researchers are that the research conducted shows that there is a relationship between the regularity of ANC visits to detection in pregnant women with a p-value of 0.000 (Sukarsih, R.I, 2020). Pregnant women who regularly make ANC visits will be able to detect and handle high-risk events well, such as research conducted with Statistical test results show that there is a relationship (P-value = $0.001 < 0.05$ which means there is a significant relationship between the regularity of antenatal visits to early detection of high-risk pregnant women in the third trimester using the Poedji Rochjati score (Siahaan, Gustien, Al Maghfirah, 2023).

Good knowledge about pregnancy will support a mother's attitude about when she is ready to marry, plan her pregnancy, manage the spacing of pregnancies, and the regularity of ANC visits. The study conducted with a p-value of 0.001, indicating a significant relationship between the level of knowledge of pregnant women about danger signs in the third trimester and the regularity of prenatal check-ups at the South Cimahi Community Health Center (Setiawan, Shellita Melanie Astuti, Alma Lucyati, Ira Dewi Rachmadhiani, 2023).

Research conducted in Belagavi suggests that health care practices such as supplementation of folic acid, iron, calcium during routine check-ups at ANC visits of high-risk mothers and early ANC check-ups may have ensured good pregnancy outcomes by preventing adverse outcomes (Chate, Sphurt Uday, Chandra Shrishail Metgud, 2022).

CONCLUSION

Research conducted on 51 pregnant women in their third trimester at the Sikumana Health Center in Kupang City showed that there was a statistically significant relationship between knowledge, attitude, and regularity of ANC towards early detection of high-risk pregnant women in their third trimester, and there was no relationship between education and early detection of high-risk pregnant women in their third trimester. The chi-square test produced a p-value for knowledge (0.06), attitude (0.020), regularity of ANC (0.020) and education (0.098).

SUGGESTION

Based on the results of this study, it is recommended that health workers be more active in educating the public, especially pregnant women, about early detection of risks and preventing pregnancy complications. This education can be provided through routine outreach at health facilities, integrated health posts (Posyandu), or home visits, with an emphasis on the importance of prenatal checkups (ANC) to provide care and supervision that can detect early signs of pregnancy danger signs, complications, and appropriate planning and action.

Further research is recommended to explore other factors such as geography, economics, husband's support, and socio-cultural factors. Furthermore, qualitative research is needed to better understand the role of pregnant women in the third trimester in early detection of high-risk pregnancy outcomes.

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