Relationship of Antenatal Care Visits Viewed from the Standards of Antenatal Care Visits with Pregnancy Risks in the Work Area of Tanjung Bingkung Health Center, Solok District

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Abstract

The Tanjung Bingkung Health Center ranks first in the number of high-risk pregnant mothers and has the lowest K6 in Solok District, with 78 high-risk pregnant mothers recorded in July 2023 out of a target of 72. Additionally, the number of high-risk pregnant mothers has increased over the last three years. This study aims to determine the relationship between antenatal care visits, assessed according to antenatal care visit standards, and pregnancy risks in the working area of Tanjung Bingkung Health Center, Solok District, in 2023. This is an analytical study with a cross-sectional design. The population includes all third-trimester pregnant women with a gestational age above 36 weeks from November to December 2023, totaling 40 individuals. The sampling technique used is total sampling, and data collection tools include a questionnaire and KIA (Maternal and Child Health) book. Data analysis was conducted univariately and bivariately using SPSS with the Chi-square statistical test. The results showed that 11 respondents (27.5%) had antenatal care visits that did not meet standards, and 15 individuals (37.5%) were at risk during pregnancy. Among the 11 pregnant women with non-standard antenatal care visits, the majority, 8 (72.7%), were classified as having high-risk pregnancies, with a p-value of 0.009. There is a significant relationship between antenatal care visits, as viewed from the standards of antenatal care visits, and pregnancy risks in the working area of Tanjung Bingkung Health Center, Solok District, in 2023. To reduce the high rate of pregnancy risks, it is hoped that all pregnant women will attend ANC visits according to the standards.

Keywords: Antenatal Care Visits, Pregnancy Risks, Health Center

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Introduction

The maternal mortality rate (MMR) and infant mortality rate (IMR) are indicators of the success of healthcare services in a country. The World Health Organization (WHO) estimated that 287,000 women died during pregnancy and childbirth in 2020. This number is remarkable, considering the rapid population growth in many countries (WHO Fact Sheet on Maternal Mortality,2023).

The high number of maternal deaths in several countries reflects the disparity in access to quality healthcare services. The maternal mortality rate in low-income countries is about 430 per 100,000 live births, while in high-income countries, it is 12 per 100,000 live births. The main causes are complications that occur during pregnancy, childbirth, and the postpartum period, such as severe bleeding, postpartum infections, high blood pressure/preeclampsia and eclampsia, complications during delivery, and unsafe abortions (WHO Fact Sheet on Maternal Mortality,2023).

According to WHO (2019), the Maternal Mortality Rate (MMR) is the number of maternal deaths due to pregnancy, childbirth, and postpartum processes, which serves as an indicator of women's health status (Habte et al., 2024). Maternal Mortality Rate (MMR) is one of the global targets of the Sustainable Development Goals (SDGs) to reduce maternal mortality to 70 per 100,000 live births by 2030.

In Southeast Asia, there were 138 maternal deaths per 100,000 live births recorded in 2020 (Maternal Mortality Ratio (MMR) Trends by Region, WHO, 2023), with Indonesia ranking second after Laos for the highest maternal mortality rate in Southeast Asia. The maternal mortality rate in Indonesia is still around 305 per 100,000 live births and has not yet reached the target of 183 per 100,000 live births set for 2024; most maternal deaths are preventable, as there are well-known healthcare solutions to prevent or manage complications. (Survey Lembaga Demografi Fakultas Ekonomi Bisnis Universitas Indonesia, 2022).

Indonesia's high maternal mortality rate has become one of the government's priority programs in the Sustainable Development Goals (SDGs) agenda (Al-Zubayer et al., 2024). The Ministry of Health of the Republic of Indonesia (Kemenkes) has developed strategies to reduce maternal mortality, one of which is to establish antenatal care (ANC) check-ups that meet standards, with a minimum of 6 visits during pregnancy: 2 times in the first trimester, 1 time in the second trimester, and 3 times in the third trimester. Antenatal care is a pregnancy check-up aimed at optimizing the physical and mental health of pregnant women, enabling them to face labor during the postpartum period, prepare for exclusive breastfeeding, and ensure the proper recovery of their reproductive health. (Widiantoro et al., 2024)

As an essential standardized service for pregnant women, an ultrasound examination (USG) is conducted by a doctor once during the first trimester and once during the third trimester (Hernawati et al., 2024). This program aims to detect abnormalities and complications in pregnant women early to prevent maternal mortality as soon as possible. To support this activity, the Ministry of Health is preparing ultrasound equipment across all provinces in

Indonesia, intending to meet the need for 10,321 ultrasound machines in 10,321 community health centers by 2024 (Kemenkes R.I, 2021).

The policy of the Ministry of Health, in an effort to accelerate the reduction of the maternal mortality rate (MMR), is to conduct early detection of possible complications through risk screening for pregnancy (Rector et al., 2024). From the beginning of pregnancy, high-risk pregnancies are conditions that can endanger both the mother and the fetus, potentially leading to death, illness, disability, discomfort, and dissatisfaction (Awoke et al., 2024). To detect these pregnancy risks in expectant mothers during ANC visits, care is provided according to the standard of 10 T, which includes: measuring weight and height, measuring blood pressure, assessing nutritional status through upper arm circumference (Lila), measuring fundal height, determining fetal presentation and fetal heart rate (Aasbø et al., 2024). Screening for T status and administering TT immunization, providing at least 90 iron tablets during pregnancy, conducting simple laboratory tests such as hemoglobin (HB), VDRL test, urine protein test, and urine reduction test. Additional care includes breast care, fitness activities (pregnancy exercises), and thyroid therapy/providing iodine oil capsules (if needed) as well as malaria therapy if cases are found (Kemenkes RI, 2022).

According to the Profile of the Ministry of Health of West Sumatra Province in 2022, to reduce the maternal mortality rate (MMR), the government must prepare skilled medical personnel capable of providing adequate and quality childbirth assistance. In West Sumatra, the maternal mortality rate in 2022 recorded a total of 133 cases, with the highest occurring during the postpartum period at 46%, during pregnancy at 36%, and during childbirth at 18%. Additionally, 76.7% of these cases occurred in hospitals. Factors contributing to maternal mortality included 22 cases of bleeding, 29 cases of hypertension during pregnancy, and 5 cases of infection, with the remainder caused by underlying health conditions (Arunala media arta,2023).

Among the various cities and regencies in West Sumatra, Solok Regency is one of the contributors to the maternal mortality rate, with 14 cases in 2020, 12 cases in 2021, and 10 cases in 2022. According to data from the Family Health Sector of the Solok Health Office, after conducting a Maternal Audit, the causes of these maternal deaths were generally due to bleeding, postpartum infections, eclampsia, and other underlying health conditions (Askins et al., 2024). The number of maternal deaths was caused by the failure to detect and address high-risk pregnancies adequately, leading to complications and issues during childbirth and the postpartum period. Other contributing factors include the low level of community awareness regarding high-risk pregnancies and a lack of awareness among the public to seek medical check-ups from health professionals according to the standards set by the government (Aagaard et al., 2024). These complications can be prevented if pregnant women attend ANC visits as per the standards, allowing risks during pregnancy to be managed before childbirth, thus avoiding complications that could result in death (Laporan Kinerja Instansi Pemerintah, Dinas Kesehatan Kabupaten Solok, 2022).

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Literature Review

According to the opinions of Jurgen A. Pattiasina and Filda Vionita in their journal article titled 'The Relationship Between Regularity of Antenatal Care and the Level of High-Risk Pregnancy in Pregnant Women in Dusun Kampung Baru, Desa Kawa In 2019, it was concluded that maternal deaths during pregnancy were caused by failures in early detection, which resulted from irregular attendance at ANC visits. The research showed that among respondents with high-risk pregnancies, a higher percentage, 50%, were those who did not regularly attend ANC visits. In contrast, among pregnant women who attended ANC visits according to the standards, the percentage of high-risk cases was only 16.7%.

Another opinion, in the research conducted by Siahaan, G., & Maghfirah, A. (2023) titled The Regularity of Antenatal Care in Early Detection of High-Risk Pregnancies, including comprehensive and integrated pregnancy examinations by healthcare providers, is an effort to ensure that the pregnancy progresses normally and to detect any issues or diseases experienced by the pregnant woman, as well as plan adequate interventions so that the mother is prepared for a safe delivery (Siahaan, G., & Maghfirah, A. 2023). Every pregnancy carries the risk of complications. Pregnant women who regularly attend antenatal care (ANC) visits from the early stages of pregnancy can prevent the risk of complications during delivery, as they are already aware and informed about the condition of their pregnancy (Apriliasari dan pujiastuti 2021).

This aligns with the 'Profile of High-Risk Pregnancy and Regularity of Antenatal Care in the Work Area of the Klungkung I Community Health Center' research conducted by Putu Putri Diah Puspita in 2021. The study concluded that out % of 100 respondents, 72.5% regularly attended ANC visits, with 38 individuals (27.5%) classified as high-risk. The conclusion is that pregnant women who attend ANC visits according to the standards have a lower risk of complications, as high-risk factors can be addressed before the pregnancy reaches the third trimester.

Complications and risk events during pregnancy in Indonesia can be prevented, one of which is through early detection of high-risk pregnancies using the Poedji Rochjati scoring instrument. This scoring is performed when pregnant women attend ANC visits based on all the risk factors outlined by Poedji Rochjati. The scoring serves as a means of communication and education for pregnant women and their families to prepare for emergency assistance and planned referrals. Additionally, it acts as a warning tool for health workers to monitor and prevent complications in pregnant women; the higher the score, the more intensive the management required. Based on the score, high-risk pregnancies are divided into three groups: low-risk pregnancy (KRR) with a score of 2, high-risk pregnancy (KRT) with a score of 6-10, and very high-risk pregnancy (KRST) with a score greater than 12 (Rochjati, 2014).

Research Method

The type of research used in this study is analytic with a cross-sectional study design, where the independent variable is Antenatal Care visits and the dependent variable is pregnancy

risk, both examined simultaneously. This study was conducted in the working area of the Tanjung Bingkung Community Health Center from September to March 2024. The population of this study consists of all pregnant women in the third trimester, with a gestational age of over 36 weeks, who attended antenatal care (ANC) visits at the Tanjung Bingkung Community Health Center during the study period, totaling 40 individuals. The research sample was from 40 pregnant women who met the inclusion criteria and attended ANC visits at the Tanjung Bingkung Community Health Center.

The inclusion criteria for the study were pregnant women who attended antenatal care (ANC) visits in the working area of the Tanjung Bingkung Community Health Center, pregnant women who were willing to be respondents, those in the third trimester with a gestational age of over 36 weeks, and pregnant women who had a maternal and child health book (KIA) with complete data filled out and The exclusion criteria were: pregnant women with mental health disorders and pregnant women who experienced childbirth during the study.

Data collection was conducted using a questionnaire and the KIA book simultaneously. Data analysis was performed using univariate and bivariate analysis with SPSS, utilizing the Chi-square statistical test.

Result

Responden Characteristics

Table 4.1 Frequency Distribution of Respondent Characteristics in the Work Area of Tanjung Bingkung Health Center, Solok Regency.

Characteristics	f	%
1. Age		
- $\leq$ 20 tahun atau $\geq$ 35 tahun	5	12,5
- 21 – 34 tahun	35	87,5
Total	**40**	**100**
2. Education		
- SLTP	3	7,5
- SLTA	28	70
- PT	9	22,5
Total	**40**	**100**
3. Occupation		
- IRT	19	47,5
- PNS	7	17,5
- Karyawan Swasta	5	12,5
- Wiraswasta	9	22,5
Total	**40**	**100**

Based on Table 4.1, it is known that out of 40 pregnant women who were respondents in the Work Area of the Tanjung Bingkung Health Center, Solok Regency, there are 35 pregnant women (87.5%) within the age range of 20 to 35 years. There are 28 pregnant women (70%) with a high school education level. There are 19 pregnant women (47.5%) who are housewives.

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Antenatal Care Visits as Seen from the Standards of Antenatal Care Visits

Table 4.2 Frequency Distribution of Antenatal Care Visits as Viewed from the Standards of Antenatal Care Visits in the Work Area of Tanjung Bingkung Health Center, Solok Regency in 2023.

Antenatal Care Visits	*f*	%
Does Not Meet Standards	11	27,5
Meets Standards	29	72,5
Total	**40**	**100**

Based on Table 4.2, it is known that out of 40 pregnant women in the working area of the Tanjung Bingkung Health Center, Solok Regency, there are 11 pregnant women (27.5%) who have antenatal care visits that do not meet the standards.

Pregnancy Risks in the Work Area of the Tanjung Bingkung Health Center, Solok Regency, in 2023

Table 4.3 Frequency Distribution of Pregnancy Risks in the Work Area of the Tanjung Bingkung Health Center, Solok Regency in 2023.

Pregnancy Risks	*f*	%
At Risk	15	37,5
Not At Risk	25	62,5
Total	**40**	**100**

Based on Table 4.3, it is known that out of 40 pregnant women in the working area of the Tanjung Bingkung Health Center, Solok Regency, there are 15 pregnant women (37.5%) with pregnancies at risk.

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Table 4.4 The Relationship Between Antenatal Care Visits Viewed from the Standards of Antenatal Care Visits and Pregnancy Risks in the Working Area of the Tanjung Bingkung Health Center, Solok Regency in 2023.

tal Care Visits	Pregnancy Risks				Total		*p-value*
	At Risk		Not At Risk				
	n	%	n	%	N	%	
Does Not Meet Standards	8	72,7	3	27,3	11	100	
Meet Standards	7	24,1	22	75,9	29	100	0,009
Total	15	37,5	25	62,5	40	100	

Based on Table 4.4, it is known that out of 11 pregnant women with antenatal care visits that did not meet the standards, the majority of the pregnant women were in high-risk pregnancies,

totaling 8 individuals (72.7%). In comparison, 3 pregnant women were low-risk, totaling 3 individuals (27.3%).

Based on the statistical test between antenatal care visits as assessed by the standards of antenatal care and pregnancy risk in the working area of the Tanjung Bingkung Community Health Center, Solok Regency in 2023, a P-value of $(0.009) \leq \alpha$ (0.05) was obtained (Ho is rejected, Ha is accepted). This indicates a significant relationship between antenatal care visits, as viewed from the standards of antenatal care, and pregnancy risk in the working area of the Tanjung Bingkung Community Health Center, Solok Regency, in 2023.

Discussion

From Table 4.4, it is known that out of 11 pregnant women with antenatal care visits that did not meet the standards, the majority were in high-risk pregnancies, totaling 8 individuals (72.7%). Based on the statistical test, a P-value of $(0.009) \leq \alpha$ (0.05) was obtained (Ho is rejected, Ha is accepted), indicating a significant relationship between antenatal care visits, as assessed by the standards of antenatal care, and pregnancy risk in the working area of the Tanjung Bingkung Community Health Center, Solok Regency in 2023.

This study aligns with Wahyu Nuraisya's opinion in the article 'Detection of High-Risk Pregnancies in Integrated ANC Services at the Bendo Community Health Center, Kediri Regency in 2015.' The research findings from 51 respondents indicated that the majority (63%) experienced high-risk pregnancies, while a smaller proportion (37%) were low-risk. Most respondents (67%) experienced complications, while a smaller group (33%) had normal pregnancies. The conclusion is that there is a relationship between the implementation of integrated ANC and high-risk pregnancies, as most (80%) complications were found during integrated ANC. In comparison, a smaller proportion (20%) were cases from previous visits. Ekawati, N also presents the same conclusion in the research article 'Detection of High-Risk Pregnancies in Integrated ANC Services at the Bangkala Community Health Center, Makassar. The research findings indicated that 86% (24 individuals) of pregnant women who irregularly attended antenatal care had a KSPR score ≥ 12. The conclusion is that there is a relationship between the regularity of pregnant women attending antenatal care (ANC) and the early detection of high-risk pregnancies.

The results of this research align with research conducted by Antono, S Dwi, where research showed a relationship between the regularity of pregnant women in carrying out antenatal care (ANC) visits and the results of early detection of high-risk pregnant women. The results obtained from 4 people who regularly carried out antenatal care visits, 15% (3 people) obtained a KSPR score of 6-10; on the other hand, 86% (24 people) of pregnant women who did not regularly carry out antenatal care, 88% (8 people) obtained a score. KSPR >12 (Antono, S. D & Rahayu, D. E. 2017).

Pregnancy and childbirth will always have potential risks. This means that there is a possibility of dangers or complications that can occur during pregnancy or childbirth. The complications that occur can range from mild to severe, potentially causing pain, disability in the mother or baby, and even death (Parker et al., 2024). The severity of the complications is

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influenced by the degree of risk factors. This means that the more risk factors a pregnant woman has, the greater the likelihood of complications. The higher the score a pregnant woman has, the greater the risk during pregnancy and childbirth, including risks to the baby. Therefore, comprehensive and integrated pregnancy examinations and management are essential to minimize risk factors (Hariastuti & Saraswati 2017).

Based on the researcher's assumption, out of 11 pregnant women with antenatal care visits that did not meet the standards, 8 individuals (72.7%) were in high-risk pregnancies because these pregnant women did not undergo standard pregnancy examinations, making it challenging to address pregnancy risks early on (Croen et al., 2024). It was observed that there were still pregnant women aged ≤20 years and ≥35 years, totaling 5 individuals (12.5%) with issues such as nutritional deficits (KEK), anemia, hypertension, and bleeding during the third trimester of pregnancy. If mothers adhere to the standard ANC, the risks of pregnancy can be prevented early, allowing them to prepare for a healthy, safe, and successful delivery for both mother and baby through appropriate planning from both the mother and family, as well as healthcare providers who offer guidance according to the working area to protect the mother and her baby. The more a pregnant woman adheres to the ANC standards, the more pregnancy risks that could threaten the lives of both mother and fetus can be prevented. (Richardson & Andipatin, 2024)

Conclusion

Based on the research results and discussion above, several conclusions can be drawn regarding the relationship between antenatal care visits, as assessed by the standards of antenatal care, and pregnancy risk in the working area of the Tanjung Bingkung Community Health Center, Solok Regency in 2023, as follows: Less than half of the pregnant women, 15 individuals (37.5%), had high-risk pregnancies, Less than half of the pregnant women, 11 individuals (27.5%), had antenatal care visits that did not meet the standards, There is a significant relationship between antenatal care visits, as assessed by the standards of antenatal care, and pregnancy risk in the working area of the Tanjung Bingkung Community Health Center, Solok Regency, in 2023.

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