



Knowledge of Birth Spacing and Its Impact on Pregnancy Incidence at the Werba Health Center, Fakfak Regency

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Abstract. A high-risk pregnancy poses potential dangers to both the mother and baby, often due to insufficient awareness regarding proper pregnancy spacing. This research sought to explore the connection between pregnant women's knowledge of pregnancy spacing and the occurrence of high-risk pregnancies at the Werba Health Center in Fakfak Regency. A cross-sectional study was conducted with a consecutive sampling approach, involving 29 pregnant women from the Ananda Polindes. Data collection was carried out through the use of closed-ended questionnaires and observation sheets based on the Poedji Rochyati scoring method. The findings revealed that 48.3% of the participants had an adequate understanding of pregnancy spacing, while 60.7% experienced pregnancies classified as high-risk. Statistical analysis through the Spearman Rho test produced a p-value of 0.001 ($p < 0.05$), signifying a significant relationship between knowledge of pregnancy spacing and the incidence of high-risk pregnancies, with a Spearman correlation coefficient (r_s) of 0.432. The study highlights the need to enhance pregnant women's awareness of pregnancy spacing, recommending counseling during antenatal care (ANC) and posyandu sessions as a means to reduce the occurrence of high-risk pregnancies.

Keywords: knowledge of pregnancy spacing, high risk pregnancy, risky pregnancy, pregnant women, pregnancy spacing

1. INTRODUCTION

Pregnancy is a natural occurrence following conception, culminating in the birth of a child. However, not all pregnancies proceed smoothly without risks. A high-risk pregnancy arises when either the mother or fetus faces potential complications during gestation. One key factor that can contribute to pregnancy risk is the interval between pregnancies. If the time between pregnancies is too short (less than 2 years) or excessively long (more than 10 years), the likelihood of serious issues such as preeclampsia, premature labor, or low birth weight (LBW) increases (Benson, 2017; Saifuddin, 2017). Research and health guidelines consistently emphasize the importance of optimal pregnancy spacing. A gap of more than two years but less than ten years is considered ideal, providing mothers with adequate time to recover both physically and mentally while improving their ability to care for their children. In contrast, spacing pregnancies too closely or too far apart can negatively impact maternal reproductive health, leading to complications during pregnancy and childbirth (Krisnadi, 2015; Manuaba, 2017). In this context, understanding pregnancy spacing plays a crucial role in lowering the occurrence of high-risk pregnancies. Adequate knowledge enables mothers to grasp the significance of family planning and the potential risks associated with improper pregnancy intervals (Mubarak, 2017). A study conducted at the Werba Health Center in Fakfak Regency sought to examine the connection between pregnant women's awareness of pregnancy spacing and the prevalence of high-risk pregnancies (Nursalam, 2018).

High Risk Pregnancy in Indonesia

The incidence of high-risk pregnancies in Indonesia is still quite high. Based on data from the Ministry of Health, many pregnant women experience high risk due to age, the number of pregnancies, and the distance between pregnancies that are not ideal (MOH RI, 2019). In Fakfak District, an initial survey showed that more than 70% of pregnant women experienced high-risk pregnancies, mainly due to the distance between pregnancies that did not comply with health guidelines (MOH RI, 2019).

According to data collected at the Werba Health Center in 2023, most pregnant women have sufficient knowledge regarding pregnancy spacing, but the incidence of high-risk pregnancies is still quite dominant. Of the 29 pregnant women studied, about 48.3% had low-risk pregnancies, while 44.8% were in the high-risk category, and 6.9% had very high-risk pregnancies (Henderson, 2016).

Factors Affecting High Risk Pregnancy

Pregnant women's knowledge about pregnancy spacing is influenced by various factors such as education level, age, occupation, and access to information. Mothers who have sufficient or good knowledge tend to be better able to plan pregnancies with ideal spacing, so as to avoid complications (Iqbal Mubarak, 2017; Hidayat, 2017). However, research shows that although most mothers have sufficient knowledge about pregnancy spacing, they still experience high pregnancy risk. This could be due to their inability to apply the knowledge in their daily lives (Bobak, 2015).

In addition, social and cultural factors also influence pregnant women's knowledge. For example, unemployed pregnant women or housewives tend to have more time to access information, either through print, electronic media, or counseling at health facilities. In contrast, pregnant women who work in the informal sector or have low incomes may have limitations in obtaining optimal health information and services (Ayurai, 2018; Sayoga, 2017).

Role of Werba Health Center in Pregnancy Spacing Counseling

As a health service center in the Fakfak area, Puskesmas Werba has an important responsibility in providing counseling on ideal pregnancy spacing. Intensive counseling programs are expected to increase pregnant women's understanding of the importance of appropriate spacing between pregnancies for maternal and child health (Paath, 2017). Counseling on high-risk pregnancies is also routinely conducted during antenatal care visits (ANC) and posyandu. Health workers provide information about the dangers of pregnancy spacing that is too close or too far apart, as well as the negative impact on maternal and fetal health (Saifuddin, 2018).

Importance of Pregnancy Spacing Knowledge

Knowledge about pregnancy spacing is fundamental in planning a healthy family. Mothers who understand the importance of maintaining ideal pregnancy spacing will be more vigilant in making decisions about pregnancy planning, such as the use of contraception and good pregnancy care (Rini Ayu, 2018). This study confirms that there is a significant relationship between pregnant women's knowledge about pregnancy spacing and the incidence of high-risk pregnancies. The higher the level of knowledge of pregnant women, the lower the risk of pregnancy they experience. Conversely, pregnant women who have low knowledge about pregnancy spacing tend to face higher pregnancy risks (Saifuddin, 2018). Thus, the results of this study are expected to be an input for Puskesmas Werba and related agencies to continue to improve counseling programs and health services related to pregnancy spacing. In addition, it is also hoped that this study can be a reference for future researchers to further examine the factors that influence high-risk pregnancies in other regions in Indonesia (Nursalam, 2017).

2. METHODS

Research Design

The design used in this study is correlational analytic, which aims to analyze the relationship between the knowledge of pregnant women about pregnancy spacing and the incidence of risky pregnancies at Puskesmas Werba, West Fakfak District, Fakfak Regency. This correlational study was conducted to assess how strong the relationship between the two main variables, namely the knowledge of pregnant women as the independent variable and the incidence of risky pregnancies as the dependent variable.

Population and Sample

The population in this study were all pregnant women who visited the Werba Health Center during the study period, from June to July 2023. The targeted population was 40 pregnant women, but after screening based on the inclusion and exclusion criteria, the final sample size used was 29 respondents. The sampling technique used in this study was consecutive sampling, where every pregnant woman who met the inclusion and exclusion criteria was included in the study until reaching the required sample size.

Inclusion Criteria:

1. Pregnant women who are willing to participate in the study by providing written consent.
2. Pregnant women who can read and write.

Exclusion Criteria:

1. Pregnant women with significant mental impairment or physical disability that prevents the completion of the questionnaire.

Data Collection Procedure

Data were collected through questionnaires and direct observation in the field. Data on pregnant women's knowledge regarding pregnancy spacing was collected using a closed questionnaire consisting of 10 questions regarding the definition, criteria, and impact of nonideal pregnancy spacing. Each correct answer was given a value of 1, and the wrong answer was given a value of 0, with a total score ranging from 0 to 10. Data on the incidence of high-risk pregnancies were obtained through observation using the Poedji Rochyati Score. This observation sheet serves to identify risk factors in pregnant women, which are then grouped into three risk categories: low risk, high risk, and very high risk.

Research Instruments

The instruments used in this study included a knowledge questionnaire and a pregnancy risk observation sheet. The questionnaire was tested for validity and reliability before being used in the study. Meanwhile, the observation sheet based on the Poedji Rochyati Score was used as an instrument to measure the incidence of high-risk pregnancy.

Data Analysis**1. Data Collection**

Data were collected for two months, from June to July 2023. Data collection was conducted using a survey method using a questionnaire given directly to pregnant women at the Werba Health Center. In addition, observation of pregnancy conditions was carried out by involving trained medical personnel to conduct pregnancy risk assessment using the Poedji Rochyati Score.

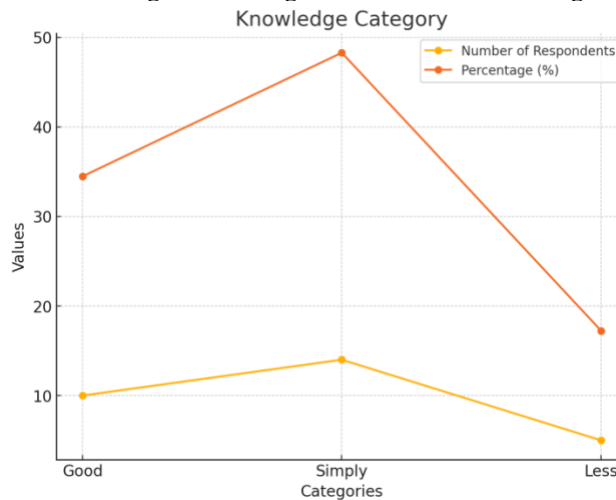
2. Data Processing

The collected data were analyzed using the Spearman Rho test to test the relationship between the variable knowledge of pregnant women about pregnancy spacing and the incidence of high-risk pregnancies. The Spearman Rho test was chosen because the knowledge data was ordinal scale and did not meet the assumption of normality. This analysis produces a correlation coefficient (r_s), which measures the strength and direction of the relationship between the two variables. The significance value used in this study is $\alpha = 0.05$. If the p value is <0.05 , then there is a significant relationship between pregnant women's knowledge about pregnancy spacing and the incidence of risky pregnancies.

3. Interpretation of Results

The results of the data analysis were presented in tables and graphs to provide a visualization of the distribution of pregnant women's knowledge and the incidence of high-risk pregnancies. The researcher also evaluates the results by comparing the results of this study with the findings of previous studies, as well as making interpretations based on the theory that has been developed in the introduction.

Data Diagram of Pregnant Women's Knowledge



Example of High-Risk Pregnancy Incidence Chart

Respondents with low risk: 48,3%

Respondents with high risk: 44,8%

Respondents with very high risk: 6,9%

Research Ethics

This study has obtained permission from the relevant agencies and each participating respondent has been given an explanation of the purpose of the study. The researcher ensured that all data collected was confidential and used only for research purposes. Written consent was obtained from each respondent, and the right to withdraw from the study was given without any consequences. All procedures applied followed the research ethics guidelines set by the local health institution.

Research Limitations

This study has several limitations, including a relatively small sample size and limited geographical coverage in Fakfak District. In addition, the short data collection time is also one of the obstacles in collecting broader data. Researchers suggest further research with a larger population and area to get more representative results.

3. RESULTS AND DISCUSSION

Research Results

This study was conducted to determine the relationship between pregnant women's knowledge about pregnancy spacing and the incidence of risky pregnancies at the Werba Health Center, West Fakfak District, Fakfak Regency. This study used the Spearman rho test to analyze data from 29 pregnant women respondents, with data collection conducted through questionnaires between June 7 and July 6, 2023. The results of the analysis showed that there was a significant relationship between pregnant women's knowledge about pregnancy spacing and the incidence of risky pregnancies, with a Spearman correlation coefficient (rs) of 0.496 and a p value of 0.006. With a significant level of $\alpha = 0.05$, this result indicates that there is a moderate negative relationship between the two variables.

Overview of the Research Location

The study was conducted at the Werba Health Center, which is located in Werba Village, West Fakfak District. Its strategic location near the West Fakfak District Office facilitates community access. It provides maternal and child health services, including pregnancy, delivery, family planning, immunization, and inpatient care. This makes Puskesmas Werba an important health center for pregnant women in the region.

General Data

This study involved respondent characteristics including education, occupation, and age of pregnant women:

Education

Based on the results of the study, most pregnant women (31%) had a high school education, while a small proportion (3.5%) had a college education. This shows that pregnant women generally have a secondary education level.

Work

Most pregnant women (51.7%) were housewives or unemployed, while a small proportion (3.5%) worked as civil servants. This indicates that most respondents did not have formal employment.

Age

The majority of pregnant women (62.1%) were between 20 and 35 years old, which is the ideal reproductive age. A small proportion (6.9%) were over 35 years old, which is generally outside the optimal reproductive age range.

Special Data

Pregnant women's knowledge about pregnancy spacing

The results showed that most pregnant women (37.9%) had sufficient knowledge about pregnancy spacing, while 34.5% had good knowledge. This indicates that the majority of respondents have an adequate understanding of the importance of maintaining an ideal distance between pregnancies.

Incidence of Pregnancy at Risk

Most pregnant women (48.3%) had a low-risk pregnancy, while 44.8% had a high-risk pregnancy. A small proportion (6.9%) had a very high-risk pregnancy.

Relationship between Pregnant Women's Knowledge of Pregnancy Spacing and the Incidence of Pregnancy at Risk

Based on the Spearman rho test, the correlation coefficient (r_s) was 0.496 and $p = 0.006$. This indicates that there is a moderate and negative relationship between pregnant women's knowledge about pregnancy spacing and the incidence of risky pregnancies. The better the mother's knowledge about pregnancy spacing, the lower the risk of pregnancy experienced. With $p < 0.05$, it can be concluded that this relationship is significant, so H_1 is accepted.

Discussion

Pregnant women's knowledge about pregnancy spacing at the Werba Health Center, West Fakfak District, Fakfak Regency in 2023

Based on the results of the study, most pregnant women have sufficient knowledge about pregnancy spacing (37.9%). Knowledge about pregnancy spacing is influenced by several factors, such as education, age, occupation, experience, and culture. Educational factors, for example, play an important role in improving pregnant women's understanding of the importance of spacing pregnancies. As the theory put forward by Soekidjo Notoatmodjo (2016), the higher a person's education, the better their ability to receive and process health information.

Pregnant women who are at reproductive age (20-35 years) also tend to have a better ability to understand health information. This is in accordance with the theory of Iqbal Mubarak (2017), which states that at reproductive age, individual cognitive abilities tend to be better so that they can receive and remember information more effectively. Most of the pregnant women in this study were of this age (62.1%). In addition, although most respondents did not work (51.7%), this did not prevent them from having good knowledge about pregnancy spacing. Housewives tend to have more time to access information through mass media or attend counseling provided by midwives at the Puskesmas, so their knowledge remains adequate.

Incidence of Pregnancy at Risk at the Werba Health Center, West Fakfak District, Fakfak Regency

The study's findings indicate that nearly half of the pregnant women (44.8%) faced a high-risk pregnancy. Several factors contribute to this, including age, education, and the work environment. Women of reproductive age (20–35 years) are less likely to experience risky pregnancies compared to those who are either younger or older. Education plays a crucial role in minimizing pregnancy risks, as women with higher educational backgrounds are more informed about pregnancy health, which helps them reduce the likelihood of complications. Additionally, although many pregnant women are not employed, they still receive adequate information through social interactions and health counseling provided by medical professionals.

The Relationship between Pregnant Women's Knowledge about Pregnancy Spacing and the Incidence of Risky Pregnancy at the Werba Health Center, Fakfak Barat District, Fakfak Regency

The statistical test results show that there is a significant negative relationship between pregnant women's knowledge about pregnancy spacing and the incidence of risky pregnancies. The better the knowledge of pregnant women about pregnancy spacing, the lower the risk of pregnancy experienced. Conversely, pregnant women with poor knowledge tend to experience high or very high-risk pregnancies. Knowledge is an important factor in determining a person's behavior. Pregnant women who have good knowledge about pregnancy spacing will be more careful in planning the next pregnancy, so that the risk of nonideal pregnancy can be avoided. The results of this study are consistent with the theory that good knowledge will encourage individuals to make rational and responsible decisions about their health. Overall, this study shows that increasing pregnant women's knowledge about pregnancy spacing can be one of the effective strategies in reducing the incidence of risky pregnancies at the Werba Health Center. Therefore, further efforts are needed in the form of health counseling and support from families to increase the knowledge of pregnant women and prevent high-risk pregnancies.

4. CONCLUSIONS

This research demonstrated a significant association between pregnant women's understanding of birth spacing and the likelihood of experiencing high-risk pregnancies at the Werba Health Center in Fakfak Regency. The Spearman rho analysis indicated a moderate inverse correlation ($r_s = -0.496$) with a p-value of 0.006, suggesting that as pregnant women's knowledge about birth spacing increases, their risk of experiencing complications during pregnancy decreases. On the other hand, women with limited awareness of appropriate pregnancy intervals are more susceptible to pregnancies with severe complications. Key factors such as education level, age, and occupation play a role in shaping women's knowledge about birth spacing and their associated pregnancy risks. Women within the reproductive age range (20–35 years) and those with higher educational backgrounds tend to exhibit greater knowledge and face lower risks of pregnancy complications. The findings emphasize the importance of enhancing pregnant women's awareness through health education and counseling provided by healthcare centers like Puskesmas to minimize the occurrence of high-risk pregnancies. Furthermore, comprehensive counseling efforts and family support are crucial in helping women grasp and implement proper birth spacing practices, ultimately reducing the prevalence of high-risk pregnancies.

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