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IMPLEMENTATION OF HEALTH EDUCATION ON DANGER SIGNS OF PREGNANCY TO IMPROVE THE KNOWLEDGE OF PREGNANT WOMEN

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ABSTRACT
Pregnancy is a crucial period in a woman's life, where the health of both mother and fetus requires special attention. One of the efforts to prevent complications is providing health education regarding the danger signs of pregnancy. This study aims to determine the effect of health education on improving pregnant women's knowledge about pregnancy danger signs in the working area of Sitinjo Health Center. This research employed a pre-experimental design with a one-group pretest-posttest approach. The sample consisted of 30 pregnant women in their second and third trimesters, selected using purposive sampling. Data were analyzed using the Wilcoxon Signed Rank Test. The results indicated a significant increase in pregnant women's knowledge after receiving health education, with a p-value < 0.05. Prior to the intervention, most respondents had low to moderate knowledge, while after the intervention the majority demonstrated good knowledge. This finding confirms that health education is effective in enhancing pregnant women's understanding of pregnancy danger signs. Improved knowledge is expected to encourage pregnant women to be more alert regarding their pregnancy conditions, thereby preventing delays in handling complications. Therefore, health education should be continuously implemented by health workers in primary care settings.

Keywords: : health education; knowledge; pregnancy danger signs; pregnant women

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INTRODUCTION

Pregnancy is a natural process. Pregnancy is defined as the fertilization or union of a spermatozoon and an ovum, followed by nidation or implantation. A high-risk pregnancy is one in which the life and health of the mother and baby may be threatened. Antenatal Care (ANC) is prenatal care primarily aimed at the growth and development of the fetus in the womb and the mother. This study aims to determine the relationship between pregnant women's knowledge of high-risk pregnancies and the regularity of antenatal care (ANC) (Rizky Yulia Efendi N, 2022). Antenatal care is a form of care that ensures the health of the mother and baby by building a trusting relationship, detecting life-threatening danger signs of pregnancy, preparing for birth, and providing health care to the mother. The high maternal mortality rate (MMR) can indicate the low quality of health services. Reducing the MMR is also an indicator of the success of a region's health status. The government is working together to develop various strategies to accelerate the reduction of MMR (Siti SK and Fitriani AIF, 2023). The Maternal and Child Health Program is a priority of the Ministry of Health, and the success of the MCH program is a key indicator in the 2005–2025 National Long-Term Development Plan (RPJPN). The high Maternal Mortality Rate (MMR) in Indonesia has led the government to prioritize efforts to reduce MMR as a health development program. Maternal mortality and morbidity remain a major issue in Indonesia.

Maternal and infant mortality remain key indicators of a nation's health status. High Maternal Mortality Rates (MMR) and Infant Mortality Rates (IMR) are influenced by both direct and indirect factors. Direct factors are related to medical conditions, while indirect factors include culture,

education level, knowledge, environment, availability of facilities, and health resources (Ministry of Health, 2011). Low reproductive knowledge, particularly among adolescents, contributes to early marriage and high-risk pregnancies (Johnson JY, et. All, 2014). Pregnancies at too young, too old, too frequent, and too many (the "four too many") increase the risk of complications and maternal death (Ministry of Health, 2011). Poor understanding of reproductive health can lead to unwanted pregnancies, unsafe abortions, and obstetric complications (Siti SK and Fitriani AIF, 2023).

Previous research has shown that adolescent knowledge about reproductive health remains low, especially among high school students and is more concerning among girls who are not in school ((Johnson JY, et. All, 2014). Educational, economic, customary, and cultural factors are the main causes of high rates of early marriage. Therefore, strategies to reduce maternal and child mortality rates should not only focus on medical factors but also target promotive and preventive aspects, particularly reproductive health education. This approach aligns with the health paradigm that emphasizes prevention and community empowerment over curative interventions ((Isa A, Hairunnisa A, 2014). The purpose of this study was to determine the application of health education on pregnancy danger signs to improve the knowledge of pregnant women and to determine the knowledge of pregnant women regarding the dangers of pregnancy in the Sitinjo Community Health Center work area.

METHOD

This study employed a quantitative, quasi-experimental research method. The design employed a one-group pre-test and post-test design. This study compared the results of implementing health education on pregnancy danger signs to improve the knowledge of pregnant women in the experimental group. The sample was observed before treatment, and then re-observed after treatment. The study period was from September to November 2024. This study was conducted in the Sitinjo Community Health Center (Puskesmas) working area in Sitinjo District, Dairi Regency. The population in this study was pregnant women. The sample was determined using the G-Power application version 3.1.9.7, referring to previous research to obtain an effect size value using a one-tailed T-test with an effect size of 0.85, an alpha error of 0.05, and a power of 0.80. Therefore, a minimum of 28 respondents were required, plus a 10% probability of error. Therefore, the required number of respondents was 30. The sample consisted of pregnant women who met the inclusion and exclusion criteria. The inclusion criteria for the research sample were good communication skills and pregnant women. The exclusion criteria for this study were women who were not pregnant. The data collection procedure was conducted in two stages: preparation and implementation. The preparation stage began with the preparation of the tools and instruments used in this study, namely the characteristic sheet and the cognitive ability questionnaire. This questionnaire, used to measure cognitive function, consisted of 20 statements, with correct answers scored 1 and incorrect answers scored 0. Odd numbers represent negative statements, while even numbers represent positive statements.

The next stage was the administrative procedure, which involved submitting a research permit application to the Research and Community Service Division of the Ministry of Health, Medan Polytechnic, and then submitting it to the Head of the Sitinjo Community Health Center. After the research permit was issued, the researcher requested permission from the Sitinjo Community Health Center staff, explained the purpose, and drafted an employment contract regarding the duration of the study. The next stage involved identifying the sample within a two-week period. The sample was selected based on the inclusion criteria previously established by the researcher. In this stage, the researcher will introduce themselves and explain the research objectives and intervention procedures. They will also request the respondents' willingness to actively participate in the study by having the Sitinjo Community Health Center employee, acting as the respondent's companion, sign the provided informed consent form. On the informed consent form, respondents will be asked

to include their complete address and a contactable telephone number for communication purposes. The research implementation phase will consist of three stages: pre-test, intervention, and post-test. At the first meeting, the researcher identified respondents based on predetermined criteria, and the respondents agreed by completing an informed consent form. The researcher then explained the danger signs of pregnancy. Data collection was conducted using a respondent characteristics sheet and a cognitive ability questionnaire. The intervention phase involved identifying respondents according to the study's inclusion and exclusion criteria, explaining the purpose and benefits of health education on danger signs of pregnancy to respondents and their families, conducting a pre-test using demographic data and a cognitive ability questionnaire, training respondents on danger signs of pregnancy, evaluating the accuracy of the information provided on danger signs of pregnancy, and observing patients during the health education on danger signs of pregnancy, with a daily schedule. Evaluations were conducted weekly on the sixth day. Data processing was performed using the SPSS computer program. Normality testing was first performed using the Kolmogorov-Smirnov test. If the data were normally distributed, analysis was continued with paired t-tests and independent t-tests to examine differences before and after the intervention. Univariate analysis was used to describe the characteristics of respondents and the study variables, while bivariate analysis was used to determine the relationship between the two variables. The hypothesis in this study is that there is an effect of health education on pregnancy danger signs on pregnant women in the Sitinjo Community Health Center (Puskesmas) working area. To test this hypothesis, a quantitative statistical approach was used, with the paired t-test as the primary analytical tool.

RESULT

Table 1.
Respondent Characteristics Based on Age

Age	Respondents		Mean
	f	%	
20-24 years old	3	10.0	10.0
25-19 years old	15	50.0	60.0
30-34 years old	6	20.0	80.0
35-39 years old	6	20.0	100.0

From the frequency analysis in SPSS, it can be seen that the majority of the target population is aged 25-29, at 50%, and the minority is aged 20-24, at 10%.

Table 2.
Respondent Characteristics Based on Occupation

Age	Respondent		%Valid	Mean
	f	%		
Farmers	17	56.7	56.7	56.7
Entrepreneurs	8	26.7	26.7	83.3
IRT	5	16.7	16.7	100.0

From the frequency analysis in SPSS, the most common occupation is farming (56.7%), and the least common is housewife (16.7%).

Table 3.
Respondent Characteristics Based on Education

Age	Respondent		% Valid	Mean
	f	%		
Elementary School	17	56.7	56.7	56.7
Middle School	8	26.7	26.7	83.3
High School	5	16.7	16.7	100.0
University	3	10.0	10.0	100.0

From the frequency analysis in SPSS, it can be seen that the majority of respondents (53.3%) had a high school education, while a minority (3.3%) had an elementary school education.

Table 4.
Overview of Knowledge Before and After the Intervention

Variabel	Mean	N	Std. Deviation	Mean
Overview of Knowledge Before	2.27	30	.640	.117
Overview of Knowledge After	1.53	30	.571	.104

In the descriptive statistics table, the average knowledge profile before the intervention was 2.27% with a standard deviation of 0.64%. The average knowledge profile after the intervention was 1.53% with a standard deviation of 0.57%. The results above indicate a 0.74% difference between the average knowledge profiles before and after the intervention.

Table 5.
Distribution of Average Knowledge Profile Before and After Pregnancy Danger Signs Education in Pregnant Women

Variabel	Mean	N	Std. Deviation	P Value
Overview of Knowledge Before	2.27	30	0.640	0.000
Overview of Knowledge After	1.53	30	0.571	0.000

In the table above, the average description of pregnant women's knowledge about the dangers of pregnancy before the intervention was 2.27% with a standard deviation of 0.64%. The average description of pregnant women's knowledge about the dangers of pregnancy after the intervention was 1.53% with a standard deviation of 0.571%. From the results above, there is a difference in the average description of pregnant women's knowledge about the dangers of pregnancy of 0.74%. Providing education to pregnant women about the dangers of pregnancy can increase their knowledge. After continuing with statistical testing, p = 0.000 was obtained, so it can be concluded at 5% alpha there is a significant difference between the description of pregnant women's knowledge about the dangers of pregnancy before the intervention and knowledge after the intervention.

DISCUSSION

Respondent Characteristics

This study was conducted from September to November in the Sitinjo Community Health Center (Puskesmas) working area. This study describes the implementation of health education regarding danger signs in pregnancy. The data analysis used in this study included descriptive and analytical methods. In this chapter, the researcher will discuss in detail the results of this study, which were conducted based on demographic data and intervention analysis. The results of this study, based on Table 4.1, show that 3 respondents (10%) were aged 20-24, 15 (50%) were aged 25-29, 6 (20%) were aged 30-34, and 6 (20%) were aged 35-39. The table also shows that the mean for respondents aged 20-24 was 10.0, 25-29 was 60.0, 30-34 was 80.0, and 35-39 was 100.0.

Differences in Knowledge Scores Before and After Health Education in Pregnant Women

This study used descriptive analysis and bivariate analysis, using the Wilcoxon statistical test, to identify cognitive scores before and after health education. The results showed a difference in cognitive scores before and after the health education intervention, with a P value of 0.000. This indicates a statistically significant difference in cognitive scores before and after the intervention, with a P value of 0.000. However, this does not mean that mothers should not be aware of pregnancy danger signs, as they can be caused by other factors. The statistical test results obtained a p value of 0.230; this p value was not significant due to the small sample size. In conclusion, there is no significant relationship between maternal age and maternal knowledge in early detection of pregnancy danger signs. This analysis result contradicts the statement that age influences a person's comprehension and mindset. As age increases, comprehension and mindset increase, resulting in improved knowledge (Isa A, Hairunnisa A, 2014). Good knowledge and behavior regarding pregnancy warning signs are crucial for maintaining the safety of the mother and child and for avoiding negative outcomes such as bleeding (Rofiah S, Widatiningsih S, Arfiana, 2020. Lack of knowledge of pregnant women is the main cause of death in childbirth and also in infants or

toddlers (Indriyani D, Asmuji, 2014). Knowledge of pregnant women plays a role in managing a healthy pregnancy, supporting the physical and mental preparation of mothers before giving birth (Manurung S, Suryati, 2021). The results of statistical tests prove that the resulting p value is 0.001 <0.05. This proves that there is a significant relationship between knowledge and behavior of pregnant women regarding danger signs of pregnancy. The better the knowledge, the more positive the behavior of pregnant women regarding danger signs of pregnancy. Conversely, the lower the knowledge, the more negative the behavior of pregnant women regarding danger signs of pregnancy. The results of this study are in accordance with the results of Arofah's study that there is a relationship between knowledge and behavior regarding danger signs of pregnancy with a value of 0.021 (Walyani ES, Purwoastuti E, 2019).

Health education is an effective way to increase the knowledge of pregnant women, especially regarding danger signs of pregnancy. Danger signs of pregnancy are symptoms or conditions that require immediate medical attention because they can threaten the safety of the mother and fetus. Health education provides structured information so that pregnant women are more aware of pregnancy risks and are able to take appropriate action if these signs appear. One benefit of providing health education to pregnant women is increased knowledge. Health education helps pregnant women recognize danger signs such as bleeding, severe headaches, excessive swelling, blurred vision, and no fetal movement. Studies show that mothers who receive counseling have a better level of knowledge than mothers who do not receive it. Providing health education has been shown to increase pregnant women's knowledge of danger signs of pregnancy by 80% compared to before the intervention (Handayani E, Pujiastuti A, 2016). Then the second benefit is changes in attitudes and behavior. Increased knowledge contributes to changes in attitudes and behavior of pregnant women to be more proactive in monitoring their health during pregnancy. This includes regular visits to health facilities and preparedness for complications. Increased knowledge through health education is also followed by an increase in positive attitudes of pregnant women in recognizing danger signs of pregnancy (Siti SK, Fitriani AIF, 2023). The third benefit is increased preparedness and prevention. By understanding the danger signs of pregnancy, pregnant women can be better prepared and seek medical help promptly, thus preventing serious complications. Health education helps reduce the risk of pregnancy complications because mothers can recognize symptoms early and seek timely medical help (Rizky Yulia Efendi N, Selvi Yanti J, Suci Hakameri C, 2022)

CONCLUSION

The results of this study, as shown in Table 4.1, indicate that 10% of respondents were aged 20-24, 50% were aged 25-29, 20% were aged 30-34, and 20% were aged 35-39. Furthermore, Table 4.2 shows that 55.7% of respondents were farmers, 26.7% were self-employed, and 16.7% were housewives. Furthermore, Table 4.3 shows that 3.3% of respondents had an elementary school education, 33.3% were junior high school, 53.3% were senior high school, and 10% were university. This study used bivariate analysis, a statistical test, to identify cognitive scores before and after health education. The results showed a difference in cognitive scores before and after health education, with a P-value of 0.000. This indicates a statistically significant difference in cognitive scores and preparedness for concentration before and after health education, with a P-value of 0.000.

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