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THE RELATIONSHIP OF EDUCATIONAL LEVEL TO KNOWLEDGE LEVEL OF HIGH RISK PREGNANCY IN INTEGRATED ANTENATAL CARE

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ABSTRACT
High risk pregnancy is a risky pregnancy condition that can cause disorders, disease, and even death in the mother and fetus during pregnancy. Integrated antenatal care education is carried out as an effort to provide information and increase knowledge to pregnant women regarding high-risk pregnancies. This study aims to determine the relationship between level of education and level of knowledge regarding high-risk pregnancies in integrated antenatal care carried out during the Month of Service Program at RSIA Ananda Semarang. This study used a pre-experimental design, One-Group Pretest-Posttest Design, then a correlation test was carried out using the Kendall's Tau statistical test to assess the relationship between the research subjects' educational level variables and their level of knowledge. This study is processed using spearment test rank of SPSS. There were 30 participants who met the criteria. The type of data collected is primary data from questionnaire. This questionnaire is a standard questionnaire adopted from Titi Yulianti's research (2020). Research time is from July - August 2022.: In this study, it was found that the majority of subjects were aged between 21-30 years, namely 23 subjects (77%), the majority had normoweight nutritional status, namely 11 subjects (37%). Most parity status was primipara, 16 subjects (53%). The majority of subjects' education level was high school, namely 13 subjects (43%). The average output result obtained from the N-Gain Score analysis is 63.61% which is included in the quite effective category. There is a significant relationship (p=0.000) between the level of education and the level of knowledge regarding high-risk pregnancies. The majority of counseling participants were in the 21-30 year age group, with normoweight, primiparous nutritional status, and high school education level. Integrated antenatal care education is quite effective in increasing pregnant women's knowledge regarding high-risk pregnancies and the level of education has a significant relationship with the level of knowledge the subject has regarding high-risk pregnancies.

Keywords: education level; high risk pregnancy; integrated antenatal care; knowledge level

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INTRODUCTION

High risk pregnancy is a risky pregnancy condition that can cause morbidity and mortality to both the mother and fetus during the period up to the delivery process. High-risk pregnancies are closely related to increased maternal mortality rates (Siwi & Saputro, 2020). The maternal mortality rate includes the ratio of mothers who died during pregnancy, childbirth and postpartum. The 2018-2013 Central Java Health Service Strategic Plan explains that in

general the maternal mortality rate in Central Java in 2017 was 88.58 per 100,000 live births, while the national target was 226 per 100,000 (Berčan et al., 2023). 2,4 Based on the results of the health center report, the number of maternal deaths in Semarang City in 2021 as many as 21 cases out of 22,030 live births (KH) or around 95.32 per 100,000 KH. MMR has increased compared to 2020, namely 71.35 per 100,000 KH.3 Bangetayu and Tlogosari Kulon Districts are the areas with the highest MMR in Semarang City (Muthoharoh et al., 2022). The still high MMR in Central Java is due to the increasing number of high-risk pregnancies, low early detection, and lack of effectiveness of referral decision making for high-risk pregnancies (Hakam, 2021). The most common causes of maternal death include bleeding, hypertension in pregnancy, metabolic disorders, and infection (Nadapdap et al., 2023).

The maternal and infant mortality rate is one of the indicators of family health in the 2020-2024 National Medium-Long Term Development Plan, so efforts are needed to reduce the mortality rate. Integrated antenatal care counseling is carried out as an effort to provide information and increase knowledge to pregnant women regarding high-risk pregnancies (Idris & Sari, 2023). Based on the 2021 performance report of the Family Health Directorate, there is an increase in the coverage of antenatal visits in 2021 compared to 2020, namely from 79.36% with a target of 80 % to 88.13% of the target of 85% (Kementerian Kesehatan Republik Indonesia, 2021). Data on integrated antenatal care visits at RSIA Ananda Pasar Ace in 2021 reached 1139 visits and as many as 639 visits until October 2022 (Renstra Provinsi Jawa Tengah, 2019).

Knowledge is the result of human sensing of an object, for example the senses of sight and hearing. Knowledge is influenced by other factors, for example formal education (Idris & Sari, 2023). With higher formal education, it is hoped that the person's knowledge will be broader (Elsharkawy et al., 2022). People's knowledge will determine the attitude they will take in facing problems, in this research the problem faced is pregnancy (Yuriah et al., 2022). This research aims to determine the relationship between the level of education and the level of knowledge regarding high-risk pregnancies through integrated antenatal care counseling carried out during the Month of Service Program at RSIA Ananda Semarang on July 28 2022.

METHOD

This study used a pre-experimental design, One-Group Pretest-Posttest Design, then a correlation test was carried out using the Kendall's Tau statistical test to assess the relationship between the research subjects' educational level variables and their level of knowledge. The type of data collected is primary data. All data was obtained from questionnaires that were filled in by counseling participants. Inclusion criteria include pregnant female patients who are participants in the Month of Service Program in July 2022. Exclusion criteria include pregnant female patients with incomplete data. There were 30 participants who met the inclusion and exclusion criteria in this study. The place of this research is at RSIA Ananda Semarang. Research time is from July - August 2022.

This research used a pre-experimental One-Group Pretest-Posttest Design. The sampling technique was carried out by accidental sampling by fulfilling the inclusion and exclusion criteria. The inclusion criteria are pregnant female patients who are participants in the July 2022 Service Month Program. The exclusion criteria are pregnant female patients whose data is incomplete. There were 30 participants who met the inclusion and exclusion criteria in this study. The type of data collected is primary data. All data was obtained from questionnaires filled out by counseling participants. The place of this research is RSIA Ananda Semarang.

This research uses an instrument in the form of a questionnaire which includes a questionnaire checklist containing questions. The questionnaire regarding maternal knowledge is in the form of a closed questionnaire, because respondents answer questions by checking questions that are considered correct or incorrect according to their opinion. Knowledge questionnaire about high risk pregnancy with 10 questions. This questionnaire is a standard questionnaire adopted from Titi Yulianti's research (2020). Data processing was carried out using univariate analysis to obtain an overview of the frequency distribution and proportions of each variable. Bivariate analysis to test the relationship used was the Kendall Tau correlation test. Correlation test using the Kendall's Tau statistical test to assess the relationship between the research subject's educational level variables and their level of knowledge. This study is processed using spearment test rank.

RESULTS

The characteristics of pregnant women based on their latest education who are participants in the July 2022 Month of Service Program can be seen in the following table:

Table 1.
Subject Characteristics of 30 Research Subjects

Characteristics	f (%)
Number of subjects	30
Age (years), mean (SB)	
21-30 years old	23 (77%)
31-40 years old	5 (17%)
41-50 years old	2 (7%)
BMI (kg/m2), mean (SB)	
Underweight (<18.5)	0 (0%)
Normoweight (18.5-22.9)	11 (37%)
Overweight (23-24.9)	5 (17%)
Obesity (≥25)	14 (47%)
Parity	
P0, n (%)	9 (30%)
P1, n (%)	16 (53%)
>P1, n (%)	5 (17%)
last education	
elementary school	2 (7%)
Junior High School	12 (40%)
Senior High School	13 (43%)
College	3 (10%)

This research sample involved 30 pregnant women who met the inclusion criteria. Data collection was taken from questionnaires that had been filled in by counseling participants. Subject characteristics can be seen in Table 1. Age distribution was grouped per decade into 4 age groups, namely 21-30 years, 31-40 years, and 41-50 years. The average age of the July 2022 Service Month participants in this study was 29 years with the majority of research subjects being in the 21-30 year age group, namely 23 respondents (77%). In the 31-40 year age group there were 5 respondents (17%), and in the 41-50 year age group there were 2 respondents (7%). Research subjects were then grouped based on body mass index using WHO guidelines which were measured based on body weight in kilograms divided by height in meters squared (kg/m2). Underweight is defined if the BMI is < 18.5 kg/m2, normoweight if the BMI is 18.5-22.9 kg/m2, overweight if the BMI is 23-24.9 kg/m2, and obese if the BMI is ≥ 25 kg/m2. Of the 30 research subjects, there were no respondents who were in the underweight group, 11 respondents (37%) were in the normoweight category, 5 respondents (17%) were in the overweight category, and 14 respondents (47%) were in the obese category. Based on table 2, the parity status of the research sample was mostly primipara or had given birth once, namely 16 respondents (53%), the category of nullipara or never given birth was 9

respondents (30%), multipara or had given birth more than once, 5 respondents (17%). The majority of educational levels of pregnant women who took part in counseling were Senior High School (SMA), namely 13 respondents (43%), followed by Junior High School (SMP), namely 12 samples (40%), and only 3 respondents (10%) were received education up to tertiary level while the other 2 respondents (7%) only reached elementary school (SD) level.

For 30 Month of Service participants at RSIA Ananda in July 2022, a pre-test and post-test were carried out to determine changes in mothers' knowledge regarding high-risk pregnancies after antenatal ANC. The pre-test and post-test results can be seen in the following table.

Table 2.
Results of Pre-Test and Post-Test Scores for 30 Research Subjects

No	Name	Level of education	Pre-Test Score	Post-Test Score	N-Gain Score	Interpretation
1	LT	College	70	100	1.00	Tall
2	BS	Senior High School	70	90	0.67	Currently
3	SS	Junior High School	40	50	0.17	Low
4	IN	Senior High School	60	100	1.00	Tall
5	EPW	College	70	100	1.00	Tall
6	L.R	Senior High School	70	90	0.67	Currently
7	PEN	Senior High School	60	80	0.50	Currently
8	NH	Junior High School	40	60	0.33	Low
9	NR	Junior High School	40	70	0.50	Currently
10	AF	Junior High School	50	60	0.20	Low
11	DU	Junior High School	60	80	0.50	Currently
12	TA	Senior High School	70	90	0.67	Currently
13	AKS	Junior High School	60	70	0.25	Low
14	TN	Senior High School	70	100	1.00	Tall
15	RJ	Junior High School	50	70	0.40	Currently
16	KB	Senior High School	60	100	1.00	Tall
17	BRAKE	College	80	100	1.00	Tall
18	SR	Junior High School	50	80	0.60	Currently
19	UC	Elementary School	60	70	0.25	Low
20	TW	Junior High School	60	80	0.50	Currently
21	YL	Senior High School	60	90	0.75	Tall
22	AD	Senior High School	80	100	1.00	Tall
23	FY	Senior High School	70	100	1.00	Tall
24	ST	Senior High School	60	90	0.75	Tall
25	Kindergarten	Elementary School	40	70	0.50	Currently
26	N.C	Junior High School	50	70	0.40	Currently
27	ICE	Junior High School	50	70	0.40	Currently
28	NA	Senior High School	60	100	1.00	Tall
29	RC	Senior High School	60	90	0.75	Currently
30	IN	Junior High School	40	60	0.33	Low

From this data, data analysis was then carried out to see whether there was an increase in the dependent variable, namely the pre-test value, namely the knowledge value before the counseling was carried out and the post-test value after the counseling was carried out. Based on the data in table 3, it shows that there is an increase between the pre-test scores before being given integrated antenatal care counseling and the post-test scores after being given the counseling. Next, the scores obtained are analyzed to find the average pre-test score, post-test score, N-gain score and percentage of N-gain score which are presented in table 3. Meanwhile, the difference in pre-test and post-test scores which were analyzed using the N-gain score was classified into three groups (low, medium and high) as a parameter of the respondent's level of knowledge.

Table 3.
Mean Pre-Test, Post-Test and N-Gain Scores for 30 Research Subjects

Pre-Test Score	Post-Test Score	N-Gain Score	N-Gain Score (%)	Interpretation
58.67	82.67	0.64	63.61%	Effective enough

Data analysis using the Normalized Gain (N-Gain) Score is a method for measuring the effectiveness of a treatment, in this case integrated antenatal care counseling. The benefit of conducting an N-gain score analysis is that researchers can find out whether the effectiveness of the treatment given is effective or not. The distribution of N-Gain Score can be seen in the following table.

Table 4.
Category Distribution of Effectiveness of N-Gain Values

Category	Effectiveness Level
N-Gain Value	
$g > 0.7$	Tall
$0.3 \leq g \leq 0.7$	Currently
$g < 0.3$	Low
Percentage (%)	Effectiveness Level
<40	Ineffective
40-55	Less effective
56-75	Effective enough
>76	Effective

Based on table 4, the average obtained from the N-Gain Score analysis is 63.61% so that when grouped into the distribution of treatment effectiveness according to table 5, the average is included in the quite effective category. These results show that integrated antenatal care counseling is quite effective in increasing pregnant women's knowledge about high-risk pregnancies.

Table 5.
Distribution between Education Level and Mother's Knowledge Level Regarding High Risk Pregnancy

Level Of Education	Knowledge level					
	Low		Currently		Tall	
	f	%	f	%	f	%
Elementary School	1	16.7	1	7.7	0	0
Junior High School	5	83.3	7	53.8	0	0
Senior High School	0	0	5	38.5	8	72.7
College	0	0	0	0	3	27.3

From table 6 it is found that the majority of respondents have a moderate level of knowledge regarding high risk pregnancy with a total of 13 respondents (43.3%), followed by a high level of knowledge, namely 11 respondents (36.7%). In the group with a high level of knowledge, it was found that the majority had a high school education level of 8 respondents (72.7%) and participants who had education up to tertiary level (PT) all had a high level of knowledge, namely 3 respondents (36.7%). Meanwhile, in the group with a low level of knowledge regarding high-risk pregnancies, the majority attended junior high school (SMP), namely 5 respondents (83.3%) and elementary school (SD) as many as 1 respondent (16.7%).

Table 6.
Results of the Kendall's Tau Correlation Statistical Test

			Level of education	Knowledge level
Kendall's Tau test	Level of education	Correlation Coefficient	1,000	,700**
		Sig. (2-tailed)		,000
	Knowledge level	Correlation Coefficient	,700**	1,000
		Sig. (2-tailed)	,000	.

The results of the Shapiro-Wilk normality test in this study show a sig value of 0.000, namely <0.005, so it can be stated that the data is not normally distributed. The Kendall's tau test was carried out to test the relationship between two variables in a non-parametric manner where the data distribution does not have to be normally distributed. 6 In this study, the Kendall's tau association test was carried out to assess whether there was a relationship between the educational level of the research subjects and the level of knowledge understood about pregnancy risks. tall. If the result of the significance value (Sig. 2 tailed) is greater than 0.05 then H0 is accepted meaning there is no significant relationship between the subject's level of education and the level of knowledge possessed, however if the result of the significance value is less than 0.05 then H0 is rejected which indicates There is a significant relationship between the subject's education level and the level of knowledge regarding high-risk pregnancies.

In table 7, the significance value obtained is 0.000, which means the value is <0.05, thus indicating that there is a significant relationship between the educational level of the research subjects, in this case pregnant women who took part in integrated antenatal care counseling, and the mother's level of knowledge regarding pregnancy risks. tall. Based on the correlation coefficient value, a value of 0.700 is obtained, so it is included in the strong category (0.51-0.75), which means the relationship between the level of education and the level of knowledge is strong, and because the correlation coefficient value is positive, it can be concluded that the direction of the relationship between the two variables is unidirectional which can be interpreted as increasing the level of education will be followed by an increase in the level of knowledge.

DISCUSSION

Based on research data, it was found that the majority of participants who took part in integrated antenatal care counseling were in the 21-30 year age group, namely 23 samples (77%) and the highest level of education was at the high school level, 13 (43%). This is in accordance with research by Quadriani which states that the level of education has an important role for a person to obtain information about health, especially maternal and child health. The higher a mother's level of education, it is hoped that she will be able to obtain reliable information from health workers and can later apply it during pregnancy (Yuriah & Kartini, 2022).

Education is important because it is the basis for people's understanding in terms of receiving information (Bombana et al., 2022). Education also plays an important role in the formation of human intelligence and changes in behavior (Antunes et al., 2022). Education also means guidance given to someone to other people about something so that they can understand (Honda et al., 2021). It cannot be denied that the higher a person's education, the easier it is for them to receive information. In the end, he also had a lot of knowledge (Yuriah, 2024). On the other hand, if someone has a low level of education, it will hinder the development of a person's attitude towards receiving information (Direktorat Kesehatan Keluarga, 2021).

Pregnant women with higher education are more likely to register for prenatal care before 20 weeks of gestation compared to women who do not have higher education, education has been shown to increase awareness and they have more awareness the benefits of punctuality in carrying out Antenatal Care visits (Berčan et al., 2023). Antenatal care services are the starting point for health care interventions for pregnant women because they offer preventive, curative services and prepare mothers to recognize pregnancy complications and seek help early. The level of education and knowledge influences women in expressing their perceptions of the services they receive. Pregnant women with higher education are more critical and realize that time is a consequence of work demands (Elsharkawy et al., 2022). Respondents who had low education mostly expressed unfavorable perceptions. Low-educated pregnant women have less knowledge regarding pregnancy and the quality of services at the Community Health Center so that the quality of Community Health Center services that have been improved are still considered to be poor or not carried out well. Moreover, most of the Antenatal Care visits of low-educated pregnant women are not regular as recommended by health workers at the Community Health Center.

The level of education influences the assessment of pregnant women's perceptions of Antenatal Care service locations. Low levels of education result in less attention to knowledge about pregnancy or abnormalities in pregnancy. In the end, it can bring unwanted risks and cause many deaths, both mother and baby, or even both. Low education of pregnant women results in low knowledge of pregnant women (Bombana et al., 2022). Maternal and perinatal health problems are national problems that need to be given top priority because they greatly determine the quality of human resources for future generations. There are factors that cause this situation, including a lack of knowledge about the risks of pregnancy due to low levels of education (Citrawati & Laksmi, 2022). Knowing the educational background of a pregnant woman, her perceptions and needs regarding services, can be considered an important strategy for planning care (Qudriani & Hidayah, 2017). Knowing ANC patient perceptions is necessary because this will influence patient satisfaction with their expectations of services. Increasing the level of education in society is an important thing that needs to be done, so that pregnant women can become more critical of the services or examinations they receive during ANC. Apart from that, higher education has an important social and economic impact on society. Education is the key to developing and changing the methods and quality of health services (Muthoharoh et al., 2022).

In this study, based on data analysis, it was found that integrated antenatal care counseling was quite effective in increasing pregnant women's knowledge regarding high-risk pregnancies (Yuriah et al., 2023). Compliance with integrated antenatal care (ANC) visits shows the mother's understanding of the importance of early detection and prompt and appropriate intervention in her pregnancy and to reduce high-risk pregnancies (Citrawati & Laksmi, 2022). This study has several limitations, including the limited number of research subjects, the method of taking subjects consecutively. so no randomization was carried out. It is hoped that future research will be more objective and use a larger number of subjects (Qudriani & Hidayah, 2017). This research obtained results that were also in line with research conducted (Muhamad et al., 2023) at the Teling Atas Community Health Center, Manado which found that there was a relationship between the mother's education level and antenatal care visits (Fegita et al., 2022). This research is also in accordance with previous research which found that the education level of high-risk pregnant women is one of the factors associated with increasing knowledge, thereby encouraging ANC behavior in pregnant women (Ruggieri et al., 2022). According to (Wang et al., 2022), the level of education greatly influences a person's ability to act and look for causes and solutions in their life.

People who are highly educated usually act more rationally (Purwati & Nisa, 2022). Therefore, educated people will more easily accept new ideas.

However, the results of this research are not in line with the results of Purwantini's research in 2012 regarding the description of the level of knowledge of pregnant women in antenatal care examinations in the Jambon Community Health Center Working Area, Ponorogo Regency. The results showed that 53 respondents had good knowledge and 27 respondents had poor knowledge. The results of this research are in line with research conducted by Silvia (2011) at the Koni Health Center, Jambi City, concluding that there were still 1st trimester pregnant women who had poor knowledge of the first visit (K1) because they did not have time or did not have time to carry out pregnancy checks at the Community Health Center. In fact, pregnancy checks can be carried out at the midwife's house or at other health facilities, however, pregnancy checks are sometimes still considered unimportant by some pregnant women (Idris & Sari, 2023).

Insufficient knowledge will cause poor behavior. Pregnant women who have good knowledge about high-risk pregnancies are likely to be able to prepare for their birth well (Bella Fauziah et al., 2023). If a pregnant woman has good knowledge but experiences a high-risk pregnancy, it could be due to other factors, such as the spacing of the pregnancies experienced. Pregnant women can gain knowledge from experience and several sources, for example mass media, poster media, pregnancy books, health workers who provide counseling, community service activities for pregnant women and so on. Good childbirth preparation can also be obtained from previous pregnancy experiences for multigravida mothers (Muhamad et al., 2023).
The efforts made are that the role of health workers is very necessary to provide information through counseling regarding antenatal care visits. So with the knowledge they have, mothers can know about the importance of antenatal care visits so that mothers will carry out pregnancy checks to ensure the health of themselves and their babies (Citrawati & Laksmi, 2022).

CONCLUSION

From the results of this study, it was found that the highest number of participants who took part in integrated antenatal care counseling were in the 21-30 year age group with the highest level of education being in the group with a high school education level. Through statistical tests, there is a significant relationship between the level of education and the level of knowledge and the direction of the relationship between the two variables is in the same direction, where as the education level of the research subjects increases, a good level of knowledge regarding high risk pregnancies is obtained. The level of education is considered to support the capture of the latest and most reliable information conveyed during counseling and examinations by health workers, in this case obstetricians. Integrated antenatal care education is considered quite effective in increasing pregnant women's knowledge about high-risk pregnancies.

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