

# Relationship Between Education Level, Age and Knowledge of Pregnant Women with Antenatal Care Status

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#### **Abstrak**

Latar Belakang: Angka Kematian Ibu di Indonesia masih cukup tinggi. Untuk menurunkan angka kematian ibu, pemerintah telah membuat program pelayanan kesehatan bagi ibu hamil yaitu antenatal care (ANC). Pendidikan, pengetahuan, dan usia ibu merupakan salah satu faktor penentu kematian ibu. Tujuan dari penelitian ini adalah untuk mengetahui hubungan antara tingkat pendidikan formal, usia ibu dan tingkat pengetahuan dengan kesehatan pada ANC. **Metode:** Penelitian analitik observasional dengan pendekatan cross sectional, menggunakan data primer yaitu angket dan data sekunder dari buku KIA. Data dianalisis secara univariat dan bivariat menggunakan uji Spearman rho 2.0. **Hasil:** Analisis univariat, ibu hamil dengan tingkat pendidikan tinggi 7 orang (21,9%), sedang 8 orang (25,0%), rendah 17 orang (53,1%); Ibu hamil dengan tingkat pengetahuan tinggi dan rendah yang sama yaitu 50%; Usia ibu <20 tahun dan >35 tahun 10 orang (31,3%) dan usia ibu 20-35 tahun 22 orang (68,8%); Ibu hamil dengan status ANC lengkap 15 orang (46,9%) dan tidak lengkap 17 orang (53,1%); Uji bivariat spearman rho, hubungan antara tingkat pendidikan formal dengan tingkat pengetahuan ibu dengan ANC p>0,05, sedangkan hubungan antara usia ibu dengan ANC p>0,05. **Kesimpulan:** Sebagian besar ibu hamil berpendidikan dengan tingkat pengetahuan tentang status ANC.

Kata Kunci: Tingkat Pendidikan Formal, Usia Ibu, Pengetahuan, ANC

#### Abstract

**Background:** Maternal mortality in Indonesia was still quite high. To reduce the mortality rate of the government made a health care program for pregnant women, namely antenatal care services (ANC). Education, knowledge and age of mothers were one of the determinants of maternal death. The purpose of this study was to determine the relationship of formal education levels, maternal age and level of knowledge with health to ANC. **Method:** Observational analytic research type with a cross-sectional approach, using primary data, namely quizerer and secondary book data KIA. Data were analyzed univariate and bivariate using Spearman Rho test. **Results:** Univariate analysis, pregnant women with a higher education level of 7 people (21.9%), while 8 people (25.0%), 17 people (53.1%); Pregnant women with the same high and low knowledge level, 50%; Mother's age <20 years and> 35 years 10 people (31.3%) and mothers age 20-35 years 22 people (68.8%); Pregnant women with a complete ANC status of 15 people (46.9%), and 17 people were incomplete (53.1%); Spearman Rho Bivariat Test, the relationship of the level of formal education and the level of maternal knowledge with ANC P <0.05, while maternal age relations with ANC P> 0.05. **Conclusion:** The majority of pregnant women with low educated with the age range of 20-35 years. There was a significant and direct relationship between the level of education and the level of knowledge with ANC status.

Keywords: Formal education level, Age maternal, Knowledge, Antenatal care

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#### I. Introduction

Maternal health is one of the important aspects in supporting health development programs in Indonesia. Maternal health is also one of the targets in the Sustainable Development Goals (SDGs).<sup>1</sup>

Indonesia is one of the developing countries in Southeast Asia with a high maternal mortality rate,2 ie from 228 per 100,000 to 359 per 100,000 in 2012.<sup>3</sup>

The government has made efforts to reduce maternal mortality, namely by providing ANC services at the puskesmas level during pregnancy.4 The WHO standard for this examination is 4 times during pregnancy.<sup>5</sup> ANC services are needed by mothers who are experiencing pregnancy, so knowledge and compliance are needed in carrying them out.

Factors that affect maternal health are knowledge, education, age, socioeconomic, community environment and policies, while the most common problems of maternal death are bleeding, pregnancy poisoning accompanied by convulsions, abortion, and infection.4

Data from the Kuantan Singingi Regency Health Office shows that the number of pregnant women at risk is still high, namely pregnancies of <20 years and >35 years.<sup>6</sup>

Data in the Long-Term Development Plan (RPJPD) of Kuantan Singingi Regency for 2015 - 2025, many people have low education (SD-SMP/MTs) both male and female.7

Based on the description of the background, researchers are interested in conducting research on the relationship between levels of education, maternal age, and level of knowledge of pregnant women with maternal health on antenatal care (ANC) status at Sungai Keranji Community Health Center, Kuantan Singingi Regency, Riau. addition, no one has conducted research at the Sungai Keranji Health Center in Riau.

The purpose of this study was to determine the relationship between formal education level, maternal age, and knowledge level with maternal health on ANC.

#### II. Research methods

This type of research is an observational analytic study with a cross sectional design. The place is at Sungai Keranji Health Center, Kuantan Singingi Regency, Riau in 2020. The target population in this study was all pregnant women aged 28-36 weeks. The data used are primary data with questionnaires and secondary data from the MCH book with respondents. The validity of the questionnaire has been tested with r count > r table 0.444 with a significant level of 5%. His rehabilitation with Cronbach's alpha 0.985. Data were analyzed univariately and bivariately using SPSS No. 20 with Spearman Rho test. The research has received permission from the Research Ethic Committee, Baiturrahmah University Faculty of Medicine 084/ETIK-FKUNBRAH/03/09/2020.

#### III. Results

The study was conducted on 32 pregnant women who had met the inclusion criteria. Based on the results of data collection and analysis that has been obtained, the results of the study can be concluded in the explanation below:

# A. Level of education

Table 1. Frequency Distribution Of Education Level Of Pregnant Women In Puskesmas In 2020.

Level of education	<i>f</i> = n	%
College(Academy/College)	7	21.9 %
Medium(High	8	25.0 %
School/Equivalent)	17	53.1%
Low		
Amount	32	100%

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The results of the data analysis presented in table 1 show that the frequency distribution of the level of formal education of pregnant women at Sungai Keranji Community Health Center is the most with low education levels, namely 17 mothers (53.1%), moderate education levels 8 mothers (25.0%), and the least level of higher education is 7 mothers (21.9%).

### B. Knowledge level

Table 2. Frequency Distribution Of Knowledge Level Of Pregnant Women In Sungai Keranji Puskesmas In 2020

Knowledge level	$f = \mathbf{n}$	%
Tall	16	50%
Low	16	50%
Amount	32	100%

The results of the data analysis presented in table 2 show the frequency distribution of the knowledge level of pregnant women at the Sungai Keranji Public Health Center, where mothers with a high level of knowledge were 16 mothers (50%) and mothers with low knowledge were 16 mothers (50%).

### C. Mother's Age

Table 3 . Age Frequency Distribution Of Pregnant Mothers In Sungai Keranji Health Center In 2020

Mother's Age	$f = \mathbf{n}$	%
<20 years and >35 years(at risk)	10	31.3 %
20-35 years (No Risk)	22	68.8 %
Amount	32	100%

The results of the data analysis presented in table 3, shows the frequency distribution of pregnant women at Sungai Keranji Health Center in 2020, the most recorded mothers are in the age range of 20 -35 years, namely 22 mothers (68.8%) while mothers with age <20 years and >35 years only 10 mothers (31.3%) of the 32 samples.

## D. Antenatal Care (ANC) Status

Table 4. Frequency Distribution Of Antenatal Care (Anc) Status In Sungai Keranji Puskesmas In 2020.

ANC Status	$f = \mathbf{n}$	%
Complete	15	46.9 %
Incomplete	17	53.1 %
Amount	32	100%

The results of the data analysis presented in table 4, show the frequency distribution of antenatal care (ANC) status at Sungai Keranji Health Center in 2020 recorded from 32 samples the majority of mothers had incomplete antenatal care status 17 mothers (53.1%) while mothers with antenatal care status complete 15 mothers (46.9%).

E. The Relationship between Formal Education Level and Antenatal Care (ANC) Status

Table 5. Relationship Of Education Level With Antenatal Care (Anc) Status

		ANC Status		_		
		Com	Incom	Total	p	R
		plete	plete			
Level	Tall	7	0	7	0.001	0.576
of	Currently	4	4	8		
educat	Low	4	13	17		
ion	Total	15	17	32		

The results of the data analysis presented in table 5 show that mothers with higher education levels have complete antenatal care status, while mothers with low levels of education have incomplete antenatal care status. Based on the results of the statistical (spearman rho) the correlation coefficient value is 0.579, with the direction of the relationship +, and the value of Sig 0.001 which means that there is a strong and significant unidirectional relationship between the mother's formal education level and the status of the mother.antenatal care (ANC). The higher the education level of the mother, the more complete the ANC status will be.

# F. Relationship between Maternal Age and Antenatal Care (ANC) Status

Table 6. Relationship Of Maternal Age And Antenatal Care (Anc) Status

		ANC Status		Total	p	R
		Comp lete	Incom plete			
Mother's	<20 and	5	5	10	0.819	0.042
Age	>35 years old 20 - 35 years	10	12	22		
	Total	15	17	32		

The results of the analysis of the data presented in table 6 show that the majority of mothers aged 20-35 years have incomplete antenatal care status, while mothers with age <20 and >35 years between mothers with complete and incomplete antenatal care status are the same, namely from a total of 10 mothers in age <20 and >35 years 5 mothers with complete antenatal status and 5 mothers with incomplete status. The results of the statistical test (spearman rho) obtained a correlation coefficient value of 0.042 with the direction of the relationship +, and the value of Sig 0819 which means that there is no significant relationship between maternal age and ANC.

# G. Relationship between Knowledge Level and Antenatal Care (ANC) Status

Table 7. Relationship Of Knowledge Level With Antenatal Care (ANC) Status

		(ANC	•	T-4-1		
		Com plete	Incom plete	Total	p	r
Know	Tall	13	3	16	0.000	0.689
ledge	Low	2	14	16		
level	Total	15	17	32		

The results of the data analysis presented in table 7 show that of the 32 research samples, most of the mothers had a high level of knowledge with complete antenatal care status, while mothers with low levels of knowledge had incomplete antenatal care status. The results of the statistical test

(spearman rho) obtained a correlation coefficient value of 689 with a + direction relationship, and a Sig value of 0.000 which that means there is a strong unidirectional significant relationship between the level of knowledge and antenatal care (ANC) status. The higher the mother's level of knowledge, the more complete the antenatal care status.

### H. Profession

Table 8. Characteristics Of Occupational Frequency Distribution Of Pregnant Women In Sungai Keranji Puskesmas 2020

Profession	$f = \mathbf{n}$	<b>%</b>
Teacher	2	6.3 %
IRT	30	93.8 %
Amount	32	100%

The results of the analysis of the data presented in table 8 show that more pregnant women work as housewives compared to mothers who work as teachers.

### I. Gestational Age

Table 9. characteristics of mother 's pregnancy age frequency distribution in sungai keranji puskesmas 2020

Mother's Gestational Age	$f = \mathbf{n}$	
28	10	31.3 %
29	7	21.9 %
30	3	9.4 %
31	2	6.3 %
32	2	6.3 %
33	2	6.3 %
34	3	9.4 %
36	3	9.4 %
Amount	32	100%

The results of the analysis of the data presented in table 9, show the majority of mothers with a gestational age of 28 weeks while the minority of mothers with a gestational age range of 31-33 weeks.

#### IV. Discussion

### A. Level of education

In a study conducted on 32 samples at Sungai Keranji Community Health Center, it was recorded that 7 pregnant women (21.9%) had high education, 8 pregnant women (25.0%) had moderate education, and 17 pregnant women (53.1%) had high education. low. The number of low educated people is suspected because the Sungai Keranji village which is far from the district city is about 22.7 km and the lack of educational facilities in the Sungai Keranji village even according to data from the Kuantan Singingi Regency Statistics Agency in 2019 the junior high school and high school for this Sungai Keranji village there isn't any.8

The results of this study are in accordance with research conducted by Mitha Sarwo Indah in 2007 that the majority of pregnant women belonging to low and moderate education were 17 mothers (48.57%) and 1 mother (2.86%) with high education. This low level of formal education may be caused by the cost factor (school fees are still high for rural communities), the difficulty of the terrain to be taken, many pregnant women living in areas that are still remote and far from school facilities (geographical factors), the lack of educational facilities formal, and the opinion of the village community that women do not need high school (faith culture factor) in addition to other reasons.<sup>9</sup>

# B. Knowledge level

In this study, with 32 samples of pregnant women, it was obtained with a high level of knowledge 16 people (50%) and 16 mothers (50%). This high maternal knowledge can be obtained from formal education, informal 1, and the environment. This statement is supported by the theory that mother's participation in community activities can support mother's knowledge about health,

because health care workers usually use this activity to provide information related to maternal health. One's knowledge cannot be separated from the influence of education. If someone has a higher education then he will easier to know. understand understand. 10 In terms of education, the majority of mothers have low education. For this reason, pregnant women insufficient knowledge about antenatal care need to be given health education/counseling with correct and continuous communication, information, and education.<sup>11</sup>

In a study conducted by Maria Yosefa Pattipeilohy in 2017, 25 people (62.5%) had high education and 15 people (37.5%) had low education. Knowledge is one of the factors that influence changes in a person's behavior so as to provide rational thinking or generate motivation for an activity. In this study, the behavior that may be influenced by the level of knowledge is the behavior of the accuracy of ANC visits at the Rekas Health Center, West Manggarai Regency. The research data showed that from as many as 25 mothers who had a high level of knowledge about the accuracy of ANC visits, there were 92% who carried out ANC examinations correctly, so it can be concluded that the level of knowledge about the accuracy of ANC visits ANC visits are indicated by proper ANC examinations. 12

### C. Mother's Age

Research conducted on 32 samples of pregnant women recorded in the MCH book at the Keranji Health Center in 2020, it was found that 10 pregnant women (31.3%) with maternal age including at risk pregnancies with age ranges <20 years and >35 years, and 22 pregnant women (68.8%) of maternal age are not at risk with an age range of 20-35 years.

The results of this study are in line with research conducted by Vinny JR Lumempouw, et al. in 2017 it was found that

most of the respondents were aged between 21-35 years, namely as many as 25 respondents (55.6%). The productive age of the mother is 20-35 years because at that age the uterus is mature and able to accept pregnancy both from a psychological and physical perspective. Age really determines a person's health, mothers are said to be at high risk if pregnant women are under 20 years old and over 35 years old. Age under 20 years is feared to have a risk of complications that are closely related to women's reproductive health, above 35 years have a high risk due to a decline in the function of the reproductive organs. 13

Another study also obtained similar results that 51 pregnant women (94 %) had a nonrisk age of 20-35 years, and only 5 pregnant women (5%) had a risk age of <20 years and >35 years from 56 samples. study. The same reason is found that the age of 20-35 years is the age that is considered safe to undergo pregnancy and childbirth.<sup>4</sup>

#### D. Antenatal Care (ANC) Status

The results of the data analysis are presented in table 8, showing the frequency distribution of ANC At Sungai Keranji Health Center in 2020, 15 pregnant women (46.9%) were recorded with complete ANC status and 17 pregnant women (53.1%) with incomplete ANC status.

The results of research conducted by Devi Kurniasari in 2016, found that 60% of mothers with complete anc status were recorded and 18 mothers (40%). 15

E. The Relationship between Formal Education Level and Antenatal Care (ANC) Status

In a study conducted on 32 samples at Sungai Keranji Health Center based on the results of statistical tests (spearman rho) the correlation coefficient value was 0.579, with a + direction relationship, and a Sig value of

0.001 which means that there is a strong and unidirectional significant relationship between the mother's level of formal education and antenatal care (ANC) status. The higher the education level of the mother, the more complete the ANC status will be.

To find out how the development of the fetus, pregnant women with higher education will routinely check their pregnancies. Someone who is highly educated has a great curiosity so that it encourages pregnant women to find out information about their pregnancy and ask the complaints they feel during pregnancy, this is reinforced by the results of research obtained from 7 pregnant women who are highly educated also have good antenatal care status. complete. 16

The results of this study are in line with the research obtained by Mitha Sarwo Indah at the Tempurejo Health Center Jember in 2007 where there is a fairly strong relationship between the level of formal education and antenatal care status with a sig value of 0.000 with a correlation coefficient of 0.777. With higher education, pregnant women generally have good antenatal care (ANC) status. Education is an effort so that mothers behave by means of persuasion, persuasion, appeal, providing information, and providing awareness. It is hoped that education has a relationship with the mindset of pregnant women, which will be useful later in receiving educational information in an effort to improve the status of antenatal care. Besides that, higher education will be able to form high knowledge in a person, and the level of education has been shown to be related to antenatal care status in this study.<sup>9</sup>

# F. Relationship between Knowledge Level and Antenatal Care (ANC) Status

Based on the results of statistical tests (spearman rho) the relationship between knowledge level and antenatal care status obtained a correlation coefficient value of

689 with a + direction relationship, and a Sig value of 0.000 which means that there is a strong and unidirectional significant relationship between the level of knowledge and ANC status.

Antenatal knowledge of how pregnant women obtain information such as from sensing, seeing, and hearing. <sup>17</sup> Information about antenatal care can also be obtained from health workers, participating in health promotion activities, counseling, and from mass media such as MCH books. The information obtained will increase the mother's knowledge about the status of antenatal care and about maternal health during pregnancy. The higher the mother's knowledge, of course the antenatal care status that will be obtained will be better and more complete.

This is in accordance with the statement that mothers who have good knowledge and understanding about the importance of prenatal care that have been obtained through health counseling or information from the mass media are still in the adoption stage, where mothers are just realizing the meaning of the stimulus in the form of intentions without being followed by changes in attitudes and behavior. his behavior. Based on behavioral theory, getting information, one of which can guarantee someone to behave in accordance with the knowledge gained.<sup>10</sup>

The results of this study are in line with research conducted by Devi Kurniasari (2016) that the higher one's knowledge about antenatal care, the higher one's motivation to make routine pregnancy visits.<sup>15</sup>

# G. Relationship between Maternal Age and Antenatal Care (ANC) Status

After the data was obtained and the analysis was carried out, the results of statistical tests (spearman rho) regarding the relationship between maternal age and antenatal care

status were obtained. antenatal care (ANC) status. Age cannot be used as a trigger for mothers to make pregnancy visits, both mothers who are aged 20-35 who are of reproductive age and are included in the age that are not at risk and mothers aged <20 years and >35 years who are at risk of pregnancy have the same opportunity to do this. incomplete pregnancy visit. 15

The results of this study are in line with the results of research conducted by Sumiati (2012) which showed that mothers aged not at risk were 25.6% more than mothers aged at risk of 19.4%. the results of the statistical test showed that there was no significant relationship between maternal age and ANC visits. It can be explained that the mother's age does not have much effect on her habit of checking her pregnancy, meaning that both at-risk and non-risky age mothers have the same opportunity to have their pregnancy checked. <sup>16</sup>

Research conducted by Gabriellyn et al (2013) also obtained the same results, namely there was no relationship between maternal age and the regularity of antenatal visits. The age of pregnant women can affect knowledge about danger signs in pregnancy because the older the mother, the more experience the mother gets so that her knowledge is increase. However, in this study, it was found that mothers aged 20-35 years did a lot of irregular antenatal visits. This is caused by the lack of knowledge of the mother about the correct schedule of antenatal care so that it affects the mother to do antenatal care irregularly.

### H. Profession

The study was conducted on 32 samples of pregnant women whose work frequency was recorded mostly as housewives, while only 2 people worked as teachers (6.3%). The large number of mothers as housewives is due to the fact that in terms of education, Sungai Keranji village has only a few educational

facilities, even junior high schools and high schools in 2019 according to data from the Central Statistics Agency for the Kuantan Singing Regency, there are no educational facilities, of course the number of teachers is too less and less.<sup>8</sup>

The results of this study are in accordance with research conducted by Gabriela A. Lumempouw, et al. It was found that from 76 research samples, the highest frequency of mothers did not work 63 mothers (82.9%), where in the category that was said to be working were those who carried out an activity outside the home to earn a living and those who do not work are housewives. <sup>19</sup>

Another similar study was also conducted by Nur Inayah 2019, it was found that 34 pregnant women (65.4%) did not work and 18 pregnant women (34.6%) worked.<sup>20</sup>

### I. Gestational Age

The results of this study showed that the majority of mothers were at 28 weeks of gestation, while the rest were women aged 31-33 weeks.

In a study conducted by Mitha Sarwo Indah, the majority of mothers' pregnancies were 32-35 weeks while the minority of mothers were 28-31 weeks pregnant.<sup>9</sup>

In both of these studies, the inclusion criteria were the same as taking respondents aged 28-36 weeks because antenatal care (ANC) status could only be known at that gestational age. This is in accordance with the completeness of a good ANC status by carrying out antenatal care at least 4 times during pregnancy. The difference in the results of the characteristics of gestational age in the two studies is still included in a good gestational age range to see the completeness of ANC status. So mothers with a gestational age of 28-36 weeks have the same opportunity to be able to check their pregnancy.

### V. Conclusions and suggestions

From the research that has been done, it was found that there was a significant relationship p < 0.05 between education level and knowledge level on ANC status while maternal age had no relationship with ANC status. This study has limitations with a small number of research samples and a small time span, so further research is needed to obtain more accurate results.

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