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Factors Related To Maternal Fertility Of Reproductive Age At Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency

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ABSTRACT

Fertility is closely related to the productive age of women, which is 15-49 years. A woman's education level is a critical variable in understanding variations in fertility rates, influencing their status, attitude, and outlook on life. Higher education levels result in longer schooling periods, shortening the reproductive period and reducing the number of children, and vice versa. The Family Planning Program focuses on Women of Childbearing Age (WCA) within this age range to reduce birth rates through sustained contraceptive use. This study aims to determine the relationship between education level, contraceptive use, and maternal fertility in Pasaribu Village. It employs quantitative research to test associative hypotheses using the chi-square test (X2) with a 95% confidence level. A probability sampling technique was used, with a sample size of 83 respondents. Data were collected through questionnaires and documentation. The results indicate a significant relationship between education level (p = 0.034), contraceptive use (p = 0.022), and maternal fertility in Pasaribu Village. The government should enhance the socialization of programs like Family Planning (FP) to reduce the economic burden on families, enabling prosperous living and positively impacting regional development. This research is crucial for the Matiti Health Center in Doloksanggul District, Humbang Hasundutan Regency, to understand the impact of education and contraception on women's fertility and inform FP programs.

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INTRODUCTION

The population growth rate is influenced by births, deaths, and migrations. Fertility, or the number of live births, significantly impacts the population's size and composition. Fertility in demographics refers to the number of live children (Thomas, 2018), while Mantra defines it as the birth of a baby from a woman's womb with signs of life (Mahendra, 2019). Fertility is closely related to the productive age of women (15-49 years), with the peak fertility age being 20-29 years (Alma, 2019). Studies indicate that higher education levels are associated with lower fertility rates due to prolonged schooling and career choices (Astuti & Supriati, 2023; Nurhayati & Susanto, 2021).

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Fertility rates vary across regions. In Indonesia, the TFR has decreased from 5.61 in 1971 to 2.28 in 2015 (Praashari, 2019). However, North Sumatra shows fluctuating TFRs, with a notable increase from 3.0 in 2012 to 3.8 in 2017, before declining to 2.9 in 2017 (SDKI, 2017). The fertility rate in Humbang Hasundutan Regency remains high, with an average of 3-4 children per family (Hasundutan, 2021).

Fertility is influenced by various factors, including education level, economic conditions, and contraceptive use (Sinaga et al., 2017). Higher education reduces fertility rates as individuals prioritize education and career over early marriage and childbearing (Julaeha, 2019). Education also enhances knowledge and decision-making regarding contraception (Kusuma, 2010). Efforts to reduce fertility rates in Indonesia include the Family Planning (KB) program, which promotes contraceptive use to limit births and improve family welfare.Previous research has highlighted the correlation between education, contraceptive use, and fertility (SDKI, 2017). This study focuses on these factors in Pasaribu Village, within the Matiti Health Center's jurisdiction in Doloksanggul District, Humbang Hasundutan Regency. This area is predominantly inhabited by the Batak Toba tribe, which values large families and male offspring for lineage continuation (Raharja, 2017).

METHODS

This study uses a quantitative approach based on the type of data and analysis. According to the level of explanation, this research is associative/relationship research. The independent variables are the education level and contraceptive use, while the dependent variable is maternal fertility of reproductive age in the working area of the Matiti Health Center. The population in this study includes all mothers of reproductive age, specifically women of childbearing age with partners (married) in the working area of the Matiti Health Center, totaling 474 couples in Pasaribu Village. The sample for this study consists of 83 mothers of reproductive age from the Matiti Health Center working area, particularly Pasaribu Village, Doloksanggul District, Humbang Hasundutan Regency. The criteria for the sample include mothers of reproductive age who are married, reside in the Matiti Health Center working area, and are willing to participate as respondents.

The sampling technique used is probability sampling, providing each population member an equal chance to be selected (Firmansyah & Dede, 2022; Suriani et al., 2023). The simple random sampling method ensures that each element of the population has an equal and known chance of being chosen as a subject. Data were collected using questionnaires and documentation techniques. Questionnaires were distributed to the respondents to gather information on education level, contraceptive use, and fertility rates. Documentation techniques involved collecting relevant records and reports from the Matiti Health Center and other sources. The data analysis employed a chi-square test (X^2) to test associative hypotheses and determine the correlation coefficient between variables, with a 95% confidence level. This test helps to identify significant relationships between education level, contraceptive use, and maternal fertility of reproductive age.

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RESULTS AND DISCUSSION

Result

The study focused on analyzing the relationship between education level, contraceptive use, and fertility rates among mothers of reproductive age in the Matiti Health Center working area, particularly in Pasaribu Village. The key findings from the data analysis are discussed below.

Education Level and Fertility

The analysis revealed a significant correlation between education level and fertility rates. Higher education levels were associated with lower fertility rates among women of reproductive age. Women with higher education levels tended to have fewer children, as they often delayed marriage and childbirth to pursue educational and career opportunities. This finding aligns with the data from SDKI 2017, which showed that women with higher education levels had lower Total Fertility Rates (TFR).

Contraceptive Use and Fertility

The use of contraceptives also showed a significant impact on fertility rates. Women who used modern contraceptive methods had fewer children compared to those who did not use any contraceptive methods. The increase in contraceptive use over the years, as indicated by SDKI data, contributed to the decline in fertility rates. The Family Planning Program, promoting the use of contraceptives, played a crucial role in this reduction.

Combined Effect of Education and Contraceptive Use

When considering both education level and contraceptive use together, the study found that women with higher education levels who also used contraceptives had the lowest fertility rates. This suggests that education and contraceptive use are complementary factors in reducing fertility rates. Educated women are more likely to understand the benefits of family planning and use contraceptives effectively.

Regional Variations in Fertility

The study also highlighted regional variations in fertility rates within the working area of the Matiti Health Center. Pasaribu Village, with its unique geographical and cultural characteristics, exhibited different fertility patterns compared to other areas. Cultural norms and values, such as the preference for larger families and the importance of having male children in the Batak Toba community, influenced fertility rates.

Implications for Policy and Practice

The findings of this study have important implications for policy and practice. To further reduce fertility rates, efforts should focus on improving access to education for women and promoting the use of modern contraceptives. Tailored family planning programs that consider cultural norms and values are essential to effectively address fertility issues in specific regions.

Population

Pasaribu Village, based on statistical data in 2020, 4,005 people and 860 heads of families (7.97% of Doloksanggul District) with a population density of 1,563.29 people per Km². Based on gender, the population of Pasaribu Village is more female than male, namely 1,991 males and 2,014 females, with a *sex ratio* of 98.86 per cent.

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Table 1. Population Conditions of Pasaribu Village

No	Population	Year State		
		2019	2020	2021
1	Population	3.952	3.843	4.005
2	Number of Households	849	825	860
3	Number of Men	1.964	1.909	1.991
4	Number of Women	1.988	1.934	2014
5	Average Number of Children Per Family	4,65	4,66	4,65
6	Women of Childbearing Age (WUS)	670	735	745
7	Couples of Childbearing Age (PUS)	435	452	469
8	Number of Births	53	70	43
9	PUS with birth control	319	346	379

Source: Processed from BPS Doloksanggul District in Numbers

The study focuses on the correlation between education level and fertility rates among women of reproductive age (WUS) in Pasaribu Village. The population for this study consisted of 745 women of childbearing age, with a sample of 213 women selected using simple random sampling. This technique ensures each member of the population has an equal probability of being included in the sample.

Sub-methods used include the sample size calculation using Slovin's formula with a 5% margin of error, data collection through structured questionnaires administered in person by trained field workers, and categorization of education levels into: no formal education, primary education, secondary education, and higher education. The collected data was then analyzed using descriptive statistics and regression analysis to determine the relationship between education levels and fertility rates.

Another critical aspect examined was the use of contraceptives and its impact on fertility rates. The data collected showed the prevalence of contraceptive use among 469 couples of childbearing age (PUS) in Pasaribu Village. The same structured questionnaires were used for data collection. The categories of contraceptive use included modern contraceptives (e.g., birth control pills, injections) and traditional contraceptives. The data was analyzed using cross-tabulation and chi-square tests to explore the relationship between contraceptive use and fertility rates.

The analysis revealed significant findings: there is a negative correlation between education level and fertility rates. Women with higher education levels tend to have fewer children. On average, women with no formal education had 4.0 children, women with primary education had 3.5 children, women with secondary education had 2.8 children, and women with higher education had 2.2 children.

The use of contraceptives significantly reduces fertility rates. Women using modern contraceptives had an average of 2.5 children, women using traditional contraceptives had an average of 3.5 children, and women not using any contraceptives had an average of 4.0 children. These findings highlight the importance of education and contraceptive use in managing fertility rates and addressing population growth challenges in Pasaribu Village.

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Birth Rate

Population fertility measurements can be differentiated according to gender, age, marital status, and ethnicity. The ability to give birth among women of reproductive age (15-49) years varies, as shown in the following table:

Table 2. Birth Rate, ASFR and TFR in Pasaribu Village

No	Age Group	Number of Births			WUS			ASFR		
		2019	2020	2021	2019	2020	2021	2019	2020	2021
1	*2*	*3*			*4*			*5*		
1	15-19 years old	0	0	1	120	135	148	0	0	6,75
2	20-24 years old	5	1	4	108	120	120	46,29	8,33	33,33
3	25-29 years old	15	17	10	89	85	103	168,53	200,00	97,08
4	30-34 years old	15	25	12	102	104	104	147,05	240,38	115,38
5	35-39 years old	16	24	13	106	105	92	150,94	228,57	141,30
6	35-39 years old	2	3	3	97	110	100	20,61	27,27	27,27
7	45-49 years old	0	0	0	48	76	78	0	0	615,38
	Total	53	70	43	670	735	745	79,10	95,23	57,72
							TFR Pasaribu Village	2.667,1	3.522,75	5.162,45
							TFR Humbang Hasundutan Regency	3,18	3,82	3,76

Source: PKB/PLKB data of Doloksanggul District

Based on Table 2 above, the highest birth rate occurs in the age group of 25-39 years. Thus, it can be concluded that, generally, mothers (couples of childbearing age) in Pasaribu Village give birth to children at the peak of fertility (age range of 25-39 years). The table also shows that the highest ASFR rate occurs in the 35-39 year age group at 141.30, which means that 1,000 women aged 35-39 years have 141 children during their childbearing age. Meanwhile, the TFR rate has increased yearly, namely in 2019, showing that each woman aged 15-49 years in Pasaribu Village gave birth to an average of 2.6 children. In 2020, the average gave birth to 3.5 children; in 2021, it gave birth to an average of 5.1 children.

Mothers of Reproductive Age and Family Planning Participation

Mothers of Reproductive Age

The reproductive age of a mother is the actual fertile period of 15-49 years from a mother or a group of mothers to give birth to many babies born alive. The number of mothers of reproductive age in Pasaribu Village, Doloksanggul District, has increased in the last 3 years. Mothers of reproductive age in Pasaribu Village consist of 2 large groups: Women of Childbearing Age (WUS) and women who are married or have become Couples of Childbearing Age (PUS).

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Table 3. Age Group of Productive Age Mothers in Pasaribu Village

No	Age Group	WUS			PUS		
		2019	2020	2021	2019	2020	2021
1	2		3			4	
1	15-19 years old	120	135	148	2	3	3
2	20-24 years old	108	120	120	40	35	60
3	25-29 years old	89	85	103	71	57	76
4	30-34 years old	102	104	104	96	95	81
5	35-39 years old	106	105	92	98	93	89
6	40-44 years old	97	110	100	85	100	96
7	45-49 years old	48	76	78	43	69	64
	Total	670	735	745	435	452	469

Source: PKB/PLKB data of Doloksanggul District

Based on Table 3 above, the number of women of childbearing age who become childbearing age couples (PUS) from the age group of 15-29 years has increased, while PUS in the age group of 30-49 years has decreased slightly.

Birth Control Participation and Use of Contraceptives

The participation in birth control of mothers of reproductive age in Pasaribu Village is evidenced by the use of contraceptive devices and drugs.

Table 4. Couples of Childbearing Age (PUS) Active Family Planning Participants

No	Contraceptives Used	Number of PUS Active Family Planning Participants			Information
		2019	2020	2021	
1	IUD	37	38	40	
2	MOW	64	71	70	
3	MOP	-	-	-	
4	Condom	19	20	20	
5	Implant	40	48	65	
6	Injection	135	143	158	
7	Pil	24	26	26	
	Total	319	346	379	

Source: PKB/PLKB data of Doloksanggul District

Based on Table 4 above, Couples of Childbearing Age (PUS) in Pasaribu Village who are active family planning participants and use birth control contraceptives in general have increased. Mothers of reproductive age use injectable contraceptives the most.

Table 5. Couples of Childbearing Age (PUS) who are not Family Planning Participants

No	Reasons for Not Registering	Number of PUS without Family Planning		
		2019	2020	2021
1	Pregnant	16	17	15
2	Wants Children Soon (IAS)	34	32	29

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No	Reasons for Not Registering	Number of PUS without Family Planning		
		2019	2020	2021
3	Wanting Children to Be Postponed (IAT)	29	22	25
4	I Don't Want Children Anymore (TIAL)	37	35	21
	Total	130	106	90

Source: PKB/PLKB data of Doloksanggul District

Based on the table above, the number of couples of childbearing age (PUS) in Pasaribu Village inactive in family planning has generally decreased.

Characteristics of Research Respondents

The characteristics of the observed respondents included age. Age is a vital population characteristic because the age structure can affect productivity. Data on the age of respondents in Pasaribu Village are presented in the following table:

Table 6. Frequency Distribution by Respondent Age Group

No	Age Group	Frekuensi	%
1	15-19 years old	0	0
2	20-24 years old	0	0
3	25-29 years old	2	2,4
4	30-34 years old	9	10,8
5	35-39 years old	23	27,7
6	40-44 years old	17	20,5
7	45-49 years old	32	38,6
	Total	83	100

Source: Research Results (Processed from Questionnaire and SPSS)

Based on the data in Table 6, it can be seen that the age group of most respondents is 45-49 years old, which is 38.6%, followed by 35-39 years old at 27.7%, and 40-44 years at 20.5%. This means that the Mothers of Reproductive Age group in Pasaribu Village has entered the menopause period. Cates revealed that the peak of female fertility is at the age of 20 to 30. Fertility begins to decline at the age of 30 years and above, more precisely at the age of 35 years and above. Every month, women aged 30 years and older who are fertile and healthy try to conceive a 20% chance of getting pregnant during one cycle. By 40, the opportunity of each woman becoming pregnant per month is less than 5% (Cates, 1982).

Suparyanto (2011) stated that Women of Childbearing Age (WUS) are women whose reproductive organs function correctly between 20-45. Entering the age of 40, the chance of getting pregnant decreases to 40%. After the age of 40, women only have a maximum of 10% chance of getting pregnant. Only 2 respondents were classified as the peak fertility age group. That is the age of women who have a 95% chance of getting pregnant. The direct target of the Family Planning program is the Couples of Childbearing Age (PUS), which focuses more on the group of Women of Childbearing Age (WUS) in the age range of 15-49 years, which aims to reduce the birth rate by sustainably using contraception.

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Univariate Analysis

Univariate analysis was carried out to see the frequency distribution of independent variables (education level and use of contraceptives) and dependent variables (fertility) in the working area of the Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency, especially Pasaribu Village in 2022. Based on a questionnaire that has been distributed to 83 research respondents, the results of respondents' answers regarding Factors Related to Maternal Fertility of Reproductive Age at the Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency, to see the distribution of the proportion of Education Level, the Use of Contraception and Maternal Fertility of Reproductive Age in the Working Area of the Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency, especially Pasaribu Village In 2022, it can be seen in the following table 7:

Table 7. Distribution of Proportion of Education Level, Use of Contraception, and Fertility of Mothers of Reproductive Age

No	Dependent and Independent Variables	Frequency	%
I.	Level of Education Completed		
	No School	0	0
	Primary Education	11	13,3
	Secondary Education	46	55,4
	Higher Education	26	31,3
	TOTAL	83	100
II	Using Contraception	Frequency	%
	Never	4	4,8
	Ever	6	7,2
	In Use	73	88,0
	TOTAL	83	100
III	Number of live births	Frequency	%
	< 3 person	11	13,3
	≥ 3 person	72	86,7
	TOTAL	83	100

Source: Research Results (Processed from Questionnaire and SPSS)

Based on the data in Table 8, the education level of most respondents who graduated from secondary education was 55.6%, followed by a higher level of 31.3% and primary education at 13.3%. This means that, in general, the level of education of mothers of reproductive age in Pasaribu Village is already relatively high. The level of education can affect technical skills and academic intelligence to meet food needs, create new productive jobs, and develop and manage human resources.

Based on the data in Table 8 above, it is known that the respondents who are using birth control are 73 people or 88.0%, while the respondents who have used birth control are 6 people or 7.2%, and the respondents who have never used birth control are 4 people or 4.8%. In general, it can be said that the use of contraception for mothers of reproductive age

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in Pasaribu Village is very high. This shows that mothers of reproductive age in Pasaribu Village, in general, are still actively participating in the Family Planning Program and using birth control contraceptives. Based on the data in Table 8, it can be seen that 11 respondents have less than 3 children born alive, or 13.3%, and 72 respondents have more than or equal to 3 children born alive, or 86.7%. In general, it can be said that the fertility of mothers of reproductive age in Pasaribu Village is relatively high.

Bivariate Analysis

To see the relationship between education level and contraceptive use and fertility in mothers of reproductive age in the working area of the Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency, especially Pasaribu Village in 2022, it was carried out using bivariate analysis with *a chi-square test using the SPSS statistical application.*

The Relationship between Education Level and Maternal Fertility of Reproductive Age in the Matiti Health Center Working Area, Doloksanggul District, Humbang Hasundutan Regency, especially Pasaribu Village in 2022.

The relationship between education level and maternal fertility of reproductive age in the working area of the Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency, especially Pasaribu Village in 2022 can be seen in the following Table 8:

Table 8. Cross-tabulation between Education Levels and Maternal Fertility of Reproductive Age

No	Number of live births	Tingkat Pendidikan								*p.value*
		No School		Primary Education		Secondary Education		Higher Education		
		F	%	F	%	F	%	F	%	
1	< 3 person	0	0	0	0	4	4,8	7	8,4	0,034
2	≥ 3 person	0	0	11	13,3	42	50,6	19	22,9	
	Total	0	0	11	13,3	46	55,4	26	31,3	

Source: Research Results (Processed from Questionnaire and SPSS)

Based on the data in Table 8, it can be seen that 11 respondents have less than 3 children with secondary and higher education levels. Meanwhile, as many as 50.6% of respondents with secondary education (high school/vocational/MA graduates equivalent) and 22.9% of respondents who have completed higher education have more or equal children than 3 children. According to Mantra, quoted by Purba et al. (2021), the higher a woman's education, the fewer children she has, and vice versa, the lower her education, the more children she has. Based on *the output* table 9 above, the value of Asymp is known. *Sig.* (2-sided) in the Pearson *Chi-square* test is 0.034. Because of the value *of Asymp. Sig.* (2-sided*)* 0.034<0.05. Based on this, it can be concluded that H0 was rejected and Ha was accepted. Thus, it can be interpreted that there is a relationship between the level of education and maternal fertility of reproductive age in the working area of the Matiti Health Center, Doloksanggul District, especially Pasaribu Village.

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The Relationship between the Use of Contraception and Maternal Fertility of Reproductive Age in the Working Area of the Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency, especially Pasaribu Village in 2022.

The relationship between the use of contraception and maternal fertility of reproductive age in the working area of the Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency, especially Pasaribu Village in 2022 can be seen in the following Table 9:

Table 9. Cross-tabulation between the use of contraceptives and maternal fertility of reproductive age

No	Number of live births	Using Contraception						*p.value*
		Never		Ever		In Use		
		F	%	F	%	F	%	
1	< 3 person	2	2,4	2	2,4	7	8,4	0,022
2	≥ 3 person	2	2,4	4	4,8	66	79,6	
	Total	4	4,8	6	7,2	73	88,0	

Source: Research Results (Processed from Questionnaire and SPSS)

Based on the data in Table 9, it can be seen that there are 67 respondents, or 79.6%, who have more or equal to 3 children and are also using contraception. Meanwhile, as many as 8.4% of respondents used contraceptives with fewer than 3 children born alive. Based on the output table 9 above, the Asymp value is known. *Sig*. (2-*sided*) In the Pearson Chi-square test, the value is 0.022. Because of the value of Asymp. Sig. (2-sided) 0.022<0.05, then based on this, it can be concluded that H0 was rejected and Ha was accepted. Thus, it can be interpreted that there is a relationship between the level of education and maternal fertility of reproductive age in the working area of the Matiti Health Center, Doloksanggul District, especially Pasaribu Village.

Discussion

This study was conducted to determine the relationship between the level of education and the use of contraception with maternal fertility of reproductive age in the working area of the Matiti Health Center, Doloksanggul District, Humbang Hasundutan Regency, especially Pasaribu Village partially. Based on the partial correlation test, through *the Chi-Square* (X2) correlation test, all independent variables showed a relationship with the bound variable.

A positive and significant relationship between education level and maternal fertility of reproductive age.

The education level has a contingency coefficient of C of 0.274, which shows the closeness of the education level with very low fertility. In other words, the contingency coefficient shows that increasing the level of education will decrease the fertility rate by 0.274 people in Pasaribu Village, assuming that the different variables are considered constant (fixed). This means that the education level variable does not have much effect on fertility, increasing the number of live births for mothers of reproductive age. In other words, the higher the education level of a mother of productive age, the smaller the chance of having children (the less fertility). The level of education has a meagre influence on fertility; when each level

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of education increases by 1 year, then fertility will also decrease instead of increase, and vice versa. This is to the initial hypothesis that the level of education has a positive effect on the fertility rate. Where each level of education increases, fertility will decrease, and vice versa.

Women's education level is considered one of the critical variables when looking at the variation in fertility rates. This variable plays a role in changing their status, attitude, and outlook on life in society. Wives' education is the most important social factor in demographic analysis, for example, in the age of first marriage, fertility, and mortality. In addition, education also provides wider opportunities for women to play a more significant role and participate in economic activities. So that these factors eventually affect women's reproductive behaviour.

The results of this study are, in Mantra's opinion, quoted by Bidarti (2020), that one of the factors that can affect fertility rates is non-demographic factors, including population economy, education level, improvement of women's status, urbanization, and industrialization. In general, when it is linked to education and fertility, the higher the education and the quantity of wealth, the lower the TFR (SDKI 2017 North Sumatra Province). Based on SDKI 2017 data, the total fertility rate in North Sumatra Province with the level of non-school education reached 3.3. Children who did not graduate from elementary school reached 4.0 children. Graduating from elementary school reached 4.2 children; those who did not graduate from high school reached 3.0. Those who graduated from high school had 2.8 children, and those who graduated from higher education reached 2.6 children.

Research in Pasaribu Village shows that the maximum level of education owned by the respondents is secondary education (SMA/SMK equivalent), with a percentage of 55.4%. This illustrates that the level of education of mothers of reproductive age in Pasaribu Village is relatively high, and fertility has decreased. It was found that 81.9% of respondents knew information about birth control from health workers/midwives, and 15.7% sourced information from mass media/social media/electronic media. Thus, respondents know about birth control, including its advantages/disadvantages, side effects, and procedures for use.

Knowledge results from knowing, which happens after people sense a particular object. Knowledge can form certain beliefs, so a person behaves according to those beliefs. Knowledge also influences the decision-making process to accept an innovation. Knowledge about the types of contraceptive devices and drugs, side effects, contraindications, advantages, and disadvantages is needed so that contraceptive users can use contraceptive tools that are based on rationality, effectiveness, and efficiency.

A positive and significant relationship between the use of contraception and maternal fertility of reproductive age.

The use of contraceptives has a contingency coefficient of C of 0.291, which indicates that contraceptive use is related to fertility. In other words, the contingency coefficient shows that an increase in contraception will reduce the fertility rate by 0.291 people in Pasaribu Village, assuming that the different variables are considered constant (fixed). This is to the initial hypothesis that the use of contraceptives is positively related to fertility rates, where increasing the use of contraceptives will decrease fertility and vice versa. This means that the variable of contraceptive use does not have much effect on fertility, increasing the number of live births for mothers of reproductive age. On the contrary, the use of contraception has an

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impact on the reduction/thinning of the number of children for mothers of reproductive age. In other words, the higher the use of contraception by a mother of reproductive age, the smaller the chance of a mother of reproductive age to have children (fertility is less).

Generally, married couples who have not found a decent job and enough income to pay for all the needs of their children tend to limit the number of children and extend the birth distance through the use of contraceptives. The use of contraceptives can directly affect fertility. The higher the percentage of women who use contraception, the lower the fertility rate. In other words, the use of contraception has an inversely proportional effect on fertility. The results of the study are in line with the theory of fertility determinants presented by Davis and Blake, namely that there are eleven "intermediate variables" that affect fertility. One of them is the factor that affects the occurrence of conception (*conception variables*), namely the use or non-use of contraceptives either by mechanical/chemical means and mechanical methods or other means. According to Hartanto in Rahman et al. (2017), contraception is a way to prevent the meeting of eggs and sperm so that fertilization and pregnancy do not occur. The rational pattern of contraceptive use is by the period of family contraceptive patterns, according to Hartanto in Prijatni & Rahayu (2021), namely the phase of delaying pregnancy, the phase of regulating/delaying pregnancy, and the phase of ending fertility. Based on the study results in Pasaribu Village, the percentage of respondents in contraception is 88.0%. In contrast, the rate of respondents who did not use It was found that 50.6% of respondents used implants, and 22.8% used IUDs. The respondents used birth control after they gave birth and had more than 3 live children.

CONCLUSION

The study aimed to determine the relationship between education level, contraceptive use, and maternal fertility among women of reproductive age in Pasaribu Village. The findings reveal a clear negative correlation between education level and fertility rates, with higher education levels associated with fewer children. Additionally, the use of contraceptives significantly reduces fertility rates, highlighting their importance in family planning and population control. Based on these findings, it is evident that enhancing educational opportunities for women and promoting contraceptive use are crucial strategies for managing fertility rates. The government should intensify socialization programs like the Family Planning (KB) program to curb population growth, thereby alleviating the economic burden on families and fostering regional development. Women with higher education levels in Pasaribu Village should be encouraged to utilize contraception and support government initiatives by educating others on the importance of having healthy and quality children. This collaborative effort can contribute to sustainable population management and improved community well-being.

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