

Socio-economic Role on the Utilization of Maternal Healthcare Service in Sidoluhur, Lawang

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Informasi artikel	ABSTRACT
<p><i>Sejarah artikel</i></p> <p>Diterima : 26 Jul 2020</p> <p>Revisi : 30 Nov 2020</p> <p>Dipublikasikan : 1 Dec 2020</p> <p>Keywords:</p> <p>Utilization of Health Services</p> <p>Maternal Education</p> <p>Ante Natal Care (ANC)</p>	<p>Sidoluhur Village, Lawang District, Malang Regency is a one of the areas with the high maternal mortality rate in East Java Province. This study conducted to see how much maternal education can affect the utilization of health services as a tool to minimize the MMR. This study conducted using logit regression on two variables namely maternal education as independent variable and the number of ANC visits as dependent variable. The result of logit regression showed that there is a positive relationship between both variables. Maternal education has a big influence on the number of Ante Natal Care (ANC) Visits in Desa Sidoluhur. There is 67.1% role given by the maternal education to ANC visits. Besides, 32.1% role given by other factors to the ANC visits.</p>
<p>Kata kunci:</p> <p>Pemanfaatan Layanan Kesehatan</p> <p>Pendidikan Ibu</p> <p><i>Ante Natal Care (ANC)</i></p>	<p>ABSTRAK</p> <p>Desa Sidoluhur, Kecamatan Lawang, Kabupaten Malang merupakan salah satu daerah dengan tingkat kematian ibu (<i>Maternal Mortality Rate</i>) yang cukup tinggi di Provinsi Jawa Timur. Penelitian ini dilakukan untuk melihat seberapa besar pengaruh pendidikan ibu terhadap pemanfaatan layanan kesehatan sebagai alat untuk meminimalisir MMR. Penelitian dilakukan dengan menggunakan regresi logistik pada dua variabel penelitian yaitu pendidikan ibu sebagai variabel independen (X) dan jumlah kunjungan ANC sebagai variabel dependen (Y). Hasil uji regresi logistik yang dilakukan menunjukkan bahwa variabel pendidikan memang memiliki pengaruh besar terhadap jumlah kunjungan <i>Ante Natal Care</i> (ANC) di Desa Sidoluhur. Hasil regresi juga menunjukkan bahwa hubungan keduanya bernilai positif. Terdapat 67.1% pengaruh yang diberikan oleh pendidikan terhadap ANC pada fasilitas layanan kesehatan bagi ibu hamil. Selain itu terdapat juga 32.9% faktor lain yang dapat mempengaruhi jumlah kunjungan ANC.</p>

Introduction

Geographical condition influence development of human resource and infrastructure. The key to archieving national development are the human and infrastructure development itself (Meng, 1986). Infrastructure in the health sector and human development becomes an important issue in Sustainable Development Goals (SDGs) (UNICEF, 2016).

One of the social health problems that affect families, especially children, is maternal mortality caused by various things related to pregnancy. Maternal mortality has close direct relationship with the mother's behavior, family

and community behavior, medical, and health services. Maternal mortality can also be indirectly affected by the status and role of women in the family, as well as women's education (Achadi, 2020). A lot of mothers in Indonesia still hold the principle of "Women could not make their decisions", including every decision about their pregnancy and birth.

The health status of pregnant women is one of the indicators which represent the health of the community (Aryastami & Mubasyiroh, 2019). One of the targets of SDGs is to reduce the risk of maternal death by suppressing the Maternal Mortality Rate (MMR). MMR has a relationship

with health status in an area. The existence of MMR can also represent about socio-economic conditions in an area (Caldwell, 1986). The higher the MMR means that the region has a poor socio-economic status, and the lower the MMR, represent that the region has a good socio-economic status.

The World Health Organization (WHO) predicts that 830 women dying every day due to complications of pregnancy and childbirth. There are around 99 percent of maternal mortality

during childbirth in developing countries. Small villages become places with a higher mortality rate compared to cities (Goenawan, 2019).

Maternal mortality is a complex event caused by various things. McCarthy and Maine in 1992 divided the causes of maternal death into 3 determinants namely; distant determinant, intermediate determinant and outcomes. Here is the description given by McCarthy and Maine (1992).

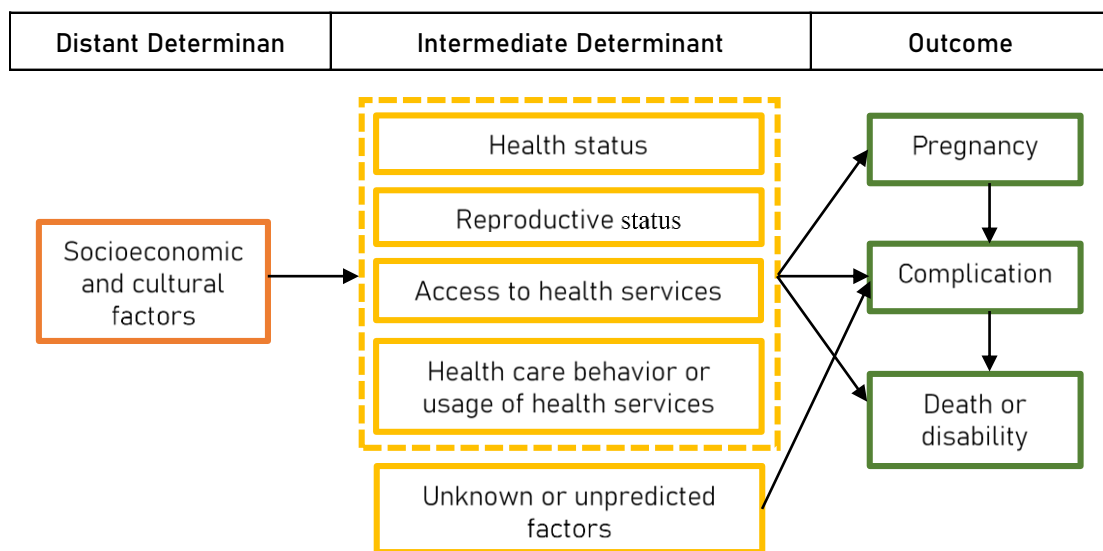


Figure 1. Causes of Maternal Death (McCarthy & Maine, 1992)

The Government of Indonesia in 2014 released the Minister of Health Regulation (*Permenkes*) No. 97 of 2014 concerning maternal health services. Then in 2019, the government complete the regulation with Minister of Health Regulation No. 4 of 2019 concerning technical standards for fulfilling the quality of basic services in the health sector (Aryastami & Mubasyiroh, 2019). The health services that have been provided are able to finalize the occurrence of death in mothers and infants (Rahman, 2018). The utilization of health services for pregnant women is a preventive measure in dealing with maternal death.

The utilization of health services depends on the availability and ease of access. Accessibility (affordability) is generally related to distance. This concept is more related to the ease of reaching a

location. Areas with a high degree of accessibility or easily accessible, tend to develop more quickly. However, if the area is in the hinterland, mountainous, prone to disasters and difficult to access it is certainly difficult to reach. Affordability generally changes in line with economic development and technological progress, whereas places with low affordability will find it difficult to step forward and develop the economy.

According to Daga (2013) in this present day, information about pregnancy and birth can be easily accessed because of technological developments. Technological developments are also able to influence maternal behavior.

Efforts to maintain maternal health are manifested in the form of Ante Natal Care (ANC) services. Based on maternal and child health

books (MCH), the ideal number of obstetric examination is 7–9 times during pregnancy. These standards have been established with consideration to ensure protection for the mother and the conceived fetus. This service is in the form of early detection of risk factors, prevention, and early treatment if complications occur in pregnancy (Ministry of Health, 2013 in Budiart et al., 2018).

Research conducted by Edrin et al., 2014 shows that education also influences pregnancy. According to Mochtar and Sofian (2013) in Budiman et al. (2017) education is even included in factors that can influence high-risk pregnancies. Besides, Corneles & Losu (2015) study also has the same result, that there is a relationship between the level of education with the knowledge of pregnant women about high-risk pregnancies.

Education is a predisposing characteristic in terms of the behavior of users of health facilities in absorbing information and knowledge (Syeh, 2008 in Astuti, 2012). Then Astuti (2012) said that although pregnant women already have an MCH book, which is where there is knowledge about the dangers of pregnancy, still a lot of mother's knowledge about the signs is still minimal. It caused by the educational factors that are considered to have an impact on pregnant women, such as the ability to read and absorb information.

Based on the explanation, it can be seen that education can affect the knowledge and absorption of information possessed by prospective mothers regarding pregnancy, likewise information on health services such as pregnancy consultation or Ante Natal Care (ANC). Therefore, this study conducted to find out whether education and the use of health services have a mutually influential relationship. Moreover, this study will also show how much the influence of parent education, especially the mother, towards the knowledge or understanding about pregnancy to prevent complications that can cause death for mothers and also infants.

Method

This study located in Sidoluhur Village, Lawang District, Malang Regency, East Java Province, Indonesia. Based on data from *Badan Pusat Statistik* (BPS, 2017), Malang Regency is one of three districts in East Java Province with a high Maternal Mortality Rate (MMR). Lawang District was chosen because the number of maternal deaths in this district is quite high. Based on BPS data, the incidence of maternal deaths in the Lawang District has decreased from 2015–2017 in Malang Regency.

The data source is primary data collected using structured interviews. This research also uses secondary data as supporting data for research, such as data from the *Badan Pusat Statistik* (BPS), the Indonesian Ministry of Health and *Badan Kependudukan dan Keluarga Berencana Nasional* (BKKBN), which includes data on the number of children born alive, the number of maternal deaths, the availability of health facilities and infrastructure.

The population in this study is the population of women aged over 15 years who have been married in the village of Sidoluhur. Then a sample frame is made with the criteria for the entire population who have experienced pregnancy and childbirth. The total population in this study was 764 inhabitants. The sample in this study was determined using the Slovin method, which is as follows:

$$\frac{N}{1 + (N \times \alpha^2)} = \frac{764}{1 + (764 \times 0.10^2)} = 72,3 \rightarrow 72$$

Slovin method shows that the minimum number of samples to be taken in this study is 72 women of childbearing age, but this study will take as many as 75 subjects in anticipation if there are any data errors. The selection of respondents was carried out using the purposive sampling method. Criteria for respondents are women of childbearing age (15–49) who are married and have experienced pregnancy until the early trimester.

Data processing is done by scoring, while data analysis is done by using inferential statistical

analysis. The analysis used the form of correlation and logistic regression. Correlation analysis is performed using the Spearman method to see the relationship between independent and dependent variables. To see how much effect is given by the independent variable on the dependent variable, the researcher using logistic regression. This type of regression analysis is a non-linear regression that is used when the dependent variable is in the category or dichotomous. This type of regression is used when there are only 2 possibilities for the dependent variable (Y). In this study, the Y variable has been categorized by researchers so that it can be used in logistic regression models.

The variable used in this study was adapted from the McCarthy and Maine theory, with indicators in the form of the mother's last education level and a pregnancy check-up visit (ANC). The dependent variable (Y) in this study is the pregnancy check-up visit, or it can also be interpreted as the utilization of health services. The independent variable (X) is the status of the last education class taken by the mother. The following table are the uses and scores in both variables:

Table 1. Tabel Variables And Reasearch Scoring

Variable	Indicator	Score
Maternal Education	The last class of mother in pursuing education	<7: 1; ≥7: 2
Pregnancy check-up visit	Number of Ante Natal care (ANC) visits	<7: 1; ≥7: 2

Result and Discussion

Malang Regency is one of the three regions that have the highest maternal mortality rate (MMR) in East Java Province. BPS notes that Lawang Subdistrict, where Sidoluhur Village is located, is the area with the highest maternal mortality in Malang Regency. Based on data held by (Kemenkes, 2014), the main cause of the high maternal mortality rate in this village is due to the

low maternal health status and nutritional status. This number can be suppressed by routine pregnancy checks to monitor the health of the mother and infant to minimize the possibility of complications that can occur.

A pregnancy checkup or what is known as Ante Natal Care (ANC) is an important thing to do. ANC aims to improve physical health as well as mental health for pregnant women, so that prospective mothers can face labor, childbirth, exclusive breastfeeding until the time comes when the reproductive health of the mother returned to normal. The procedure of this ANC is by increasing maternal assistance by trained medical personnel (Direktorat Promosi Kesehatan dan Pemberdayaan Masyarakat, 2018). Even so, there are still many residents in Sidoluhur Village, Lawang District, Malang Regency who are not aware of the importance of this examination.

The study was conducted by taking the subject of fertile women aged 15–49 years who were married. There are 85.5% of the total subject of 75 women in Sidoluhur Village, aged 15 to 35 years. This percentage is equivalent to 65 women. There are 11 women aged 36 to 49 years, equivalent to 14.5% of the total research subjects.

Observation results showed that among 75 research subjects, there were 38.7% of women who did education only up to elementary school and some were not even go to school. Another 61.3% attended school up to secondary school. It can be seen that women in this village are quite aware of the importance of education.

Based on observations that have been made, there are only 66.7% of women in this village who carry out routine pregnancy check for 7 to 9 times during their pregnancy. As many as 18.7% of women had pregnancy checks only 1 to 3 times during their pregnancy, and 14.7% had pregnancy checks at least 4 to 6 times according to the minimum recommendations by *Direktorat Promosi Kesehatan dan Pemberdayaan Masyarakat* (2018). The distribution of the number of antenatal care can be seen in the following table:

Table 2. Number of Pregnancy Visits, Frequencies, and Percentages

Number of Visits	Frequency	Percentage
1 – 3	14	18.7%
4 – 6	11	14.7%
7 – 9	50	66.7%
Total	75	100.0%

Reliability Test

Before conducting a correlation analysis to see the relationship and regression to see the effect, the reliability test was first performed. The result can be seen in the following table:

Table 3. Reliability Test Result

Reliability Statistics	
Cronbach's Alpha	N of Items
.873	2

In this study, the reliability test was carried out using Cronbach's Alpha. The results of tests conducted on two research variables namely education and pregnancy visits. The Cronbach's Alpha value obtained was 0.873. Based on the results obtained, it can be seen that the instruments used by researchers in this study are reliable and can be used because the results obtained are > 0.60 (Ghozali, 2002).

Validity Test

After the reliability test, the validity test then performed using the product-moment correlation. A validity test is done to see whether the instrument used in this study can perform its measurement function properly. From this test, it can also be seen whether the instrument has the ability to achieve the intended target or not. The validity test results can be seen in the following table:

Table 4. Validity Test Result

	Product-Moment Correlations	
	ANC	Education
Correlation Coefficient	.774 **	.774 **

Sig. (2-tailed)	0,000	0,000
N	75	75

** Correlation is significant at the 0.01 level (2-tailed).

Table 4 shows that the correlation coefficient between the two variables used, namely education and ANC visits is 0.774. With a total of 75 data, the value of r table is 0.2919. If compared between the value of r table with the value of r count, it can be interpreted that the research conducted is valid because the value of r count is greater than the r table. Thus it can be seen also that the instruments used in this study are valid and have the ability to achieve the intended target.

Kolmogorov-Smirnov Normality Test

After testing the reliability and validity, the researcher then tests the normality. This test is done to see the distribution of the observations. The results can be seen in table 5.

Table 5. Normality Test Result

Tests of Normality Kolmogorov-Smirnov ^a			
Variable	Statistics	df	Sig.
Education	.398	75	.000
ANC	.425	75	.000

^a Lilliefors Significance Correction

The normality test table shows that the significance of the Kolmogorov-smirnov coefficient on both variables is 0.000. From these results, it can be interpreted that the data used in this study were not normally distributed. Therefore, the regression test will be performed using logistic regression.

Spearman Correlation

The correlation test is performed to see how much influence is given by the independent variable (mother's last education class) with the dependent variable (number of pregnancy visits). The function of this test is to see whether education influences the number of pregnancy visits performed. Correlation test results can be seen in table 6.

Table 6. Spearman Correlation Test

Spearman Correlations		
	ANC	Education
Correlation Coefficient	.774 **	.774 **
Sig. (2-tailed)	0,000	0,000
N	75	75

** Correlation is significant at the 0.01 level (2-tailed).

The number of pregnancy checks conducted by mothers in Sidoluhur Village is being correlated with the last education class that the mother has ever taken. The number of visits is divided into two classes which are ideal and not ideal. The ideal class has the number of visits as much as 7 to 9 times during pregnancy, and the not ideal class has the number of visits less than 7 times. The correlation test using the Spearman method shows that there is a relationship between

maternal education and the number of ANC attendance (pregnancy checks). It can be seen that the correlation coefficient between ANC and maternal education level is 0.774 with the significance of a relationship of 0.000. When viewed based on the existing correlation coefficient, the relationship between ANC and maternal education level is classified as having a strong level of relationship.

Logistic Regression

After finding out that the two variables have a strong relationship, then the researchers look at how much influence is given by education on the number of pregnancy visits (ANC) by doing regression. Regression tests are carried out using logistic regression, due to the abnormal distribution of the data. The following table is the results of regression tests conducted by researchers:

Table 7. Summary of Logistic Regression Test Result

Omnibus Tests of Model Coefficients			
	Chi-square	df	Sig.
Step	49.454	1	.000
Step 1 Block	49.454	1	.000
Model	49.454	1	.000

Summary Model			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	46.023a	.483	6771

a. Estimation terminated at iteration number 20 because the maximum iterations have been reached. Final solution cannot be found.

Classification Table				
Observed		Predicted		Percentage Correct
		ANC	2	
Step 1	ANC	1	2	92.0
		2	44	88.0
Overall Percentage				89.3

Variables in the Equation							95% CI for		
	B	SE	Wald	df	Sig.	Exp (B)	EXP (B)		
							Lower	Upper	
Step 1a	Class_Education	4.435	856	26.836	1	.000	84,333	15.751	451.539
	Constant	-5.779	1.168	24.493	1	.000	.003		

a. Variable (s) entered on step 1: Education Class.

Table 7 shows the results of the logistic regression between independent variable (mother's education) that influenced the dependent variable (utilization of health services in the form of ANC visits). The omnibus test shows a significant value of 0.000. This number can be interpreted as an independent variable that gives a big influence on the dependent variable. Nagelkerke R Square calculation shows the result value of 0.671. The logistic regression results show that the influence given by the independent variables on the dependent variable is 67.1%. There are 32.9% other factors that influence the number of ANC visits made by mothers in Sidoluhur Village, Lawang District, Malang Regency. The effect of education on the number of ANC visits as health service utilization can be seen in the coefficient B. Partially, Educational variables significantly influence the variable number of ANC visits. As in the result, it can be seen that significantly less than 0.05. The education variable influences 4.435 to the number of ANC visits and has a positive value. Therefore, the resulting regression model is:

$$Y = -5,775 + 4,435 X$$

Where:

Y = Number of ANC visits

X = Mother's Education

The number of pregnancy visits or Ante Natal Care (ANC) has a strong relationship with the education pursued by prospective mothers. Theoretically, the higher the education of the mother, the more information that is known by the mother about the pregnancy. So with the information they have, mothers will use existing health facilities to protect their babies. Or briefly, it can be interpreted that education has a role in pregnancy visits (ANC). Likewise, the lower the education of mothers, the less absorption of information received and will also affect the utilization of health services.

In the case study in Sidoluhur Village, this theory was successfully proven. The results showed that this situation was running positively or in the same direction. The higher education that

is taken by the mother, will also affect the mindset to better maintain health and pregnancy. Most mothers with high education think that making an ANC visit to an existing health care facility will better ensure the safety of the mother and the baby in their womb. Based on research that has been done it can be seen that education has an important role in pregnancy visits or consultations for the expectant mothers.

Conclusion

Malang Regency is one of the three regions in East Java province that has a high rate of maternal mortality. BPS noted that Sidoluhur Village in Lawang District was the area with the highest maternal mortality rate (MMR) in Malang Regency. Therefore, researchers are interested in conducting research in this area. This study conducted to see whether education plays a role in the number of pregnancy visits (ANC) that have been done by expectant mothers. Ante Natal Care (ANC) itself is known to be one of the factors inhibiting the occurrence of maternal and infant mortality. By consulting a pregnancy, the parents of the baby can see the development and find out how to act if there is a problem that occurs during the pregnancy.

Theoretically, education influences mothers' knowledge about pregnancy, so it will also affect the number of pregnancy consultations (ANC) as an existing health service facility. This theory is proven in this research. Based on the results of the Spearman correlation test, it is known that education has a strong effect on the number of pregnancy consultation visits (ANC). This situation is strengthened by the results of logistic regression which shows that the two variables run in the same direction, are positive. There is 67.1% influence that education has on the ANC. The remaining 32.9% is another factor that can affect the number of ANC visits or health service utilization. From this research, we know that the higher education that is taken by the mother will also affect the mother's behavior on pregnancy health. Most mothers with high

education think that making an ANC visit to an existing health care facility will better ensure the safety of the mother and the baby in their womb.

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