

Ecological Analysis of Maternity Care in Indonesia in 2018

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Abstract

Policies that encourage maternity care to health care facilities are an important effort to reduce maternal mortality rates. This study aims to analyze the factors related to maternity care coverage in Indonesia. The ecological analysis was conducted using secondary data from the Ministry of Health of the Republic of Indonesia report in 2018. All provinces were taken as samples. In addition to coverage of childbirth in health care facilities as the dependent variable, there were 6 independent variables analyzed in this study, namely percentage of poor families, a ratio of primary health care/100,000 population, a ratio of hospital/100,000 population, a ratio of gynecologist/100,000 population, a ratio of midwife/100,000 population, and coverage of health insurance ownership. Data were analyzed using cross-tabulation. The results show the percentage of poor families tends to have a negative relationship with maternity care coverage. Besides, four other variables were found to tend to have a positive relationship with maternity care coverage, namely the ratio of primary health care/100,000 population, the ratio of hospital/100,000 population, the ratio of gynecologist/100,000 population, and coverage of health insurance ownership. Meanwhile, the ratio of the midwife/100,000 population was found to have no relationship with maternity care coverage in Indonesia. It was concluded that 5 variables show the tendency of the relationship with maternity care coverage in health care facilities in Indonesia.

Keywords: ecological analysis, secondary data, maternity care, maternal health.

Background

Health development is the implementation of health efforts to achieve the ability to live healthy independently by increasing the optimal degree of public health, improving the quality of human resources, and equal distribution of health service coverage. To equalize the reach of health services with a focus on basic health services, the government has built primary health care and its network throughout Indonesia. On average, each district has two primary health care¹.

Currently, births performed by health workers in health care facilities are recorded at 79.3%². This situation still does not meet the target of the Minimum Service Standards that should be, namely 100% of mothers giving birth to health care facilities, following the Regulation of the Minister of Health of the Republic of Indonesia No. 741/Menkes/Per/VII/2008 concerning

Minimum Service Standards in the Health Sector.

Provision of adequate health service facilities and improving the quality of health services is not sufficient to accelerate the reduction in maternal mortality. The condition of childbirth is an unpredictable process and bleeding is still one of the three main causes of death in Indonesia, which requires fast handling and adequate facilities so that if you experience an emergency maternal condition you can immediately get services compared to giving birth at home³.

Previous studies that examined equity in health services informed that in countries that have not implemented a social insurance system, the cost of health services will greatly affect access to health services^{4,5}. It was informed that the cost of health services is a barrier to accessing health services^{4,6}.

The quality and access to health services have a major influence on the successful implementation of health development. Where Indonesia is an area with quite complex geographical conditions and there is still an imbalance in the distribution of health facilities so that access to health services is still an important task to be resolved together so that all people experience fair and equitable benefits⁷. Based on the background description, this study aims to analyze the factors related to the coverage of maternity care in health care facilities in Indonesia.

Materials and Methods

The study was designed using an ecological analysis approach. Ecological studies focus on comparisons between groups, not individuals. The data analyzed is aggregate data at a certain group or level, which in this study is the provincial level. The variables in an ecological analysis can be aggregate measurements, environmental measurements, or global measurements^{8,9}.

The study was conducted using secondary data from the 2018 Indonesia Basic Health Survey report and the 2018 Data and Information of Indonesia Health Profile. Both reports were issued officially by the Ministry of Health of the Republic of Indonesia. The unit of analysis in this study is the province. All provinces in Indonesia were analyzed (34 provinces).

The dependent variable in this study was the coverage of maternity care in health care facilities. In addition to the coverage of deliveries in health care facilities as the dependent variable, 6 independent variables were analyzed in this study, namely percentage of poor families, the ratio of primary health care/100,000 population, the ratio of hospital/100,000 population, the ratio of gynecologist/100,000 population, ratio. of midwife/100,000 population, and coverage of health insurance ownership. Data were analyzed by univariate and bivariate. Bivariate analysis was performed using cross-tabulation. The entire analysis process utilizes SPSS 21 software.

Results and Discussion

Table 1 is a statistical description of the 7 variables analyzed. There is a very high gap in all variables. The highest coverage of deliveries in health care facilities was in Bali province (98.50%) and the lowest was in Maluku province (30.10%). Another variable that has a fairly high variation in values is the ratio of the gynecologist. The highest ratio of obstetricians was in Bali Province (39.40%) and the lowest was in West Sulawesi (3.90%). Besides, the variable percentage of health insurance coverage also shows a high variation in value.

Table 1. Descriptive Statistics of Maternity Care Coverage in Health Care Facilities and Analyzed Factors in Indonesia, 2018

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Coverage of Maternity Care in Health Care Facilities	34	30.10%	98.50%	71.78%	17.08%
Percentage of Poor Families	34	3.55%	27.43%	10.74%	5.65%
Ratio of Primary Health Care/100,000 population	34	0.73	7.30	1.54	1.05
Ratio of Hospital/100,000 population	34	0.71	2.33	1.28	0.36

Cont... Table 1. Descriptive Statistics of Maternity Care Coverage in Health Care Facilities and Analyzed Factors in Indonesia, 2018

Ratio of Gynecologist/100,000 population	34	3.90	39.40	15.93	8.11
Ratio of Midwife/100,000 population	34	59.80	94.60	82.52	8.54
Coverage of Health Insurance Ownership	34	58.36%	165.45%	84.91%	21.97%

Source: The 2018 Indonesia Basic Health Survey and The 2018 Indonesia Health Profile

This information shows that there is a fairly high disparity between provinces with high and low coverage of maternity care in health care facilities. Inequality shows that the trend is better in the West due to the uneven impact of health development¹⁰. This imbalance is further deepened by the geographic conditions of Eastern Indonesia which tend to be more extreme, which has further accelerated efforts to distribute development in the region^{10,11}. Meanwhile, another study states that unfavorable geographical conditions will limit people’s access to health care facilities¹².

Table 2 displays the results of the cross-tabulation of the percentage of poor families and maternity care coverage in health care facilities in Indonesia. It can be seen that there is a tendency for a negative relationship. The higher the percentage of poor families in a province, the lower the maternity care coverage in health care facilities in Indonesia. Previous research has found that poverty affects people’s accessibility to health care facilities. Economic factors play an important role in determining the choice of place of delivery because the use of health facilities and facilities depends on the community’s ability to pay^{13,14}.

Table 2. Cross-tabulation of Percentage of Poor Families and Maternity Care Coverage in Health Care Facilities in Indonesia, 2018

The Percentage of Poor Families	Coverage of Maternity Care in Health Care Facilities						Total	
	Low (30.10-52.90)		Middle (52.91-75.71)		High (75.72-98.50)			
	N	%	N	%	N	%	N	%
Low (< 7.25)	2	5.9%	5	14.7%	4	11.8%	11	32.4%
Middle (7.25-12.15)	3	8.8%	3	8.8%	6	17.6%	12	35.3%
High (> 12.15)	6	17.6%	4	11.8%	1	2.9%	11	32.4%

Source: The 2018 Indonesia Basic Health Survey and The 2018 Indonesia Health Profile

Table 3 shows the results of the cross-tabulation of primary health care/100,000 population and maternity care coverage in health care facilities in Indonesia. It can be seen that the higher the primary health care/100,000 population in a province, the higher the coverage in health care facilities.

Table 3. Cross-tabulation of Primary Health Care/100,000 Population and Maternity Care Coverage in Health Care Facilities in Indonesia, 2018

The Ratio of Primary Health Care/100,000 population	Coverage of Maternity Care in Health Care Facilities						Total	
	Low (30.10-52.90)		Middle (52.91-75.71)		High (75.72-98.50)			
	N	%	N	%	N	%	N	%
Low (< 1.31)	5	14.7%	5	14.7%	2	5.9%	12	35.3%
Middle (1.31-1.47)	5	14.7%	4	11.8%	2	5.9%	11	32.4%
High (> 1.47)	1	2.9%	3	8.8%	7	20.6%	11	32.4%

Source: The 2018 Indonesia Basic Health Survey and The 2018 Indonesia Health Profile

Moreover, Table 4 displays the results of the cross-tabulation of hospital/100,000 population ratio and maternity care coverage in health care facilities in Indonesia. It can be seen that there is a tendency between a high hospital/100,000 population ratio to have high maternity care coverage in health care facilities.

Table 4. Cross-tabulation of Hospital/100,000 Population Ratio and Maternity Care Coverage in Health Care Facilities in Indonesia, 2018

The Ratio of Hospital/100,000 population	Coverage of Maternity Care in Health Care Facilities						Total	
	Low (30.10-52.90)		Middle (52.91-75.71)		High (75.72-98.50)			
	N	%	N	%	N	%	N	%
Low (< 1.09)	5	14.7%	4	11.8%	3	8.8%	12	35.3%
Middle (1.09-1.39)	6	17.6%	3	8.8%	2	5.9%	11	32.4%
High (> 1.39)	0	0.0%	5	14.7%	6	17.6%	11	32.4%

Source: The 2018 Indonesia Basic Health Survey and The 2018 Indonesia Health Profile

The higher the ratio of primary health care and hospital in a province, the higher the maternity care coverage in health care facilities. This is possible due to the impact of local health financing policies in several regencies/cities and provinces that eliminate service fees from basic health care facilities to hospitals¹⁵.

Table 5. Cross-tabulation of The Gynecologist Ratio/100,000 population and Maternity Care Coverage in Healthcare Facilities in Indonesia, 2018

Ratio of Gynecologist/100,000 population	Coverage of Maternity Care in Health Care Facilities						Total	
	Low (30.10-52.90)		Middle (52.91-75.71)		High (75.72-98.50)			
	N	%	N	%	N	%	N	%
Low (< 12.71)	6	17.6%	4	11.8%	1	2.9%	11	32.4%
Middle (12.71-16.70)	4	11.8%	4	11.8%	4	11.8%	12	35.3%
High (> 16.70)	1	2.9%	4	11.8%	6	17.6%	11	32.4%

Source: The 2018 Indonesia Basic Health Survey and The 2018 Indonesia Health Profile

Table 5 shows the results of the cross-tabulation of gynecologist ratio/100,000 population and maternity care coverage in healthcare facilities in Indonesia. It can be seen that the higher the ratio of the gynecologist/100,000 population, the higher the maternity care coverage in healthcare facilities. This condition is possible because of the rare or uneven presence of gynecologists in each province¹⁶.

Table 6 shows the results of the cross-tabulation of the ratio of midwives/100,000 population and maternity care coverage in health care facilities in Indonesia. It can be seen that there is no trend towards the relationship between the ratio of midwives/100,000 population and maternity care coverage in health care facilities. Although the ratio of midwives in a province shows a high number, this is not followed by high coverage of deliveries in health care facilities.

Table 6. Cross-tabulation of Ratio of Midwives/100,000 Population and Maternity Care Coverage in Health Care Facilities in Indonesia, 2018

Ratio of Midwife/100,000 population	Coverage of Maternity Care in Health Care Facilities						Total	
	Low (30.10-52.90)		Middle (52.91-75.71)		High (75.72-98.50)			
	N	%	N	%	N	%	N	%
Low (< 81.34)	1	2.9%	4	11.8%	6	17.6%	11	32.4%
Middle (81.34-86.23)	4	11.8%	4	11.8%	4	11.8%	12	35.3%
High (> 86.23)	6	17.6%	4	11.8%	1	2.9%	11	32.4%

Source: The 2018 Indonesia Basic Health Survey and The 2018 Indonesia Health Profile

Table 7 shows the results of the cross-tabulation of the percentage of health insurance ownership and maternity care coverage in health care facilities in Indonesia. It can be seen that there is a tendency that the higher the percentage of health insurance ownership in a province, the higher the maternity care coverage in

health care facilities. This information is in line with previous research in Indonesia^{17,18}. Although there are also studies that have found different information. Having health insurance does not guarantee a person to take advantage of health services^{19,20}.

Table 7. Cross-tabulation of Percentage of Health Insurance Ownership and Maternity Care Coverage in Health Care Facilities in Indonesia, 2018

Coverage of Health Insurance Ownership	Coverage of Maternity Care in Health Care Facilities						Total	
	Low (30.10-52.90)		Middle (52.91-75.71)		High (75.72-98.50)			
	N	%	N	%	N	%	N	%
Low (< 75.52)	4	11.8%	4	11.8%	3	8.8%	11	32.4%
Middle (75.52-86.57)	5	14.7%	3	8.8%	4	11.8%	12	35.3%
High (> 86.57)	2	5.9%	5	14.7%	4	11.8%	11	32.4%

Source: The 2018 Indonesia Basic Health Survey and The 2018 Indonesia Health Profile

The information generated from this research is ecological information. Although it can guide the direction of policies to be taken, further research is needed to study cases in each province. This is to dig deeper into the causes of inequality in maternity care coverage in health care facilities.

Conclusions

Based on the results of the study, it could be concluded 5 variables that show a tendency to have a relationship with maternity care coverage in health care facilities in Indonesia. The percentage of poor families was found to tend to have a negative relationship with maternity care coverage in health care facilities. Meanwhile, four variables tend to have a positive relationship with maternity care coverage in health care facilities, namely the ratio of primary health care/100,000 population, ratio of hospital/100,000 population, the ratio of gynecologist/100,000 population, and coverage

of health insurance ownership.

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Ethical Clearance: The study was conducted by utilizing secondary data from published reports. For this reason, ethical clearance is not required in the implementation of this study.

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