

Factors Related to Postnatal Care Utilization in Indonesia in 2018: An Ecological Study

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Abstract

Postnatal care is very crucial in the postnatal period because it is a critical period for babies. This study aims to analyze the factors related to postnatal care utilization (1st neonatal visits) 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. Apart from postnatal care utilization, 5 other variables analyzed as independent variables were the ANC 1st visit, ANC 4th visits, poverty depth index, percentage of health centers with sufficient midwives, and the ratio of gynecologist per 100,000 population. The results show there was a tendency for a positive relationship between ANC 1st visit and 1st neonatal visit. The higher the ANC 1st visit coverage, the higher the 1st neonatal visit coverage ($p = 0.034$). Meanwhile, there was also a trend towards a positive relationship between the ANC 1st visit and the 1st neonatal visit. The higher the coverage of the ANC 4th visit, the higher the coverage of the 1st neonatal visit ($p = 0.040$). Moreover, poverty depth index, percentage of health centers with sufficient midwives, and the ratio of gynecologist per 100,000 population were found to have no significant correlation with 1st neonatal visits. It could be concluded that from the 5 independent variables analyzed, 2 variables were proven to be ecologically positively related to postnatal care utilization (1st neonatal visit), namely ANC 1st visit and ANC 4th visit.

Keywords: ecological analysis, secondary data, postnatal care, antenatal care, mother and child health.

Background

The neonatal period, or the first twenty-eight days of life, is the most vulnerable time for child survival. WHO reports that in 2018, 47% of all under-five deaths occurred in the neonatal period¹. Meanwhile, Unicef in 2018 recorded the global average neonatal mortality rate of 18 deaths per 1,000 live births². Early neonatal mortality is more closely related to factors related to pregnancy and maternal health, whereas late neonatal mortality is more closely related to factors in the newborn environment^{3,4}.

One of the ways to prevent neonatal death is to do neonatal death. According to the standards of midwifery

care released by the Indonesia Ministry of Health, all babies born healthy must receive comprehensive care until the age of one month. This care can be obtained through three home visits, namely the 1st neonatal visit in the first 48 hours, the 2nd neonatal visit on the 3rd to the 7th day, and the 3rd neonatal visit after one week to the 28th day according to the needs of each family through a neonatal visit, it can be seen if there are complications in the baby so that they can be resolved immediately and if it is not possible to overcome them, they are immediately referred to a more complete facility so that they can get optimal care. The neonatal visit is expected to reduce infant mortality⁵.

Previous studies have informed that antenatal care (ANC) is a predictor of postnatal care. Mothers who do ANC well tend to also have postnatal care visits after giving birth^{6,7}. Meanwhile, socioeconomic factors are

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also reported to affect postnatal visits to health workers. This is related to the ability to pay service fees⁸. Besides, the government must be able to guarantee the availability of midwives and gynecologists as the personnel who provide midwifery services.

Based on the background description, this study aims to analyze ecologically the factors associated with postnatal care utilization (1st neonatal visit) in Indonesia. The ecological analysis carried out in this study is important to provide clear guidance on policy targets for policy-makers to accelerate postnatal care coverage in Indonesia, so that it is expected to reduce infant mortality.

Materials and Methods

The study was conducted 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^{9,10}. The ecological analysis was conducted using secondary data from the reports “the 2018 Indonesia Basic Health Survey” and “the 2018 Indonesia Health Profile”. Both reports are official reports from the Ministry of Health of the Republic of Indonesia. The unit of analysis in this study was the province. All provinces were included in the analysis (34 provinces).

The dependent variable in this study was “postnatal care utilization”. Postnatal care utilization in this study was the first neonatal visit in a health care facility. Besides postnatal care utilization, there are 5 other variables analyzed as independent variables. The five variables are ANC 1st visit, ANC 4th visit, poverty depth index, percentage of health centers with sufficient midwives, and the ratio of gynecologist per 100,000 population. The poverty depth index was an indicator to measure the average gap based on the costs incurred by each poor population compared to the poverty line. A higher index value indicates the average expenditure of the poor moving away from the poverty line.

The analysis was carried out by bivariate using cross-tabulation and significance test with Spearman Rho. The entire analysis process utilizes SPSS 21 software.

Results and Discussion

Table 1 descriptive statistics of postnatal care utilization and related factors in Indonesia. Based on the coverage of the 1st neonatal visit, there is a very high gap between provinces. The highest coverage of the 1st neonatal visit in health care facilities was in the Province of East Nusa Tenggara (56.3%) and the lowest was in the Province of North Sumatra (13.6%).

Table 1. Descriptive Statistics of Postnatal Care Utilization and Related Factors in Indonesia in 2018

Descriptive Statistics	1st Neonatal Visit	ANC 1st Visit	ANC 4th Visits	Poverty Depth Index	Percentage of Health Centers with Sufficient Midwives	Ratio of Gynecologist
N	34	34	34	34	34	34
Mean	37.36	81.6559	67.2765	0.9106	3.5426	2.9348
Median	37	84.4500	67.2500	0.6800	2.5350	2.7642
Mode	25.10a	88.30a	65.10a	0.36a	0.00	0.14a
Std. Deviation	10.36582	8.24368	11.71699	0.77139	2.99496	1.67275

Cont... Table 1. Descriptive Statistics of Postnatal Care Utilization and Related Factors in Indonesia in 2018

Variance	107.450	67.958	137.288	0.595	8.970	2.798
Range	42.70	30.90	46.40	3.95	12.08	9.30
Minimum	13.60	63.50	43.80	0.11	0.00	0.14
Maximum	56.30	94.40	90.20	4.06	12.08	9.44

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

Table 2 shows the cross-tabulation between the ANC 1st visit and 1st neonatal visit in Indonesia. It can be seen that based on the coverage of the 1st neonatal visit in the high category, the ANC 1st visit in the low category (18.2%) had a lower percentage than the 1st visit in the high category (45.5). This information shows a trend towards a positive relationship between ANC 1st visit and 1st neonatal visit. The higher the ANC 1st visit coverage, the higher the 1st neonatal visit coverage. The results of the correlation test also showed significant results between the two variables ($p=0.034$).

Table 2. Cross-tabulation between ANC 1st Visit and 1st Neonatal Visit in Indonesia, 2018

ANC 1st Visit	1st Neonatal Visit					
	Low (< 2.16)		Middle ($2.16-3.21$)		High (> 3.21)	
	N	%	N	%	N	%
Low (< 32.27)	6	54.5	3	25.0	2	18.2
Middle ($32.27-44.00$)	4	36.4	4	33.3	4	36.4
High (> 44.0)	1	9.1	5	41.7	5	45.5
Total	11	100.0	12	100.0	11	100.0

Source: The 2018 Indonesia Basic Health Survey

Table 3 provides the cross-tabulation between the ANC 4th visit and the 1st neonatal visit in Indonesia. It can be seen that based on the coverage of the 1st neonatal visit in the high category, the ANC 4th visit in the low category (9.0%) had a lower percentage than the ANC 4th visit in the high category (54.5). This information shows a trend towards a positive relationship between ANC 1st visit and 1st neonatal visit. The higher the coverage of the ANC 4th visit, the higher the coverage of the 1st neonatal visit. The results of the correlation test also showed significant results between the two variables ($p=0.040$).

Table 3. Cross-tabulation between ANC 4th Visit and 1st Neonatal Visit in Indonesia, 2018

ANC 4th Visit	1st Neonatal Visit					
	Low (< 2.16)		Middle ($2.16-3.21$)		High (> 3.21)	
	N	%	N	%	N	%
Low (< 61.37)	6	54.5	4	33.3	1	9.1
Middle ($61.37-73.23$)	5	45.5	3	25	4	36.4
High (> 73.23)	0	0.0	5	36.4	6	54.5
Total	11	100.0	12	100.0	11	100.0

Source: The 2018 Indonesia Basic Health Survey

This finding is in line with the findings in previous studies, which informed that mothers who did ANC visits performed more postnatal care than mothers who did not carry out ANC visits^{11,12}. This is because mothers who complete ANC will get counseling from midwives to carry out postnatal care so that mothers who do antenatal care will be more motivated to carry out postnatal care than mothers who do not make ANC visits^{7,13}.

Table 4 shows the cross-tabulation between poverty depth index and 1st neonatal visit in Indonesia. It can be seen that based on the coverage of the 1st neonatal visit category high, the poverty depth index visit category

low (45.5%) has a higher percentage than the poverty depth index category high (27.3%). This information shows the tendency of a negative relationship between the poverty depth index and the 1st neonatal visit. The higher the percentage of poverty depth index, the lower the coverage of 1st neonatal visit. However, the results of the correlation test also showed insignificant results between the two variables ($p = 0.128$). These findings differ from previous studies which inform that socioeconomic or wealth status is associated with postnatal care^{8,14}.

Table 4. Cross-tabulation between Poverty Depth Index and 1st Neonatal Visit in Indonesia, 2018

Poverty Depth Index	1st Neonatal Visit					
	Low (< 2.16)		Middle ($2.16-3.21$)		High (> 3.21)	
	N	%	N	%	N	%
Low (< 0.53)	3	27.3	3	25	5	45.5
Middle ($0.53-0.98$)	3	27.3	6	50	3	27.3
High (> 0.98)	5	45.5	3	25	3	27.3
Total	11	100.0	12	100.0	11	100.0

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

Table 5 shows the cross-tabulation between the percentage of health centers with sufficient midwives and 1st neonatal visit in Indonesia. It can be seen that based on the coverage of the 1st neonatal visit in the high category, there is no trend pattern of the relationship between the two variables. Moreover, the results of the correlation test also showed insignificant results between the two variables ($p=0.663$).

Similar information is also shared in previous studies. The study informed that although the input ratio of midwives was still below standard, several provinces were able to show better performance in the MCH program than those with a ratio of midwives above the

standard. The program performance analyzed in the study was coverage of ANC 1st visit, coverage of ANC 4th visit, neonatal visits, postpartum visits, and delivery assisted by health personnel¹⁵.

The ratio of midwives per 100 thousand population according to the standard is an effort to ensure the availability of services for the community. However, these indicators still have to consider other factors. Indonesia has extreme topographic variability. This condition makes the situation in some underdeveloped areas in Indonesia not available for midwives¹⁶. Often women who give birth end up choosing a shaman, a traditional birth attendant, who is relatively more available and closer to the community¹⁷⁻¹⁹.

Table 5. Cross-tabulation between Percentage of Health Centers with Sufficient Midwives and 1st Neonatal Visit and in Indonesia, 2018

Percentage of Health Centers with Sufficient Midwives	1st Neonatal Visit					
	Low (< 2.16)		Middle (2.16-3.21)		High (> 3.21)	
	N	%	N	%	N	%
Low (< 1.67)	3	27.3	5	41.7	3	27.3
Middle (1.67-3.98)	4	36.4	3	25.0	5	45.5
High (> 3.98)	4	36.4	4	45.5	3	27.3
Total	11	100.0	12	100.0	11	100.0

Source: The 2018 Indonesia Basic Health Survey

Table 6 shows the cross-tabulation between the ratio of gynecologist per 100,000 population and 1st neonatal visit in Indonesia. It can be seen that based on the coverage of the 1st neonatal visit in the high category, the ratio of gynecologists in the low category (30.0%) has a lower percentage of the poverty depth index category high (40.0%). This information shows

a trend towards a positive relationship between the ratio of the gynecologist and the 1st neonatal visit. The higher the percentage of poverty depth index, the lower the coverage of 1st neonatal visit. However, the results of the correlation test also showed insignificant results between the two variables ($p=0.431$).

Table 6. Cross-tabulation between Ratio of Gynecologist and 1st Neonatal Visit in Indonesia, 2018

Ratio of Gynecologist	1st Neonatal Visit					
	Low (< 2.16)		Middle (2.16-3.21)		High (> 3.21)	
	N	%	N	%	N	%
Low (< 2.16)	4	36.4	3	27.3	3	30.0
Middle (2.16-3.21)	5	45.5	4	36.4	3	30.0
High (> 3.21)	2	18.2	4	36.4	4	40.0
Total	11	100.0	12	100.0	10	100.0

Source: The 2018 Indonesia Basic Health Survey

The availability of gynecologists in Indonesia is often only in hospitals. The availability is uneven, often accumulating in big cities. Provinces with many large cities tend to have better access to gynecologists²⁰. This situation makes the gynecologist's ratio variable less sensitive.

Conclusions

Based on the research results, it could be concluded that of the 5 independent variables analyzed, there were 2 variables which are proven to be ecologically positively related to postnatal care utilization (1st neonatal visit). The two variables are the ANC 1st visit and ANC 4th visit.

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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.

Conflicting Interests: Nil

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