Barriers to Antenatal Care Utilization in Indonesia

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Abstract

MMR data in Indonesia fluctuates according to the data source used. Based on Indonesia Demographic and Health Survey data, MMR in Indonesia in 1990 was 390 per 100,000 live births, in 2004/2007 it was 228/100,000 live births, then increased sharply in 2008-2012 by 359/100,000 live births. Whereas based on the 2015 SUPA data, MMR in Indonesia decreased by 305 per 100,000 per live birth. This study aims to analyze the barrier to ≥4 ANC visits during pregnancy. The analysis uses the 2017 Indonesian Demographic and Health Survey data. Stratification and multistage random sampling method get 15,351 respondents. Barrier determination was done using Binary Logistic Regression. The barriers consisted of the following variables: young age, low education, high parity, poverty, not having health insurance, not being able to read, not being exposed to the media, never using the internet, not knowing the danger signs of pregnancy, and belief in traditional birth attendants.

Keywords: *Antenatal care, healthcare utilization, the barrier of utilization, mother and child health.*

Introduction

Maternal Mortality Rate (MMR) is an indicator of the level of women's health that illustrates the level of access, integrity, and effectiveness of the health sector. Therefore, MMR is often used as an indicator of the welfare level of a country. Since 1988, the Indonesian Ministry of Health has focused its policy on improving maternal health and well-being, as MMR's reaction is still high in Indonesia. Starting from the "Safe Motherhood" program in 1988, the Dear Mother Movement in 1996, the National Strategic Plan for Making Pregnancy Safer in 2001-2010, Birth Assurance in 2011, to the National Action Plan for Acceleration in Decreasing Maternal Mortality Rates 2013-2015[1].

MMR data in Indonesia fluctuates according to the data source used. Based on Indonesia Demographic and Health Survey Data, MMR in Indonesia in 1990 was 390 per 100,000 live births, in 2004/2007 it was 228/100,000 live births, then increased sharply in 2008-2012 by 359/100,000 live births. Whereas based on the 2015 SUPA data, MMR in Indonesia decreased by 305 per 100,000 per live birth[1].

One of the policies to reduce MMR in Indonesia is an effort to improve the quality of health services, especially pregnant woman examination services by professionals who are following integrated Antenatal Care (ANC) service standards. Minimum ANC standard services include 1) Measure Weigh; 2) Measure the circumference of the upper arm; 3) Measure blood pressure; 4) Measure fundal height; 5) Calculate fetal heart rate; 6) Determine the fetal presentation; 7) Give TT immunization; 8) Give blood plus tablets (Fe); 9) Check routine and specialized laboratories (blood type examination, blood hemoglobin level check, urine protein check, blood sugar level check, malaria blood test, syphilis test, HIV test, and smear examination); 10) Management or handling of cases[2].

Several recent studies have shown that health-seeking behavior is influenced by individual and household factors, including education, marital status,

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wealth status, health insurance[3], and health belief[4]. Besides, external factors such as the availability of information and media exposure also contribute to health-seeking behavior[5].

This study was conducted to analyze the barrier of the use of ≥4 ANC visits during pregnancy in women aged 15-49 years old who gave birth in the last five years in Indonesia. The results of this study are useful for the Ministry of Health to determine the acceleration of ANC utilization policy of at least 4 visits during pregnancy to reduce maternal mortality in Indonesia.

Materials and Method

This research was conducted using secondary data from the 2017 Indonesian Demographic Data Survey (IDHS). The IDHS was part of the International Demographic and Health Survey program conducted by the Inner City Fund. The 2017 IDHS sampling method was done by stratification and multistage random sampling. With the analysis unit of women aged 15-49 years old who had given birth in the last 5 years, a sample size of 15,351 women was obtained.

Following recommendations from the Ministry of Health, ANC was performed at least 4 times during pregnancy, which was at least 1 time in the first trimester, at least 1 time in the second trimester, and at least 2 times in the third trimester[6].Other variables analyzed are the place of residence, age, marital status, education level, parity, wealth status, health insurance, literacy, media exposure, frequency of media, use of the internet, know the danger of pregnancy, and belief in traditional birth attendants. Barrier determination was done using Binary Logistic Regression because of the nature of the dependent variable. All statistical analyses were carried out using SPSS 21 software.

Results and Discussion

Table 1 is a statistical description of the socio-demographic characteristics of respondents. There are significant differences between women who make <4 ANC visits compared to women who make ≥4 ANC visits in all socio-demographic categories. Women who make ≥4 ANC visits are more dominant in urban areas and the 30-34 age group.

Table 1. Socio-Demographic of Respondents (n=15,351)

Variables	ANC		All	P
	<4 visits	≥4 visits		
Place				0.000***
• Urban	627(34.45%)	6941(51.30%)	7568(49.30%)	
• Rural(ref.)	1193(65.55%)	6590(48.70%)	7783(50.70%)	
Age				<0.001***
• 15-19	102(5.60%)	314(2.32%)	416(2.71%)	
• 20-24	309(16.98%)	2105(15.56%)	2414(15.73%)	
• 25-29	394(21.65%)	3453(25.51%)	3847(25.06%)	
• 30-34	408(22.42%)	3555(26.27%)	3963(25.82%)	
• 35-39	351(19.29%)	2705(19.99%)	3056(19.91%)	
• 40-44	201(11.04%)	1156(8.54%)	1357(8.84%)	
• 45-49 (ref.)	55(3.02%)	243(1.80%)	298(1.94%)	
Marital				<0.001***
• Single/Never in union (ref.)	8(0.44%)	20(0.15%)	28(0.18%)	
• Married/Living with partner	1702(93.52%)	13141(97.12%)	14843(96.69%)	
• Widowed/Divorced	110(6.04%)	370(2.73%)	480(3.13%)	
Education				<0.001***
• No education(ref.)	88(4.84%)	116(0.86%)	204(1.33%)	
• Primary	695(38.19%)	3164(23.38%)	3859(25.14%)	

Variables	ANC		All	P
	<4 visits	≥4 visits		
• Secondary	857(47.09%)	7771(57.43%)	8628(56.20%)	
• Higher	180(9.89%)	2480(18.33%)	2660(17.33%)	
Parity				<0.001***
• <2	459(25.22%)	4296(31.75%)	4755(30.98%)	
• 2-4	1013(55.66%)	8394(62.04%)	9407(61.28%)	
• >4 (ref.)	348(19.12%)	841(6.22%)	1189(7.75%)	
Wealth status				<0.001***
• Poorest (ref.)	913(50.16%)	3160(23.35%)	4073(26.53%)	
• Poorer	368(20.22%)	2663(19.68%)	3031(19.74%)	
• Midle	260(14.29%)	2630(19.44%)	2890(18.83%)	
• Richer	171(9.40%)	2589(19.13%)	2760(17.98%)	
• Richest	108(5.93%)	2489(18.39%)	2597916.92%)	
Health insurance				<0.001***
• No(ref.)	851(46.76%)	4988(36.86%)	5839(38.04%)	
• Yes	969(53.24%)	8543(63.14%)	9512(61.96%)	

Note: *p<0.05; **p<0.01; ***p<0.001.

Table 1 informs that women who make ANC visits during pregnancy are dominated by women who are married or living with partners. The education level category is dominated by secondary education women. Table 1 shows that women who made ANC visits during pregnancy were dominated by women who had parity 2-4 and were very poor. Dominance is also shown by women who are covered by health insurance.

Table 2 is a statistical description of the characteristics of knowledge and information exposure of respondents aged 15-49 years old who gave birth in the last five years in Indonesia. Table 2 informs that there are significant differences between women who make <4 ANC visits compared with women who make ≥4 ANC visits during pregnancy in all categories.

Table 2 shows that women who were able to read whole sentences were exposed to the media less than once a week, and had never used the internet were more dominant in both ANC frequency categories. While in the "know the danger sign of pregnancy" category, the group of women who made ≥4 ANC visits during pregnancy was dominated by those who knew. While the group of women who made ≥4 ANC visits during pregnancy was dominated by those who did not know. Table 2 informs us that in both categories ANC frequencies were dominated by women who did not believe in traditional birth attendants.

Table 2. Knowledge and exposure of information (n=15,351)

Variables	ANC		All	P
	<4 visits	≥4 visits		
Literacy				<0.001***
• Cannot read at all (ref.)	180(9.89%)	324(2.39%)	504(3.28%)	
• Able to read only part of sentences	96(5.27%)	251(1.85%)	347(2.26%)	
• Able to read whole sentence	1540(84.62%)	12939(95.62%)	14479(94.32%)	
• Blind/visually impaired	4(0.22%)	17(0.13%)	21(0.14%)	

Variables	ANC		All	P
	<4 visits	≥4 visits		
Media exposure				<0.001***
• No (ref.)	185(10.16%)	414(3.06%)	599(3.90%)	
• Yes	1635(89.84%)	13117(96.94%)	14752(96.10%)	
Frequency of media				<0.001***
• Less than once a week (ref.)	1394(76.59%)	9109(67.32%)	10503(68.42%)	
• At least one a week	426(23.41%)	4422(32.68%)	4848(31.58%)	
Use of internet				<0.001***
• Never (ref.)	1349(74.12%)	7029(51.95%0	8378(54.58%)	
• Yes, last 12 months	428(23.52%)	6221(45.98%)	6649(43.31%)	
• Yes, before last 12 month	43(2.36%)	281(2.08%)	324(2.11%)	
Know the danger sign of pregnancy				<0.001***
• No (ref.)	1061(58.30%)	4406(32.56%)	5467(35.61%)	
• Yes	759(41.70%)	9125(67.44%)	9884(64.39%)	
Belief in traditional birth attendant				<0.001***
• No (ref.)	1661(91.26%)	13034(96.33%)	14695(95.73%)	
• Yes	159(8.74%)	497(3.67%)	656(4.27%)	

Note: *p<0.05; **p<0.01; ***p<0.001.

Table 3 shows the results of the binary logistic regression test which illustrates the barrier of using ANC in Indonesia. As reference is <4 ANC visits during pregnancy. Table 3 shows that women in the 15-19 age group were 0.286 times more likely than women in the 44-49 age group to make ≥4 ANC visits during pregnancy. While women in the 20-24 age group were 0.569 times more likely than women in the 44-49 age group. This shows that younger age is a barrier to make ≥4 ANC visits during pregnancy. A study in Angola from a different perspective also found similar results. The study found that older women had better chances of utilizing ANC[7].

Table 3. Binary Logistic Regression of ANC Utilization (n=15,351)

Predictor	≥4 ANC visits			
	P	OR	Lower Bound	Upper Bound
Place: Urban	0.905	0.993	0.879	1.121
Age: 15-19	<0.001***	0.286	0.185	0.443
Age: 20-24	0.003**	0.569	0.392	0.827
Age: 25-29	0.195	0.790	0.554	1.128
Age: 30-34	0.668	0.927	0.655	1.312
Age: 35-39	0.849	1.034	0.734	1.458
Age: 40-44	0.799	0.955	0.668	1.364
Marital: Married/Living with partner	0.487	1.360	0.571	3.238
Marital: Widowed/Divorced	0.326	0.639	0.261	1.562
Education: Primary	0.013*	1.593	1.104	2.300

Predictor	≥4 ANC visits			
	P	OR	Lower Bound	Upper Bound
Education: Secondary	0.007**	1.713	1.161	2.526
Education: Higher	0.507	1.155	0.755	1.767
Parity: <2	<0.001***	3.930	3.142	4.915
Parity: 2-4	<0.001***	2.627	2.215	3.115
Wealth status: Poorer	<0.001***	1.528	1.323	1.764
Wealth status: Midle	<0.001***	1.807	1.530	2.134
Wealth status: Richer	<0.001***	2.328	1.907	2.842
Wealth status: Richest	<0.001***	3.127	2.441	4.006
Insurance: Yes	<0.001***	1.408	1.266	1.566
Literacy: Able to read only part of sentences	0.554	0.902	0.640	1.270
Literacy: Able to read whole sentence	0.016*	1.385	1.061	1.807
Literacy: Blind/visually impaired	0.680	1.273	0.404	4.010
Media exposure: yes	0.004**	1.366	1.106	1.687
Frequency of media: At least one a week	0.196	0.920	0.810	1.044
Internet: Yes. last 12 months	<0.001***	1.413	1.215	1.644
Internet: Yes. before last 12 month	0.647	1.085	0.766	1.537
Know the danger sign of pregnancy: Yes	<0.001***	1.900	1.703	2.121
Belief in traditional birth attendant: Yes	<0.001***	0.527	0.432	0.643

Note: *p<0.05; **p<0.01; ***p<0.001.

The women with primary education are 1.593 times more likely than no education women to make ≥4 ANC visits during pregnancy. While women with secondary education were 1.713 times more likely than no education. This condition shows that uneducated is a barrier to ≥4 ANC visits during pregnancy. The result is similar to previous research that found the same phenomenon[8]. The higher a person's education, the better her chance in utilizing health services, because she knows about her needs, and knows how to fulfill them[9–11].

The research shows that have many children is a barrier to making ≥4 ANC visits. The results of this analysis are in line with studies conducted in Eastern Ethiopia. The study found that primiparous and multiparous women had lower birth preparedness and complication readiness than primiparous women. Having many children was also informed as a predictor of neonatal death in Indonesia[12,13]

Wealth status in all categories there is a better chance than the poorest women. The richer the more likely it is to make ≥4 ANC visits. This condition shows that poverty is a barrier to ≥4 ANC visits during pregnancy. Moreover, the women who were covered by health insurance had 1.408 times more likely than women who were not covered by health. This shows that not having health insurance is a barrier to making ≥4 ANC visits during pregnancy.

Poor and without health insurance were found as barriers to get ≥4 ANC visits. These two conditions are interrelated. In general, it is known that health insurance can increase public access to health care facilities[14]. The same condition also applies to accessibility to get ≥4 ANC visits. Not having health insurance is a barrier to getting ≥4 ANC visits during pregnancy. Health financing policies in Indonesia try to reduce this barrier by providing subsidies for contributions to the National Health Insurance mechanism. It is hoped that this policy can improve the access of the poor to health services, including the ANC[15].

Table 3 informs us that in the literacy category, women who were able to read whole sentences were 1.385 times more likely than women who could not read

at all to make ≥4 ANC visits. This condition shows that the inability in literacy is a barrier to make ≥4 ANC visits during pregnancy. This finding is in line with the results of research in Afghanistan which found that women who could read were three times better than those who could not read when using ANC[16]. Literacy ability is a determining factor in the level of knowledge of obstetric danger signs and perceptions of the need for obstetric care[17].

Table 3 shows that women who were exposed to the media were 1.366 times more likely than women who were not exposed to the media to make ≥4 ANC visits. This shows that media exposure is a barrier to making ≥4 ANC visits during pregnancy. While the frequency of media exposure did not show any influence on the ANC frequency. Moreover, the women who used the internet last 12 months were 1.413 times more likely than women who never used the internet. This shows that never using the internet is a barrier to making ≥4 ANC visits during pregnancy. This condition is in line with the inability to read and low education, as well as its effects, being ignorant of the danger signs of pregnancy.

Table 3 shows that women who knew the danger sign of pregnancy were 1.900 times more likely than women who did not know the danger sign of pregnancy. This shows that ignorance of the danger sign of prevention is a barrier to making ≥4 ANC visits. While the women who believe in traditional birth attendants are 0.527 times more likely than women who do not believe in traditional birth attendants. This shows that belief in traditional birth attendants is a barrier to make ≥4 ANC visits during pregnancy. Indonesia has thousands of ethnic groups. There are still many health beliefs that exist among these tribes. This condition encourages Indonesian women to still trust traditional birth attendants[4].

Conclusions

Based on the results of the study, it could be concluded that 10 variables become a barrier for Indonesian women to make ≥4 ANC visits during pregnancy. The barriers consisted of the following variables: young age, low education, high parity, poverty, not having health insurance, not being able to read, not being exposed to the media, never using the internet, not knowing the danger signs of pregnancy, and belief in traditional birth attendants.

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