Are Problems During Pregnancy a Predictor of Childbirth in The Hospital?: Determinants Analysis of Hospital Childbirth in Urban Poor Communities in Indonesia

Ratna Dwi Wulandari[1], Agung Dwi Laksono[2]

[1]Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia, [2]Researcher, National Institute of Health Research and Development, The Indonesian Ministry of Health. Jakarta, Indonesia

Abstract

Although hospital services were available, urban poor people often have limited access to hospitals when needed. This study was conducted to analyze the determinants of childbirth in a hospital in urban poor women in Indonesia. The study uses raw data from the 2017 IDHS. With stratification and multistage random sampling, 7,891 women aged 15-49 years old in urban poor communities with live births in the last 5 years were sampled. Data were analyzed using a Binary Logistic Regression test. The results of the study found that "problems during pregnancy" was not proven as a determinant of the hospital use for delivery in urban poor women in Indonesia. Age was proven to be one of the determinants, while in the education level category, urban poor women with tertiary education were 2.506 times more likely to use hospitals for delivery than urban poor women who were not in school. Parity was significantly proven as one of the determinants that influence the use of hospitals for delivery in urban poor women in Indonesia. Urban poor women who were covered by health insurance have 1.933 times more possibility of utilizing hospital for delivery than those who do not have health insurance. It could be concluded that the "problem during pregnancy" variable was not a predictor of the hospital use for childbirth in the urban poor community in Indonesia. The determinants or variables that influence, on the hospital use for childbirth were age, education, parity, and health insurance.

Keywords: *childbirth, hospital, pregnancy, wealth, poor, urban.*

Introduction

Maternal Mortality Rate (MMR) in Indonesia is still quite high, even when compared to countries in the Southeast Asia region. In 2015 MMR was recorded at 305 per 100,000 live births. This achievement has decreased compared to MMR in 2012 which was in the range of 359 per 100,000 live births[1]. This milestone is documented in the 2016 Annual Report of Directorate of Family Health[2].

The 2017 Indonesian Demographic Data Survey (IDHS) results found that 74% of women in Indonesia gave birth in health care facilities. As many as 42% deliver at first-level health service facilities, which include the Health Center (Puskesmas) and its network, clinics, and practices of health workers. While there are 32% who deliver at the advanced level of referral service facilities, namely hospitals[3].

Urban poor people like living in a vicious circle. Between poor, uneducated, and sick, like a chain that is difficult to break[4,5]. Urban poor people tend to form their own colonies in urban slums. This condition is often due to high housing and land prices in urban areas[6]. Slum housing conditions actually increase the risk of the urban poor to fall ill[7]. The government must pay serious attention to the urban poor. This group of people tends to neglect health issues because they have little education. The urban poor tend to prioritize work matters rather than school and health matters[8].

Corresponding Author:
Ratna Dwi Wulandari
Email: ratna-d-w@fkm.unair.ac.id

Although hospital services were available, urban poor people often have limited access to hospitals when needed[9,10]. This situation could occur because of their ignorance, or because they did not have health insurance[11].

Based on the background, this article was prepared to analyze the determinants of childbirth hospitals in urban poor communities in Indonesia. The analysis in this study is useful for policymakers in the field of maternal health to formulate more detailed policies according to the targets identified in the study results. This step is necessary to ensure the reduction of obstacles for urban poor women to access maternity services in hospitals.

Materials and Methods

Secondary data from the 2017 Indonesian Demographic Data Survey (IDHS) was used as an analysis material in this study. The IDHS was part of the international Demographic and Health Survey (DHS) program conducted by the Inner City Fund. In Indonesia context, the 2017 IDHS was carried out by the Central Statistics Agency, in collaboration with the National Population and Family Planning Board and the Ministry of Health.

The 2017 IDHS sample was determined through stratification and multistage random sampling. The unit of analysis in this study was women aged 15-49 years old who had given birth in the last 5 years. The sample size of the 2017 IDHS used in this analysis was 7,891 women.

Problems during pregnancy were the respondent's acknowledgment of problems experienced during pregnancy until delivery. These problems consist of: prolonged labor, vaginal bleeding, fever, convulsions, baby in the wrong position, swollen limbs, faint, breathlessness, tiredness, and others[3]. Socioeconomics was the wealth status of respondent compiled based on index of goods ownership quintile stated by the respondent. The five categories were poorest (quintile 1), poorer (quintile 2), middle (quintile 3), richer (quintile 4), and richest (quintile 5). The urban poor category used in this study was people who live in urban areas and with wealth status in quintiles 1 and 2.

The 2017 IDHS data was obtained through a structured questionnaire. Variables analyzed included, age, education level, work status, marital status, parity, health insurance, and antenatal care. Statistical analysis using chi-square was carried out for dichotomous variables and t-test for continuous variables. This statistical analysis was conducted to assess whether there were differences in childbirth facility that were statistically significant between the category of wealth status. Estimates were performed using Binary Logistic Regression because of the nature of the dependent variable. All statistical analyses were carried out using SPSS 22 software.

Result and Discussion

Table 1 informs descriptive statistics on the category of "problems during pregnancy" in urban poor women who have given birth in the last five years in Indonesia. Table 1 shows that there are significant differences in urban poor women who have given birth in the last five years in the use of hospitals for delivery in Indonesia. This difference is statistically significant for all observed characteristics. Table 1 informs that urban poor women who have delivered in the last five years have more dominant non-hospital deliveries.

Table 1 shows that urban poor women who gave birth in the last five years had a slightly older average age for those who did not have problems during pregnancy. Urban poor women who have given birth in the last five years predominantly have secondary education and are unemployed. The urban poor women who gave birth in the last five years were dominated by women with marital status married/living with partners. Urban poor women who have given birth in the last five years have a slightly higher average parity in those who have no problems during pregnancy. Moreover, the urban poor women who gave birth in the last five years were dominated by women covered by health insurance. Urban poor women who have given birth in the past five years have been dominant for antenatal care more than 4 times before giving birth.

Table 1. Descriptive Statistics of Problems During Pregnancy in Urban Poor Women and Related Factors in Indonesia (n=7891)

Characteristics		Problems during pregnancy		Sig.
		No	Yes	
Hospital childbirth*				p<0.001
-	No	1341(61.68%)	3063(53.58%)	
-	Yes	833(38.32%)	2654(46.42%)	
Age (mean)**		2174(31.36)	5717(31.30)	p<0.001
Education level*				p<0.001
-	No education (ref.)	18(0.83%)	7(0.12%)	
-	Primary	483(22.22%)	600(10.50%)	
-	Secondary	1410(64.86%)	3436(60.10%)	
-	Higher	263(12.10%)	1674(29.28%)	
Work status*				p<0.001
-	No work (ref.)	1208(55.57%)	2879(50.36%)	
-	Work	966(44.43%)	2838(49.64%)	
Marital status*				p<0.001
-	Never married (ref.)	0(0.00%)	3(0.05%)	
-	Married/Living with Partner	2079(95.63%)	5588(97.74%)	
-	Divorced/Widowed	95(4.37%)	126(2.20%)	
Parity (mean)**		2174(2,47)	5717(2.27)	p<0.001
Health insurance*				p<0.001
-	No (ref.)	904(41.58%)	1714(29.98%)	
-	Yes	1270(58.42%)	4003(70.02%)	
Antenatal care*				p<0.001
-	< 4 times (ref.)	513(23.60%)	994(17.39%)	
-	≥ 4 times	1661(76.40%)	4723(82.61%)	

*Chi-Square test was used for dichotomous variables; **T-test for continuous variables.

Table 2. Binary Logistic Regression of Hospital Childbirth in Urban Poor Communities in Indonesia (n=7891)

Predictor	Childbirth in Hospital		
	OR	Lower Bound	Upper Bound
Problems during pregnancy:Yes	1.056	0.948	1.177
Age	1.049***	1.039	1.059
Education level:Primary	0.765	0.323	1.815
Education level:Secondary	1.255	0.533	2.955
Education level:Tertiary	2.506*	1.059	5.929
Work status:work	1.021	0.927	1.125
Marital status: Married/Living with Partner	0.000	0.000	0.000
Marital status: Divorced/Widowed	0.000	0.000	0.000
Parity	0.816***	0.777	0.857
Health insurance:Yes	1.933***	1.744	2.143
Antenatal care:≥4 times	1.059	0.934	1.201

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

Table 2 presents the results of the binary logistic regression test to illustrate the results of the analysis of determinants of the use of hospitals for delivery in urban poor women in Indonesia. As a reference, the chosen category is "nonhospital childbirth".

Table 2 shows that "problems during pregnancy" were not proven as a determinant of the use of hospital for delivery in poor women in Indonesia. There is no significant difference in the category of "problems during pregnancy" in the use of hospital for delivery in urban poor women in Indonesia. This means that urban poor women, even though they are experiencing problems with their pregnancy, cannot access hospitals for childbirth. The results of this study reaffirm that there are problems in the urban poor in accessing hospitals. Several studies have found that the cost factor is the dominant factor that is a barrier in the urban poor community[10,12].

The age is proven to be one of the determinants of hospital use for poor urban women in Indonesia. While in the education level category, urban poor women with tertiary education are 2.506 times more likely to use hospitals for delivery than urban poor women who are not in school (OR 2.506; 95% CI 1.059-5.929). The low level of education makes the ability of the urban poor community to communicate and access information about health encounters obstacles and is limited. The relationship between low levels of education as a barrier to access to health care facilities is in line with the results of research in several countries[13–15]. Education level is often found as a positive determinant of health program output[16–18].

Meanwhile the marital status is not a determinant of the use of hospital for delivery in urban poor women in Indonesia. While parity is significantly proven as one of the determinants that influence the use of hospital for delivery in urban poor women in Indonesia. Table 2 informs that urban poor women covered by health insurance are 1.933 times more likely to use the hospital for delivery than those without health insurance (OR 1.933; 95% CI 1.744-2.143). While the frequency of antenatal care by urban poor women is not proven as a determinant of the use of hospitals for delivery in Indonesia.

There are at least two cost factors found in several studies that have become a barrier for people to access health services in various countries. First is the cost to

get health services[19,20], and second, the costs required for transportation[21]. The combination of the two types of barrier cost can make urban poor women increasingly have no access to deliver to the hospital, even though they feel they have a disruption in their pregnancy.

Health insurance ownership was found to be a predictor of the use of hospitals for delivery in urban poor women in Indonesia. This condition is consistent with the results of previous studies on health costs as a barrier to access to health services. Insurance ownership is one of the solutions to improve urban poor people's access to health care facilities[22,23].

In the Indonesian context, the government has provided subsidies by including membership contribution assistance mechanisms for the poor in the National Health Insurance. But some of the results of research that conduct evaluations, in general, still show that the health service system that runs in Indonesia is still pro-rich for public access to health services in hospitals[24,25]. While access to services found to be pro-poor is only demonstrated in health services at the primary level, or at the Health Center[26,27].

Conclusions

Based on the findings of the study it could be concluded that problem during pregnancy was not a predictor of the use of hospital for delivery in urban poor women in Indonesia. The determinants or variables that influence, on the use of hospital for delivery were age, level of education, parity, and health insurance.

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