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Determinants of Hospital Utilisation among Urban Poor Societies in Indonesia

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The purpose of this research to analyse the determinants of hospital utilisation in urban poor societies in Indonesia. The data was part of the 2013 Basic Health Research (Riskesdas). The analysis involved 57,296 urban poor societies in Indonesia. Estimates used the binary logistic regression test. The result shows that age and marital status have an effect on hospital utilisation – those who worked having 1.512 times the likelihood of having utilised the hospital than those who did not work: while those who have insurance were 0.513 times more likely than those who were uninsured. Those who have a travel time of ≤15 minutes have 0.686 times the likelihood than those who have a travel time of >15 minutes. While those who require transportation costs IDR 10,000 to the hospital have a likelihood of 0.692 times more than those with transportation costs >IDR 10,000 in utilising the hospital. There were 6 determinants of Hospital Utilisation at Urban Poor Societies in Indonesia.

Key words: *Health Management, Hospital Utilisation, Urban Poor Society, Vulnerable Communities.*

Introduction

Urban poor people are a group that must get serious attention from the government. These community groups tend to be low educated because they are more concerned with working immediately than attending school. Poor urban groups also tend to form their own colonies in urban slums, due to the high prices of houses and land in urban areas (Clark, Madhavan and Kabiru, 2018) (Mei et al., 2018). Slum environment conditions are prone to increase the risk of urban poor groups to get sick (Anima et al., 2008). Urban poor people are living in a vicious

circle; poverty, not educated, disease, forming a chain that is difficult to break (Chadha et al., 2016) (Nargis et al., 2015).

In the health sector, often the urban poor experience inequity in hospital access (Do et al., 2018)(Amo-Adjei et al., 2018) (Laksono, Wulandari and Soedirham, 2019b). Although hospital services are available, urban poor people often have limited access to hospitals in times of need. This situation can occur because of their ignorance, or because there are no funds available for medical expenses (Karuaihe and Wandschneider, 2018) (Laksono, Wulandari and Soedirham, 2019a) (Laksono, Rukmini and Wulandari, 2020).

The government as a policymaker must be able to introduce a policy to break the poverty chain that shackles the urban poor. One of the ways is by increasing the access equality for all groups of people to the hospital in times of need (Gaskin et al., 2018) (Fu et al., 2018). Increasing the utilisation of hospitals by the urban poor indicates better performance of the health care system in an area (Yildiz, Heboyan and Khan, 2018) (Fullman et al., 2018) (Lauriks et al., 2018). This improvement is assessed from the delivery side. Further research is needed in the assessment of the quality delivered (Zhang, Niu and Zhang, 2018).

The hospital is the last opening to health care facilities. It is the peak provider for treatment services, so it becomes very important to know what the determinants are that influence the utilisation of the hospital (Fu et al., 2018) (Zhang, Niu and Zhang, 2018). Based on the background description, the purpose of writing this article is to analyse the determinants of hospital utilisation in urban poor communities in Indonesia.

Methods

This article was written using the 2013 Basic Health Survey (Riskesdas) data. Riskesdas was a five-year cross-sectional survey conducted by the Indonesian Institute for Health Research and Development. Riskesdas was a national-scale survey with a multi-stage cluster random sampling method. Data was taken using a structured questionnaire.

The unit of analysis in this study was the urban poor in Indonesia aged 15 years and over. At that age, it was assumed that the respondent has grown up and can make their own decision to use the hospital or not. The sample size analysed in this paper was 57,296 respondents. Groups of poor people were taken based on the quintile of socioeconomic status, who enter the poor category if they are in quintiles 1 and 2.

Hospital utilisation was defined as public access to the hospital, whether it was outpatient or inpatient. Outpatient variables were those carried out by respondents in the past month, while

inpatient was carried out by respondents in the past year. The decision to use this time limit assumed the respondent could still remember the outpatient and inpatient events well.

Chi-Square was used to test dichotomy variables and T-tests for continuous variables. This test was used to assess whether there was a statistically significant relationship between the variables of hospital utilisation as the dependent variable with the independent variable. There were 8 (eight) independent variables to be tested, namely gender, age, marital status, level of education, employment status, insurance ownership, travel time, and travel costs to the hospital. Estimates used the binary logistic regression test to determine the determinants of hospital utilisation in urban poor communities in Indonesia.

Result

Descriptive Statistic

Table 1 is a statistical description of the variables that are thought to contribute to the hospitals' utilisation in urban poor communities. The results in Table 1 illustrate that there is no difference in hospital utilisation in urban poor communities in Indonesia by gender. This condition also applies to hospital utilisation based on education level.

Table 1: Descriptive Statistic

Characteristics	Hospital Utilisation		All	P
	Utilised	Not Utilised		
Gender				0.061
● Male	719 (44.9%)	26.351 (47.3%)	27.070 (47.2%)	
● Female (Ref.)	881 (55.1%)	29.345 (52.7%)	30.226 (52.8%)	
Age (mean)	1.600 (45.01%)	55.696 (41.28%)	57.296 (41.38%)	*0,000
Marital Status				*0,000
● Single	278 (17.4%)	13.229 (23.8%)	13.507 (23.6%)	
● Married	1.123 (70.2%)	35.826 (64.3%)	36.949 (64.5%)	
● Live together not married	1 (0.1%)	89 (0.2%)	90 (0.2%)	
● Divorced	38 (2.4%)	1.230 (2.2%)	1.268 (2.2%)	
● Separated	13 (0.8%)	315 (0.6%)	328 (0.6%)	

● Dead divorce (Ref.)	147 (9.2%)	5.007 (9.0%)	5.154 (9.0%)	
Education level				0,058
● Under primary school	459 (28.7%)	14.947 (26.8%)	15.406 (26.9%)	
● Primary school	565 (35.3%)	20.535 (36.9%)	21.100 (36.8%)	
● Junior high school	297 (18.6%)	11.276 (20.2%)	11.573 (20.2%)	
● Senior high school	250 (15.6%)	8.215 (14.7%)	8.465 (14.8%)	
● College (Ref.)	29 (1.8%)	723 (1.3%)	752(1.3%)	
Employment status				*0.000
● Schooling	96 (6.0%)	4.065 (7.3%)	4.161 (7.3%)	
● Work	777 (48.6%)	31.569 (56.7%)	32.346 (56.5%)	
● No work (Ref.)	727 (45.4%)	20.062 (36.0%)	20.789 (36.3%)	
Insurance				*0.000
● Insured	1.190 (74.4%)	32.937 (59.1%)	34.127 (59.6%)	
● Not insured (Ref.)	410 (25.6%)	22.759 (40.9%)	23.169 (40.4%)	
Travel time				*0.000
● ≤ 15 minutes	587 (36.7%)	13.964 (25.1%)	14.551 (25.4%)	
● > 15 minutes (Ref.)	1.013 (63.3%)	41.732 (74.9%)	42.745 (74.6%)	
Transportation cost				*0.000
● ≤ IDR 10.000	1.093 (68.3%)	31.113 (55.9%)	32.206 (56.2%)	
● > IDR 10.000 (Ref.)	507 (31.7%)	24.583 (44.1%)	25.090 (43.8%)	

Note: Chi-Square used for dichotomous variables and the T-test used for continuous variables. *Significant at 95% level.

Table 1 shows that age variation is related to hospital utilisation in urban poor communities. It is seen that the average age of the urban poor who utilised hospitals is slightly older (45.01 years) than those who do not utilise (41.28 years).

The other five variables also shown in table 1 have a statistically significant relationship with hospital utilisation. These five variables are marital status, employment status, insurance ownership, travel time and transportation costs to the hospital.

Multivariate Analysis

Table 2 shows the results of the binary logistic regression test which illustrates the factors that influence hospital utilisation in urban poor communities in Indonesia. As a reference was chosen "not utilised".

Table 2: Logistic Binary Regression of Hospital Utilisation at Urban Poor Society in Indonesia

Predictor	Hospital Utilisation			
	Sig	*OR*	*Lower Bound*	*Upper Bound*
Age	*0.000	0.987	0.984	0.991
Marital Status: Single	0.225	0.849	0.652	1.106
Marital Status: Married	*0.000	0.686	0.567	0.830
Marital Status: Live together without married	0.436	2.198	0.303	15.960
Marital Status: Divorced	*0.036	0.672	0.464	0.974
Marital Status: Separated	*0.023	0.506	0.281	0.910
Employment Status: Schooling	0.977	1.004	0.781	1.290
Employment Status: Work	*0.000	1.512	1.362	1.678
Insurance: Insured	*0.000	0.513	0.458	0.575
Travel time: ≤ 15 minutes	*0.000	0.686	0.610	0.771
Transportation Cost: ≤ IDR 10.000	*0.000	0.692	0.613	0.781

Note: Reference category was “not utilised”; confidence interval of 95% for OR; *significant at 95% level.

Table 2 shows that age is one of the determinants of hospital utilisation in the urban poor, while marital status has a partial effect on hospital utilisation. Those who are married have a likelihood of 0.686 times compared to those who have divorced in utilising the hospital (OR 0.686; 95% CI 0.567-0.830). Those who have divorced have a likelihood of 0.672 times than those who are widowed in utilising a hospital (OR 0.672; 95% CI 0.464-0.974). While those with separate living status were likely 0.506 times compared to those who were divorced in utilising the hospital (OR 0.506; 95% CI 0.281-0.910).

Employment status was also found to have a partial effect. Those who work have a likelihood of 1.512 times more hospital utilisation than those who do not work (OR 1.512; 95% CI 1.362-

1.667). While those who have insurance have a likelihood of 0.513 times than those who do not have insurance in utilisation of the hospital (OR 0.513; 95% CI 0.458-0.575).

Travel time and transportation costs were also found to be statistically significant in influencing the utilisation of hospitals by the urban poor. Those who have a travel time of ≤ 15 minutes have a likelihood of 0.686 times compared to those who have a travel time of > 15 minutes in hospital utilisation (OR 0.686; 95% CI 0.610-0.777). While those who require transportation costs ≤ IDR 10,000 to the hospital have a likelihood of 0.692 times compared to those with transportation costs > IDR 10,000 in utilising the hospital (OR 0.692; 95% CI 0.613-0.778).

Discussion

Descriptive statistics show that there is no difference between men and women in hospital utilisation in urban poor communities in Indonesia. This means that men and women have equal opportunities in hospital utilisation. This result is different from research in many countries that found there was an effect of gender on hospital utilisation (Morgan et al., 2018). The female gender is often proven to utilise hospitals more than the male (Daley and MacDonnell, 2011) (Das et al., 2018) (Zhang, Niu and Zhang, 2018).

The level of education was also found to have no effect on hospital utilisation. The results of this study are different from some of the results of similar studies. A study in Ghana concluded that the better the level of education, the better the utilisation of hospitals that are associated with the use of insurance (Seddoh and Sataru, 2018). Several other similar studies also concluded the results that the better the level of education, the better the utilisation of the hospital. This was at least found in Lazio Italy (Ventura et al., 2018), Danish (Tayyari Dehbarez et al., 2018), and Brazil (Araujo et al., 2017).

Age was one that was widely known as a determinant of hospital utilisation. This is often related to toddlers (Ehara, 2017) (Harris and Norton, 2016), and the elderly (MacAndrew et al., 2018) as vulnerable groups. Another aspect is closely related to degenerative and catastrophic diseases that are found in many elderly people (Ghiasvand et al., 2018) (Xu et al., 2018) (Kim and Kwon, 2015) (Jacobs and Weissert, 2007) (Wulandari and Laksono, 2019). The findings in this study reinforce this.

The results show that marital status is one of the determinants of hospital utilisation for the urban poor. This condition is in accordance with several research results which show that marital status is proven to have an effect on health status (Julin et al., 2018) (Rezaeian et al., 2018). Furthermore, this also has an impact on the utilisation of health care facilities (Li, Yao and Yin, 2018) (Zhu et al., 2017) (Laksono, Paramita and Wulandari, 2020). Those with the status of dead divorce have better hospital utilisation, probably because those with dead divorce

status are dominated by the elderly, who have more degenerative diseases, which require more interaction with the hospital.

Employment status is one of the civil factors that determines health equity, especially those related to public health, race and ethnicity (Hahn, Truman and Williams, 2018). In the urban poor, those who work use hospitals more than those who do not work. These findings reinforce the results of research in Sweden that find a health gap between those who work and the unemployed. The researcher explained that this was related to differences in access to economic and social resources (Brydsten, Hammarström and San Sebastian, 2018).

The research results found that urban poor societies who have insurance have the possibility of a lower hospital utilisation than those without insurance. The results of this study contradict some research results that show the opposite results. In Turkey, for example, it was found that Green Card (a non-contributory health insurance program) had an impact on increasing the use of outpatient services by 68.30%, hospitalisation by 34.60%, and specialist visits by 74.10%. This Green Card scheme in Turkey is devoted to the poor as a transition policy to UHC (Tirgil, A.a, Gurol-Urganci and Atun, 2018). In line with the research results in Turkey, a study in Massachusetts that looked at the impact of a subsidised insurance scheme for the poor found that the financing policy found positive results. It was found that there was an improvement in primary care access for low-income adults, especially white ones (Miraldo, Propper and Williams, 2018). A similar impact was also found in Malawi, even with a slightly different financing scheme (Flory, 2018).

The results also found that those who have a longer travel time and have more expensive transportation costs to hospitals have better hospital utilisation. This is contrary to several similar studies which show the opposite (Craike et al., 2018) (Johar et al., 2018) (Tilahun et al., 2018). This condition shows that in the Indonesian context the hospital is truly the ultimate goal of the health care referral system. That is, the possibility that among urban poor people who use hospitals, their disease is already in the advanced stages. Whether they want to or not, they have to go to the hospital, even though they don't have insurance, the distance is far and the transportation costs are expensive.

Conclusion

Based on the results of the study it can be concluded that of the 8 (eight) variables tested, 6 (six) variables were found as determinants of hospital utilisation in the urban poor in Indonesia. The six variables are age, marital status, employment status, insurance ownership, travel time, and travel costs to the hospital. Structured policy for those who are divorced, unemployed, uninsured, have longer travel time and higher transportation costs need to be established to reach out to the vulnerable community.

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Ethics and Consent

The 2013 Riskesdas survey had an ethical clearance that was approved by the national ethical committee in the NIHRD (ethic number: 01.1206.207). Informed consent was used during data collection, which considered aspects of the data collection procedure, voluntary, and confidentiality.

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