Self-Medication and Outpatient Care Utilization after Implementation of National Health Insurance in Indonesia

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ABSTRACT

The implementation of National Health Insurance in 2014 is expected to increase access in health services while reducing the economic burden due to illness. This study aims to see how the behavior of people in choosing treatment when experiencing health problems, whether they tend to select self-medication or outpatient treatment. Quantitative analysis was carried out on variables previously formed based on the KOR Data questionnaire found in SUSENAS 2017. The results of the study showed that more respondents chose to do self-medication than those who accessed formal services with outpatient care. Multivariate tests show all variables except secondary education significantly influence individual decisions to self-medication.

Implementasi Jaminan kesehatan Nasional pada tahun 2014 diharapkan meningkatkan akses pelayanan kesehatan sekaligus mengurangi beban ekonomi karena sakit. Penelitian ini bertujuan untuk melihat bagaimana perilaku masyarakat dalam memilih pengobatan ketika mengalami gangguan kesehatan, apakah cenderung memilih melakukan Swamedikasi atau berobat jalan. Analisis kuantitatif dilakukan pada variabel yang sebelumnya dibentuk berdasarkan kuesioner Data KOR yang terdapat pada data SUSENAS 2017. Hasil analisis menunjukkan bahwa lebih banyak responden yang memilih melakukan Swamedikasi dibandingkan yang mengakses pelayanan formal dengan berobat jalan. Uji Multivariat menunjukkan semua variabel kecuali pendidikan menengah berpengaruh secara signifikan pada keputusan individu untuk melakukan Swamedikasi.

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INTRODUCTION

Lawrence Green (1984) sparks the concept of how individual relates to health seeker behaviour by three factors, namely predisposing, enabling, and need factor. These three factors influence personal decisions in dealing with health problems.¹ Nowadays, to meet curative needs or treatment when an illness occurs, individuals are often faced with two choices, namely self-medication or access to conventional medicine through the utilisation of health services. The choice of treatment chosen depends on the individual's condition. Sociodemographic conditions such as economic conditions, location of residence, and ownership of health insurance are referred to as factors that influence this decision.²

Furthermore, if viewed from the perspective of fulfilling economic needs, Self-Medication is categorized as "Inferior Goods". This terminology further defines demand of this practice as behavior that is more often done by individuals with low income and does not have ownership of health insurance.³ Systematic reviews conducted in several countries show different phenomena. In developed

countries, the proportion of people who do Self-Medication is quite high because of the adequate level of literacy. While in poor and developing countries, this behavior has become quite popular due to limited access to health services and the absence of health insurance.⁴

Self-Medication is considered to provide a cheaper treatment alternative and can be the choice of the poor if they are unable to access health services such as clinics or hospitals.⁵ Viewed from the perspective of health service's costs, self-medication in some countries can reduce the burden of government-based health insurance or government-funded health insurance. In individuals who have private health insurance, Self-Medication can save benefit packages or ceilings covered by insurance providers.⁶

The National Health Insurance (JKN) developed in Indonesia is part of the National Social Security System (SJSN). The National Social Security System is organized through a mandatory social health insurance mechanism based on Law No. 40 of 2004 concerning the National Social Security System (SJSN). The aim is that all

Indonesians can be protected in the insurance system so that they can meet the basic needs of adequate public health.⁷ One of the goals of JKN is to increase public access to health services to meet their health needs.

The Indonesian Baseline Health Research in 2013 (RISKESDAS 2013) results show 35.2 % of household samples stored drugs for Self-Medication purposes. The highest proportion is in DKI Jakarta (56.4%), and the lowest is in East Nusa Tenggara (17.2%).⁸ In Indonesia, the level of utilisation of health services is still quite low. The results of the RISKESDAS in 2018 show that 60.8% of the total population still has difficulty accessing primary health services. The same research results also show that 62.6% of households find it difficult to access independent health services such as clinics, general practitioners, dentists and independent midwives. The causes can be either economic factors or other factors related to limitations in accessing and using health services.⁹

This study aims to provide an overview of the level of practice of Self-Medication and Outpatient utilization in 2017, three years after JKN implementation in Indonesia.

RESEARCH METHOD

The data were taken from the results of the 2017 National Socio-Economic Survey (SUSENAS). SUSENAS is a household survey in Indonesia regarding various socio-economic characteristics of the population, especially those closely related to measuring the level of community welfare. SUSENAS collects data concerning the fields of education, health/nutrition, and housing, other socio-economic activities, socio-cultural activities, consumption/expenditure and household and travel income. SUSENAS data are released annually by the Central Agency on Statistics (Biro Pusat Statistik, BPS) to describe the socio-economic conditions in Indonesia.

SUSENAS has 2 main parts that are carried out every year, namely KOR data which contains questions in each field such as information on migration, information, education, health, etc. and MODUL, which contain information that explains the main data contained in the KOR such as the amount of specific expenditure for housing, spending on health and nutrition. This study is a follow-up analysis of the main data (KOR) of the SUSENAS in year 2017 (SUSENAS 2017).

We examined and carried out further analysis on 275,912 2017 SUSENAS respondents who had experienced health problems and had the probability of doing self-medication or decided to seek treatment at formal health services such as health centers, clinics or hospitals. Before

further analysis, variables are shaped according to the needs and the research hypothesis in the form of dummy variables. To describe the probability of choice that respondents can choose when experiencing health problems and factors that can influence can be expressed through the following models:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + e$$

Where y is the dependent variable that is influenced by the initial constant (β_0), the independent variables in the form of covariates (x) and "e" are error terms, independent variables that do not exist in this study but affect outcome variables. By entering the variables used in the study, the model is determined as follows:

$$Y_i = \beta_0 + \beta_1 \text{regio} + \beta_2 \text{gender} + \beta_3 \text{age} + \beta_4 \text{poor} + \beta_5 \text{ins} + \beta_6 \text{edu} + \beta_7 \text{married} + \beta_8 \text{Exp_cap} + e$$

Annotation

Yi

Decision when experiencing health problems, can be either Self-Medication or outpatient utilisation. Each is a binary variable in the form of a probability of doing or not doing self-medication / outpatient.

regio:

Classification of the area of residence of the respondent, categorized as "urban" and "rural".

Gender

Sex of respondents: categorical data, classified as "male" and "female"

Age

Age of respondent (in years) is continuous data

Poor

Respondents' poverty rates based on per capita income compared to defined poverty line. If the income below the poverty line is categorized as "poor", income level above poverty line will be classified as "non-poor".

ins

Health insurance ownership by respondents, made in the form of a dummy variable. It is divided into three categories. They are: "BPJS/JKN": if having government health insurance; "Private": if having private health insurance and "Uninsured": if not having health insurance at all

edu

Education level, recent education of respondents. It is divided into three categories. They are: "Low": Graduated from elementary school (SD) or equivalent; "Intermediate": Graduated from High School or equivalent;

“High”: At least first associate degree (Diploma 1) in education

Married

The respondent's marital status. It is classified as “unmarried” and “married”

Smoking

Respondent's smoking status: “non-smoker” and “smoker”

“e”
“Error-Term” is a variable that might affect Self-Medication behavior or outpatient utilisation, which is not included in research Variable.

RESULT AND DISCUSSION

The results of descriptive analysis showed that the number of respondents who did the proportion of respondents with Self-Medication was greater than those who did not. Most of the respondents also preferred not to go, outpatient, when they were sick (56% vs. 44%). Based on the sociodemographic character, the number of respondents who live in villages is higher than those who live in cities. Female respondents were more likely than men. The age of respondent was 5-97 years, with an average age of 38.6 years. The respondents who got married were more than those who were unmarried (68.67% vs. 31.33%).

By comparing *per capita* expenditure (exp / cap) with the poverty baseline by BPS (*povline*), respondents are categorized as poor if their expenditure below *povline* and vice versa. The respondents who were in the poor category were fewer than those who were not in the poor category (9.83% vs. 90.17%). According to the ownership of health insurance, the largest proportion are respondents who have government health insurance (BPJS / JKN) while the smallest proportion is those who have private health insurance. It is interesting to note that the number of respondents who do not have health insurance is quite large, at 35.01% of total respondents. Respondents with the highest education in elementary school (SD) or less constitute were the largest proportion based on education level than respondents who completed secondary and high education. Meanwhile, 21.5% of respondents had smoking behavior, smaller than respondents who did not smoke

(78.5%). Distribution of respondent characteristics based on research variables can be seen in table 1, more marriage than unmarried (68.67% vs 31.33%).

The results of the chi-square test (table. 2) show a significant difference between respondents who did Self-Medication and or utilization of outpatient care. By comparing the proportion of respondents who had the probability of conducting self-medication or choosing outpatient treatment, it can be seen that the respondents who did Self-Medication and were not outpatient were the groups with the highest proportion (49.72%). Conversely, the group of respondents who decided to go out for treatment without doing self-medication was 24.04%. As many as 19.96% did Self-Medication and outpatient treatment while others chose not to do both (6.28%).

Through the results of logistic regression (table 3 and table 4), it can be seen that Self-Medication behavior is significantly affected by all covariates except the secondary level (intermediate). Meanwhile, outpatient utilization is also significantly affected by all independent variables.

Meanwhile, the results of the multivariate test on outpatient utilization showed that female respondents, who lived in urban areas and had health insurance, had a higher probability of outpatient treatment.

Being married, smoking, and categorized as poor respondents tend not to seek medical treatment when experiencing health problems. Interestingly, education levels are inversely proportional to outpatient utilization, where the higher the level of education is, the more possibility of outpatient utilization decreases. The results of this test also show that the older the respondents, the higher the probability of respondents to go out for treatment.

The results of multivariate analysis through logistic regression tests showed that female respondents, married, included in the “poor” category, and smoking had an increased probability of self-medication. On the other hand, respondents who lived in urban areas and had health insurance had the possibility not to do self-medication. These results also indicate that the probability of doing self-medication decreases inversely with increasing age and education level.

Table 1. Distribution of Respondents by Research Variables

Variable	Description	Observation	Mean	Standard Deviation	%
Selfmed	Self-Medication behavior	275,912	0.697	0.459	
	0 = No self-medication				30.31
	1 = Self-medication				60.69
Outpatient	Outpatient behavior	275,912	0,439	0,496	
	0 = No outpatient care				56.0
	1 = Do Outpatient				44.0

Table 1. (Continued) Distribution of Respondents by Research Variables

Variable	Description	Observation	Mean	Standard Deviation	%
Region	Classification of residential area	275,912	0.437	0.497	
	0 = Urban				43.76
	1 = Rural				56.24
Gender	Gender of Respondents				
	1. Male	275,912	1.527	0.499	47.3
	2. Female				52.7
Age	Age of respondents in years	275,912	38.606	21.135	
Poor	Poverty status	275,912	0.098	0.297	
	0 = No Poor				90.17
	1 = Poor				9.83
Ins	Type of insurance ownership	275,912	1.883	0.896	
	1 = BPJS/JKN				46.71
	2 = Private Insurance				18.27
					35.01
	3 = Un insurance				
Edu	Education level of respondents	275,912	1.462	0.611	
	1 = Lower				59.96
	2 = Middle				33.82
	3 = Higher				6.22
Married	Marital status	275,912	0.687	0.464	
	0 = Unmarried				31.33
	1 = Married				68.67
Smoking	Smoking status	275,912	0.215	0.410	
	0 = No Smoking				78.50
	1 = Smoking				21.50

Discussion

Two systematic reviews conducted in 2014 showed variations in the prevalence of Self-Medication between 5% and 92% (Figure 1). The results of the study indicate that the leading cause that drives someone to do self-medication is the inability to access health services. Some obstacles in the utilization of health services include low income, lack of health insurance, the distance between home and health care facilities, and health literacy rates.^{4,10}

The results of the SUSENAS 2017 analysis show that the prevalence of self-medication in Indonesia is 60.69%. This figure is greater than the results of the Riskesdas in 2013 of 35.2%, which means that after the implementation of JKN, it turns out that the proportion increased. This result is not by research conducted in Mexico, which shows that health insurance coverage can reduce the level of self-medication in the community.¹¹

Table 2. Tabulation of respondents based on Self-Medication behavior and or Outpatient Utilization

Condition	No Outpatient	Outpatient	Total	P-Value (Pr)
No-Selfmed	17,339	66,303	83,642	0,000
% / total case	6.28	24.04	30.32	
Selfmed	137,185	55,085	192,270	
% / total case	69.72	19.96	69.68	
Total	154,524	121,388	275,91	

Research conducted by Liew and Gardner in 2014 using the Indonesia Family Life Survey (IFLS 2014) data shows that most people are reluctant to go out for Treatment due to health-related facilities. Location of health services, waiting time, and maintenance costs are

factors that significantly influence individual decisions to do outpatient care. Furthermore, the results of this study also highlight the disparity in health services that differ in every province.¹²

Regarding outpatient utilization, the results of data analysis showed that the number of respondents who

experienced health problems and decided to go out for treatment turned out to be less than those who chose not to go out for treatment. This result is in line with the results of the RISKESDAS 2018, which states that the majority of people feel they have difficulty accessing primary and secondary health services.

Through multivariate analysis, it is known that women are more likely to do self-medication than men. This is possible because, in sociological culture, women play a prominent role in maintaining health in the household. The responsibility of treatment in a family is often held by the wife of the head of the household (mother). Other things related to gender are several studies showing that psychologically, women are more anxious about the presence of health problems.^{13,14,15,16}

Along with the increasing age of respondents, the likelihood of disease disorders is also getting more significant. This has an impact on the probability of treatment. This condition causes an increase in the age of the individual, the greater the chance for Self-Medication or utilization of outpatient care. Besides the natural state of the

body which is increasingly vulnerable, old age is also often associated with treatment related to psychosomatic conditions and anxiety.¹⁷

The location of residence refers also to the individual's decision to conduct self-medication. People living in urban areas are said to be more likely not to do self-medication related to easier access to transportation and more number of health care facilities than in rural areas.³

Conversely, with these conditions, the utilization of outpatient care by urban communities tends to be higher than the population who live in rural areas. Regarding outpatient utilization, the results of data analysis showed that the number of respondents who experienced health problems and decided to go out for treatment turned out to be less than those who chose not to go out for treatment. This result is in line with the results of the 2018 RISKESDAS, which states that the majority of people feel they have difficulty accessing primary and secondary health service.

Table 3. Logistic Regression Results Determinants of Self-Medication Behavior

Variable	Description	Logit Model		
		Coef	OR	p-value
Region	Classification region theplace stay			
	1 = Rural (ref)			
Gender	2 = Urban	-0.037	0.963	0,000 **
	Type sex respondent			
	1 = Male (ref)			
	2 = Female	0.005	1,034	0.000 **
Age c	Age respondent in year	-0.003	1,025	0.000 **
Poor	Poverty level			
	0 = No Poor (ref)			
Ins	1 = Poor	0,048	1.049	0.026 **
	Type ownership insurance			
	1 = BPJS	- 0.255	0.774	0.000 **
	2 = Insurance Private	- 0.186	0.829	0.000 **
	3 = Un insurance (ref)			
Edu	Education level respondent			
	1 = Basic (ref)			
	2 = Intermediate	- 0,107	0.898	0.000 **
	3 = High	- 0,212	1.012	0.415
Married	Marital status:			
	0 = Un married(ref)			
	1 = Married	0.256	1.292	0.000 **

Table 3. (Continued) Logistic Regression Results Determinants of Self-Medication Behavior

Variable	Description	Logit Model		
		Coef	OR	p-value
Smoking	Smoking status			
Constanta		0.857	0.576	0.000 **
N		275,912		
Prob > Chi ²		0.0000		

Through multivariate analysis, it is known that women are more likely to do self-medication than men. This is possible because, in sociological culture, women play a prominent role in maintaining health in the household. The responsibility of treatment in a family is

often held by the wife of the head of the household (mother). Other things related to gender are several studies showing that psychologically, women are more anxious about the presence of health problems.^{13, 14,15,16}

Picture 1. Self-Medication Prevalence¹⁰

Poverty and education levels are also related to individual health seeker behavior. The poor with a low level of knowledge and health literacy are more likely to do self-medication. Interestingly, in developed countries, individuals with higher education are more likely to do self-medication related to adequate health literacy.¹⁸

Another variable included in this study is smoking behavior. Someone who smokes will tend to be more susceptible to disease so that the opportunity to seek treatment is more exceptional. Previous research has shown that consumption of tobacco, alcohol, and other addictive substances increases a person's chances of doing self-medication.

This is related to the adverse effects caused by the use of these substances.¹⁹ The results of this study are in line with the results of the research conducted that smoking behavior can increase the probability of doing Self-Medication or using outpatient services.

Insurance ownership is an enabling factor for individuals to utilize health services. Individuals who have health insurance have a higher chance of outpatient and health services than those who do not have insurance. Hidayat. et al. (2004) explains that the ownership of health insurance in addition to increasing access to health services could also reduce household health expenditure.²⁰ Opportunities to do Self-Medication can also be reduced because benefits and protection from health insurance

generally make individuals do not need to spend money to buy medicine.

CONCLUSION

Three years after the implementation of JKN, the proportion of people doing Self-Medication is still quite large, while the increase in access to expected health services is also not optimal. This study does not directly evaluate the impact of JKN on the level of Self-Medication behavior. Impact evaluation analysis is needed to see differences before and after JKN implementation. Another limitation of this study is that the research variables used are only limited to the variables listed in SUSENAS 2017 so that they are unable to explain the phenomenon of Self-Medication and Outpatient Utilization more comprehensively.

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