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Multiple Logistics Regression Model, Dominant Factors Affecting Health Service Utilization for PBI Participants in Jambi City

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Abstract

Background : The coverage of BPJS Health membership has reached more than 80% of the total population, but the utilization rate of health services for PBI group participants is the lowest, one of which is in Jambi City. The purpose of this study was to determine the dominant factors that influence the utilization of health services for PBI participants in Jambi City.
Method : An observational analytic study using a cross sectional design with a population of PBI BPJS Health participants in Jambi City. Calculation of the sample using the Lemeshow formula, as many as 106 samples with accidental random sampling technique. The research instrument used a questionnaire sheet, then the data was processed through data editing, data coding, data entry, data cleaning, and data processing, then analyzed by univariate, bivariate with chi-square test, and multivariate with multiple logistic regression test.
Results : The results showed that the most dominant factor influencing the utilization of health services in Jambi City PBI participants was knowledge (OR=0.173).
Conclusion : Health Service Providers are expected to increase socialization and education efforts to the public on the importance of utilizing health services (promotive, preventive, curative, rehabilitative) both directly and by maximizing the role of social media accounts of health facilities.

Keywords: utilization of health services, knowledge

INTRODUCTION

The concept of universal coverage is a national government effort to provide health insurance in the form of protection against the need for basic health services for every Indonesian community. The National Health Insurance (JKN) consists of Contribution Assistance Recipient and non-Contribution Assistance Recipient participants (1)(2).

Health services are all joint efforts within an organization to maintain and improve health, prevent and treat disease, and restore the health of individuals, groups, families, and communities. With the progress of the times, it has influenced people to live unhealthy lifestyles, as a result, more and more people are suffering from disease, which causes an increase in the need and demand for health health services.(3)

Good health services are a community need and are also a benchmark for the success of national development. By realizing that health services are the needs of all citizens, the government is trying to formulate a plan that can increase the utilization of health services as a whole from time to time. One of them is efforts to improve the quality of health services promoted by BPJS Health through strengthening synergies with government and private health facilities, including giving appreciation to a number of First Level Health Facilities and hospitals that are most committed to promoting service quality for JKN-KIS participants (4)(5).

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Utilization of health services refers to the use of service facilities provided in outpatient services, inpatient care, home visits by the medical personnels or other ways in which the use of these services is in accordance with the availability and continuity of services, community acceptance, justice, easy access to the community, affordable prices and guaranteed quality (6).

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The problem of affordability of health services in Indonesia is in dire need of attention and supervision, the utilization rate of health services is estimated to still be 35% of the total population of Indonesia so that it affects the health status of the community which is still low. however, the level of utilization of health services in the Contribution Assistance Recipient group was at the lowest level (9).

In Jambi Province, the coverage of outpatient and inpatient visits fluctuated, in 2017 the coverage of outpatient visits was 27.56% and inpatients was 6.15%, in 2018 the coverage of outpatient visits was 76.9% and inpatients was 9 .2%, and in 2019 the coverage of outpatient visits was 27.5% and inpatients was 5.7% (10).

The low level of utilization (utilization rate) of health facilities such as what happened in health centers, hospitals and treatment centers is not only due to the distance of these facilities from the community (physical and social distance), but the high cost, unsatisfactory services, and other factors originating from the community. The community itself will also be affected (11).

Green (1980) and Andersen (1975) stated that there are factors that determine the utilization of health services, some of which are age, gender, number of family members, education, occupation, income, knowledge, attitudes, perceptions of health conditions, and affordability (11)(12).

Based on this, researchers are interested in examining the multiple logistic regression model on the dominant factors that affect the utilization of health services for PBI participants in Jambi City. It is hoped that this will provide the latest information for stakeholders in understanding potential barriers to the utilization of health services.

METHOD

The type of research used is an observational analytic study with a cross sectional design. The population in this study is the Contribution Assistance Recipients (PBI) in the 3 selected sub-districts in Jambi City as many as 46,084 people. Calculation of the sample size using the Lemeshow formula as many as 106 samples with accidental sampling technique. The research instrument used a questionnaire sheet, then the data was processed through data editing, data coding, data entry, data cleaning, and data processing, then a bivariate test was carried out using the Chi-quare statistical test with a significant level of 95% to determine the relationship of each independent variable with dependent variable and multivariate test using multiple logistic regression with a significance level of 95%.

RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Overall Respondents Characteristics

Variable	n	%
Usia		
Adult	99	93,4
Elderly	7	6,6
Gender		
Male	58	54,7
Female	48	45,3
Number of Family Members		
1-4	70	66,0
>4	36	34,0
Education		
High	45	42,5
Low	61	57,5
Occupation		
Permanent	69	65,1
Not Permanent	37	34,9
Income		
≥ Rp. 2.630.162,-	32	30,2
<Rp. 2.630.162,-	74	69,8
Knowledge		
High	31	29,2
Los	75	70,8
Attitude		
Good	43	40,6
Less	63	59,4
Perception of Health Conditions		
Good	46	43,4
Less	60	56,6
Affordability		
Affordable	32	30,2
Not Affordable	74	69,8
Utilization of Health Services		
Good	41	38,7
Less	65	61,3
Total	106	100,0

The multiple logistic regression method used in this model is Backward Wald with the aim of obtaining significant variables without ignoring insignificant variables. This means that the steps in the elimination of insignificant variables can still be seen because the procedure in this method is to enter all explanatory variables into the model, then gradually eliminate the insignificant variables. The last step of this method is to show the variables that are significant and deserve to be included in the multiple logistic regression model. Significant variables are considered related and have a significant influence on the response variable. The significance level used in the model significance test and the coefficient significance is 0.05. The variables in this study include the dependent variable, namely the use of health services, while the independent variables are age,

gender, number of family members, education, occupation, income, knowledge, attitudes, perceptions of health conditions, and affordability (13).

Model Candidate

Table 2. Multiple Regression Model Candidates Based on Utilization of Health Services by Age, Gender, Number of Family Members, Education, Occupation, Income, Knowledge, Attitude, Perception of Health Services, and Affordability

Variable	P-*value*	Description
Age	0,244	Model candidate
Gender	0,219	Model candidate
Number of Family Members	0,549	Not odel candidate
Education	0,212	Not odel candidate
Occupation	0,015	Model candidate
Income	0,703	Not odel candidate
Knowledge	0,000	Model candidate
Attitude	0,005	Model candidate
Perception of Health Services	0,022	Model candidate
Affordability	0,958	Not odel candidate

Table 2. shows that there are 7 (seven) variables included in the candidate model (Pvalue < 0.25), namely age (P-value: 0.244), gender (P-value: 0.219), Education (P-value: 0.212), occupation (P-value: 0.212), 0.015), knowledge (P-value: 0.000), attitude (P-value: 0.005), and perception of health conditions (P-value: 0.022).

Pseudo R Square Value

Table 3. Pseudo R Square

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	120,792[a]	0,177	0,241
2	120,856 [a]	0,177	0,240
3	120,919 [a]	0,176	0,239
4	121,540 [b]	0,171	0,233
5	122,746 [b]	0,162	0,220
6	124,179 [b]	0,150	0,204
7	125,973 [b]	0,136	0,185

In the table above, it can be seen how far the ability of the independent variable in explaining the dependent variable, namely by using the value of Nagelkerke R Square, or also called Pseudo R-Square. The Nagelkerke R Square value is 0.185, indicating that the ability of the independent variable to explain the dependent variable is 0.185 or 18.5%, and there are 81.5% of other factors outside the model that explain the dependent variable.

Initial Modeling

Table 4. Initial Modeling of Multiple Logistics Regression

Variable	Unstandardized Cofficients					
	B	Std. Error	Wald	df	Sig.	Exp(B)
Age	-0,919	1,164	0,623	1	0,430	0,399
Gender	-0,134	0,503	0,071	1	0,789	0,874
Education	0,886	0,635	1,945	1	0,163	2,426
Occupation	-0,726	0,559	1,689	1	0,194	0,484
Knowledge	-2,711	1,096	6,125	1	0,013	0,066
Attitude	0,190	0,758	0,063	1	0,802	1,210
Perception of Health Services	0,688	0,762	0,813	1	0,367	1,989

Final Modeling

Table 5. Final Modeling of Multiple Logistics Regression

Variable	Unstandardized Cofficients					
	B	Std. Error	Wald	df	Sig.	Exp(B)
Knowledge	-1,754	0,465	14,249	1	0,000	0,173

Table 5. shows that the odds ratio of the knowledge variable is 0.173, meaning that PBI participants who have low knowledge have a 0.173 times risk of not using health services compared to PBI participants who have high knowledge, so it is found that the knowledge variable is the variable that has the greatest influence on utilization. health services.

In the frequency distribution of the questionnaire, it was found that most of the PBI participants did not know the procedures for obtaining health services for PBI participants at health facilities (64.15%), did not know what services were not covered by JKN services (61.32%), did not know the benefits of promotive and preventive services in health facilities that can be obtained by PBI participants (68.87%), and do not know what types of services can be obtained as JKN participants in health facilities (75.47%).

Knowledge is the result of knowing, and this occurs after someone has sensed a certain object. Without knowledge, a person does not have a basis for making decisions and determining actions to deal with the problems at hand. Health knowledge is knowledge about how a person maintains health, knowledge about health care facilities, and knowledge to avoid disease. The higher the individual's knowledge of health knowledge, the higher the efforts made to prevent disease conditions (14)(15)(16).

The results of this study are in line with research at the Nias District Hospital which showed that the most dominant factor influencing the utilization of health services was knowledge (OR=4.972) and in line with research in Central Java which showed that the knowledge factor

(OR=0.569) was the most dominant related to with the use of dental and oral health services at Karanganyar Health Center Purbalingga, Central Java (17)(18).

The results of this study are not in line with research at the North Perumnas Public Health Center which showed that the level of education (Exp(B) = 5.002) was the most influential factor on the utilization of JKN at the North Perumnas Public Health Center. Education level affects a person's behavior regarding lifestyle and motivates to participate in health development and is in accordance with Anderson's theory in Notoatmodjo (2014) which states that education is one of the predisposing factors (predidposing factors) which is the initial factor that supports a person to act (11)(19).

The results of this study are also not in line with research at the Lalang Village Health Center which shows that the perception variable about disease (Exp(B) = 11.094) is the most influential factor on the utilization of health services at the Lalang Village Health Center, Medan Sunggal District. The perception of most PBI participants is that if you are not seriously ill, you do not need to go to the Puskesmas but only buy medicine at the shop (20).

CONCLUSION

The most dominant factor influencing the utilization of health services in Jambi City PBI participants was knowledge (OR=0.173). To increase public knowledge, it is hoped that BPJS Health and health facilities will be more intensive in socializing and educating the public, especially regarding procedures and types of health services in health facilities for BPJS Health participants, which are not only curative and rehabilitative services, but also promotive and preventive. This effort can be increased through direct or further activating social media accounts.

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