# Outpatient visit among elderly in Indonesia

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| Article Info | ABSTRACT |
|---|---|
| | Population aging has become an important issue mostly discussed in many countries in the world. The proportion of the older population is getting better in both developed and developing countries. Elderly tend to need more health care as they are more susceptible to chronic diseases. The purpose of this study was to determine the factors affecting outpatient visit among elderly in Indonesia. This study employed a cross-sectional study design with a sample of ≥60-year-old individual with a total sample of 5,325 elderly. The data used to be analyzed were from the Indonesian Family Life Survey 2014 representing 83% of the population in Indonesia. The theory used was Andersen health service utilization model. In analyzing the data, bivariate analysis were used, with Chi-square and multivariate test using multiple logistic regression test prediction model. Elderly who utilize health service for outpatient was 18.6%. Variables that have significant relationships with outpatient utilization on elderly were female, high education, formal job, Java and Bali, urban, health insurance ownership, economic status, the perception of ill, smoking habit, history of chronic disease, fat, and obesity. Predictor for the most dominant outpatient utilization is influenced by chronic disesase after controlled by other variables. Chronic disesase greatly affect the elderly in utilizing health services for outpatient. To overcome this, the government is expected to provide policies on health facilities to better emphasize promotive and preventive efforts among the elderly. |
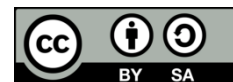
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## 1. INTRODUCTION

The population of the elderly becomes a very important issue mostly discussed in some parts of the world. It is estimated that in 2050, 79% of the elderly are in developing areas [1]. Indonesia itself has about 8.04% elderly and their morbidity rate is around 28.62%, sick elderly utilizing health service for outpatient are 72.16% [2]. Age is very important to the utilization of health services, the older the person, the higher the health services utilization will be [3]. The prevalence of multi-morbidity increases with age and substantial among older adults [4], [5]. Several studies related to factors affecting the elderly utilizing health care services. Educational level, marital status, health insurance ownership, reports of chronic diseases, and nutritional status are influencing the utilization of health services [6]-[9].

Age influences individuals to take advantage of health services. The elderly have a higher risk of chronic disease than the younger individuals, so the utilization of health service seems different to the youngers. Elderly who have comorbid diseases do not take advantage of health services will have poor health

status. The study related to the elder's outpatient utilization in Indonesia is still limited. It is very important for health care policy on elderly groups. The purpose of this study was to analyze the factors influencing the utilization of outpatient among elderly.

## 2.    RESEARCH METHOD
### 2.1.  Design study
This study employed a cross-sectional study design. The Indonesia Family Life Survey 2014 data wa used in this research. IFLS is a survey that aims to provide a depiction of health and socio-economic household's conditions in Indonesia done in a sustainable manner. Indonesian Family Life Survey (IFLS) is a sustainable socio-economic and health survey.

### 2.2.  Sample
There were 5,325 elderly were obtained as the sample. The dependent variable in this study is outpatient visits. Outpatient visit use was scored 'yes' if the individual reported having visited a public hospital, public health center (Puskesmas), private hospital, clinic, health worker, or doctor's practice or had been visited by a health worker or doctor for outpatient care in the past 4 weeks. The variable was scored 'no' if this was not the case. Variables were established based on information on outpatient visits during the last month before the survey was conducted. We used data from The Indonesia Family Life Survey (IFLS). The first wave (IFLS 1) was administered in 1993. IFLS 2 sought to reinterview the same respondents four years later. The next wave, IFLS 3, was fielded on the full sample in 2000. IFLS 4 was fielded in late 2007. IFLS 5 was fielded in late 2014. We used data (The fifth wave) for this study. This survey carried out by a team from the RAND corporation collaborated with Indonesian researchers. The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. The sample of this survey consisted of individuals aged 15-65 years. The data survey used multistage stratified sampling design. The survey is based on a sample of households representing about 83% of the Indonesian population living in 13 of 27 provinces. The survey collects data about individuals, their families and households, the communities where they live in, health and education facilities that they use. The sampling used on IFLS was multistage random sampling [10].

### 2.3.  Variable
Independent variables in this study were gender, education, marital status, occupation, region, area location, health insurance ownership, and economic status, history of chronic disease, health perception, smoking habit, nutritional status, and physical activity. The analysis in this study used bivariate with Chi-square and multivariate with multiple logistic regression prediction models. The analysis was completed using the statistical package STATA 12.0 SE. The variables were summarized with descriptive statistics (N, percentages).

## 3.    RESULTS AND DISCUSSION
### 3.1.  Univariate
Elderly who utilize health services for outpatient care (18.6%) and those who did not are (81.4%). Majority of the elderly who have low education are (79.6%), married are (70.9%), work in informal sector are (87.5%), live in Java and Bali are (66.0%). Those who live in rural area are (52.4%), do not have health insurance are (56.8%), have very poor economic status are (27.7%). Hence, those who have no history of chronic diseases are (90.1%), have an ill health status are (66.5%), have smoking habit are (51.7%), have normal nutritional status are (44.4%) and have low physical activity are (85.2%).

### 3.2.  Bivariate analysis
Table 1 shows the elderly who utilize outpatient majority are women, have midle education, work in formal job, live in Java and Bali area, live in urban area, have health insurance, have middle to very rich economic status, have history of chronic disease, have perception of healthy, have no smoking habit and are obese. Based on the results of cross-tabulation analysis of variables that have significant relationship with the utilization of outpatient on elderly are gender, education (high), occupation, region (Java and Bali), location of area, health insurance, economic status, history of chronic disease, smoking habits, poor self reported and nutritional status.

### 3.3.  Multivariate analysis
Table 2 shows the factors affecting outpatient utilization in the elderly. The results of health service utilization for outpatients on elderly shows that respondents who have middle education have a greater

probability of utilizing outpatient care than the respondent who has low education. The respondent who stay in Sumatera have a greater probability of utilizing outpatient care than respondents who stay in the East region. The probability of elderly utilizing outpatient increases with the ownership of health insurance. Health insurance has a significant relationship with outpatient utilization for the elderly.

Household income significantly affects the outpatient utilization of the elderly. The probability of outpatient utilization is increasing with increasing household income. The history of chronic diseases significantly affects the use of outpatients. The elderly who have a history of chronic diseases have a greater risk than the elderly who do not have the chronic disease to take advantage of outpatient care. Self-reported significantly affect the outpatient utilization of the elderly. Elderly who have poor self-reported to utilize outpatient care are smaller than those with good self-reported. Smoking elderly have a smaller probability of taking outpatient than non-smokers. Chronic disease is the most dominant variable influencing outpatient visit among elderly in healthcare facility (p-value <0.001; OR 1.972; 95% CI 1.600-2.492).

Table 1. Bivariate analysis of outpatient visit

| Variables | Outpatient | | Pr | 95% ci | |
| --- | --- | --- | --- | --- | --- |
| | Yes % | No % | | Lower | Upper |
| **Gender** | | | | | |
| Female | 21.0 | 79.0 | 1.24*** | 1.11 | 1.39 |
| Male | 16.9 | 83.1 | 1 | | |
| **Education** | | | | | |
| Low | 17.7 | 82.3 | 1 | | |
| Middle | 20.3 | 79.7 | 1.19 | 0.99 | 1.42 |
| High | 32.3 | 67.7 | 2.22*** | 1.61 | 3.04 |
| **Marital status** | | | | | |
| Married | 18.4 | 81.6 | 0.96 | 0.85 | 1.08 |
| Others | 19.2 | 80.8 | 1 | | |
| **Job** | | | | | |
| Formal | 23.1 | 76.9 | 1.3** | 1.1 | 1.49 |
| Informal | 18 | 82 | 1 | | |
| **Region** | | | | | |
| Sumatera | 17.9 | 82.1 | 1.16 | 0.9 | 1.48 |
| Java and Bali | 19.5 | 80.5 | 1.28* | 1.04 | 1.57 |
| Eastern part | 15.9 | 81.4 | 1 | | |
| **Area socation** | | | | | |
| Urban | 20 | 80 | 1.15* | 1.03 | 1.28 |
| Rural | 17.4 | 82.6 | | 1 | |
| **Health insurance ownership** | | | | | |
| Yes | 21.9 | 78.1 | 1.36*** | 1.21 | 1.52 |
| No | 16.2 | 83.8 | 1 | | |
| **Economic status** | | | | | |
| Very poor | 14.5 | 85.5 | 1 | | |
| Poor | 19.6 | 80.4 | 1.45*** | 1.18 | 1.78 |
| Middle | 20.2 | 79.8 | 1.49*** | 1.21 | 1.85 |
| Rich | 19.9 | 80.1 | 1.47*** | 1.18 | 1.84 |
| Very rich | 21.4 | 78.6 | 1.61*** | 1.30 | 2.00 |
| **History of chronic disease** | | | | | |
| Yes | 35.4 | 64.6 | 2.11*** | 1.85 | 2.4 |
| No | 16.8 | 83.2 | | 1 | |
| **Self-reported** | | | | | |
| Poor | 13.4 | 86.6 | 0.46*** | 0.41 | 0.51 |
| Good | 29.1 | 70.9 | | | |
| **Smoking habit** | | | | | |
| Yes | 16.1 | 83.9 | 0.76*** | 0.68 | 0.85 |
| No | 21.3 | 78.7 | 1 | | |
| **Nutritional status** | | | | | |
| Lean | 17.1 | 82.9 | 1,03 | 0.85 | 1.26 |
| Normal | 16.6 | 83.4 | 1 | | |
| Fatty | 19.9 | 80.1 | 1.24* | 1.01 | 1.52 |
| Obese | 23.3 | 76.7 | 1.52*** | 1.28 | 1.81 |
| **Physical activities** | | | | | |
| Less active | 18.8 | 81.2 | 1.01 | 0.79 | 1.28 |
| Normal | 17.1 | 82.9 | 0.97 | 0.62 | 1.32 |
| Very active | 18.6 | 81.4 | 1 | | |

* Significant at level 10%; * * significant at level 5%; *** significant at level 1%

Table 2. Final model of multivariate analysis used logistic regression

| variables | Sig. | Exp(B) | 95% C.I | |
| --- | --- | --- | --- | --- |
| | | | Lower | Upper |
| **Education (low)** | | | | |
| Midle | 0.006 | 1.369 | 1.154 | 2.328 |
| High | 0.604 | 1.053 | 0.866 | 1.280 |
| **Region (east region)** | | | | |
| Sumatera | 0.006 | 1.353 | 1.089 | 1.061 |
| Java and Bali | 0.661 | 1.060 | 0.817 | 1.376 |
| **Employee (informal)** | | | | |
| Formal | 0.063 | 1.216 | 0,990 | 1.494 |
| **Insurance (no)** | | | | |
| Yes | 0.001 | 1.289 | 1.111 | 1.5494 |
| **Household income (poorest)** | | | | |
| Poor | 0.007 | 1.332 | 1.062 | 1.670 |
| Middle | 0.000 | 1.517 | 1,217 | 1.892 |
| Rich | 0.039 | 1.283 | 1.013 | 1.626 |
| Very rich | 0.034 | 1.292 | 1.019 | 1.638 |
| **Chronic disease (no)** | | | | |
| Yes | 0.000 | 1.972 | 1.600 | 2.492 |
| **Self-reported (good)** | | | | |
| Poor | 0.000 | 0.383 | 0.331 | 0.444 |
| **Smoker (no)** | | | | |
| Yes | 0.000 | 0.741 | 0.645 | 0.868 |
| **Nutrition status (normal)** | | | | |
| Lean | 0.297 | 1.118 | 0.908 | 1.371 |
| Fatty | 0.133 | 1.176 | 0.952 | 1.452 |
| Obesity | 0.044 | 1.214 | 1.006 | 1.467 |

## 3.4. Discussion

This paper aimed to determine the factors that influence the utilization of outpatient on the elderly. Outpatient utilization on the elderly is 18.6%, outpatient utilization increased with age [3]. The fact that more and more people are reaching old age has resulted in changes in patterns of illness such as chronic conditions [11]. Outpatient utilization on elderly is dominated by women who have secondary education, work in the formal sector, live in Java and Bali, live urban areas, have health insurance, have a high income, have a history of chronic diseases, have healthy perception, have no smoking habit and are obese. Health care utilisation is also associated with environmental determinants such as the availability and accessibility of services, which can vary geographically. Health service facilities outside Java and Bali are still limited than Java and Bali. Based on the results of the analysis, the elderly who have higher education have a greater risk of utilizing outpatient care. This study is consistent with Chen [12]. Higher the level of education will influence the mindset in making decisions to do utilizing health care when needed [12]-[14].

The regional differences in the elderly can also affect the utilization of outpatient; this can be caused by each region having different government policies, trust, endemic in diseases and population density. elderly working in the formal sector has a greater probability of using outpatients. Working in the informal sector such as farmers tends to have lower incomes [8].

Elderly who have health insurance have a greater probability of utilizing outpatient care. The results of this study are in line with other studies [15], [16]. Not covered by health insurance and having a high economic burden will largely delay the utilization of outpatient care when needing it [12]. Income will affect the decision of the elderly to utilize outpatient services or not. The results of this study show that outpatient utilization is influenced by household income. Compared to the elderly who have very poor income, all elderly have a greater risk of taking outpatient care. The higher the economic status is, the better the health status will be [15]. The risk of disease infection is higher on people with low economic status [8].

This study found that the elderly with chronic disease have a probability of 1.97 times to have an outpatient visit in a healthcare facility. A history of chronic disease will affect the decision of the elderly to utilize outpatient services. Elderly who have a history of chronic disease have a greater risk of taking outpatient care after being controlled by other variables. This study is in line with other studies [14], [17], [18]. The older a person is, the higher the risk for infected diseases, especially chronic disease [19], [20]. The presence of chronic diseases can limit daily activities [11]. Thus, it can encourage someone to do one treatment using outpatient [8]. Self-reported is a predictor in influencing elderly utilizing outpatient care. During the interview, the elderly having poor self-reported having a smaller probability of utilizing outpatient care. It can be understood that when a person's health status is good then good health utilization will be depicted [21]. This study is in line with other studies finding that health perception has a significant relationship with outpatient utilization [14], [22].

Smoking habits affect the elderly utilizing outpatient. Based on the results of this study, elderly who have a smoking habit have a smaller risk to take care of outpatient. The results of this study are in line with other studies [13]. During the interview, the elderly who have lived a long life and do not have a smoking habit are likely to have quit smoking because they have felt the consequences of it [23]. Elderly people who have obesity nutritional status have a greater probability of utilizing outpatient care. Obesity is a risk factor for various chronic diseases [7], [24]. Such as cardiovascular diseases [25], stroke, cancer, diabetes, hearth diseases [19], [20] so this will have an impact on the utilization of health services.

This study has some limitations that need to be discussed. First, this study used secondary data, so it only explored the available variables in the dataset. Several variables, such as waiting time [26], mental health status [27], local insurance [28], and activities of daily living, regular medication [29] and ethnicity [30] were not included in this study due to data limitations. Second, this study used a cross-sectional study design, so it is possible to have information bias when requesting data. Furthermore, this research design can only see the relationship between the variables studied without being able to see a causal relationship among them. The study also asks self-reported, and elderly may have difficulties in memorizing their health services utilization for once week. Recall bias could not be ruled out.

## 4. CONCLUSION

Chronic disesase is a predictor of outpatient utilization among elderly. To overcome this, the government is expected to provide policies on health facilities to better emphasize promotive and preventive. Health promotion for the elderly about the importance of healthy living at their age is needed. For the elderly in Indonesia, they are expected to apply a healthy lifestyle at their age.

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