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Factors Associated With The Utilization of Healthcare Facility Among The Ederly in X Hospital Semarang

Theresia Anggita✉, Antono Suryoputro, Yohanes Sugiarto

Diponegoro University, Faculty of Public Health, Postgraduate, Indonesia

Article Info	Abstract
	Recently, the percentage of older adults in Semarang has increased significantly because of the success of national development in the field of health and welfare. Elderly people tend to have greater healthcare utilization because of their health status. However, we need to know the factors that influence the elderly in utilizing health services in X 65%hospitals in the framework of developing a geriatric clinic for improving elderly health services in Semarang. This study aimed to identify factors related to the use of outpatient services among the X Hospital elderly. This is cross sectional study using data from X Hospital, conducted in Januari- Maret 2020 Only those who were 60 years or older were included in the analyses. We used a logistic regression analysis to determine factors associated with use of outpatient services. Among 100 participants, 65% of respondents had actived using the outpatient services in X Hospital. Factors associated with the use of outpatient services were family income, knowledge, attitude of health worker, hospital facilities, self-rated health, the number of chronic conditions, and Activities of Daily Living (ADL).The need for elderly patients in outpatient services is likely to increase along with the increasing elderly population in Indonesia in general and in the City of Semarang in particular. Elderly activeness in Hospital X in utilizing health services in Hospital X provides an opportunity for hospitals in the development of geriatric clinics and service which are currently being initiated by hospitals. Geriatric services at X Hospital providing services to elderly patients to improve the quality of their health, both psychologically and physically., and facilitate them to access appropriate health services according to their needs.

✉ Correspondence Address :
Public Health Departemen, Jl. Prof Sudarto No. 1269, Semarang, 50275, Indonesia
E-mail: theresia.anggita@gmail.com

INTRODUCTION

The United Nations estimates that the number of people aged ≥60 years will increase from 901 million in 2015 to 1.4 billion in 2030 globally, an increase of more than 56% in 15 years.

It is estimated that 71% of the increase in the elderly population will occur in developing countries (United Nation,2015). Indonesia, with the world's 4th largest population of around 258 million in 2015, is also facing the challenge of a rapidly increasing elderly population. The number of elderly people increased by about 4.12 million from 2000 to 2015, as life expectancy in Indonesia increased from 67.25 to 70.8 years in the same period (Kementrian Kesehatan, 2016). The increase in the number of elderly people is partly due to the success of health development in Indonesia which has an impact on a more equitable distribution of health services (Kementrian Kesehatan, 2016). Since 2004 - 2015, there has been an increase in Life Expectancy in Indonesia from 68.6 years to 70.8 years and projections for 2030-2035 to reach 72.2 years (Maylasari, 2017). Indonesia has five provinces that have an old population structure where the elderly population has reached 10 percent, namely: DI Yogyakarta (14.50 percent), Central Java (13.36 percent), East Java (12.96 percent), Bali (11 , 30 percent) and West Sulawesi (11.15 percent).

The increase in old age in Semarang City is quite high from year to year in 2014 the number of elderly was 7.85% of the total population, in 2015 the number of elderly was 7.89%, and in 2018 the number increased to 8.78% of the total population (Rahmadina, 2018) so that the handling of the elderly needs to be more intensive considering the psychological conditions that might interfere with the healing process if the handling of the disease is inadequate. Room facilities and all corners of the building units must be in accordance with the standards of the elderly, because if they are appropriate it will be very helpful in the healing process of the elderly and the elderly can feel comfortable following the treatment period.

Health service planning must be designed based on the condition of the elderly and the pattern of services needed, referring to the choice of health service facilities that are accessed by the elderly in seeking treatment. Data on elderly with medical treatment places show that in urban areas the largest proportion of them went to outpatient treatment at 58.80%, to doctors / midwives 33.04%, to primary health care 28.27% and to private hospitals 13.97% (Maylasari, 2019).

Hospital X Semarang opened Geriatric services in August 2018 but the utilization is still not optimal compared to the number of elderly people who go to X Hospital Semarang. Patient behavior in the utilization of health services is influenced by the predisposing, enabling, and need components according to Andersen (1995).This theory is similar to Green's (1980) theory in Notoatmodjo (2012) regarding health behavior except for the third variable, namely the reinforcing factor as an effort to encourage patients to influence choices in the use of health services. The predisposing factor is manifested in knowledge, attitudes, beliefs, values, attitudes, perceptions, motivation, and demographics. Enabling factors, which are manifested in the availability of health resources, affordability of health resources, community / government priorities and health commitments, and health-related expertise. Reinforcing factors, are factors that determine whether a person's actions receive support (from leaders, community leaders, families, and health service providers) or not.

In line with existing theories, several studies have shown the influence of certain variables on the utilization of elderly health services. In the study of Chen et al. (2018) the utilization of elderly services in hospitals was most influenced by need factors (chronic disease) rather than predisposing and enabling factors. According to the results of research by Chaterjee et al. (2018) reported that apart from financial and sociodemographic factors, need factors were also a factor influencing the decision making of the elderly in utilizing health services.

Overall, this study can provide some descriptions of the factors that influence the

utilization of elderly services in Semarang City in general and X Hospital in particular. Findings from this study can contribute providing services to elderly patients to improve the quality of their health, both psychologically and physically.

METHOD

The method used was a quantitative study with a cross-sectional approach using data obtained from 100 elderly patients in the outpatient installation of RS X Semarang. Sample distribution using proportional random sampling. The steps in this study consisted of compiling a questionnaire, testing the questionnaire, collecting data and processing data.

The research instrument is a structured questionnaire that has been tested for validity and reliability on 30 elderly patients at the Hospital X Hospital. . The value of r table for 30 respondents is 0.370-0.903 with a significance level of 0.05. The questionnaire reliability test was carried out by calculating the *Cronbach alpha* value with the results of the questionnaire 0.605-0.839, which was reliable because the value was > 0.6.

The research data collection was carried out through interviews by third parties who had been trained using a structured questionnaire in March 2020. The basic characteristics of the participants were presented by numbers and percentages, and bivariate analysis of the characteristics of the respondents was carried out using the *Pearson Chi-square* test. Multivariate logistic regression analysis was performed to determine the factors associated with outpatient care utilization. 95% confidence intervals (CI) were used to report percentage odds ratios (ORs) and all analyzes were performed using SPSS.

RESULT AND DISCUSSION

Table 1 shows the basic characteristics of the 100 participants. Among them 54% were female, and 33%, 67% and 0% in the 60 ~ 74 years, 75 ~ 90 years, and ≥ 90 years age groups respectively. There are 84% of respondents who are married, 12% of them are divorced and 4% of other statuses.

Most of them, as many as 60% of respondents have a level of education equivalent to junior high school or senior high school, while 11% have a level of education equivalent to primary school or have never taken formal education, and only 19% have an education equivalent to tertiary education or higher. The majority of respondents did not work, namely 66% and those who worked were 34%. Elderly with income <1 million 27%, 1-10 million 63% and more than 10 million 10%.

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In general, the data shows the general healthy elderly population in Indonesia. More than 40% of the elderly rated their health as "very healthy" or "moderately well", and only 51% as "unhealthy". In terms of ADL functions, 14.4% indicated that they have difficulty in at least one in five ADL functions.

Table 1. Characteristics of Research Subjects
(N= 100)

Variable	Category	Frequency %	Percentage
Age	60-74	33	33
	75-90	67	67
	>90	0	0
Sex	Male	46	46
	Female	54	54
Marital Status	Married	84	84
	Divorced	12	12
	Others	4	4
Education	Low	11	11
	Medium	60	60
	High	29	29
Job status	Work	34	34
	Not work	66	66
Monthly Income	Loww	47	47
	High	53	53
Knowledge	Good	48	48
	Not Good	52	52
Health self assessment	Healthy	7	7
	Rather Healthy	42	42
	Not Healthy	51	51
Chronic Illness Condition	None	28	28
	1	35	35
	>1	37	37
Activities of Daily Living	Totally Independent	84	84
	Partially Dependent	7	7
	Dependent	9	9
Targeted Outpatient	Internal Medicine	25	25
	Surgery	13	13
	Rehabilitation Services	31	31
	Neurology	18	18
	Cardiology	12	12
	Geriatric	1	1

Table 2 shows the results of the bivariate analysis of the characteristics of the respondents and the use of outpatient services. With the exception of education level, occupation and accessibility, other variables were significantly associated with use of outpatient services. Table 3 shows the multivariate analysis using logistic statistical tests. Odds ratios and 95% confidence intervals are presented.

The effect between all independent variables together with the dependent variable was tested using logistic statistical tests. The implementation is done without considering the comfounding variable. The variables of knowledge, behavior of health workers, assessment of health status and Activities of Daily Living are statistically significant in relation to the utilization of outpatient services.

Elderly who have more knowledge will benefit from elderly services by 3.017 times compared to patients who do not have more knowledge. A hospital that creates a culture of good staff behavior will bring in 3.807 times more patients than a hospital that does not create a culture of good staff. Compared to those with good health status, those with poor health status had an odds ratio of 0.443 (95% CI: 0.169-1.156). Activities of Daily Living status and having more chronic conditions were also associated with higher use of outpatient services.

Table 2. Bivariate Analysis of the Factors Associated with Outpatient Utilization at X Hospital Semarang

Variable	Active		Not Active		P value*
	N	%	N	%	
Education level					0.388
Low	4	36.4	7	63.6	
Medium	35	58.3	25	41.7	
High	15	51.7	14	48.3	
Employment					0.537
Work	11	32.4	23	67.6	
Not work	27	40.9	39	59.1	
Income					0.012*
Low	37	78.7	10	21.3	
High	28	52.8	25	47.2	
Knowledge					0.008*
Low	27	51.9	25	48.1	
High	38	79.2	10	20.8	
Accesibilty					0,208
Good	36	72	14	28	
Not Good	29	58	21	42	
Facility					0,031*
Good	42	75	14	25	
Not Good	23	52.3	21	47.7	
Behaviour of health worker					0,026*
Good	37	77.1	11	22.9	
Not Good	28	53.8	24	46.2	
Self Health Assesment					0,000*
Healthy	3	42.9	4	57.1	
Rather Healthy	18	42.9	24	57.1	
Not Healthy	44	86.3	7	13.7	
Chronic Condition					0,031*

None	12	46.2	14	53.8	
1	24	64.9	13	35.1	
>1	29	78.4	8	21.6	
Activities of Daily Living					0,043*
Totally Independent	49	75.54	33	94.3	
Partially Dependant	8	12.3	0	0	
Dependant	8	12.3	2	5.7	

*= P value carried out based on statistical tests (chi square test) with a significance of <0.05

Tabel 3. Multivariate Analysis with Backward Method

Step	Variable	P	OR	95% C.I for Exp(B)	
				Lower	Upper
Step 1	Education level	0.416	1.965	0.385	10.018
	Employment	0.781	0.854	0.280	2.605
	Income	0.889	1.080	0.366	3.185
	Knowledge	0.059	2.798	0.961	8.142
	Accecibility	0.530	1.379	0.506	3.761
	Facility	0.251	1.857	0.645	5.347
	Worker's behaviour	0.081	2.663	0.887	7.999
	Self Health Assesment	0.183	0.507	0.187	1.376
	Chronic conditions	0.213	0.501	0.169	1.487
	Activities of Daily Living	0.078	0.214	0.038	1.189
Step 2	Education level	0.422	1.931	0.387	9.631
	Employment	0.720	0.828	0.295	2.321
	Knowledge	0.059	2.795	0.960	8.136
	Accecibility	0.532	1.376	0.505	3.748
	Facility	0.247	1.865	0.649	5.360
	Worker's behaviour	0.082	2.647	0.884	7.925
	Self Health Assesment	0.174	0.503	0.187	1.354
	Chronic conditions	0.215	0.503	0.170	1.491
	Activities of Daily Living	0.074	0.211	0.038	1.164
Step 3	Education level	0.457	1.828	0.374	8.945
	Knowledge	0.057	2.818	0.971	8.181
	Accecibility	0.508	1.400	0.517	3.788
	Facility	0.240	1.879	0.656	5.387
	Worker's behaviour	0.086	2.601	0.874	7.736
	Self Health Assesment	0.182	0.511	0.191	1.370
	Chronic conditions	0.208	0.498	0.168	1.475
	Activities of Daily Living	0.069	0.207	0.038	1.132
Step 4	Education level	0.427	1.887	0.394	9.029
	Knowledge	0.051	2.878	0.994	8.336
	Facility	0.202	1.970	0.695	5.584

	Employee Behaviour	0.070	2.721	0.992	8.025
	Self Health Assesment	0.171	0.503	0.189	1.344
	Chronic Conditions	0.248	0.536	0.186	1.545
	Activities of Daily Living	0.070	0.209	0.039	1.133
Step 5	Knowledge	0.025	3.221	1.157	8.967
	Facility	0.236	1.862	0.666	5.208
	Employee Behaviour	0.068	2.731	0.928	8.034
	Self Health Assesment	0.136	0.477	0.180	1.262
	Critical conditions	0.187	0.497	0.176	1.405
	Activities of Daily Living	0.070	0.212	0.040	1.137
Step 6	Knowledge	0.031	3.105	1.108	8.209
	Employee Behaviour	0.014	3.486	1.291	9.417
	Self Health Assesment	0.108	0.452	0.172	1.189
	Chronic conditions	0.204	0.512	0.183	1.436
	Activities of Daily Living	0.058	0.199	0.037	1.057
Step 7	Knowledge	0.028	3.017	1.124	8.098
	Employee Behaviour	0.007	3.807	1.437	10.085
	Self Health Assesment	0.096	0.443	0.169	1.156
	Activities of Daily Living	0.030	0.160	0.031	0.834

Based on Andersen's model of behavior, the discussion is carried out according to the various factors that influence health care service usage:

Predisposing Factors

In this study, female respondents were more active in utilizing elderly health services than male respondents. In accordance with research by Tsou (2018) that women are rated to pay more attention to their physical and mental conditions. The results showed that the age frequency with the most visits was 75-90 years. Age is no longer a major factor in the use of health services because age only shows the probability of a person being hospitalized (Liu, 2016), the type and number of illnesses, and differences in medical care patterns (Andersen, 2005). Similar findings by Werblow et al.(2007) shows that age cannot be justified as the main reason for someone's health care costs. Chronic disease limits a person's ability to perform daily activities, loses independence, and results in more need for care so that in this study age is not a significant determinant of the utilization of elderly health services.

This study shows that there is no significant relationship between education and the utilization of elderly services at Hospital Xin line with research conducted by Fatimah (2019). In contrast to the theory put forward by Anderson (1995), Dhingra (2010), Blackwell (2016), Chen (2018) which states that higher education levels serve as an important determinant of health service use. Andersen in Wolinsky (1978) states that the characteristics of education which is one of the predisposing factors in the utilization of health services illustrate that each individual uses health services in different ways where to take advantage of health services the presence of predisposing and supporting factors alone is not enough without the perceived need for health service

The results of the study are consistent with the research of Song et al. (2017) and Rahayu (2020) that there is no relationship between work and the utilization of elderly health services. These results are also in line with other studies showing that people who are not working are more likely to take advantage of health services because people who are not working have more free time than people who are working.

People with lower incomes make more use of health services than those with higher incomes. Public health research shows that people on lower incomes are generally less healthy than people on higher incomes so people with lower incomes may have a greater chance of developing chronic disease. This result is associated with the ability of people with higher incomes to have better health, better living locations, have more knowledge about health, care more about health care in daily life, and have more access to services and health care (Chen, 2018).

Knowledge is not only obtained formally it's also through experience, apart from that knowledge is also acquired through means available information such as internet, radio, leaflets,etc (Pratiwi, 2017). Health knowledge is related to people's awareness, motivation and competence in accessing, understanding, assessing, and applying health information. These factors help maintain or improve the behavior and quality of life of individuals by making appropriate judgments and making decisions about disease prevention and health promotion in their daily lives. Snider's research (2015) , Yin et al. (2013) , He et al. (2016) and Silvia (2019) suggest a link meaning between knowledge on the use of health services.

Enabling Factors

Accessibility plays an important role in the selection of health care providers. Accessibility to health services is defined as the ability of a population to obtain a set of health services (Halden, 2002). Penchansky and Thomas (1981) divide five dimensions of accessibility, namely: availability (number of health workers and other health services), accessibility (the relationship between the location of health services and the location of the community considering patient transportation resources, travel time, distance, and costs), accommodation (health care system which relates to ease of use such as practical hours, waiting time, and long waiting times for service appointments), affordability (people's financial ability to take advantage of health services), and acceptability (user's attitudes towards health services or vice versa).

A number of studies have measured the impact of distance on utilization of health services where the results show that distance and access to health care facilities significantly influence health service utilization for the elderly (Yunus, 2017; Mattson, 2011; Krishnawamy, 2009) . This result contradicts the results of the research conducted because even though the location is easy to reach by public transportation, which is rarely available, it is not a problem because most patients use private vehicles to reach health service locations.

One of the factors that can affect health service users is physical appearance (tangible). This aspect of physical appearance relates to things seen in services such as waiting room facilities, computerized network systems that facilitate the flow of information and so on. The better these tools work and are reliable according to the perceptions of service users, the more likely it will affect the assessment of service quality (Muninjaya, 2004). Hamid (2013) also stated that good service quality (number and reliability of health workers, completeness of facilities, types of health services guaranteed and availability and completeness medicine in the service area) will stimulate a person's interest in utilizing health services.

Need Factors

Aging is characterized by a progressive loss of adaptability (Evans, 2003) , deterioration of organs and systems (Ritter, 2001) that leads to lower effectiveness of physiological functions and is accompanied by an increase in risk factors for various diseases that require additional medical treatment. The results of the study were carried out in accordance with research by Madyaningrum et al (2018) which stated that the elderly with poor health status assessments and

the number of chronic conditions suffered more often used outpatient services.

Utilization of health services is higher in patients with more than one chronic disease than in patients with a single chronic disease (Hopman, 2016). Patients with more than one chronic disease benefit more from health services because of decreased body function and have complex needs and need comprehensive and integrated care so that they are more active in utilizing elderly services (Reichard, 2015)

The main goal of caring for elderly patients is to maintain the ability to perform daily tasks that are essential for living and daily activities (Activities of Daily Living) such as using the toilet, dressing, showering, eating, and moving from a bed or chair. These activities are the basis for maintaining the independence and quality of life of the elderly. Loss of independence in these activities is strongly associated with higher resource use and mortality (Covinsky, 2003). This study is supported by previous research by Olano (2006) that functional limitations are one of the factors that increase the utilization of health services and health care costs in the elderly.

The increase in the number of elderly at Hospital X Semarang causes challenges faced by the Hospital in an effort to improve the health and welfare of the elderly, one of which is the provision of health service facilities and infrastructure in providing friendly and easily accessible services for the elderly (Geriatric Service). Hospital X Semarang has opened Geriatric Services since 2018 but the utilization of Geriatric services at Hospital X Semarang is still quite low.

Geriatric services are implemented in an integrated manner with a multidisciplinary approach that works in an interdisciplinary manner by examining all aspects of health in the form of promotive, preventive, curative, rehabilitative, and palliative. Based on service capability, Geriatric services at Hospital X Semarang are included in a complete level. The complete level of Geriatric services available consists of outpatient services, acute inpatient care, and home care services. The integrated

Geriatric Team which is owned by the hospital consists of: doctors who specialize in internal medicine; physical medicine and rehabilitation specialist; psychiatrist / psychiatrist; other specialist doctors according to the type of disease of the Geriatric Patient; doctor; nurses who have attended gerontic nursing training or intelligence skills training; pharmacist; nutritionist; physiotherapist; occupational therapist, and psychologist.

Good accessibility, the activeness of the elderly in utilizing elderly services at Hospital X Semarang along with the ability of the hospital (facilities, types of services, and an integrated geriatric team) are the strengths of Hospital X in developing future geriatric services.

The results showed that the elderly who seek treatment at the Outpatient Installation of X Hospital Semarang still have low knowledge. This can be because the elderly do not get information about special services for the elderly or geriatrics from health workers, fellow elderly friends, family or through electronic media (hospital websites). Promotion related to geriatric services needs to be maximized again by the Hospital Public Relations and Marketing division so that the geriatric services that are already owned by the hospital can be utilized properly by elderly patients, become superior hospital services, and can also increase hospital income.

CONCLUSION

The need for outpatient care increases with the increasing age population in Indonesia. Factors associated with outpatient use at Hospital X are need factors (assessment of health conditions, chronic conditions suffered, and Activities of Daily Living), supporting factors (Hospital Facilities and Health Officer Behavior) and predisposing factors (education , income and knowledge).

Health facilities need to understand how the elderly can get access and information to be able to provide complete health services to the elderly. The results showed that the activeness of the elderly in utilizing health services at Hospital X provided opportunities for the hospital to

develop clinics and geriatric services which are currently being started by the hospital.

Further research can be carried out with variables that are not in this study and use a different research design and a wider research scope with a larger number of respondents.

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