



SOCIODEMOGRAPHIC CHARACTERISTICS OF ELDERLY WITH HYPERTENSION AND COGNITIVE FUNCTIONS

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Abstract

Objective: This study aims to determine the correlation between the sociodemographic characteristics of the elderly with hypertension to cognitive function. **Method:** This is a descriptive correlational study that was conducted in Pekanbaru City. This study involved 86 elders with hypertension that were recruited using a purposive sampling technique. **Data on** sociodemographic characteristics of the elderly with hypertension were obtained by using questionnaires and cognitive function data were obtained by using MMSE (Mini-Mental Status Examination). **Result:** The Chi-square test showed a significant relationship between gender, educational level, marital status, employment status with the cognitive function of the elders (p -value < 0.05). **Conclusion:** The condition of the cognitive function of the elderly can be influenced by the sociodemographic characteristics of the elderly, such as gender, education, employment status, and marital status.

Keywords: Sociodemographic Characteristics, Elderly with Hypertension, Cognitive function

Introduction

The high population of the elderly is at risk of various holistic health problems, such as biological, psychological, social and spiritual health problems. One of the biological health problems that tend to be experienced by the elderly is a chronic non-communicable health problem, namely hypertension.

Hypertension is one of the main health problems experienced by the elderly. Hypertension occurs due to disorders of the circulatory system or the cardiovascular system, is chronic or chronic even throughout life, cannot recover as usual, and has a very high prevalence rate¹ This hypertension is also a silent killer, where many sufferers does not show any complaints or symptoms, but is one of the causes of death².

According to^{3,4} hypertension is caused by the aging process. Blood vessels in the elderly

In addition to the aging process, several social experience loss of elasticity so that peripheral vascular resistance increases demographic factors in the elderly also influence the occurrence of hypertension, such as: gender, education level, occupation^{2,5}.

Gender factors affect the occurrence of hypertension^{6,7}, Women at the age of 65 years and over or the elderly are more at risk of developing hypertension than men. This condition is influenced by hormones. A woman who has entered menopause is more at risk for obesity which will increase the occurrence of hypertension⁸.

In addition,⁹ shows that the level of education and work are also related to the proportion of hypertension. The higher the level of education of a person shows a tendency to decrease the incidence of hypertension (the proportion of hypertension in people who do not go to school, is 51.6% and people with diploma education and above are only 28.3%) The same



is, for employment status. The proportion of hypertension in people who do not work is higher than those who work².

Hypertension can slowly damage the body and blood vessels in most parts of the body, including damage to brain function¹. Research conducted¹⁰ states that hypertension disrupts the structure and function of cerebral blood vessels, leads to ischemic damage of white matter regions critical for cognitive function.

Elderly suffering from hypertension has decreased brain function due to narrowing and sclerosis of small arteries in the subcortical area, which results in decreased blood flow, loss of autoregulation, decreased brain barrier, and microinfarction. This condition is at risk for cognitive dysfunction¹¹.

The examination used to detect the occurrence of cognitive disorders is through the Mini Mental State Examination which includes, orientation, registration, attention, and calculation, recall, and language¹². Researchs^{5,13} show that the socio-demographic characteristics (such as gender, education, marital status and employment status) of the elderly have a relationship with the risk of developing dementia.

Based on this description, the researcher is interested in examining the socio-demographic characteristics of the elderly who have hypertension with their cognitive function. The purpose of this study was to determine the correlation between the socio-demographic characteristics of hypertensive elderly with cognitive function.

Method

This is a descriptive correlational study that was conducted in the working area of Payung Sekaki Subdistrict Public Health Center in Pekanbaru. This subdistrict had the highest elderly population compared to other Public Health Centers. This study involved 86 elders who were recruited using purposive sampling technique according to the inclusion criteria, including: elderly aged 60 years and above,

and have hypertension. The data was collected through questionnaires.

Data on the sociodemographic characteristics of the elderly were collected through a questionnaire in the form of closed questions consisting of: age, gender, religion, ethnicity, education, marital status and occupation. Data on the risk of dementia were collected through a valid and reliable Mini Mental State Examination (MMSE) questionnaire. The MMSE consists of 11 questions measuring 5 areas of cognitive function consisting of orientation, registration, attention and calculation, repeating, and language. The study will conduct an MMSE test for 5-10 minutes. The maximum score on the MMSE examination is 30, a score ≥ 24 is said to have no cognitive impairment and a score < 24 is said to have cognitive impairment.^(14,15). This research has followed ethical principles by seeking informed consent from all respondents while maintaining anonymity and confidentiality.

Data analysis in this study was univariate and bivariate using computer software. Univariate analysis in the form of frequency distribution (%) and bivariate analysis using Chi Square test with p value (0.05).

Results

1. Sociodemographic characteristics

Table 1
Frequency Distribution of
Sociodemographic Characteristics of
Elderly (N=86)

No	Characteristic of elderly	N	%
1.	Age:		
	Elderly (60-74 y.o)	64	74.4
	Oldi (75-90 y.o)	22	25.6
2.	Gender:		
	Male	33	38.4
	Female	53	61.6
3.	Religion:		
	Islam	79	91.9
	Christian	7	8.1



4.	Tribe:			
a.	Minang	40	46.5	
	Jawa	22	25.6	
	Melayu	15	17.4	
	Batak	9	10.5	
b.	Level of education:			
	Elementary School	44	51.2	
	Junior school	23	26.7	
	High School	18	20.9	
	College graduates	1	1.2	
	Marital Status:			
	Not Married	0	0	
	Married	39	45.3	
	Widow/widower	47	54.7	
	Occupations:			
	Government employees	3	3.5	
	Private staff	0	0	
	Entrepreneur	31	36.0	
	Unemployed	52	60.5	

	Junior School	14	60.9	9	39.1	23
	High School	13	72.2	5	27.8	18
	College Graduates	1	100	0	0	1
	Total	41		45		86
3	Marital Status					0.000
	Not Married	0	0	0	0	0
	Married	29	74.4	10	25.6	39
	Widow/widower	12	25.5	35	74.5	47
	Total	41		45		86
4	Occupations:					0.000
	Government employees	3	100	0	0	3
	Private staff	0	0	0	0	0
	Entrepreneur	25	80.6	6	19.4	31
	Unemployed	13	25.0	39	75.0	52
	Total	41		45		86

Discussion

Socio-demographic characteristics of the elderly (such as gender, education, marital status and employment status) have a relationship with the risk of dementia^{2,5,13}. Cognitive decline is more at risk for women due to the high life expectancy of women compared to men, so that the female elderly population is more⁶. Women at the age of 65 years and over or the elderly are more at risk of developing hypertension than men. This condition is influenced by hormones. A woman who has entered menopause is more at risk for obesity which will increase the occurrence of hypertension⁸.

Hypertension can slowly damage the body and blood vessels in most parts of the body, including damage to brain function¹. Research conducted¹⁰ states that hypertension is a major factor in damage to target organs, one of which is the brain.

Elderly suffering from hypertension has decreased brain function due to narrowing and sclerosis of small arteries in the subcortical area, which results in decreased blood flow, loss of autoregulation, decreased brain barrier, and microinfarction. This condition is at risk for cognitive dysfunction¹¹.

Elderly with a history of higher education have more brain mass and are able to adapt to cognitive and neurodegenerative changes than



elderly people with lower education.¹³ A good marital status with a spouse can be a social support that helps the elderly in their daily life.¹³. Elderly with low activity are at risk of experiencing cognitive decline due to routine definite activities such as work, so that the brain will always work to think due to these brain stimuli^{6,13}.

Conclusion

The results showed that the majority of hypertensive elderly respondents were 60-74 years old, female, Muslim, Minang ethnicity, with primary school education, widow/widower marital status, and unemployment, and most of them experienced cognitive dysfunction. The results of the bivariate analysis (Chi Square test) showed that there was a relationship between sociodemographic characteristics: gender, education, marital status, and occupation with cognitive function (pvalue <0.005).

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