

Characteristics, Nutritional Status and Degenerative Diseases in the Elderly at the Curug Health Center, Serang Regency, Banten

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Abstract

Degenerative disease is a disease that accompanies the aging process this disease occurs with age. Degenerative disease is a medical term used to describe a process of decline in nerve cell function without a known cause, from a previous normal state to a worse state. Several types of degenerative diseases include: osteoporosis, stroke, heart disease, gout, DM, cholesterol, obesity, etc. One of the causes of degenerative diseases is due to the acquisition of micro and macro nutrients that are not balanced. The wrong diet increases the risk of this disease. From the several types of diseases above, we can conclude that most of them are influenced by food consumption. People are now fond of consuming foods high in fat such as fried foods, junk food, instant foods. The purpose of this study was to see the relationship between respondent characteristics, nutritional status and degenerative diseases. This research is a cross sectional study, with the population as the target group of Posbindu activities at the Curug Health Center, Serang Regency, Banten and the number of samples is 124 elderly. The results showed that the majority of respondents were elderly 60-69 years as much as 78.2%. The majority of respondents have nutritional status with BMI in the normal category as much as 66.1%. Normal blood pressure (as much as 46.8% for systolic pressure and 45.2% for diastolic pressure). The respondent's cholesterol, blood sugar and uric acid levels are in normal conditions but must remain vigilant. There is no significant relationship between BMI (nutritional status) with age, sex, and systolic blood pressure. There is a significant relationship between systolic and diastolic blood pressure on age and gender in the elderly at the Curug Health Center, Serang Banten.

Keywords: Nutritional Status, Degenerative Disease, Elderly

Background

Degenerative diseases in Indonesia are increasing. As purchasing power increases, this applies to all Indonesians of all ages, including the elderly. And not only diabetes mellitus, but also other degenerative diseases. As income increases, people now tend to be able to buy all kinds of technological advancement products such as cars, people everywhere now just sit in the car, watch television, just press the remote, in malls or in other buildings it is now familiar, taking the elevator or the escalator, just set the washing machine. People in Indonesia are now able to buy all kinds of expensive and delicious foods that contain a lot of fat and become somewhat sedentary, even though being less mobile can be at risk of causing these degenerative diseases, as well as consuming fatty foods.

Non-communicable diseases or degenerative diseases since a few decades ago have become a separate problem segmentation for each country around the world. Together with the increasing complexity of the problems caused by various kinds of infectious diseases, cases of non-infectious diseases pose a double burden on the world of health. According to WHO, it is estimated that many countries have suffered losses of up to billions of dollars due to this degenerative disease,

therefore concrete steps are needed to overcome it.

Until now, degenerative diseases have become the biggest cause of death in the world. Nearly 17 million people die prematurely each year from the global epidemic of degenerative diseases (WHO).

The results of the 2010 Population Census show that Indonesia is currently among the top five countries with the largest number of elderly people in the world, reaching 18.1 million people or 7.6 percent of the total population. The increase in the elderly population will certainly be followed by an increased risk for suffering from degenerative diseases. Degenerative disease is the biggest problem in the elderly. It is estimated that in 2050 around 75% of elderly people with degenerative diseases cannot do activities.

The government has set National Elderly Day every May 29, since 1996. We are all directly or indirectly related to the elderly, the elderly limit in Indonesia is 60 years, in other countries there are those who categorize the age limit as 65 years.

At first glance, old age is often seen as a decrease in the body's resistance so that it is easy to get sick, and from a psychological point of view, you often feel lonely. Some people think that old age is a fact and a natural process of decreasing immunity, but we all must care and try our

best for better health for the elderly. Degenerative diseases in the elderly must be reduced by adopting a healthy lifestyle and exercising regularly. Degenerative diseases are diseases that cause damage or destruction to tissues or organs of the body. The process of this damage can be caused by use with age or due to an unhealthy lifestyle. The various degenerative diseases include: kidney, cholesterol, hypertension, heart, stroke, diabetes mellitus, and gout.

The surprising fact is that the global epidemic is found to be worse in many countries with low and medium national income, where 80% of deaths from degenerative diseases occur in some of these countries. The countries in question are Brazil, Canada, China, India, Nigeria, Pakistan, Russia, United Kingdom, and Tanzania (WHO). Therefore there is no choice but to rescue efforts. Efforts in the form of global cooperation proposed by WHO to tackle this degenerative disease epidemic can save the lives of 36 million people who will die by 2015. In Indonesia, the epidemiological transition has caused a shift in disease patterns, in which chronic degenerative diseases have increased.

Degenerative diseases are chronic non-communicable diseases such as heart disease, hypertension, diabetes, obesity and others. The main contributors to chronic disease are unhealthy lifestyles such as

smoking, drinking alcohol, diet and obesity, lack of physical activity, stress, and environmental pollution. So that Indonesia bears the double burden of diseases in the health sector, namely infectious diseases are still rampant and coupled with chronic degenerative diseases. The main cardiovascular diseases are coronary heart disease and hypertension. Coronary heart disease is mainly caused by abnormalities of the myocardium due to insufficiency of coronary blood flow due to atherosclerosis which is a degenerative process, in addition to other factors. Therefore, as the life expectancy of Indonesian people increases, the incidence will increase and become an important disease; moreover often cause sudden death. Another degenerative cause is Diabetes Mellitus (DM). Currently DM is still ranked fourth as a world epidemic that causes death (<https://www.liputan6.com/health/read/368590/diabetes-melitus-indonesia-occupied-ranked-ke-4-world>). In the diabetes atlas, it is estimated that the population of Indonesia over 20 years is 125 million with the assumption that the prevalence of DM is 4.6%, it is estimated that in 2000 the number of people with DM was 5.6 million people. Meanwhile, in 2020 there will be around 8.2 million people with DM. This is due to changes in lifestyle in the Java-Bali region, where in urban life there are

changes in all aspects including social, economic, cultural and political. Lack of employment, insufficient income, marital status, increasingly expensive education, area of residence and so on, can affect a person's health condition. These conditions can cause emotional disturbances in the form of psycho-social stress. Changes in eating patterns consume a lot of instant food and environmental conditions with a lot of pollution that can manifest in health problems. In addition to population density due to urbanization, which results in poor environmental sanitation, infectious diseases remain high. A follow-up analysis of the 2001 mortality study showed that deaths tended to be more in rural areas than in urban areas. This could be due to, among other things, the uneven distribution of health workers in rural areas and the lack of infrastructure in existing health facilities. In addition, distance and means of transportation In addition, distance and means of transportation can limit the willingness and ability to seek health services. Barriers to transportation facilities or transportation costs such as the absence of public transportation causes sufferers to have to pay quite high transportation costs to pay for vehicle rentals (Adianti Handajani, et al 2010). Based on the description of the background, the authors are interested in researching the

relationship between nutritional status and degenerative diseases in the elderly at the Curug Health Center, Serang Banten Regency in 2019.

Method

In this study, our research team wants to discuss degenerative diseases that exist in the Curug Health Center, Tangerang Banten Regency, including hypertension, cholesterol, blood sugar, uric acid and relate them to the nutritional status of the elderly. This research is a cross sectional study, with the population being the target group of Posbindu activities at the Curug Health Center, Serang Regency, Banten. The sample size in this study were all elderly people in the Curug Health Center area, Serang Banten Regency in 2019, namely 124 elderly people. The sampling technique used was the convenient sampling method, which took all elderly respondents who visited the Curug Health Center in 2019. The data collection technique was through interviews with officers who collected respondents using a structured questionnaire. Univariate analysis to describe patient characteristics such as age, gender, BMI and the incidence of degenerative diseases in the elderly such as hypertension, cholesterol, uric acid, blood sugar. Finding the relationship between BMI and degenerative diseases in

the elderly was analyzed using the Chi-Square test, if the Chi-Square test did not meet the requirements, the Fisher Exact test was used.

Result

In this study, the characteristics of the respondents assessed included age and gender. The age of the respondents in this study was divided based on the target groups of elderly health services in posbindu and health centers, namely the elderly (60-69 years) and the elderly with high risk (> 70 years) following the provisions of the Ministry of Health.

Meanwhile, according to some experts, Durmin said: Young elderly (65-75 years), older elderly (75 years), Munro et al: older elderly divided by 2, 75-84 years old and 85 years old, M. Alwi Dahlan: over 60 years old, according to government retirement age: age above 56 years, WHO: middle age (45-59 years), elderly (60-74 years), old age (75-90 years), very old age (> 90 years), according to the Ministry of Health RI (2013) is divided into pre-elderly aged between 45-59 years, elderly aged 60 years or more, high-risk elderly aged 70 years or more.

Table 1. Characteristic Respondent

	Characteristic	n	%
Age	60-69 year	97	78,2
	> 70 Year	27	21,8
		x= 63,94 ; SD=6,64	
Sex	Male	5	4,0
	Female	119	96,0

The results showed that the majority of respondents were elderly 60-69 years as much as 78.2% with an average age of respondents 63.94 + 6.64 years, where the oldest age was recorded at the age of 83 years while the lowest was 60 years, and

96% respondents are women, as can be seen in table 1 below. This is in accordance with the research conducted by Juliandi Harahap and Lita Sri Andayani in Medan City in 2018.

Table 2. BMI Respondent Characteristic

Body Mass Index	n	%
<= 18,4 (Less Weight)	39	31,5
18,5-25 (Normal Weight)	82	66,1
> 25 (Over Weight)	3	2,4
\bar{x} = 19,92 ; SD=2,909		

From table 2 it can be seen that the majority of respondents have nutritional status with BMI in the normal category as much as 66.1%, while 31% have less nutritional status and only 2.4% are overweight. Researchers analyzed that this condition of poor nutritional status could have a bad impact on the elderly. Fulfillment of unbalanced nutrition does not only have an impact on stunted physical growth. The internal organs of the body can also be affected. Clinical nutrition specialist, Inge Permadi said, someone who has been malnourished since childhood, then in the long term is at risk of degenerative diseases, such as hypertension, diabetes, coronary heart disease to stroke. Malnutrition occurs when a person does not meet the complete and balanced nutrition that the body needs. For example, eating more carbohydrates in a serving plate than the intake of vegetables, fruit, protein, fat, vitamins, and minerals which are also important for the body. "Diversity of food is needed because

there is no perfect nutritional content. Eating a variety of foods ensures the fulfillment of the body's needs for nutrients such as carbohydrates, fats, proteins, vitamins and minerals (<https://www.voice.com/health/2016/06/05/124339/malnutrition-for-elderly-can-trigger-stroke>).

In line with increasing age, there is a tendency for blood pressure to increase. One of the processes that affect this is atherosclerosis in blood vessels. Although there is no limit on the size of blood pressure based on age, it is often understood that hypertension occurs in this elderly group. Based on JNC VII for systolic blood pressure, it is referred to as pre-hypertension if the blood pressure is 120 – 139 mmHg, stage 1 hypertension if the blood pressure is 140-159 mmHg and stage 2 hypertension if the blood pressure is 160 mmHg. As for diastolic blood pressure, it is referred to as pre-hypertension if the blood

pressure is 80-89 mmHg, stage 1 hypertension if the blood pressure is 90-99 mmHg and stage 2 hypertension if the blood pressure is 100 mmHg. In this study, the researchers divided categories into 3

where stage 1 and 2 hypertension were combined into hypertension only, the description of systolic and diastolic blood pressure of the elderly is as shown in Table 3.

Table 3. Systolic dan Diastolic Blood Pressure Respondent

Blood Pressure	Systolic		Diastolic	
	n	%	n	%
Normal	58	46,8	56	45,2
Pre-Hypertension	36	29,0	37	29,8
Hypertension	30	24,2	31	25,0
	$\bar{x}=120,97$; SD=19,44		$\bar{x}= 77,9$; SD=9,13	

In the table, most of the elderly studied had normal blood pressure (46.8% for systolic pressure and 45.2% for diastolic pressure). The number of elderly people with pre-hypertension and hypertension also makes a large contribution, namely 50% more (53.2% for systolic pressure and 54.8% for

diastolic pressure) so they must be wary of because the number is higher than normal blood pressure. In general, the respondents' average systolic blood pressure was 120.97 + 19.44 mmHg and the average diastolic blood pressure was 77.9 + 9.13 mmHg.

Table 4. Respondent Cholesterol, Sugar Blood and Gout Rate

Variable	Rate	n	%
Cholesterol	Normal	124	100,0
Blood Sugar	Normal	124	100,0
Gout	Normal	124	100,0

One of the degenerative diseases that can occur due to excessive food consumption is coronary heart disease, where the risk factors for coronary heart disease include

high cholesterol levels in the blood (hypercholesterolemia) due to excessive fat consumption. Coronary heart disease is the most common cause of death. In this study,

the cholesterol levels of the elderly can be seen in Table 4. From the table it can be seen that all the elderly (100%) did not have cholesterol disease, this is because based on the results of the examination it was normal.

Diabetes mellitus is a degenerative disease. Checking blood sugar is one way to diagnose diabetes mellitus (DM). Ideally, establishing a clinical diagnosis of diabetes mellitus is based on clinical symptoms that appear (classic complaints) and examination of plasma blood sugar levels during fasting and intermittent fasting. In this study, the examination of blood sugar levels was carried out through capillary blood examination as an effort to screen DM in the elderly. The results obtained can

be seen in Table 4. From the table above, it can be seen that all respondents had normal blood sugar levels with more women than men.

Gout (hyperuricemia) or gouty arthritis is just one of more than two hundred different forms of arthritis. This disease is a type of arthritis caused by sodium urate crystallization in or around the joints. High uric acid levels are usually caused by consuming foods that contain purines. Several other medical conditions can also increase uric acid levels, such as diabetes mellitus, hypertension and hypercholesterolemia and obesity. From Table 4 it can be seen that all respondents had normal uric acid levels.

Bivariate analysis results

Table 5 Bivariate Results Between BMI (Nutritional Status) Categories and Age, Sex, Systolic and Diastolic Blood Pressure

Age	BMI (Nutritional Status)								P value
	<= 18,4 (Less)		18,5-25 (Normal)		> 25 (Over)		Total		
	N	%	n	%	N	%	n	%	
60-69 year	34	87,2	62	75,6	1	33,3	97	78,2	,057
> 70 year	5	12,8	20	24,4	2	66,7	27	21,8	
Total	39	100,0	82	100,0	3	100,0	124	100,0	
Sex	N	%	n	%	N	%	n	%	,365
Male	3	7,7	2	2,4	0	0,0	5	4,0	
Female	36	92,3	80	97,6	3	100,0	119	96,0	
Total	39	100,0	82	100,0	3	100,0	124	100,0	

Systolic Blood Pressure									
	N	%	n	%	N	%	n	%	
< 120 mmHg (Normal)	17	43,6	39	47,6	2	66,7	58	46,8	
120-139 mmHg (Pre Hypertension)	13	33,3	22	26,8	1	33,3	36	29,0	,815
>=140 mmHg (hypertension)	9	23,1	21	25,6	0	0,0	30	24,2	
Total	39	100,0	82	100,0	3	100,0	124	100,0	
Diastolic Blood Pressure									
	n	%	n	%	n	%	n	%	
< 80 mmHg (Normal)	17	43,6	37	45,1	2	66,7	56	45,2	
80-89 mmHg (Pre hypertension)	13	33,3	23	28,0	1	33,3	37	29,8	,826
>=90 mmHg (hypertension)	9	23,1	22	26,8	0	0,0	31	25,0	
Total	39	100,0	82	100,0	3	100,0	124	100,0	

From the table, there is no significant relationship between BMI (nutritional status) and age, sex, systolic and diastolic

blood pressure in the elderly at the Curug Health Center, Serang Banten.

Table 6 Bivariate results between systolic blood pressure with age and sex

Age	Systolic Blood Pressure								P value
	< 120 mmHg (Normal)		120-139 mmHg (Pre hypertension)		≥140 mmHg (hypertension)		Total		
	n	%	n	%	n	%	n	%	
60-69 year	50	86,2	29	80,6	18	60,0	97	78,2	,017
> 70 year	8	13,8	7	19,4	12	40,0	27	21,8	
Total	58	100,0	36	100,0	30	100,0	124	100,0	
Sex	n	%	n	%	n	%	n	%	,011
Male	1	1,7	0	0,0	4	13,3	5	4,0	
Female	57	98,3	36	100,0	26	86,7	119	96,0	
Total	58	100,0	36	100,0	30	100,0	124	100,0	

From the table that there is a significant relationship between systolic blood pressure and age and sex in the elderly at the Curug Health Center, Serang Banten.

Table 7 Bivariate results between diastolic blood pressure with age and sex

Age	Diastolic Blood Pressure								P value
	< 80 mmHg (Normal)		80-89 mmHg (Pre hypertension)		≥90 mmHg (hypertension)		Total		
	n	%	n	%	n	%	n	%	
60-69 year	49	87,5	30	81,1	18	58,1	97	78,2	,006
> 70 year	7	12,5	7	18,9	13	41,9	27	21,8	
Total	56	100,0	37	100,0	31	100,0	124	100,0	
Sex	n	%	n	%	n	%	n	%	,014
Male	1	1,8	0	0,0	4	12,9	5	4,0	
Female	55	98,2	37	100,0	27	87,1	119	96,0	
Total	56	100,0	37	100,0	31	100,0	124	100,0	

From the table that there is a significant relationship between diastolic blood pressure and age and sex in the elderly at the Curug Health Center, Serang Banten.

From tables 6 and 7 it can be said that hypertension is one of the degenerative diseases that must be watched out for. Hypertension is a public health problem that occurs in both developed and developing countries (Ministry of Health, 2008). Hypertension is a condition of blood pressure that exceeds the normal limit, namely systolic 140 mmHg and diastolic 90 mmHg. Normal human blood pressure is 120/80 mmHg. Generally, patients do not realize that they have hypertension, because hypertension is often without signs and symptoms. Hypertension is often referred to as the silent killer (WHO, 2011). Based on the results of the 2013 Basic Health Research (Riskesdas), the prevalence of hypertension in Indonesia decreased from 31.7% in 2007 to 25.8% in 2013. It is possible that the community has started to come for treatment to health facilities (Ministry of Health, 2013). At the provincial level in Central Java (2012), the prevalence of high blood pressure is quite high at 26.4%, although in Indonesia cases of high blood pressure have decreased and high blood pressure is a non-communicable disease, but it still requires special attention. High blood pressure that is not treated immediately will cause risk factors for various types of degenerative diseases. Hypertension is one of the priority health

problems in Indonesia and throughout the world, a chronic increase in blood pressure will increase the risk of damage to body organ functions, such as the brain, heart, and kidneys (Tedjasukmana, 2012). Hypertension is also still a health problem in the elderly group, with increasing age, blood pressure will also increase due to a buildup of collagen in the muscle layer, so that blood vessels will gradually narrow and become stiff. After the age of 45 years, the artery walls will experience thickening. In general, with increasing age, blood pressure will increase, both systolic blood pressure and diastolic blood pressure. Hypertension as a degenerative disease that is often found in the elderly group (Abdullah, 2005). There are several factors that cause hypertension, namely factors that cannot be changed and can be changed. Factors that cannot be changed are age, gender, and heredity/genetic factors, while factors that can be changed are physical activity, fat consumption, nutritional status, sodium/salt consumption, smoking habits, alcohol consumption habits, and stress. Shukraini, 2010). One of the factors that cause hypertension is food intake. This is because food has a significant role in increasing blood pressure such as excessive consumption of sodium, carbohydrates, protein and fat (Darmojo, 2001). Consumption of high fat can cause blood

pressure to increase. Excessive consumption of fat will increase cholesterol levels in the blood, especially LDL cholesterol and will accumulate in the body. Fat deposits caused by cholesterol will stick to blood vessels which will then form plaque. The formation of plaque can lead to blockage of blood vessels or atherosclerosis. Blood vessels affected by atherosclerosis will reduce their elasticity and blood flow throughout the body will be disrupted and can trigger an increase in blood volume and blood pressure. Increased blood pressure can lead to hypertension (Jansen, 2006). The recommended fat consumption for hypertension sufferers is 27% of the total energy from total energy and <6% is the type of saturated fat (Karyadi, 2002). Consumption of excess fat will increase cholesterol levels in the blood, especially LDL cholesterol. Cholesterol will stick to the walls of blood vessels so that plaque will form which over time will clog blood vessels. Blockage of blood vessels is called atherosclerosis. Atherosclerotic blood vessels will result in increased blood vessel wall resistance which can cause an increase in heart rate and blood pressure. Increased blood pressure continuously will result in hypertension (Morrell, 2005). Hypertension is related to physical activity. Kisjanto et al (2005) in their research show

that relaxed behavior characterized by higher calorie intake and less physical activity is a risk factor for heart disease, which is usually preceded by an increase in blood pressure (Pradono, 2010). Relaxed behavior which is described as easy access, lack of physical activity, coupled with the increasingly lively food served, less consumption of fibrous foods such as fruits and vegetables, smoking habits, drinking alcoholic beverages are risk factors for increasing blood pressure (Pradono, 2010).

Conclusion

1. The results showed that the majority of respondents were elderly 60-69 years as much as 78.2% with an average age of respondents 63.94 + 6.64 years, where the oldest age was recorded at the age of 83 years while the lowest was 60 years, and 96% of respondents are women
2. The majority of respondents have nutritional status with BMI in the normal category as much as 66.1%, while 31.1% have less nutritional status and only 2.4% are overweight.
3. The results showed that most of the elderly studied had normal blood pressure (46.8% for systolic pressure and 45.2% for diastolic pressure). The number of elderly people with pre-hypertension and hypertension also made a big contribution, namely 50% more (53.2% for systolic pressure and 54.8% for diastolic pressure).

4. The respondent's cholesterol, blood sugar and uric acid levels are in normal conditions but must remain vigilant

5. There is no significant relationship between BMI (nutritional status) with age, gender, systolic and diastolic blood pressure in the elderly at the Curug Health Center, Serang Banten

6. There is a significant relationship between systolic and diastolic blood pressure on age and gender in the elderly at the Curug Public Health Center, Serang Banten.

Suggestion

1. The government is expected to have a targeted data collection system in the future so that the number of elderly targets is more and more measurable.

2. There needs to be training for posbindu officers and local health centers in recording and reporting data because researchers find it difficult to get information

3. It is necessary to add an examination variable for the elderly that is adjusted to the needs of the elderly in that place

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