

The Influence of Blood Pressure and Chronic Disease to the Elderly's Quality of Life in Elderly Service Unit of Kartasura Primary Health Care

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Abstract

Quality of life is a person's assumption in terms of culture and values by residence and relates to goals, expectations, concerns, standards during one's life. Elderly who suffer from high blood pressure or chronic disease will affect the quality of life. This is because high blood pressure and chronic illness can adversely affect the function of health, vitality, social, mental and psychological health of the elderly which will ultimately affect their quality of life. This study aims to analyze the effect of blood pressure and chronic disease on quality of life in elderly people in Elderly service unit. This research is an observational analytic research with cross sectional approach. The technique for data sampling of this research is purposive sampling. The data are obtained by measuring the blood pressure and the use of WHOQOL-BREF questionnaire. Data analysis used in this research are Chi Square and Logistic Regression analysis. Based on the data analysis, the research finds that blood pressure has significant influence to the quality of life in elderly with p value 0.003. It also finds that chronic disease has a significant effect on quality of life in elderly with p value of 0.000. Based on Logistic Regression analysis finds that the blood pressure and chronic disease factors altogether will significantly affect the quality of life in the elderly with p value of 0.000 and R value of 0.642. The factors of blood pressure and chronic diseases significantly affect the quality of life of the elderly.

Keywords: blood pressure, chronic disease, quality of life, elderly.

1. Introduction

According to the definition of the American Thoracic Society (American Thoracic Society, 2004), quality of life closely relates to a person's health condition where the happiness and satisfaction of a person's life is greatly influenced and influences his or her health condition. The world population is estimated to suffer from hypertension as much as 1.5 billion people in 2025 each year. Several factors that affect the incidence of hypertension include race, age, gender, obesity, exercise, alcohol consumption, smoking habits and excessive salt intake (Sheps SG., 2005).

According to JNC 8, hypertension criteria occur when systolic blood pressure reaches ≥ 140 mmHg and / or diastolic blood pressure ≥ 90 mmHg (JNC-8, 2015). The death rate caused by hypertension occurs about 7.1 million every year and ranks third after stroke (15.4%) and tuberculosis (7.5%). The number of elderly people is estimated to continue rising to close to 1.6 billion by 2025 (Wahdah, 2011).

Some of the factors that cause hypertension in the elderly are due to decreased blood vessel elasticity, decreased cardiac contractility, the presence of physiological changes such as decreased body resistance, decreased peripheral blood vessel oxygenation, stiffening heart valves that later will lead to increased vascular resistance that may lead to hypertension in the elderly (Darmojo, R.B. Martono, H., 2011; Fogari and Zoppi., 2004).

The data obtained from Kartasura Primary Health Care at the end of 2016 stated that the numbers of people who suffered from hypertension were mostly found in Makamhaji village by 25%, Gumpang was 13.5%, Singopuran was 11.7%, Wirogunan was 10.5%, Kartasura was 8%, Gonilan was 6.7%, Ngadirejo was 6.4%, Pucangan was 5.8%, Pabelan was 4.1%, Ngemplak was 3.2%, and Ngabeyan was 3.2%.

2. Research Methods

This research uses analytic observational type and cross sectional approach. The research instrument used is the World Health Organization Quality Of Life - Bref (WHOQOL-BREF) questionnaire. The research was conducted with a large sample sizes of 80 people. The sampling technique used is purposive sampling. The study was conducted at Elderly service unit in Kartasura Primary Health Care. The data analysis in this research uses descriptive and inference analyses that use Chi Square test and Logistic Regression.

3. Results and Discussion

The data collected then will tested using SPSS ver.13. The data obtained from 80 respondents are presented below:

Table 1. Distribution of Samples by Age, Education, Occupation, Marital Status, Quality of Life, Blood Pressure, Chronic Illness

Characteristics	Frequency (n)	Percentage (%)
Distribution of elderly blood pressure		
Hypertension	40	50%
Normotension	40	50%
Distribution of elderly by education		
No school	22	27%
Elementary School	31	38.8%
Junior High School	11	13.8%
Senior High School	10	12.5%
Diploma III	6	7.5%
Distribution of elderly by history of chronic disease		
- Not suffering from chronic disease	68	85%
- Stroke	3	3.8%
- Chronic kidney	2	2.5%
- Cardiovascular	4	5%
- Diabetes Mellitus		
Distribution of elderly by quality of life		
Poor	21	26.3%
Good	59	73.8%
Distribution of elderly by marital status		
- Divorce	18	22.5%
- Married	62	77.5%
Distribution of elderly by age		
60-65 years old	49	61.3%
66-70 years old	25	31.3%
>70 years old	6	7.5%
Distribution of elderly by job		
- Tailor	4	5%
- Retired	4	5%
- Labor	20	25.0%

- Merchants	18	22.5%
- Housewife	34	42.2%

Distribution of elderly by sex

- Women	49	61.3%
- Man	31	38.8%
Total	80	100%

From Table 1, it is found that the respondents in this study mostly with the primary school education level of 38.8%, with the quality of life mostly good as much as 59% and most are married as much as 62%. Most of the respondents in this study had a job as a housewife as much as 34% with gender of mostly women that is as much as 49%. The data acquired from the research results on the frequency of respondents who participated in the study aged 60-65 years old is 49 respondents (37.8%), with the incidence of hypertension is almost evenly distributed in all age groups of respondents.

Table 2. Quality Characteristics of Elderly Life based on Blood Pressure at Elderly Service Unit of Kartasura Primary Health Care By Chi-Square analysis.

Blood pressure	Quality of life		<i>p</i> (value)
	Poor	Good	
Normotension	5 (6.3%)	35 (43.8%)	0.003
Hypertension	17 (21.3%)	23 (28.8%)	

Source: Primary Data

Table 2. shows that elderly with normotension tend to have better quality of life while elderly with hypertension tend to have good quality of life equal to 28.8% and bad quality equal to 21.3%. Based on Chi square analysis, the obtained p value of 0.003 indicates blood pressure has a significant effect on quality of life.

Table 3. The Influence of chronic disease on quality of life of elderly at elderly service unit of Kartasura Primary Health Care using Fisher analysis

Chronic disease	Quality of life		<i>p</i> (value)
	Good	Poor	
Not suffering from chronic illness	57 (98.28%)	10 (45.45%)	0.000
Suffering from chronic illness	1 (1.72%)	12 (54.55%)	
TOTAL	58	22	

Table 3 shows that elderly people who do not suffer from chronic diseases tend to have better quality of life of 98.28%, whereas elderly people who suffer from chronic diseases tend to have poor quality of life of 54.55%. By using Fisher analysis, the research shows p value of 0.000, which that indicates that chronic disease has significant effect on the quality of life.

Table 4. The Influence of Blood Pressure and Chronic Disease on Quality of Life in elderly service unit at of Kartasura Primary Health Care using Logistic Regression Analysis

	R	p Value
Logistic Regression	0.642	0.000

Another research results (R. Silitonga, 2007); T. Hakan, A. Sefer, N. Mustafa, 2015) mention that in the elderly who are affected by diseases such as hypertension and chronic diseases (i.e., diabetic mellitus, chronic kidney disease, chronic heart disease) can experience a decrease in their quality of life. As the result, the decreased quality of life (QOL) of this elderly can limit the activity of the elderly people.

According to research conducted by Soni, T. Hakan, A. Sefer, N. Mustafa (2015), there are 4.6 times elderly with hypertension have less quality of life compared with elderly who do not have hypertension. Therefore, there is a correlation between hypertension with the decreased quality of life. The results of this study is in line with other studies conducted by Silitonga (T. Hakan, A. Sefer, N. Mustafa, 2015) which states that in elderly people who suffer from hypertension can lead to decreased quality of life due to restrictions on elderly activities.

Another study also mentions that someone who suffers from high blood pressure and chronic diseases tend to have a poor quality of life. Meanwhile, someone who has normal blood pressure tends to have a better quality of life. This is because in an elderly with high blood pressure and/or chronic disease tend to have biopsychosocial problems that can result in the decreased quality of life (DJ. Trevisol, LB. Moreira, A. Kerkhoff, SC. Fuchs, FD. Fuchs. 2011).

The quality of life is influenced by the existence of social conditions, physical condition, comfort, and the level of inner satisfaction and happiness. The decreased quality of life will affect the life expectancy of a person (Yusup, Lany, 2010). Meanwhile several researches (Kao, C.C., 2008); (R.K, Soni, A.C., Porter, J.P., Lash, M.L., Unruh, 2010) state that hypertension and chronic diseases also affect the quality of life of the elderly people, in which according to them, the quality of life is influenced by the physical condition of a person, social conditions, their ability to move in everyday life and emotional conditions.

Another research conducted by Carvalho et al, (2012) state that hypertension and chronic diseases can hinder the quality of life in term of social aspects, mental health, general health condition, pain, functional capacity, emotional aspects, vitality, physical aspects. Similarly, another research reveals that the increase of blood pressure and uncontrolled hypertension can lead to stress that further affect the person's quality of life (Berendes A., Meyer T., Martin H., and Christoph H., 2013.).

The quality of life of the elderly can be improved through several programs such as elderly service unit, mobile clinic, elderly gymnastics, counseling and health insurance for elderly. The fulfillment of all these aspects can increase elderly people's condition and their quality of life (Anbarasan, S., Sri, 2015).

In addition, kidney plays an important role in blood pressure control through the renin-angiotensin system. Kidney affects peripheral resistance and sodium homeostasis. Angiotensin II increases blood pressure by increasing peripheral resistance (immediate effect on vascular smooth muscle

cells) and blood volume (stimulation of aldosterone secretion, increased sodium reabsorption in distal tubules). The kidneys also produce various vasodepressors or antihypertensive substances that may counteract the effects of angiotensin vasopressors. When the blood volume decreases, the glomerular filtration rate decreases, resulting in an increase in sodium reabsorption by the proximal tubule so that sodium is retained and blood volume increases. This increased blood pressure stimulates the production of renin by the kidneys that lead to increased aldosterone. In the long-term activity of aldosterone secretion, it will be higher than angiotensin, this process results in the balance of body fluids disturbance (dehydration), and this dehydration that can affect people with tired hypertension. On the other hand, long term condition of hypertension will affect the function of the kidneys thus chronic kidney disease can occur simultaneously. Uncontrolled hypertension can affect cardiovascular function that will lead to cardiovascular disease (Kumar, G., Pavithra, A.M., 2014); (Kumar, V., Cotran, R.S., and Robbins, S.L., 2007).

In some other studies, individuals with hypertension report that they experience symptoms such as headaches, depression, anxiety, and fatigue. These symptoms are reported to affect the quality of life of a person in various dimensions, especially the physical dimension. Therefore, in dealing with individuals with hypertension, it is very important to control the hypertension and to measure the quality of life to ensure optimal management (Theodorou, M., Kaitelidou, D., Galanis, P., Middleton, N., Theodorou, P., Stafylas, P., Siskou, O., Maniadakis, N., 2011).

Uncontrolled hypertension will cause various complications. In heart organ, it can cause myocardial infarction, coronary heart, and congestive heart failure. Hypertension can also affect the brain, which will cause cerebral vascular attack, hypertensive ensevalopati. Another complication on the kidneys can cause chronic renal failure, whereas if in the eye will cause hypertensive retinopathies. From all the various complications that may arise, they are all very serious diseases and can affect the psychological aspects of the sufferers, causing low quality of life, especially in cases of cerebral vascular attack, kidney failure, and heart failure (V.M., Nurani, S., Mariyanti, 2013.).

Hypertension in the elderly can also be associated with the aging theory of glycosylation. This theory suggests that the nonenzymatic glycosylation process resulting in glucose-protein integrity called advanced glycation end products (AGEs), which can lead to the accumulation of proteins and other modified macromolecules resulting in dysfunction in animals or humans. Aging, glycation proteins show functional changes, including the decreased of enzyme activity and decreased of abnormal protein degradation. When humans age, AGEs accumulate in various tissues, including collagen, hemoglobin, and eye lenses. Due to the high amount of collagen, the connective tissue becomes less elastic and stiff. These conditions can affect the elasticity of blood vessel walls. AGEs are thought to also interact with DNA and therefore may interfere with the cell's ability to correct changes in DNA (S., Setiati, K., Harimurti, A.R., Govinda, 2014).

Hypertension is one of the chronic diseases caused by multifactorial and has implications for many things in the life of the sufferer. In addition to causing implications for various body organs, hypertension can have an impact on the socio-economic life and quality of life. Several studies have suggested that individuals with hypertension have lower scores in almost all dimensions as measured by the WHOQOL questionnaire if compared with other population. This is because hypertension can adversely affect vitality, social function, mental health, and psychological function (Theodorou, M., Kaitelidou, D., Galanis, P., Middleton, N., Theodorou, P., Stafylas, P., Siskou, O., Maniadakis, N., 2011).

The analysis on the influence of blood pressure and chronic disease on the elderly people's quality of life in Elderly service unit of Kartasura Primary Health Care is done using data analysis test of

Logistic Regression by using computer program SPSS 17.0 for Windows. The analysis obtains that the p value significance of value 0.000, therefore p value <0.05 , which means that the presence of blood pressure and chronic disease as factors can significantly affect the elderly people's quality of life. It can be assumed that elderly people with normal blood pressure and without any other chronic disease tend to have good quality of life. Conversely, when the elderly people suffer from hypertension blood pressure and/or have any other chronic disease, they will have poor good quality of life. Similarly, if the elderly people do not have chronic disease then their quality of life will also be better. This is in accordance with research conducted by Dewi (P. R., Dewi, dan I. W., Sudhana, 2013) which reveals that the quality of life of the elderly people in general is associated with normotension with percentage of 57.1%. Whereas, in elderly respondents with hypertension, the quality of life in general worsens with percentage 56.7%. Douma et al., (2009) also receive similar results in hypertensive patients whose quality of life was worse (60.4%).

5. 4. Conclusion

Based on the results acquired from the statistical analysis that has been done, it can be concluded that the factors of blood pressure and chronic disease altogether significantly affect the quality of life of the elderly with p value of 0.000 and R value of 0.642.

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