ISSN: 2709-5215 Volume 1, Issue 2, 2020
DOI: https://doi.org/10.48173/jwh.v1i2.29 page 42-51
Journal Wetenskap Health

The Effect of Life Quality on Erderly with Hypertension at Mitra Medika Tanjung Mulia Hospital

Irma Yuliana[1], Razia Begum Suroyo[2], Asriwati[2]

*Corresponding: yulianairma87@gmail.com

[1]Master Student of Public Health Sciences, Helvetia Institute of Health Medan, Indonesia

[2]Masters Lecturer in Public Health Sciences, Helvetia Institute of Health Medan, Indonesia

Abstract

The process of aging affects physical and mental changes which result in decreased endurance, resulting in various diseases such as hypertension. An increase in blood pressure is thought to be influenced by poor quality of life. The aim of this study was to analyze the effect of quality of life in the elderly with the incidence of hypertension. This type of research uses quantitative and qualitative approaches (Mixed Methods). The research was conducted at Mitra Medika Tanjung Mulia General Hospital. Population of 360 people and sample of 78 people. The research informants were 7 people. The results showed that the quality of life in the dimensions of independence, intellectual function, and back depression had an effect on the incidence of hypertension at Mitra Medika Tanjung Mulia General Hospital, p = 0.000. The most dominant variable or the one with the greatest influence on the incidence of hypertension in this study is the variable level of independence which has a value of Exp (B) / OR = 3,943, meaning that the elderly with independence depending on their activities with other people have the opportunity to experience high category hypertension (Grade 2) of 3.9. times higher than the elderly who are independent. The conclusion of this study is that the incidence of hypertension in the elderly is influenced by quality of life (independence, intellectual function, and depression back). It is recommended that Mitra Medika Tanjung Mulia Hospital make a policy on geriatric services by providing counseling services for the elderly, providing counseling on prevention and management of hypertension, such as occupational therapy (healing process through activities).

Keywords: Quality of Life, Elderly, Hypertension

Introduction

According to WHO, Quality of Life is an individual's perception of a position in society in the context of values and culture related to local customs and is related to wishes and expectations which are multidimensional views, which are not limited only from physical but also psychological aspects (Alifariki, 2018).

Quality of Life is a level that describes the superiority of an individual that can be assessed from their life. The superiority of the individual can usually be assessed from life goals, personal control, interpersonal relationships, personal development, intellectual and material conditions (Dharma, 2018). Poor quality of life will cause a person, especially the elderly, to cause various degenerative diseases, one of which is hypertension.

Hypertension is a chronic medical condition in which the blood pressure (BP) rises above the normal agreed BP. BP is formed from the interaction between blood flow and peripheral vascular resistance, blood pressure increases and reaches a peak when blood flow decreases as in diastole. Thus, two types of BP were obtained, namely systolic BP (normal ± 120 mmHg)

and diastolic BP (normal ± 80 mmHg). The difference between systolic and diastolic pressure is called pulse pressure (Pulse pressure, normal ± 40 mmHg) (Kabo, 2010).

Hypertension or "high blood pressure" disease is a condition when a person experiences a slow or sudden (acute) increase in blood pressure. Persistent hypertension (decreased high blood pressure) is a risk factor for stroke, coronary heart disease (CHD). Heart failure, kidney failure, and arterial aneurysms (blood vessel disease). Although the increase in blood is relatively small, it can reduce life expectancy (Montgomery et al, 2000).

One study in the Framingham study found that people aged ≥65 years in the Framingham heart study had optimal blood pressure (<120/80 mmHg), normal (120-129 / 80-84 mmHg) or abnormally high (130-139 mmHg). / 85-89 mmHg) within 4 years of observation there was an increase to an increase in hypertension at 16.26 and 50%, respectively. Meanwhile, other studies estimate that the possibility of a person aged 55-65 years not having hypertension to stage I hypertension (140-159 / 90-99 mmHg) throughout his life reaches 90% and suffering from stage II hypertension (≥160 / ≥100 mmHg) by 40% (Darmojo & Martono, 2009).

With increasing age, the physiological function decreases due to the aging process so that non-communicable diseases often appear in the elderly. In addition, degenerative problems reduce the body's resistance so that it is prone to infection with infectious diseases. The results of the 2013 Riskesdas, most diseases in the elderly are Non-Communicable Diseases (PTM), including hypertension, arthritis, stroke, Chronic Obstructive Pulmonary Disease (COPD) and Diabetes Mellitus (DM) (Ministry of Health, 2017).

Hypertension is a bleeding system disorder that causes an increase in blood pressure above normal so that it has a risk of heart disease, stroke and kidney failure. The factors that influence the occurrence of hypertension are inherent or irreversible factors such as gender, age, genetics, and factors that can be changed such as diet, exercise habits and others. For the occurrence of hypertension, it is necessary to play the role of these risk factors together (common underlying risk factors), in other words, one risk factor alone is not sufficient to cause hypertension. Apart from the factors above, poor quality of life also affects the occurrence of hypertension (Masyudi, 2018).

Changes in Quality of Life such as changes in diet leading to ready-to-eat dishes containing lots of fat, protein and high salt but low in dietary fiber, have consequences as a factor in the development of degenerative diseases such as hypertension (Masyudi, 2018).

Research shows that 30% of people with hypertension are classified as people with resistant hypertension. Old age and obesity are two risk factors that are worrying like what happened in today's society. Hypertension is usually treated with lifestyle changes and medications. If there is no effect at the start of treatment, increasing the dose or other drugs is needed, or by using other substitutes (Montgomery et al, 2000).

Data from the World Health Organization (WHO) in 2014 showed that one billion people in the world suffer from hypertension, 2/3 of whom are in low to medium income developing countries. The prevalence of hypertension will continue to increase sharply and it is predicted that by 2025 as many as 29% of adults worldwide are affected by hypertension (8). Hypertension has resulted in the death of around 8 million people every year, of which 1.5 million deaths occur in Southeast Asia, where 1/3 of the population suffers from hypertension, which can cause an increase in the burden of health costs (Ministry of Health, 2017).

The situation in the United States, that one in three adults has hypertension, which generally causes no complaints, even though it has been experienced for years. During this

time, damage occurs in the heart, kidneys, blood vessels, and other body parts (Montgomery et al, 2000).

The national hypertension prevalence based on Riskesdas 2013 was 25.8%, the highest was in the Bangka Belitung Islands (30.9%), while the lowest was in Papua (16.8%). Based on these data, from 25.8% of people who have hypertension, only 1/3 are diagnosed, the remaining 2/3 are undiagnosed (Ministry of Health, 2018). The data shows that only 0.7% of people diagnosed with high blood pressure take hypertension medication. This shows that most hypertension sufferers are not aware of hypertension or are receiving treatment (Ministry of Health, 2017).

Hypertension that is not treated properly can cause complications such as stroke, coronary heart disease, diabetes, kidney failure and blindness. Stroke (51%) and Coronary Heart Disease (45%) are the leading causes of death (Ministry of Health, 2017). Target organ damage due to complications of hypertension will depend on the magnitude of the increase in blood pressure and the length of the blood pressure condition that is undiagnosed and untreated. The body organs that are targeted include the brain, eyes, heart, kidneys, and can also affect the peripheral arteries themselves (Ministry of Health, 2018).

In addition, hypertension often occurs at the age of 35-44 years (6.3%), age 45-54 years (11.9%), and age 55-64 years (17.2%). Meanwhile, according to economic status, the highest proportion of hypertension is at the lower middle (27.2%) and middle (25.9%) levels (Ministry of Health, 2017). According to the 2014 Indonesian Sample Registration System (SRS) data, hypertension with complications (5.3%) is the number 5 (five) cause of death at all ages (Ministry of Health, 2014).

Hypertension can be prevented by controlling risky behaviors such as smoking, unhealthy diets such as less consumption of vegetables and fruit and consumption of sugar, excess salt and fat, obesity, lack of physical activity, excessive alcohol consumption and stress (Ministry of Health, 2017). Riskesdas 2018 data for people aged 15 years and over obtained data on risk factors such as the proportion of people who eat less vegetables and fruit by 95.5%, the proportion of less physical activity 35.5%, the proportion of smoking 29.3%, the proportion of central obesity of 31% and the proportion of general obesity is 21.8%. The data above shows an increase compared to the 2013 Riskesdas data (Ministry of Health, 2018).

Based on the results of the initial survey at Mitra Medika General Hospital for one week, that the visits of patients suffering from hypertension with an average age of 60 to 90 years were included in the elderly category. From the initial survey data of outpatient hypertension patients at Mitra Medika General Hospital in 2015-2019, there were 6,413 people. Meanwhile, the results of interviews with 10 hypertensive patients stated that 2 patients stated that they could not go to the toilet by themselves, 4 patients stated that their memory skills had begun to decrease, and 4 other patients stated that they often felt sad because they felt less attention by their children.

Based on these problems, the authors are interested in taking the title of "The Effect of Quality of Life on the Elderly with Hypertension at Mitra Medika Tanjung Mulia Hospital in 2020".

Methods

This type of research is mix methods with quantitative and qualitative approaches (explanatory sequential). This research was conducted at Mitra Medika Tanjung Mulia Hospital. The number of elderly who have hypertension is 360 people, the sample size is 78 people and the number of informants is 7 people. Quantitative data analysis was done through univariate analysis, bivariate analysis with Chi-Square test, and multivariate analysis using multiple logistic regression at the 95% confidence level (= 0.05). Qualitative data through data reduction, display data, conclusion drawing, and verification. To analyze the effect of quality of life (level of independence, intellectual function, Beck depression) in the elderly with hypertension, to analyze the most dominant factors affecting the elderly against the incidence of hypertension, and to explain the phenomenon of quality of life for the elderly that can affect the occurrence of hypertension in the elderly at Mitra Medika Tanjung Hospital Noble 2020.

Results and Discussion

Univariate Analysis

Based on the results of the study, the level of independence, intellectual function, Beck depression and incidence of hypertension of respondents can be seen in the following table.

Table 1.Frequency Distribution of Respondents based on Level of Independence, Intellectual Function, Beck Depression, and Incidence of Hypertension of respondents at Mitra Medika Tanjung Mulia Hospital in 2020.

No	Level of Independence	F	(%)
1	Independent	51	65,4
2	It depends on the activity	27	34,6
Total		**78**	**100,0**
No	**Intellectual Functions**	**F**	**(%)**
1	Mild intellectual impairment	32	41,0
2	Moderate intellectual damage	46	59,0
Total		**78**	**100,0**
No	**Depression Level**	**F**	**(%)**
1	Light	30	38,5
2	Moderate	48	61,5
Total		**78**	**100,0**
No	**Incidence of Hypertension**	**F**	**(%)**
1	Moderate	45	57,7
2	High	33	42,3
Total		**78**	**100,0**

The table above shows that most of the respondents in the independent category were 51 people (65.4%), most respondents with moderate intellectual impairment were 46 people (59.0%), most respondents experienced moderate depression as many as 48 people (61.5%) , and most of the respondents had moderate hypertension (level 1) as many as 45 people (57.7%).

Bivariate Analysis

Based on the research results, the relationship between the level of independence in the elderly and the incidence of hypertension can be seen in the following table.

Table 2.The Relationship between the Level of Independence in the Elderly and the Incidence of Hypertension at Mitra Medika Tanjung Mulia Hospital in 2020

No	Level of Independence	Incidence of Hypertension				Amount		*p-value*
		Moderate		High				
		f	%	f	%	F	%	
1	Independent	36	70,6	15	29,4	51	100,0	0,002
2	It depends on the activity	9	33,3	18	66,7	27	100,0	
Total		**45**	**57,7**	**33**	**41,9**	**78**	**100,0**	

The table above shows that of the 51 independent respondents the majority had moderate hypertension (level 1) as many as 36 people (70.6%). Of the 27 respondents whose independence was dependent on activities, the majority experienced high hypertension (level 2) as many as 18 people (66.7%).

The results of the bivariate test using Chi-Square obtained a p-value of 0.002 <0.05, meaning that there is a relationship between the level of independence in the elderly and the incidence of hypertension at Mitra Medika Tanjung Mulia Hospital in 2020. Based on the results of research, the relationship between intellectual function in the elderly and the incidence of hypertension can be seen in the following table.

Table 3.The Relationship between Intellectual Function in the Elderly and the Incidence of Hypertension at Mitra Medika Tanjung Mulia Hospital in 2020.

No	Intellectual Functions	Incidence of Hypertension				Amount		*p-value*
		Moderate		High				
		f	%	f	%	F	%	
1	Mild intellectual impairment	24	75,0	8	25,0	32	100,0	0,011
2	Moderate intellectual damage	21	45,7	25	54,3	46	100,0	
Total		**45**	**57,7**	**33**	**41,9**	**78**	**100,0**	

The table above shows that of the 32 respondents who experienced mild intellectual impairment, the majority had moderate hypertension (level 1) as many as 24 people (75.0%). Of the 45 respondents who experienced moderate intellectual impairment, the majority had high hypertension (level 2) as many as 25 people (54.3%).

The results of the bivariate test using Chi-Square obtained a p-value of 0.011 <0.05, which means that there is a relationship between intellectual function in the elderly and the incidence of hypertension at Mitra Medika Tanjung Mulia Hospital in 2020. Based on the research results, the relationship between depression in the elderly and the incidence of hypertension can be seen in the table following.

Table 4.The Relationship of Depression in the Elderly with the Incidence of Hypertension at Mitra Medika Tanjung Mulia Hospital in 2020

No	Depression	Incidence of Hypertension				Amount		*p-value*
		Moderate		High				
		f	%	f	%	F	%	
1	Light	23	76,7	7	23,3	30	100,0	0,010
2	Moderate	22	45,8	26	54,2	48	100,0	
Total		**45**	**57,7**	**33**	**41,9**	**78**	**100,0**	

The table above shows that of the 32 respondents who experienced mild depression the majority had moderate hypertension (level 1) as many as 23 people (76.7%). Of the 48 respondents who experienced moderate depression, the majority had high hypertension (level 2) as many as 26 people (54.2%).

The results of the bivariate test using Chi-Square obtained a p-value of 0.010 <0.05, meaning that there is a depression relationship in the elderly with the incidence of hypertension at Mitra Medika Tanjung Mulia General Hospital in 2020.

Multivariate Analysis

Table 4. The Influence of the Level of Independence, Intellectual Function, and Depression in the Elderly with the Incidence of Hypertension at Mitra Medika Tanjung Mulia Hospital in 2020

Variable	B	Sig.	Exp(B)	95%CI for Exp(B)	
				Lower	*Upper*
Level of independence	1,372	0,012	3,943	1,360	11,433
Intellectual function	1,112	0,043	3,041	1,035	8,932
Depression	1,170	0,038	3,222	1,067	9,727
Constant	-8,196	0,000			

The dominant variable or the variable that has the greatest influence on the incidence of hypertension in this study is the variable level of independence which has a value of Exp (B) / OR = 3,943 which means that elderly with independence depending on their activities have a chance of experiencing high hypertension (level 2) of 3.9 times higher than elderly who are independent.

The depressive variable, the value of Exp (B) / OR = 3.222, means that the elderly who have moderate depression have the opportunity to experience high hypertension (level 2) 3.2 times higher than the elderly who have mild depression.

The intellectual function variable has a value of Exp (B) / OR = 3.041, meaning that the elderly with moderate intellectual function impairment have a 3 times higher chance of experiencing high hypertension (level 2) than the elderly with mild intellectual function impairment.

The results of interviews with informants about the intellectual function of the elderly were said to have good intellectual function. Informant 1 can still remember days and dates, can still calculate simple counts. The thing that makes him often forget is that when he puts things down, he doesn't remember where the item was placed. Informant 2 is also almost the same as informant 1 in that he can still remember the day and date, remember where he is currently, is able to remember age, remember the names of the president and vice president, the number of children and grandchildren, perform calculations such as addition and multiplication. His

hearing was still clear, only his eyes had decreased vision. Informant 2 also often forgets to put the key, especially when praying at the mosque. Informant 3 also remembers the day and date, remembers where he is in the hospital, remembers his current age, remembers the number of children and grandchildren, calculates simple addition, whereas multiplication and division are difficult. Just like informant 1 and informant 2, informant 3 also often forgets when to put things that are felt in the past 1 year. The results of interviews with informants about the level of depression in the elderly mostly stated that they often feel sad because they think about children. Informant 1 and informant 2 stated that their children are no longer working due to the Covid-19 pandemic.

Respondents studied in this study all had hypertension, which was differentiated by grade (level) of hypertension. Based on the results of the measurement of the respondent's blood pressure that the researcher conducted at Mitra Medika Tanjung Mulus General Hospital, it showed that most of the respondents had moderate hypertension (Grade1) (57.7%), a small proportion of respondents had high hypertension (Grade2) (42.3%).

Research conducted by Anbarasan in the working area of Puskesmas Rendang, Bali Province, shows that the blood pressure status of the elderly indicates that 43.3% have Grade I hypertension status and 56.7% have Grade II hypertension status (Anbarasan, 2015). Dewhurst's (2013) study on elderly people in Tanzania, found that the prevalence of hypertension in the elderly was quite high, namely 69.9% of 2223 elderly people (Dewhurst et al, 2013). Stockslager in Anbarasan states that the incidence of hypertension increases with age. This is also in line with research where hypertension occupies 87% of cases in people aged over 60 years (Anbarasan, 2015).

Hypertension is a chronic medical condition in which the blood pressure (BP) rises above the normal agreed BP. BP is formed from the interaction between blood flow and peripheral vascular resistance, blood pressure increases and reaches a peak when blood flow decreases as in diastole. Thus, two types of BP were obtained, namely systolic BP (normal ± 120 mmHg) and diastolic BP (normal ± 80 mmHg). The difference between systolic and diastolic pressure is called pulse pressure (Pulse pressure, normal ± 40 mmHg) (Kabo, 2010). According to WHO, hypertension is grouped into three, namely: Normotension: if blood pressure <140/90 mmHg; hypertension (border line) (Grade I): if the blood pressure is 140-159 / 90 mmHg and <160/90 mmHg; and severe hypertension (Grade II): if the blood pressure> 160/95 mmHg (Suiraoka, 2012).

The National Health and Nutrition Examination Survey (NHANES) states that 65% of people over the age of 65 suffer from hypertension. Hypertension in the elderly begins with atherosclerosis, a disorder of the anatomical structure of the peripheral vessels that continues with stiffness of the vessels. Vascular stiffness is accompanied by narrowing and possibly enlargement of the plague which inhibits peripheral circulatory disorders. The stiffness and inaction of blood flow cause the heart to get heavier, which eventually decompensates with an increase in heart pumping which gives an idea of an increase in blood pressure in the circulatory system (Sudoyo et al, 2009).

According to the researchers, the results of this study found that most of the elderly who came to Mitra Medika Tanjung Mulia Hospital had Grade I hypertension (moderate), the number was almost the same as the elderly who had Grade II (high) hypertension. Elderly with Grade I and Grade II are still able to walk, however, some elderly are assisted and accompanied by family members such as their children, wives or husbands. There are those who are in control because the medicine has run out, there are also those who feel an increase in blood

pressure that does not go down so they need to visit a doctor at Mitra Medika Tanjung Mulia General Hospital.

Based on the history of hypertension experienced by the elderly, the results of interviews with informants showed that the incidence of hypertension with different histories. Informant 1 said that he had hypertension because many thoughts in his household were mainly related to the problems of his children, such as the youngest child who has epilepsy (epilepsy), sometimes having seizures, this is what he continues to think about. Informant 2 said that he did not know the cause of hypertension in him suddenly when the blood pressure was checked, it was in the high category (180-200 / 95 mmHg). He has been suffering from hypertension for about 15 years. Informant 3 said that he was suffering from hypertension because he had a lot of thoughts, so he didn't eat enough, and when he ate more that contained salt. Economic problems are also a factor that is always on his mind so that stress is easy and blood pressure increases.

The informant's family also supported the statement of the elderly suffering from hypertension that informant 4 said their parents had an increase in blood pressure due to mental factors. Informant 5 also said that parents often have severe headaches and then are invited to the clinic to check their blood pressure, so it is known that the parents have hypertension. This was also conveyed by informant 6 that his wife often felt pain in the back of her head, because she thought about many things, especially family problems involving her children. In general, the elderly experience an increase in blood pressure because of many things they think about, especially family problems and life burdens that lead to hypertension. This was stated by the nurses at Mitra Medika Tanjung Mulia Hospital that on average patients who come for treatment have their blood pressure suddenly increased due to stress, problems and life burdens, some are happy to eat salty food, have a habit of drinking alcohol, and because of heredity (hereditary). These factors are risk factors or trigger factors for an increase in blood pressure in the elderly.

Based on the results of the study, the variable of the level of elderly independence had an effect on the incidence of hypertension and was the most dominant variable in its influence compared to intellectual function and depression back at Mitra Medika Tanjung Mulia Hospital. The variable level of independence has a value of Exp (B) / OR = 3,943, meaning that the elderly with independence depending on their activities, have the opportunity to experience an increase in high blood pressure by 3.9 times higher than the elderly who are independent.

This research is in line with Dewi and Sudhana's research entitled Work Area of Puskesmas Gianyar I in 2013 which shows that the quality of life of hypertensive elderly is worse than normotensive elderly especially because they experience a low level of independence (Hypertension, 2014). Research conducted by Fithria in Lamceu Village, Kuta Baro District, Aceh Besar District in 2015 shows that quality of life is related to the independence of the elderly and is associated with hypertension (Fithria, 2012). The results of this study are in line with the research of Wakhid et al. who conducted a phenomenological study of the experience of the helplessness of the elderly with hypertension in Bogor City, found that the elderly who suffer from hypertension find it difficult to carry out their daily activities, sleep more, have a weak body and say they often feel dizzy every day (Suarni et al, 2018).

According to researchers, the results of this study prove that the quality of life on indicators of depression back affects the incidence of hypertension in the elderly at Mitra Medika Tanjung Mulia Hospital. Elderly with moderate depression tends to have Grade 2 hypertension, while

elderly people who experience mild depression tend to experience Grade 1 hypertension. The higher the depression felt by the elderly, the higher the blood pressure tends to be. Depression back that is felt by elderly people with hypertension such as sadness, insecurity and pessimism, feeling guilty, feeling like leaving, feeling like a failure, and so on.

The informant's family also said that the elderly often feel sad, gloomy, alone, and pessimistic because they think about life's problems, especially thinking about their children. To overcome the problems of stress, sadness, and depression felt by the elderly, the family invites the elderly to take a walk, attend family parties to forget about the problems they face. The elderly are often depressed because they think of their illness that does not heal due to boredom of taking medication every day. The family also invites the elderly to worship to be close to God so that they can be more patient and do not always think about their life burdens.

The nurse also confirmed the above opinion that there are elderly people who experience depression so that their blood pressure increases. Elderly are often sad because their children are not paying attention, or their grandchildren rarely see them. Elderly who experience depression are usually characterized by not focusing when asked by the nurse, and often angry alone. The nurse advised the elderly not to think too much about their children, and be diligent in worshiping to draw closer to God. Families are also advised to pay more attention to the elderly by taking them for walks, gathering with their grandchildren, getting used to worship, and getting closer to God.

Conclusion

The quality of life of the elderly in the level of independence has an effect on the incidence of hypertension at Mitra Medika Tanjung Mulia Hospital in 2020, p = 0.012. The quality of life of the elderly on intellectual function has an effect on the incidence of hypertension at Mitra Medika Tanjung Mulia General Hospital in 2020, p = 0.043. The quality of life of the elderly in depression back has an effect on the incidence of hypertension at Mitra Medika Tanjung Mulia Hospital in 2020, p = 0.038. The most dominant variable or the one with the greatest influence on the incidence of hypertension in this study is the variable level of independence which has a value of Exp (B) / OR = 3,943, meaning that the elderly with independence depending on their activities with other people have the opportunity to experience high category hypertension (Grade 2) of 3.9. times higher than the elderly who are independent.

References

Anbarasan, S. S. (2015). Gambaran Kualitas Hidup Lansia Dengan Hipertensi Di Wilayah Kerja Puskesmas Rendang Pada Periode 27 Februari Sampai 14 Maret 2015. *Intisari Sains Medis*, *4*(1), 113-124.

Alifariki LO. (2018). *Determinan Kualitas Hidup Lansia: Monograf*. Cetakan 1. Jakarta: Leutikapri;.

Darmojo, B., & Martono, H. (2009). Geriatri (Ilmu Kesehatan Usia Lanjut) Edisi 4. *Jakarta: FKUI*.

Dewhurst, M. J., Dewhurst, F., Gray, W. K., Chaote, P., Orega, G. P., & Walker, R. W. (2013). The high prevalence of hypertension in rural-dwelling Tanzanian older adults and the disparity between detection, treatment and control: a rule of sixths?. *Journal of human hypertension*, *27*(6), 374-380.

Dharma, K. K. (2018). *Pemberdayaan Keluarga untuk Mengoptimalkan Kualitas Hidup Pasien Paska Stroke*. Deepublish.

Fithria, F. (2012). KUALITAS HIDUP PENDERITA HIPERTENSI DI DESA LAMCEU KECAMATAN KUTA BARO KABUPATEN ACEH BESAR. *Idea Nursing Journal*, *3*(1), 62-69.

Hipertensi, K. H. (2014). Gambaran kualitas hidup pada lansia dengan normotensi dan hipertensi di wilayah kerja puskesmas gianyar i periode bulan november tahun 2013.

Kabo, P. (2010). Bagaimana menggunakan obat-obat kardiovaskular secara rasional. *Jakarta: Balai Penerbit Fakultas Kedokteran Universitas Indonesia*.

Masyudi, M. (2018). Faktor yang berhubungan dengan perilaku lansia dalam mengendalikan hipertensi. *AcTion: Aceh Nutrition Journal*, *3*(1), 57-64.

Ministry of Health, R. I. (2014). Pusat data dan informasi kementerian kesehatan RI. *Jakarta: infodatin*.

Ministry of Health, R. I. (2017). Sebagian besar penderita hipertensi tidak menyadarinya. *Retrieved April*, *7*, 2018.

Ministry of Health, R. I. (2018). Hasil Utama Laporan Riskesdas 2018. Jakarta: Kementerian Kesehatan Republik Indonesia.

Ministry of Health, R. I. (2018). Kemenkes RI. Profil Kesehatan Indonesia 2017. Data dan Informasi. Kementrian Keseahtan RI; 2018. *Jurnal Ilmu Kesehatan*.

Montgomery, S. M., Berney, L. R., & Blane, D. (2000). Prepubertal stature and blood pressure in early old age. *Archives of disease in childhood*, *82*(5), 358-363.

Suarni, N. K., Wakhid, A., & Choiriyyah, Z. (2018). Kemandirian Lansia Penderita Hipertensi Dalam Pemenuhan Aktivitas Sehari-Hari. *Jurnal Keperawatan*, *10*(2), 102-105.

Sudoyo, A. W., Setiyohadi, B., Alwi, I., Simadibrata, M., & Setiati, S. (2009). Buku Ajar Ilmu Penyakit Dalam Jilid II edisi V. *Jakarta: Interna Publishing*, *310*, 1973-1982.

Suiraoka, I. P. (2012). Penyakit degeneratif. *Yogyakarta: Nuha Medika*, 45-51.