

Original Research Paper

The experience of elderly hypertension getting family care

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Abstract

Hypertension is a silent killer disease because hypertension causes various blood vessel complications that can cause coronary heart disease, kidney disease, stroke, and cause death. The prevalence of hypertension is 33.3%, with 81 out of 243 elderly over 50 years. The family has an important role in supporting the elderly in family care. This research was designed with qualitative phenomenology, with 8 participants. The process of data collection with in-depth interviews. Analyze the data using Colaizzi measures. Data analysis in this study with the Colaizzi technique. The analysis results obtained six themes: a response to hypertension, causes of increased blood pressure, actions to be taken when hypertension, supporting sources of high blood pressure treatment, views on blood pressure treatment, participants' expectations of high blood pressure, and hypertension treatment programs. This study suggests that families provide daily care support through informational, instrumental, and elderly assessment support to make preventive efforts to increase blood pressure.

Keywords: elderly; family care; hypertension; qualitative

1. Introduction

Heart and blood vessel disease (cardiovascular) is a major health problem in developed and developing countries. Hypertension is the number one cause of death in the world every year. Hypertension is among the most widespread cardiovascular diseases in the community. Data from the World Health Organization (WHO) in 2013 shows about 1.13 billion people worldwide have hypertension, meaning that 1 in 3 people is diagnosed with hypertension. The number of people with hypertension continues to increase every year, it is estimated that by 2025 there will be 1.5 billion people affected by hypertension, and it is estimated that every year 9.4 million people die from hypertension and its complications (Ministry of Health, 2022).

According to data from the *Indonesian Sample Registration System (SRS)* (2014), hypertension with complications (5.3%) is the number 5 (five) cause of death in all ages. In 2017 the *Institute for Health Metrics and Evaluation (IHME)* stated that as of 53.3 million deaths in the world, the cause of death was due to cardiovascular disease by 33.1%, cancer by 16.7%, DM and endocrine disorders by 6% and lower respiratory tract infections by 4.8%. Data on the causes of death in Indonesia in 2016 obtained a total of 1.5 million deaths. The most causes of death were cardiovascular disease 36.9%, cancer 9.7%, DM and endocrine disease 9.3% and Tuberculosis 5.9%. The estimated number of hypertension cases in Indonesia is **63,309,620 people**, while the death rate in Indonesia due to hypertension is 427,218 deaths. IHME said that from a total of 1.7 million deaths in Indonesia, risk factors that cause death are blood pressure (hypertension) at 23.7%, hyperglycemia at 18.4%, smoking at 12.7%, and obesity at 7.7% (Ministry of Health of the Republic of Indonesia, 2022).



The results of Riskesdas (2018) showed that the prevalence of hypertension based on measurement results in the population aged 18 years was 34.1%, the highest in South Kalimantan (44.1%), while the lowest in Papua was (22.2%). Hypertension occurs in the age group of 31-44 years (31.6%), age 45-54 years (45.3%), and age 55-64 years (55.2%). The prevalence of hypertension was 34.1%, 8.8% were diagnosed with hypertension, 13.3% of people diagnosed with hypertension did not take medication, and 32.3% did not routinely take medication. This shows that most people with hypertension do not know they are hypertensive, so they do not get treatment. The reasons for people with hypertension not taking medication include because people with hypertension feel healthy (59.8%), irregular visits to health facilities (31.3%), taking traditional medicine (14.5%), using other therapies (12.5%), forgetting to take medicine (11.5%), cannot afford drugs (8.1%), there are side effects of drugs (4.5%), and hypertension drugs are not available in health care facilities (2%) (Research and Development Agency for Health Metrics of the Republic of Indonesia, 2018).

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Hypertension is referred to as *the silent killer* because it is often without complaints, so sufferers do not know they have hypertension and are only known after complications occur. Target organ damage due to complications of hypertension will depend on the magnitude of the increase in blood pressure and the duration of undiagnosed and untreated blood pressure conditions. The targeted organs include the brain, eyes, heart, and kidneys, which can also result in peripheral arteries. (Ministry of Health of the Republic of Indonesia, 2022).

Hypertension can be prevented by controlling risky behaviors such as smoking, unhealthy diets such as lack of consumption of vegetables and fruits and consumption of excess sugar, salt, and fat, obesity, lack of physical activity, excessive alcohol consumption, and stress. Riskesdas 2018 data on residents aged 15 years and over obtained data on risk factors such as the proportion of people who eat less vegetables and fruits 95.5%, the ratio of less physical activity 35.5%, the balance of smoking 29.3%, the proportion of central obesity 31% and the proportion of general obesity 21.8%. (Research and Development Agency for Health Metrics of the Republic of Indonesia, 2018).

Controlling hypertension requires an active role of the family in helping sufferers so that hypertension can be controlled. It is concerned with the essential functions and duties of the family doing health care. One is providing care to families in the health sector to meet their health needs (Friedman et al., 2014). Family support in hypertension care at home is a very meaningful morning sufferer. The form of support is instrumental, informational, and emotional (Daziah & Rahayu, 2020). The family's experience of hypertension treatment is felt differently by everyone. It is very dependent on the socio-culture of the family, education, and assessment of the patient and his family.

2. Research Methods

This research uses qualitative methods with three steps: *intuiting, analyzing, and describing*. The sampling technique used *purposive sampling* with a total of 8 participants. This research was conducted in the Trihanggo Gamping Village, Sleman, Yogyakarta, with age criteria of more than 60 years following predetermined characteristics. Unstructured interview data collection method (in-depth interview) and observation using *field notes*. Data analysis using Colaizzi measures which include *credibility, dependability, and confirmability*.

3. Results and Discussion

Based on the study results, six themes of family hypertension treatment were felt by the elderly.

a. Problems Felt When Suffering from High Blood Pressure

Participants felt impaired circulation and oxygenation that can interfere with the daily activities of participation. This is revealed from the participants' statements as follows

"..... If my blood pressure rises, usually the head is dizzy and feel like spins....." (P1 and P3)

"..... If I have had high tension, I feel dizzy and fall..." (P7)

"...when blood pressure rises, the body feels weak, and I can't work...." (P3)

".....at first I feel nervous and stinging in the left chest and then pain..." (P1 and P7)

The problems felt by the elderly are caused by changes in physiology and changes in cardiovascular function.

In the elderly, there is a decrease in aorta elasticity, heart valves thicken and become stiff, the ability of the heart to pump blood decreases, lack of elasticity of blood vessels, lack of effectiveness of peripheral blood vessels in meeting oxygenation, changes in position from sleeping to sitting or from sitting to standing can result in decreased blood pressure, and elevated blood pressure due to increased resistance of peripheral blood vessels.

Changes in the heart's structure in the elderly in the myocardium are *amyloid deposits, lipofuscin* accumulation, basophilic degeneration, myocardial atrophy or hypertrophy, stiff and thickened valves, and the amount of connective tissue increases (Miller, 2012). Aging does not result in a change in the size of the heart, but the wall of the left ventricle tends to thicken. This is caused by an increase in collagen density and loss of elastic fiber function, so the heart impact occurs distension with less effective contractile forces. The thickening leads to less stretchable myocardium as well as stiff valves, leading to an increase in diastolic fill time. Increased diastolic filling pressure maintains adequate *preload* (Brunner & Suddarth, 2017). According to Miller (2012), other changes related to age are thickening of the endocardium atrium, the thickening of the atrioventricular valve, and calcifying part of the mitral annulus of the aortic valve.

The occurrence of thickening of the walls of the left ventricle leads to diastolic dysfunction and increased *afterload*. Another cause is collagen production, the ventricles begin to thicken and stiffen, and there is a decrease in the number of myocardial cells. Any changes that occur will interfere with the heart's ability to contract. Contractility becomes less effective, so it takes more time to complete diastolic and systolic emptying. The stiffness of the base of the aortic base blocks the complete opening of the valve, causing partial obstruction of blood flow during the systole beat. According to Brunner & Suddarth (2017), incomplete ventricular emptying can occur during increased heart rate (e.g., exercise, stress, and fever). The myocardium becomes increasingly *irritable* and less responsive to impulses from the sympathetic nervous system (Miller, 2012). Age-related changes lead to functional consequences primarily involving cardiac electrophysiology. Changes that occur in the electrophysiology of the heart are decreased in the number of pacemaker

cells, and irregularities in the shape of heart cells are increased. Structural changes affect the conduction of the cardiac system through an increase in fibrous tissue and connective tissue. The number of pacemaker cells decreases with age. His beam is missing conduction fibers that carry impulses to the ventricles (Brunner & Suddarth, 2017).

Impaired circulation and oxygenation are the main signs and symptoms in the elderly with hypertension. Good blood circulation plays a role for overall body health, and poor circulatory circulation can affect various organs of the body, from the heart to the brain. In older adults, there is a change in the elasticity of the blood vessel wall due to the aging process, so the blood pressure pattern changes because the blood vessels become more rigid. Inelastic arteriole blood vessels will cause a narrow lumen diameter, making blood flow not smooth. Blood flow that is not smooth will make some body organs only receive a little blood so that the brain, kidneys, and several other organs will detect it. The body will react through reflex mechanisms of innervation and hormonal that force the heart to work harder so that blood can be distributed smoothly in the arterioles. As a result, blood pressure rises compared to normal conditions.

b. Causes of Increased Blood Pressure in The Elderly

The cause of increased blood pressure in the elderly due to physical and psychological problems is dominant, as revealed from several participants' statements.

".....if you are tired of working in the fields or in the market, go up..." (P1)

".....every working day after excess work I don't know for sure immediately dizziness and twitching behind the head..." (P2 and P5)

".....if I had a lot of thoughts, I was immediately high in blood pressure..." (P1)

"...yesterday when there was a family problem, the head immediately throbbed..." (P2)

Risk factors for increased blood pressure in the elderly due to physical problems and psychological problems. Elderly with hypertension, excessive physical activity will cause the heart load to increase, which can stimulate higher blood pressure in the elderly. The elderly with hypertension are usually restricted in activities or work by expending excessive energy that will increase blood pressure. Physical activity will cause an increase in blood pressure. Physical fatigue impacts the heart's efforts to bind the blood distribution volume throughout the body by increasing blood pressure.

Stressful conditions are prone to occur in productive age, namely 15-64 years (Cuffee, Ogedegbe, Williams, Schoenthaler, 2014). Mental or psychosocial stress constitutes other cardiovascular diseases (Jadhav, Jatti, Jadhav, Rajderkar, Naik, 2014). Stress is an individual mechanism, endurance or individual adjustment to stress is different for each person because it depends on age, gender, personality type, level of intelligence, emotions, social status, or work (Mesuri, 2013). This is supported by the theory that strong emotions and intense and sustained stress transform into somatic reactions that directly affect the circulatory system, affecting heart rate and blood circulation. The physiological response of stress increases pulse frequency, blood pressure, breathing, and arrhythmias. In addition, the release of the hormone adrenaline due to severe stress will cause an increase in blood pressure and increase blood viscosity which makes blood easily clot and clump, increasing the risk of a heart attack. Adrenaline will speed up the heart rate and narrow the coronary blood vessels. Constant and continuous stress affects the work of the adrenal glands and thyroid in producing adrenaline, thyroxine, and cortisol hormones, as the main stress hormones will increase in number and significantly affect the homeostasis system. The adrenaline that works synergistically with the sympathetic nervous system affects the heart rate and blood pressure increase. Thyroxine, in addition to increasing *Basal Metabolism Rate* (BMR), also increases heart rate and breathing frequency, this increase in heart rate will aggravate atherosclerosis (Mesuri,

2013). Blood pressure levels in the elderly occur due to changes in the structure of blood vessels, such as reduced blood vessel elasticity and strength in blood vessel walls, resulting in the narrowing of blood vessels resulting in blood flow to tissues and organs, and an increase in blood pressure in the elderly (Tyas, Cahyaning & Zulfikar, 2021).

In the elderly, heavy mind load and stress are the main causes of increased blood pressure. The elderly tends to cover up and not give burdens to others, so sometimes she thinks about her problems and does not want others to know. This is what causes hypertension problems to be unaffected and causes stroke in the elderly. Aspects of stress include biological aspects and psychological specs. The biological aspect of each person facing a certain condition that is threatening and dangerous for him can cause physiological reactions in the body to stress, such as a rapid heartbeat. According to Yumba and Wycliffe (2018), other physiological reactions, such as cold and sweaty hands, are characterized by a person's behavior. Biological aspects include cognitive, emotional, and social behavior. Stress will interfere with cognitive function by distracting the individual. Cognitive is related to memory, difficulty and concentration, forgetfulness, and inability to solve problems. Stress in the elderly can trigger blood pressure levels in the elderly, and stress will increase if peripheral blood vessels and cardiac output increase so as to stimulate sympathetic nerves so that stress will react and increase blood pressure (Yosep, 2014). Prevent stress levels with increased blood pressure by forming attitudes, and beliefs, controlling emotions, being flexible, rational, and adaptive to others, and developing an efficient attitude to reduce the stress experienced and relaxation. Stress is a condition of the body condition disturbed because psychological pressure and the influence of stress can cause physical illness, and endurance affects health problems (Tyas, Cahyaning & Zulfikar, 2021)

c. Actions Performed when Blood Pressure is High

The actions taken by participants were to make lifestyle changes, cope with drug consumption, and where to access drugs. This was revealed from the participants' statements.

".....I cut down on salty and greasy foods a lot..." (P1)

"...I now often walk lightly for 20 minutes until the neighborhood's border after morning prayers, and it makes me feel refreshed..." (P6)

"...now if I have a lot of thoughts left to Allah so that the burden of my life is not so heavy..." (P7)

"...Having faith is impossible for God to give trials if we are not strong..." (P4)

".....I always have hypertension medicine available from the health center and routine control every month..." (P1)

"...I checked with Pratama Clinic because it was close and knew the officers well..." (P3)

The study results showed that participants had avoided salty, oily foods to prevent complications of hypertension and can control hypertension so that it can be close to normal. Salt, natrium, or sodium found in food flavoring spices are the main causes of hypertension. Salt consumption can increase blood pressure because it affects the fluid balance in the blood. People with hypertension should limit their salt, natrium, or sodium intake daily. The Ministry of Health recommends salt consumption of no more than 2,000 milligrams of sodium, or the equivalent of one teaspoon of salt, or five grams of salt per day. To limit the intake of salt, sodium, and sodium every day hypertensive people by looking at the composition of food consumed daily, avoiding added salt or table salt in food, and changing the habit of liking foods too salty by adding flavor and adding spices.

In addition to maintaining the diet of people with hypertension, doing light activity by walking is one of the easiest types of aerobic exercise, but efficient in maintaining heart and blood vessel

health. Exercise provides benefits for heart health. When doing physical activity, such as sports, the heart strengthens, so there is no need to work harder to pump blood. In patients with hypertension, it makes blood flow smooth and blood pressure more controlled.

Blood pressure that continues to rise needs to be routinely controlled in the elderly with hypertension is usually recommended for routine control in health services three to four months, during the first few years after diagnosis. This action ensures treatment and lifestyle changes are successful and the body adjusts. For the elderly whose blood pressure is well controlled and adequately monitored at home, health checks to the doctor are enough to be done every six months. If blood pressure is in the normal range and does not require medication, the elderly need to be re-checked every two years. High blood pressure is often asymptomatic. However, lifestyle changes are healthier, and treatment continues. Several steps can help seniors stay committed to controlling blood pressure every day.

d. Sources of Support for High Blood Pressure Treatment

The source of care support comes from the family, participants' statements reveal this

"...my son always reminds me of foods that are abstained from hypertension..." (P3)

"...my son gives me food and money for my daily life..." (P7)

"... Those who take care of me like to remind me not to eat fried food..." (P8)

Forms of family support in carrying out hypertension treatment include emotional support from family to hypertensive patients so hypertensive patients feel motivated to improve their health status. Hypertensive patients will be motivated to carry out a healthy lifestyle and check blood pressure regularly, so it is expected that hypertensive patients do not experience more serious health conditions. Research conducted by Osamor and Bernard (2011) concluded that the factor that can make patients comply with hypertension treatment is the strong factor of hypertension patients getting good family support. The form of emotional support provided by the family to hypertensive patients is in the form of helping and caring for hypertensive patients with affection, providing an atmosphere of calm and comfort at home, providing encouragement when blood pressure begins to normal or stable, and responding well to complaints of hypertensive patients. Family emotional support is seen where the family is a safe and peaceful place to rest and learn and help mastery of emotions, including maintaining emotional connections, including support manifested in the form of affection, trust, attention, and listening or being listened to when releasing feelings.

Instrumental support for the elderly during hypertension is very useful for the elderly in the process of treatment and health control by providing assistance in the form of money or health financing by providing health insurance. The choice of treatment place is the result of decisions taken by the family, which in the end is expected not to burden much in terms of treatment costs. The cost of treatment is the amount of funds that must be provided to organize and utilize various health efforts needed by individuals, families, groups, and communities.

Appreciation support from the family is important in the process of caring for the elderly with hypertension by always reminding the elderly of food and drinks that are avoided for consumption every day, reminding them to control health services, taking medication so that the elderly feel that there are people closest to them always providing support at any time. The progression of hypertension that can develop into *hypertension-related disease* can be inhibited and controlled with the regular use of antihypertensive drugs. Social support, environmental factors, and family support can inhibit the progression of the disease.

e. Views on The Treatment of Hypertension

Treatment of hypertension in the elderly can be revealed from the statements of participants in the form of physical exercise, blood pressure control, and prevention of increased blood pressure, this is revealed from the statements of participants

".....now I participate in the routine of elderly gymnastics training in my neighborhood..." (P3)

"..... I am only with my husband, and there are no more children if the control is only at the elderly *posyandu*..." (P2)

".....If the blood pressure rises, I usually go to the doctor get checked, consultation with the doctor and got better in the morning if I have taken medicine..." (P6)

"...After my stroke, I went to a private hospital because I was afraid that I would relapse..." (P1)

"...I express a lot of problems, be more open to others and always surrender to Allah Almighty..." (P4)

Independent care is carried out by the elderly in the form of light exercise by participating in elderly gymnastics regularly at *posyandu*. Light exercise will maintain blood pressure stability and maintain blood vessel flexibility so that blood pressure is stable. Regular and periodic exercise is needed while maintaining enthusiasm and being able to be with other elderly to share with each other to make the mind calmer and avoid the stress that triggers an increase in blood pressure in the elderly. Regular activities at *posyandu* will also increase the enthusiasm of the elderly to maintain health and encourage each other between the elderly. Research by Sari, Margiyati and Rahmawati (2020) shows that *self-help groups* are very effective in lowering blood pressure. In self-help group activities, hypertensive elderly can share, learn, and practice together so that they psychologically do not feel alone and avoid severe psychological stress that can trigger hypertension in the elderly.

Health service sources usually accessed by the elderly are practicing doctors, *puskesmas*, or hospitals to check blood pressure regularly to be controlled. Hypertensive elderly can use *posyandu* as a place of basic services located at the work area of the local *puskesmas*. In addition, a healthy Indonesia approach with PISK-PK will help the elderly with hypertension to control their health regularly and overcome problems due to hypertension complications felt by the elderly. Home visits through family nursing care and education to families increased the healthy family index (IKS) and the level of family independence (Haris, Herawati, Norhasanah, & Irmawati, 2020).

Thinking positively and always expressing all problems openly to the family is one of the things that keep the blood pressure of the elderly under control. The elderly will feel the burden of life reduced by expressing problems and relaxing with fun activities such as light exercise and entertainment daily. Positive thinking can give better meaning to the elderly to be able to be grateful for life and interpret a better life. Positive thinking in the elderly with hypertension can improve *psychological well-being* so that the elderly in their old age can struggle, be grateful for what is experienced/suffered, and increase self-esteem so that they elderly can accept themselves and become meaningful and useful individuals for themselves and others. Positive thinking will increase positive coping, hypertensive elderly will have coping mechanisms against hypertension and coping with sources of stress in the family.

f. Programs Needed for The Treatment of Hypertension in The Elderly to Health Workers

Participants' statements reveal the need for accurate information and good care for the elderly

".....if I understand hypertension, I will know how to prevent blood pressure control..." (P1)

".....wow, if I go to the doctor, I want to know about my illness and explain it in detail..." (P4)

"...want to be served at home to be visited and given high blood pressure information..." (P5)

"... I want to have a routine service every week at the *posyandu*..." (P8)

Knowledge of hypertension treatment is a fundamental thing that must be possessed by the elderly to regulate themselves so that they can take care of diet, activity, diet, and stress management. High knowledge about hypertension complications and preventive measures can affect the behavior of people with hypertension in controlling lifestyle, exercise/activity patterns, stress management, and rest patterns that can trigger an increase in blood pressure and increase the risk of hypertension complications. The aspect of knowledge is a very important domain for the formation of one's behavior. The higher the level of knowledge a person will be able to influence the mindset and attitude towards something, eventually affecting behavior change (Yanti, Asyrofi, and Arisdiani, 2020).

In addition, blood pressure control facilities near the house, such as *posyandu* and auxiliary health centers, are the needs of the elderly today. The elderly who have experienced various problems of decreasing body functions, limited movement, and other health risks are in dire need of the elderly. Services carried out regularly on a community-based basis will make it easier for the elderly to access without having to depend on the family who delivers to the service facility. Regularly scheduled services will allow the elderly to control blood pressure and health consultation against complaints that are felt now. Meeting with fellow elderly will make the elderly have a support system because they feel the same fate and can share experiences in treating hypertension.

Home care is a necessity today because the elderly usually live alone at home without children and relatives. The problem of decreasing physical condition in the elderly and limited activities outside the house requires people who take care of them by coming to the house. Nurses who visit the house and monitor regularly are expected by the elderly if there are complaints or uncomfortable symptoms on their bodies. Stroke is a frequent complication in people with hypertension, and home care programs in the elderly with stroke. The presence of health workers, especially nurses, is very much needed to carry out direct care in meeting basic human needs and rehabilitation of body functions that are paralyzed. Care, patience, and empathy are things expected by the elderly during the stroke care process. This attitude will provide support for the spirit of the elderly to be able to recover from the sickness.

4. Conclusion

- a. Signs and symptoms of hypertensive elderly experiencing impaired circulation, impaired oxygenation, and psychological response, actions taken during hypertension with changes in lifestyle, activity, and stress management, and taking antihypertensive drugs provided by health services.
- b. Sources of support come from the family in the form of informational support, instrumental support, emotional, and appreciation that is very meaningful during hypertension, supported by physical exercise and controlling blood pressure regularly will have an impact on hypertension care at home.
- c. Treatment of hypertension in the elderly can be done at health care facilities and private doctors, and the care needs of hypertensive elderly include information about diseases, facilities

Suggestion

a. Elderly

Make preventive efforts to prevent increased blood pressure in the elderly, including exercise, regular physical exercise, doing regular blood pressure control, and preventing continued stress. The elderly can do regular health checks at *posyandu* in order to anticipate further problems and the complexity of blood pressure problems in the elderly.

b. Family

Provide support to the elderly to carry out hypertension treatment and control their hypertension. The family has a major role as a service provider and caregiver in the management of hypertension in the elderly, so it is necessary to improve their knowledge, attitudes, and behavior in managing and dealing with hypertension in the elderly.

c. Puskesmas Nurse

Increasing its role and function as a professional nurse in providing promotive and preventive services against hypertension in the elderly without neglecting curative and rehabilitative efforts. Nurses can provide complete and accurate information in hypertension care that can be directly applied in everyday life.

d. Further Researchers

This research can be used as input material and basic research to develop research related to hypertension and its care in the elderly. Researchers can then come up with new titles in this study.

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b. Family

Family involvement in accompanying the elderly in carrying out hypertension treatment at home.

References

- Alessa T, Abdi S, Hawley MS, de Witte L. (2018) Mobile apps to support the self-management of hypertension: systematic review of effectiveness, usability, and user satisfaction. *JMIR Mhealth Uhealth*. Jul 23;6(7):e10723
- Badan Penelitian dan Pengembangan Kementerian Kesehatan RI.(2018). *Laporan Nasional Riskesdas*. Kementerian Kesehatan RI : Jakarta
- Benetos A, Bulpitt CJ, Petrovic M, Ungar A, Agabiti Rosei E, Cherubini A, et al. An expert opinion from the European Society of Hypertension-European Union Geriatric Medicine Society Working Group on the management of hypertension in very old, frail subjects. *Hypertension*. (2016) 67:820–5. doi: 10.1161/HYPERTENSIONAHA.115.07020
- Brunner & Suddarth. (2017). *Keperawatan Medical-Bedah Brunner & Suddarth, Edisi 12*. Jakarta:EGC.
- Collaboration NCDRF. Long-term and recent trends in hypertension awareness, treatment, and control in 12 high-income countries: an analysis of 123 nationally representative surveys (2019) *Lancet*. 394:639–51. doi: 10.1016/S0140-6736(19)31145-6
- Cuffee, Y., Ogedegbe, C., Williams, N. J., & Ogedegbe, G., Schoenthaler, A. (2014). Psychosocial Risk Factors for Hypertension: An Update of the Literature. *Collaborative Medical Journal (CMJ)*, 16(10), 1–18

- Daziah. E, Rahayu S. (2020). Hubungan Antara Dukungan Keluarga Dengan Perilaku Perawatan Hipertensi Yang Dilakukan Oleh Keluarga Di Rumah. *Dinamika Kesehatan Jurnal Kebidanan dan Keperawatan*. 11(2).79-88
- Friedman, M. (2014). *Buku Ajar Keperawatan keluarga : Riset, Teori, dan Praktek*. Edisi ke-5. Jakarta: EGC.
- Haris, H., Herawati, L., Norhasanah, N., & Irmawati, I. (2020). Pengaruh Kunjungan Rumah terhadap Indeks Keluarga Sehat (IKS) dan Tingkat Kemandirian Keluarga. *Media Karya Kesehatan* Volume 3 No 2.
- Jadhav, S. B., Jatti, G. M., Jadhav, A. S., Rajderkar, S. S., Naik, J. D., dan Nandimath, V. A. (2018). Stressing “Mental Stress” in Hypertension: A Rural Background Study. *Journal of Clinical and Diagnostic Research : JCDR*. 8(6):JC04-JC07.
- Kelly. G, Mrengqwa L, Geffen L (2019) They don’t care about us”: older people’s experiences of primary healthcare in Cape Town, South Africa. *BMC Geriatrics*. (2-14) diakses <https://doi.org/10.1186/s12877-019-1116-0>
- Kementerian Kesehatan RI (2022). *Hipertensi si Pembunuh Senyap*. Infodatin Pusat Data dan Informasi Kementrian Kesehatan RI : Jakarta
- Kronish IM, Kent S, Moise N, et al. (2017). Barriers to conducting ambulatory and home blood pressure monitoring during hypertension screening in the United States. *Journal Am Soc Hypertens.*;11:573-580
- Lewington S, Clarke R, Qizilbash N, Peto R, Collins R, Prospective Studies C. Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet*. (2002) 360:1903–13. doi: 10.1016/S0140-6736(02)11911-8
- Liu X, Rodriguez CJ, Wang K. Prevalence and trends of isolated systolic hypertension among untreated adults in the United States. (2015) *J Am Soc Hypertens*. 9:197–205. doi: 10.1016/j.jash.2015.01.002
- Mancia G, Fagard R, Narkiewicz K, Redon J, Zanchetti A, Böhm M, et al. (2013) ESH/ESC guidelines for the management of arterial hypertension: the Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *Eur Heart J* . Jul;34(28):2159-2219
- Mesuri, R., P. (2013). Hubungan Mekanisme Koping Dengan Tingkat Stres Pada Pasien Fraktur Di Ruang Trauma Centre RSUP DR M.Djamil Tahun 2013 Padang. *Skripsi tidak diterbitkan*. Padang: Fakultas Kedokteran Universitas Andalas.
- Miller, C.A (2012). *Nursing Care of Older Adult: Theory And Practices*. Philadelphia:JB. Lippincott Company.
- Osamor, Bernard E. Owumi. (2011). Factors Associated with Treatment Compliance in Hypertension in Southwest Nigeria. *Journal* Diakses <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3259725/pdf/jhpn0029-0619.pdf>
- Perk J, Gohlke H, Graham I, Reiner Z, Verschuren M, Albus C, et al. European Guidelines on cardiovascular disease prevention in clinical practice (2012). The Fifth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of nine societies and by invited experts). *Eur Heart J*. Jul;33(13):1635-1701
- Praveen D, Patel A, Raghu A, Clifford GD, Maulik PK, Mohammad AA, et al. (2014) SMARTHealth India: development and field evaluation of a mobile clinical decision support system for cardiovascular diseases in rural India. *JMIR Mhealth Uhealth*. Dec 08;2(4):e54

- Sari WN, Margiyati, Rahmawati A (2020) Efektifitas Metode Self-Help Group (SHG) terhadap Tekanan Darah pada Lansia Hipertensi. *Jurnal Keperawatan* : 3(3):10-16
- Sample Registration System (SRS) (2014). Indonesia Sample Registration System - Deaths 2014, accessed 10 Agustus 2022, available at: <http://ghdx.healthdata.org/record/indonesia-sample-registration-systemdeaths-2014>.
- Tyas, Cahyaning AS, Zulfikar M (2021) Hubungan Tingkat Stress Dengan Tingkat Tekanan Darah Pada Lansia, *Jurnal Keperawatan Kontemporer*, 1(2): 48-55
- WHO. (2013). A global brief on Hypertension: silent killer, global public health crises (World Health Day 2013). Geneva: WHO
- Woolsey S, Brown B, Ralls B, Friedrichs M, Stults B. (2017). Diagnosing hypertension in primary care clinics according to current guidelines. *Journal Am Board Fam Med*. 30: 170-177
- Yanti, S. E., Asyrofi, A., & Arisdiani, T. (2020). Hubungan tingkat pengetahuan komplikasi hipertensi dengan tindakan pencegahan komplikasi. *Jurnal Keperawatan*, 12(3), 439–448
- Yosep, H.Iyus., Titin Sutini.(2016). *Buku Ajar Keperawatan Jiwa*. PT Refika Aditama; Bandung
- Yumba, Wycliffe. (2018). Academic Stress: a Case of Undergraduate Students. *Germany Psychology Journal* 13(3).34-47
- Zhang Y, Moran AE. Trends in the prevalence, awareness, treatment, and control of hypertension among young adults in the United States, 1999 to 2014. *Hypertension*. (2017) 70:736–42. doi: 10.1161/HYPERTENSIONAHA.117.09801