

Compliance of Elderly Hypertension in Oral Therapy Management and Hypertension Diet: Phenomenology Study

Ninda Ayu Prabasari P.

Faculty of Nursing Widya Mandala Catholic University Surabaya

Jalan Raya Kalisari Selatan No 1 Pakuwon City Surabaya Indonesia

E-mail: nindaayu@ukwms.ac.id

ABSTRACT

Introduction

The developmental process of hypertension is generally slow, but the potential for disease is very dangerous. This is influenced by several factors, including oral therapy and hypertension diet to control blood pressure and prevent complications. Hypertension management was long-term and lifetime, it will cause hypertensive patients do not obey the drug therapy and diet are given.

Method

This research used qualitative method with phenomenology approach. The objective of the study is to obtain data by exploring the experience of elderly adherence in the management of oral therapy and hypertensive diet. The population of this study used elderly with hypertension at Sekar Arum Surabaya Elderly Posyandu, with sample 8 participants obtained by purposive sampling technique. Data collection was done by Indepth interviews analyzed by Collaizi method.

Result

The results of the study were 9 themes: 1) understanding of hypertension, 2) adherence to hypertensive medication, 3) hypertension diet compliance, 4) adherence to control, 5) obstacles to hypertension medication, 6) obstacles to adherence to hypertension diet, 7) Supporting factors, 8) Treatment of other hypertension, 9) Expectation of hypertension disease suffered.

Conclusion

Adherence for Oral therapy and diet hypertension is depend on symptom and sign of the disease. Non Adherence treatment influenced because patient didn't feel enjoyable about the treatment. Increased awareness and adherence of elderly to always follow therapy program and hypertension diet can be done by involving family and health care services to give support, motivation and correct understanding in reaching better quality of life.

Keywords

Compliance; Elderly Hypertension; Oral Therapy; Hypertension Diet

BACKGROUND

The elderly population in the world was increasing because of the life expectancy is getting longer (Tel, 2013). The Increasing human age, degenerative aging process occurs which will have an impact on human changes one of them is physical changing (Azizah, 2011). The

decrease physical changes of the elderly also affect the immune system of the elderly against disease. When there is an increase of age until getting old, it will increase risk of diseases such as heart and blood vessel abnormalities (Muniroh, et al, 2007).

One of the health problems that often occur in the elderly is hypertension or high blood pressure (Kowalski, 2010). Hypertension is an increase in systolic blood pressure more than 120 mmHg and diastolic blood pressure more than 80 mmHg. Hypertension often causes changes in blood vessels that can lead to higher blood pressure (Muttaqin, 2009). The process of developing hypertension is generally slow, but the potential for disease is very dangerous. Therefore, new hypertension is diagnosed if it is at risk of life threatening.

According to Muttaqin, (2014) hypertension can be suppressed or treated by undergoing therapeutic treatment. In therapeutic management generally consists of pharmacological and non-pharmacological management. The goal is to control blood pressure, to prevent complications that may arise due to hypertension, and also normalize the existing complications as optimal as possible. Treatment of hypertension itself is a treatment that is long-term and lifetime.

The prevalence of hypertension continues to increase, one of which is caused by an unhealthy lifestyle, such as likes to eat fast food that is rich in fat, and salty (Wahdah, 2011). In addition, obesity (obesity), stress, smoking, and consuming alcohol can also trigger hypertension (WHO, 2013). Many people with hypertension who still have poor hypertensive dietary behaviors. Based on Yusuf research (2013), 60.4% of hypertensive patients have poor behavior towards hypertension diet. Mannan, et al (2012), that hypertension is more common in someone who likes salt consumption. Beevers, et al., (2007) also explained that an increase in blood pressure in the elderly was related to the amount of dietary salt consumed.

Hypertension patients again taked hypertension drugs if complaints attends such as headaches, palpitations, and blurred vision (Jaya, 2009). In line with the initial survey conducted by researchers used interviewing 3 elderly people suffering from hypertension. The elderly suffered from hypertension for 5 years. The interview resulted of the elderly said that taking medicine if the head feels dizzy, eating prefers salty food and does not like bland food. Elderly feel bored to take medicine continuously.

According to Susilo & Wulandari (2011) the caused of hypertension is caused by toxin factors, heredity (genetic), age, gender, stress, obesity, smoking, and high cholesterol. The risk of hypertension is 17 times higher in subjects > 40 years compared with those aged 40 years, meaning that it is known that increasing a person's age will be followed by an increase in the incidence of hypertension (Irza, 2009). Increasing age can cause the risk of hypertension. This is due to natural changes in the heart, blood vessels and hormone levels (Junaedi et al. 2013). A far more meaningful change in elderly life is what happens to blood vessels. The process called arteriosclerosis or calcification of blood vessel walls can occur everywhere. The liming process will continue to be a process that inhibits blood flow which will one day cover the blood vessels (Stanley, 2006).

The behavior of elderly hypertension who are not in accordance with the therapeutic program such as taking irregular medication, taking medication if the head feels dizzy, eating salty foods and not liking tasteless food, the elderly feel bored to take drugs continuously creates a greater risk of complications.

The success of hypertensive treatment patients is influenced by several factors, one of which is compliance in taking the drug, so that hypertensive patients can control blood pressure within normal limits. But 50% of hypertensive patients do not adhere to the advice of health workers to take drugs, which causes many hypertensive patients who cannot control blood pressure and lead to death of the patient (Morisky & Munter, 2009).

This is supported by Soeryoko (2010) Hypertension which is not handled properly, has a high risk for complications, including stroke, pulmonary edema, heart attack, and kidney failure. If these complications continue, they can cause death (Price & Wilson, 2006).

Hypertension can be treated with pharmacological and non-pharmacological treatments. Pharmacological treatment using hypertension drugs in the form of diuretics, betablockers, angiotensin converting enzyme inhibitors (ACE), angiotensin II resector blockers, calcium antagonists, vasodilators (Rusdi & Nurlaena, 2009, in Kenia & Taviyanda, 2013). In non-pharmacological therapy, modifying lifestyle such as consuming foods low in fat and salt, reducing stress, and not smoking and not consuming alcohol and doing sports that are not too heavy on a regular basis (Ridwan, 2009).

Hypertension is incurable but can be controlled by controlling health on a regular basis, doing a low-salt diet, low cholesterol, low calories, and high fiber and taking medication regularly (Nuridayati, 2016). Dietary Approach to Stop Hypertension for hypertension sufferers is a low-salt diet, a low cholesterol diet and saturated fat, a low calorie diet, increased fiber-containing foods and high potassium, reduced weight if obesity, no smoking , reduce alcoholic drinks and physical activity (National Institute, 2011).

The success of treating hypertension cannot be separated from the knowledge, attitudes and adherence of someone running a diet and taking medication. Someone who understands about hypertension and its various causes will do the best possible action so that the disease does not continue towards complications (Dalimartha, 2008).

These problems will continue to arise when therapy is carried out by patients with irregular hypertension. As we know hypertension therapy is continuous in order to maintain normal and normal blood pressure levels accompanied by lifestyle changes.

Based on this, the researchers conducted a study on the compliance of elderly hypertension in the management of oral therapy and hypertension diet. Researchers want to explore in depth the obedience of the elderly in taking medicine and diet starting when the elderly are

diagnosed with hypertension up to now, where the experience cannot be seen and explained by quantitative research because the experience of each individual is different and unique.

METHODS

The research study design is qualitative research. This study aims to obtain data by exploring the experience of adherence the elderly hypertension in the management of oral therapy and hypertension diet through in-depth interpretation of the subjectivity of elderly hypotension to obtain understanding and meaning of phenomena (Polit & Beck, 2012). Compliance experienced by elderly hypertension in the management of oral therapy and hypertension diet is unique in accordance with their respective characteristics so that this phenomenon cannot be described quantitatively. Seeing this, researchers chose to use qualitative research with a descriptive phenomenological approach (Creswell, 2010).

The population in this studied were elderly hypertensions who were members of the elderly posyandu in the Posyandu Lansia Sekar Arum RW VII Kertajaya Village, Gubeng District, Surabaya. The sampling technique was purposive sampling. The inclusion criteria for participants in this study were elderly hypertension aged 60 years; able to communicate verbally with language that researchers can understand; get oral therapy; there was no cognitive impairment based on the Short Portable Mental Status Questionnaire (SPMSQ) study; willing to participate in this study. The exclusion criteria in this study were participants who dropped out, who could not be contacted when needed to confirm the data. The number of participants in qualitative research according to the ideal phenomenology method is 3-10 people (Cresswell, 2010). This study involved 8 participants, because in the 8th participants found saturated data / data saturation

RESULTS

The purpose of this study was to determine the experience of elderly individuals with hypertension in the management of oral therapy and hypertension diet, knowing the inhibiting and supporting factors of adherence during oral therapy and diet management in elderly individuals with hypertension. The themes obtained from the interviews with participants are as follows:

The results of the study were 9 themes: 1) understanding of hypertension, 2) adherence to hypertensive medication, 3) hypertension diet compliance, 4) adherence to control, 5) obstacles to hypertension medication, 6) obstacles to adherence to hypertension diet, 7) Supporting factors, 8) Treatment of other hypertension, 9) Expectation of hypertension disease suffered

DISCUSSION

1. Understanding of hypertension

The theme of this understanding of hypertension is the concept of hypertension or knowledge that was known to the study participants. Sub research themes obtained includes understanding, causes and signs of symptoms.

The first sub theme obtained from interviews with participants is the understanding of hypertension. The definition of hypertension that is known by some participants is known blood pressure by checking blood pressure using tension and blood pressure results exceeding normal values. Such understanding was obtained by participants based on information from doctors in the Puskesmas, Clinics and Hospitals. The statement supported by Muttaqin (2014) Hypertension is a condition when systolic blood pressure is more than 120 mmHg and diastolic pressure is more than 80 mmHg.

The second sub theme is the cause of hypertension. According to participants the cause of hypertension is a diet that often eats salty, fatty foods, foods that contain cholesterol, lots of thoughts and excessive stress. The knowledge they have about the causes of hypertension they know mostly comes from the food they consume and the level of stress or the burden of one's mind. Udjianti (2011) consumption of a diet high in salt or fat is directly related to the development of hypertension. Stress can increase peripheral vascular resistance and cardiac output, thus stimulating sympathetic nerve activity and causing hypertension.

Signs and symptoms of hypertension are the third sub theme. The sub-theme is a description of participants' understanding of symptom signs, namely the experience felt by participants when blood pressure rises, participants will feel the neck / neck that feels heavy, the head feels dizzy and heavy, when blood pressure rises vision feels heavy and blurred. According to Susilo & Wulandari (2011), most of the clinical manifestations caused do not show significant symptoms. The symptoms in question are headaches, nose bleeding (nosebleeds), headaches, dizzy eyes, neck pain and fatigue. In chronic hypertension arises nausea, vomiting, shortness of breath, restlessness, blurred vision.

2. Adherence to hypertensive medication

Adherence to hypertensive medication in this study found 5 sub-themes, namely the benefits of taking medicine / effectiveness of taking medication, fear of complications, based on perceived conditions / complaints, replacing drugs that are not suitable / inappropriate, and the frequency of taking medication.

Compliance was done by participants because there are benefits or advantages that are felt after taking the drug and drinking regularly. This is in line with the results of Devi, et al (2013) study which revealed that the most reason for respondents to diligently take medicine was because they wanted to get well soon. This indicates that participants taking medication because of hypertension medication will be able to provide benefits or an advantage for participant in particular is the recovery of participants.

The second sub theme is the fear of worse things or complications. According to Suhardjono (2008) non-adherence to hypertension patients by not taking antihypertensive medicine can cause complications in hypertension so that they can cause organ damage including the brain, because uncontrolled hypertension can increase the risk of stroke then damage to the heart, hypertension increases the workload of the heart which will cause enlargement of the heart thereby increasing the risk of heart failure and heart attack. From this information based on the existing theory is very much in line with what was done by participants where fear became an important element in supporting participants' adherence to oral therapy and hypertension diet.

The perceived condition / complaint that made the participants obedient to take antihypertensive medications is the third sub theme. The changing that occurs in the body and

conditions that change in the body when increases in blood pressure become the reason for patient patients to obey taking medication.

When they have side effects from the medication they drink immediately they may come to the health service (Puskesmas) to get a checkup and substitute medicine. This is the fourth sub theme that causes participants to obey to take medicine. Fithria & Isnaini (2014) suggested that therapeutic change factors can affect the level of adherence of hypertensive patients because the consequences of changes in therapy can cause the health condition of patients with more hypertension to be caused.

The fifth sub theme that was obtained was the submissive participant because it was based on the schedule and frequency of taking medication they had received from the doctor. This situation is in accordance with the results of Hastuti, et al (2011) study which revealed that ways to maintain blood pressure to remain stable by taking routine medication and not taking medication late. Patients to be obedient to take medication from the beginning of the patient diagnosed, the initial condition of treatment and the knowledge gained from health workers lead to the importance of hypertension treatment, especially taking medication regularly

3. Hypertension diet Compliance

Hypertension diet compliance is the third theme. Hypertension diet compliance has 3 sub-themes namely diet / meal as recommended, reduce saltiness, reduce fat / cholesterol.

The understanding of participants on a hypertensive diet includes an understanding of the reduced food composition than usual. Reduce salty foods, reduce salt when cooking, reduce foods that contain fat / cholesterol.

Kim & Andrade study (2016) informs that dietary approaches to controlling hypertension are a highly recommended approach for someone who has hypertension. Compliance with following a diet shows effectiveness in controlling hypertension.

Mardiyati (2009) adherence to hypertension sufferers in carrying out a hypertensive diet such as a low-salt diet can prevent hypertension. Behavior obtained from the environment and socially related to habits that can produce a positive or negative nature.

This is supported by Blumenthal, et al research (2010) based on a study conducted to find a relationship between consumption of salty foods and fat-containing foods with high blood pressure results in hypertensive patients. This is very supportive of the theme taken that diets reducing consumption of foods containing fat and cholesterol will have an impact on hypertension experienced by participants.

This is also reinforced by Utami (2009) study that basically dietary compliance is respondent's compliance with a variety of foods and balanced nutrition, the type and composition of food adapted to the condition of the patient, the amount of salt is limited according to the health of the patient and the type of food on the diet list.

4. Adherence to control

Compliance for control obtained 2 sub themes namely control frequency, schedule according to the specified time. Participants came to the health service to check themselves specifically to find out how the blood pressure in relation to hypertension is owned, control according to the time schedule determined by health care workers.

The things that can be done was to maintain blood pressure to be stable can be done with routine control, not forgetting to control where control is done before the drug runs out and controls at least once a month (Hastuti,et all 2010). In line with the results of research

conducted by Ratnaningtyas & Djatmiko (2011) which revealed incurable hypertension but can only be controlled through routine health control, doing a low-salt diet and taking medication regularly to reduce the risk of cardiovascular complications and other organs in self patient.

5. Obstacles to hypertension medication

Obstacles to complying with taking hypertension medication were found in three sub-themes, namely when the complaint / condition was felt, the behavior of taking medication irregularly, and saturation. Long suffering from hypertension is one of the factors that made some participants become bored and bored to take medicine, the changes that are felt when taking medication make the participants know when to take medication and not, thus causing them to disobey to take medication and take medication only when it occurs only complaint.

This supported with the study results that revealed hypertensive patients again take hypertension medicine if complaints arise such as headaches, palpitations, and blurred vision. This is what makes participants feel again the need for therapy for hypertension suffered (Jaya, 2009). The majority of hypertensive patients need a combination of therapies to control their blood pressure, but the saturation to take medication is strongly associated with low adherence in taking existing hypertension drugs (Gerbino & Shoheiber, 2007).

6. Obstacles to adherence the hypertension diet

Obstacles to adherence the hypertension diet with 2 sub-themes are difficult to reduce salty foods and difficult to reduce the preferred food. The obstacle felt by the participants made the patient disobedient to go on a hypertension diet.

Xiang, et all (2014) revealed that patients actually know about high blood pressure that is very related to salt consumption and they want to get scheduled health education where they fall into the category of failing to control hypertension.

This is supported by Tomey and Alligood (2006), which states that situational influences are personal perceptions and awareness of some given situations or a context that can facilitate or prevent behavior.

7. Supporting factors

Supporting factors were found in three sub-themes, namely family, fellow elderly friends and cadres of the elderly, and health workers. The supporting factor is the system support that hypertension sufferers have in following the therapy and diet program.

The results of Puspita's research (2016) found a relationship between family support and adherence to hypertension treatment. The family can act as a motivator for sick family members (sufferers) so as to encourage patients to continue to think positively of their illness and adhere to the treatment recommended by health workers.

This is supported by Gebrezgi et al. (2017) which states that social interaction with friends and other members in the community has one important meaning to get information about hypertension and including hypertension management itself. The unwillingness to meet in a meeting center with other friends will be an obstacle to the hypertension care process. The interaction of health professionals with clients is important to provide feedback to clients after obtaining information about diagnosis. An explanation of the causes of the disease and how treatment can improve adherence, the better the services provided by health workers, the more regularly the clients make a repeat visit (follow up) (Setiadi, 2008).

Internal and external support obtained by hypertensive patients is one of the interpersonal factors that can affect adherence to treatment. Communication and motivation from family members, the environment and health workers can support the improvement of patient recovery.

8. Treatment of other hypertension

Other treatments for hypertension treatment are 5 sub-themes are exercise, herbal medicine / traditional medicine, consumption of blood pressure-lowering fruit, reducing stress, and resting. Some participants revealed that what was done to reduce blood pressure was exercise including exercise or walking, taking herbal medicines such as drinking celery, drinking decoction of bay leaves, consuming starfruit, consuming noni, single garlic, resting the body when blood pressure began and trying to reduce stress.

This is supported by the results of research where sports for hypertensive people should exercise which makes relaxing and relaxing and does not drain energy or cause exhaustion. Regular exercise (39 minutes) per day can reduce systolic blood pressure by 4 mmHg to 9 mmHg. Activities that can be done like walking fast for 30 minutes to 45 minutes as often as possible in one week (Lemone & Burke, 2008). Kharisna (2008) which connects cucumber juice with hypertension, shows that patients who regularly consume cucumber juice regularly can reduce blood pressure. Likewise in this study, shows that influential knowledge and attitudes Prevention of hypertensive patients can be done through maintaining weight, reducing cholesterol levels, reducing salt consumption, high-fiber diet, consuming fruits and vegetables and living a healthy life (Ridwan, 2009)

This is supported by research conducted where information is obtained that specific examination of education levels is included in the hypertension day compliance campaign in China; diet recommendations to reduce salt diet and fat intake including high quality protein, potassium and calcium diet; increase physical activity such as aerobics, stretching and strength training, walking, jogging, tai chi, swimming, qigong and dancing and also education to control smoking behavior and reduce stress in patients with hypertension who are under stress conditions (Xiang, et al, 2014) Stress reduction can also be done by resting if you have experienced physical or psychological stress due to stress. By making changes to the lifestyle will be able to control blood pressure in patients with hypertension.

9. Expectations of hypertension disease suffered

Expectations for hypertension suffered three sub-themes, namely stable blood pressure, no further complications, enjoying old age despite hypertension.

This is supported by research that explains that if a systemic increase in all aspects of hypertension management will be carried out until 2022, 80% of patients undergoing hypertension therapy will be able to control their blood pressure levels by an estimated 50,000 major heart and blood vessel problems (Falaschetti et al, 2014). This indicates that adhering to the therapy and hypertension diet will be able to control or keep blood pressure well in hypertensive patients.

Hypertension is an important risk factor for coronary heart disease, stroke, kidney disease, and retinopathy. Adequate hypertension therapy can reduce stroke risk by 40% and risk of myocardial infarction by 15%. Seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure (JNC 7) recommend lifestyle modification as an important therapy for hypertension. Modification of daily food intake is

one part of lifestyle modification that has a large role in preventing the increase in blood pressure in individuals who do not suffer from hypertension, and reduce blood pressure in prehypertension and hypertension sufferers (Kumala, 2014). Through good hypertension therapy that is supported by a hypertensive diet makes blood pressure controlled and reduces the occurrence of complications in patients with hypertension.

This is supported by Palmer & William (2007) in Mangendai, et all (2017) which states that adherence to treatment of hypertensive patients is important because hypertension is an incurable disease but must always be controlled or controlled so there are no complications that can lead to death. By controlling blood pressure, elderly hypertension sufferers can enjoy their old age well.

Wahyuni (2016) stated that various ways that can be done by the elderly as an effort to prevent one of them is doing regular exercise and the easiest exercise to do is fitness for the elderly. Some studies have found that exercise in the elderly can improve physical fitness, reduce symptoms of sleep disturbances and anxiety levels so that the elderly can live a healthy and happy life at dusk.

CONCLUSIONS

Participants in this study amounted to 8 participants who suffered from hypertension. Based on the results of interviews conducted, the experience of elderly hypertension in the management of oral therapy and hypertension diets, also adherence and supporting factors during the management of oral therapy and diet in elderly hypertension found related themes namely understanding of hypertension elderly about hypertension, adherence to hypertensive elderly to take hypertension medication, adherence to elderly hypertension in hypertension diet and adherence to elderly hypertension for control of health services, barriers to adherence to taking hypertension medication, barriers to adherence to hypertension diets, factors that support elderly hypertension in taking oral therapy and hypertension diet, management of other hypertensive medications and hope for hypertension suffered. Generally outline, the compliance of hypertensive elderly to take oral therapy and hypertension diet depends on the symptoms and signs that appear in the patient. Conversely, non-adherence to elderly hypertension due to the elderly was not comfortable with oral therapy programs and diets that are run because of the old therapy program that causes saturation.

Declaration

Acknowledgement

I would like to thank the Nursing Faculty Of Widya Mandala Catholic University in Surabaya for providing the research funding and support for this publication.

Consent for publication

I give my consent for this publication

Funding

Publication of this article was funded by Faculty Of Nursing Widya Mandala Catholic University

REFERENCES

1. Azizah, L. M. (2011). *Keperawatan Lanjut Usia*. Yogyakarta : Graha Ilmu
2. Beevers, D.G., Lip, G.Y.H., O'Brien, E. (2007). *ABC of Hypertension (5th.ed.)*. Victoria 3053: Blackwell Publishing.
3. Blumenthal JA, Babyak MA, Hinderliter A, et al. (2010). Effects of the DASH diet alone and in combination with exercise and weight loss on blood pressure and cardiovascular biomarkers in men and women with high blood pressure: the ENCORE study. *Arch Intern Med* 170, 126–135.
4. Creswell, J.W. (2010). *Research Design : Pendekatan Kualitatif, Kuantitatif, Dan Mixed*. Yogyakarta: Pustaka Pelajar.
5. Dalimartha, Setiawan. (2008). *Care Your self Hipertensi*. Depok : Penebar Plus
6. Devi,A. A., Shanti, I.A,& Aryani, P. (2013). Kendala Dan Strategi Dalam Menjaga Kepatuhan Menjalani Terapi Pada Pasien Hipertensi Di Wilayahkerja Puskesmas Kitamani I Kabupaten Bangli. <https://ojs.unud.ac.id/index.php/eum/article/view/13838>
7. Falaschetti,E, Mindell,J, Knott C.,& Poulter, N. (2014). Hypertension management in England: a serial cross-sectional study from 1994 to 2011. <https://search.proquest.com/docview/1530405943/fulltextPDF/6C2ACCBFABA24ED2PQ/12?accountid=38643>
8. Fithria & Isnaini, M. 2014. Faktor-Faktor Yang Berhubungan Dengan Kepatuhan Berobat Pada Penderita Hipertensi Di Klinik Sumber Sehat Indrapuri Aceh Besar. *Idea Nursing Journal* Vol.V No.2, 2014 hal 56- 6
9. Gebrezgi, M.A, Trepka, M.J & Kidane,E.A. (2017). Barriers to and facilitators of hypertension management in Asmara, Eritrea: patients' perspectives. *Journal of Health, Population and Nutrition* (2017) 36:11. DOI 10.1186/s41043-017-0090-4. <https://search.proquest.com/docview/1895301682/6C2ACCBFABA24ED2PQ/14?accountid=38643>
10. Gerbino, P. P., & Shoheiber, O. (2007). Adherence patterns among patients treated with fixed-dose combination versus separate antihypertensive agents. *Am.J.Health Syst. Pharm.* 64, 1279–1283. doi: 10.2146/ajhp060434
11. Hastuti, R.Y; Zukhri, S & Natalya.W. 2011. Studi Fenomenologis Tentang Pemahaman Pasien Hipertensi Dalam Melaksanakan Program Pengobatan Di Poliklinik Rsud Ambarawa.
12. Irza, Syukaraini. (2009). Analisis Faktor-Faktor Resiko Hipertensi pada Masyarakat Nagari Burgo Tanjung Sumatra Barat. Skripsi. <http://www.digilibusu.or.id>. Fakultas Farmasi USU.
13. Jaya, N.T.A.A. (2009). Faktor-Faktor Yang Berhubungan Dengan Tingkat Kepatuhan Pasien Dalam Minum Obat Antihipertensi Di Puskesmas Pamulang Kota Tangerang Selatan Propinsi Banten Tahun 2009. Program Studi Ilmu Keperawatan Fakultas Kedokteran Dan Ilmu Kesehatan Universitas Islam Negeri Syarif Hidayatullah: Jakarta.
14. Junaedi, E, Yulianti, S, dkk. (2013). *Hipertensi Kandas Berkat Herbal*. Jakarta: Fmedia.

15. Kenia & Taviyanda. (2013). Pengaruh Relaksasi (Aroma Terapi Mawar) Terhadap Perubahan Tekanan Darah Pada Lansia Hipertensi. *Jurnal Stikes RS Baptis Kediri, Vol. 6, No. 1, Juli.*
16. Kharisna, D., 2010, *Efektifitas Konsumsi Jus Mentimun Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi.* Universitas Riau
17. Kim,H& Andrade, F.C.D. 2016. Diagnostic status of hypertension on the adherence to the Dietary Approaches to Stop Hypertension (DASH) diet. Preventive Medicine Reports journal homepage: <http://ees.elsevier.com/pmedr>. Preventive Medicine Reports 4 (2016) 525–531
18. Kowalski, R.E. (2010). *Terapi hipertensi : program 8 minggu menurunkan tekanan darah tinggi & mengurangi resiko Serangan jantung & stroke* (Ekawati, R.S., Penerjemah).. Bandung: Penerbit Qanita.
19. Kumala, M. (2014). Peran Diet Dalam Pencegahan Dan Terapi Hipertensi. *Damianus Journal Of Medicine Vol 13 No. 1.* <http://ojs.atmajaya.ac.id/index.php/damianus/article/view/208>
20. Mangendai, Y; Rompas, S & Hamel, R.S. (2017). Faktor-Faktor Yang Berhubungan Dengan Kepatuhan Berobat Pada Pasien Hipertensi Di Puskesmas Ranotana Weru. e-journal Keperawatan (e-Kp) Volume 5 Nomor 1, Mei 2017. <https://ejournal.unsrat.ac.id/index.php/jkp/article/view/15829>
21. Mannan, H., Wahiduddin., Rismayanti. (2012). *Risk Factors for Hypertension In Bangkala Clinic Jeneponto District In 2012.* Diakses dari <http://repository.unhas.ac.id/bitstream/handle/123456789/5745/JURNAL%20MKMI%20HASRIN.pdf?sequence=1>
22. Mardiyati, Y., 2009, *Hubungan Tingkat Pengetahuan Penderita Hipertensi Dengan Sikap Menjalani Diet Hipertensi di Puskesmas Ngawen I Kabupaten Gunung Kidul Provinsi D.I.Y.* Universitas Muhammadiyah Surakarta.
23. Morisky, D. & Munter, P. (2009). *New medication adherence scale versus pharmacy fill rates in senior with hipertention.* *American Jurnal Of Managed Care, 15(1): 59-66*
24. Muniroh, Lailatul, Wirjatmadi, Bambang & Kuntoro. (2007). Pengaruh Pemberian Jus Buah Belimbing & Mentimun Terhadap Penurunan Tekanan Darah Sistolik & Diastolik Penderita Hipertensi. *The Indonesian Journal of Public Health, Vol 4, No.1.*
25. Muttaqin, A. (2014). *Asuhan Keperawatan Pada Pasien dengan Gangguan Sistem Kardiovaskular.* Jakarta : Salemba Medika
26. National Institute for Health and Clinical Excellence. (2011). Hypertension: clinical management of primary hypertension in adults. *National Institute for Health and Clinical Excellence.*
27. Polit, D.F., & Beck C.T. (2012). *Nursing Research: Generating and Assesing Evidence for Nursing Practice.* China: Lippincott Williams and Wilkins
28. Price, S.A., & Wilson, L.M. (2006). *Patofisiologi Konsep Klinis Proses-Proses Penyakit.* Jakarta: EGC.
29. Puspita, E. (2016). *Skripsi : Faktor-faktor yang Berhubungan dengan Kepatuhan Berobat pada Penderita Hipertensi dalam Menjalani Pengobatan di Puskesmas Gunungpati Kota Semarang.* <http://lib.unnes.ac.id>

30. Ratnaningtyas, Y., & Djatmiko, W. (2011). Hubungan kepribadian tipe d dengan kejadian hipertensi di rsud prof. dr. margono soekardjo. *Mandala of Health*, 5 (2).
31. Ridwan, M. (2009). Mengenal, Mencegah, Mengatasi Hipertensi. Semarang: Widyamara.
32. Setiadi. 2008. Konsep dan proses keperawatan keluarga. Graham ilmu.yogyakarta
33. Stanley, M., Kathryn A. B., & Patricia G. Beare., (2007). *Gerontological Nursing : Promoting Successful Aging with Older Adult*. (3rd ed). Philadelphia: F.A Davis Company.
34. Suhardjono. (2008). Diskusi Seminar Kepatuhan Minum Obat Akan Selamatkan Hidup Anda. Diakses dari redaksi@medicastore.com.
35. Susilo, Y & Wulandari. (2011). *Cara Jitu Mengatasi Hipertensi*. Yogyakarta: C.V Andi Offset.
36. Tel,H.(2013).*Sleep Quality And Quality Of Life Among The Elderly People*. Neurologi, Psychiatry and Brain Research vol 19. www.sciencedirect.com
37. Udjianti, W. J. (2011). *Keperawatan Kardiovaskular*. Jakarta: Salemba Medika.
38. Utami, P.(2009). Solusi Sehat Mengatasi Hipertensi. Agromedia . Jakarta
39. Xiang, J.G, Tian, J.Z, Wang, H., Zhang, Y.,&Chen, Q. (2014). Hypertension Knowledge, Awareness, and Self-Management Behaviors Affect Hypertension Control: A Community-Based Study in Xuhui District, Shanghai, China. *Journal Cardiology* 2014;127:96–104
DOI: 10.1159/000355576.
<https://search.proquest.com/docview/1512584171/6C2ACCBFABA24ED2PQ/3?accountid=38643>
40. Wahdah, N. (2011). *Menaklukan hipertensi dan diabetes: mendeteksi, mencegah dan mengobati dengan cara medis dan herbal*. Yogyakarta:Multipress.
41. Wahyuni, N. P.D. (2016). Sehat Dan Bahagia Dengan Senam Bugar Lansia. <https://ejournal.undiksha.ac.id/index.php/PENJAKORA/article/view/11669>
42. WHO. (2013). *High Blood Pressure Country Experiences and Effective Interventions Utilized Across The European Region*. World Health Organization European.
43. Yusuf, D. Y. N. (2013) Gambaran Perilaku Penderita Hipertensi Dalam Upaya Mencegah Kekambuhan Penyakit Hipertensi Di Wilayah Kerja Puskesmas DulalowoKota Gorontalo Tahun 2013. Tesis strata satu. Program Studi Ilmu Keperawatan.Universitas Gorontalo. <http://kim.ung.ac.id/index.php/KIMFIKK/article/viewFile/2787/2763>.