Original Research

HOLISTIC JOURNAL Of Nursing Studies

Open Access

https://ejournal.jrm-indo.com/index.php/hjns/index

Volume 1(1), 29-35

https://doi.org/10.xxxxx/hjns26

Level of Compliance with Medication Among Elderly People with Hypertension in the Aranio Community Health Center Service Area

Laila Qadariah [1], Diana Pefbrianti[2*]

[1,2]College of Health Sciences Intan Martapura, Banjar, Kalimantan Selatan, Indonesia

*Corresponding author:
Diana Pefbrianti
College of Health Sciences Intan Martapura, Banjar, Kalimantan Selatan, Indonesia Email:
dianapefbrianti38@gmail.com

Article info:
Received: 18 December 2024
Revised: 16 January 2025
Accepted: 19 January 2025
Date of Publication:
30 January 2025

e-ISSN xxxx-xxxx
p-ISSN xxxx-xxxx

Publisher: Junior Management Indonesia

ABSTRACT

Background: Hypertension is a condition characterized by elevated blood pressure above normal thresholds, with systolic pressure equal to or greater than 140 mmHg and diastolic pressure equal to or greater than 90 mmHg. Non-adherence to hypertension medication among patients can lead to serious complications such as myocardial infarction, stroke, acute kidney failure, coronary heart disease, and atrial fibrillation, increasing the workload on the heart, morbidity, mortality, and healthcare costs. Given this, for the effectiveness of hypertension treatment, compliance in taking medication is one of the important factors that must be considered.

Objective: This study aimed to assess medication adherence among elderly hypertension patients in the Aranio Community Health Center working area.

Methods: The study employs a descriptive research design with a cross-sectional approach, sampling 85 elderly respondents using purposive sampling. The study focuses on medication adherence as the variable of interest. The variable on this study weas compliance. Data collection was conducted using MMAS questionnaire, which consists of 8 questions and data analysis was performed descriptively using Using the Frequency Table.

Results: The study found that the highest percentage of respondents, 56.5% (48 individuals), exhibited moderate medication adherence, while 19 respondents (22.4%) showed low adherence and 18 respondents (21.2%) demonstrated high adherence.

Conclusion: Compliance with taking medication for the elderly is moderate. Elderly individuals must enhance medication adherence by understanding the importance of treatment in managing hypertension and preventing complications. Establishing a clear and regular medication schedule is essential for elderly patients.

Keywords: hypertension; elderly; compliance; medication

Cite this article as: Qadariah, L., & Pefbrianti, D. (2025). Level of Compliance with Medication Among Elderly People with Hypertension in the Aranio Community Health Center Service Area. *Holistic Journal of Nursing Studies*, 1(1), 29-35. https://doi.org/10.xxxxx/hjns26

INTRODUCTION

Elderly is the phase where there is a movement from late adulthood to old age, which is often called the aging process or the final stage of development in human life. In old age, cells decline due to the aging process, which can result in organ weakness, physical decline, and the emergence of various kinds of degenerative diseases, which can cause health, social, economic, psychological, and physiological problems. These physiological changes can occur in the cardiovascular system, and one of the diseases that often appear and are usually found in the elderly is hypertension (Aprianti, 2020).

Hypertension, or what is usually called high blood pressure, is one of the most common non-communicable diseases and is most commonly suffered by the public. Hypertension is a condition where blood pressure increases above the standard threshold, or systolic is more than equal to 140 mmHg, and diastolic is more than equal to 90 mmHg.

In other words, hypertension is also a condition when blood pressure in the blood vessels increases chronically (Triyanto, 2018).

According to WHO, the prevalence of hypertension is 22% of the world's population, with the highest prevalence in Africa, namely 27%, and Southeast Asia in third place with 22%. As many as 44% of older adults in Indonesia have comorbidities such as hypertension, the most common disease, namely 63.5% (Public Relations of the Directorate General of Social Rehabilitation, 2021). South Kalimantan is in first place as the region with the highest percentage of hypertension in Indonesia, namely 44.1% of hypertension sufferers, and Papua is the lowest with 22.2%. The prevalence in South Kalimantan is 94,549 people with hypertension, while data from the Banjar District Health Service in 2021 shows that the number of hypertension sufferers aged ≥15 years is 27,032.

Meanwhile, at the Aranio Public Health Center, there will be 587 people suffering from hypertension in 2023 (South Kalimantan Health Department 2022). The non-compliance of hypertensive patients in taking medication can have substantial adverse effects, such as the emergence of complications. Non-compliance causes patients to develop diseases such as myocardial infarction, stroke, acute kidney failure, coronary heart disease, and atrial fibrillation; this can increase the workload of the heart and can increase morbidity, mortality, and treatment costs. Because the impact of non-compliance with taking hypertension medication has a significant impact on health, we must be able to control blood pressure by complying with taking hypertension medication according to the doctor's recommendations, especially for patients who have suffered from hypertension for a long time (Oktaviani, Zunnita and Handayani, 2020).

Elderly compliance with taking antihypertensive medication is one of the determining factors in controlling blood pressure. Compliance with treatment is defined as a patient's behavior in obeying the rules and advice recommended by health workers while undergoing treatment. The recommendation to follow the rules for taking hypertension medication regularly is helpful in controlling blood pressure, so compliance is required in taking hypertension medication. The length of treatment gives rise to a feeling of boredom and boredom with the treatment being undertaken, so the longer one undergoes hypertension treatment becomes a cause of non-compliance in undergoing treatment (Afina, 2018).

The impact of patient compliance in taking antihypertensive medication is that it can influence blood pressure to become routine and will gradually prevent negative impacts on other body organs. Currently, known hypertension drugs have been proven to be able to control blood pressure in hypertensive patients and also play a significant role in reducing the risk of developing cardiovascular complications. However, the use of antihypertensives alone is not enough to produce a practical control effect if it is not supported by compliance with taking hypertension medication (Susanto et al., 2018).

The causes of the problem of non-adherence in taking medication in hypertension sufferers include taking medication for too long, which can cause boredom from taking medication, and hypertension sufferers do not comply with taking medication because they feel they are healthy. Non-compliance problems often occur in long-term treatments such as hypertension. Anti-hypertension drugs also function to reduce the risk of cardiovascular complications. However, the use of antihypertensive drugs alone is not enough to produce a long-term blood pressure control effect if it is not supported by compliance with the use of antihypertensive drugs (Utomo, 2020).

According to the Ministry of Health (2022), hypertension can be controlled by knowing blood pressure, taking the medication regularly, following the doctor's recommendations, being careful about using over-the-counter medication, and controlling blood pressure regularly. Treatment without medication, such as reducing weight, following a low-salt, low-fat diet, regular exercise, and a healthy diet, can also be effective.

To overcome the increase in the number of older adults with illnesses in Indonesia, the government is currently making efforts to ensure that the elderly can carry out their activities well and maintain their physical and mental capacity. Preventive efforts that the government needs to prepare include preparing changes in environments that are friendlier to the elderly, such as residential areas, public spaces, and transportation so that they can be accessed and support the elderly in their various needs (Coordinating Ministry for PKM RI, 2021).

Hypertension in 2022 will be 361 cases and will increase in 2023 to 587 cases. From the results of short interviews with three older adults suffering from hypertension, it was found that two older adults said they did not regularly take medication because they often forgot and were too busy working. 1 older adult was suffering from hypertension who said that when their blood pressure rose and complained of dizziness, they did not take medication to lower it at all. Blood pressure only consumes cucumbers to relieve dizziness. Compliance with taking medication for patients means that taking medication regularly can control blood pressure. Apart from that, you should also pay attention to what foods you can consume. This research aims to determine the level of compliance with taking medication among older adults with hypertension in the work area of the Aranio Community Health Center.

METHODS

This research design uses descriptive research methods with a cross-sectional approach. This research variable includes the independent variable, namely adherence to taking medication. The samples in this study were among those taken in this study, as many as 85 older adults suffering from hypertension in the UPTD work area of the Aranio Community Health Center. The inclusion criteria in this study are the elderly who experience hypertension and receive hypertension treatment. The total sample method is a sampling technique where the sample is determined by selecting a sample from the population that is in accordance with the wishes of the researcher. The sampling used was purposive. The instrument used in this research is the MMAS questionnaire, which consists of 8 questions. The data analysis used is univariate analysis Using the Frequency Table. The Intan Martapura College of Health Sciences ethics committee declared this research to have passed ethics with number 013/KE/YBIP/V/2024.

RESULTS

The characteristics of respondents in the study based on age, gender, education, and employment categories are as follows:

Table 1. Characteristics Of Research Respondents Level of Compliance with Medication in Elderly People with Hypertension (n= 85)

Characteristics of Respondents	N	%
Age		
60-70 years	44	51.8 %
71-80 years	38	44.7 %
81-90 years	3	3.5 %
Gender		
Male	37	43.5 %
Girl	48	56.5 %
Last education		
Elementary School	18	21.2 %
Junior High School	30	35.3 %
Senior High School	20	23.5 %
Higher Education	12	14.1 %
Other	5	5.9 %
Employment status		
Government employees	8	9.4 %
Self employed	25	29.4 %
Farmer	32	37.6 %
Other	20	23.5 %

Based on Table 1, the results showed that the majority of respondents were aged 60-70 years, 44 respondents (51.8%), the majority gender was female, namely 48 respondents (56.5%), the education level was Junior High School, 30 respondents (35, 3%) and the majority of respondents' occupations were farmers, 32 respondents (37.6%). The level of compliance of older adults in taking anti-hypertension medication in this study is as follows:

Table 2. Elderly compliance level of compliance with taking anti-hypertension medication (n=85)

level of adherence to taking anti-hypertension medication	N	%
High	18	21.2 %
Moderate	48	56.5 %
Low	19	22.4 %

Based on Table 2, the results show that the majority of respondents' compliance level is moderate, with 48 respondents (56.5%).

DISCUSSION

Characteristics of Respondents Based on the results of research conducted by researchers on 85 respondents, it is known that based on the age of the respondents, the majority were 60-70 years old, 44 respondents (51.8%). This is in line with the results of research by Elsayanti and Catur (2021) that hypertension is mainly suffered by the 60-70-year age group because, in general, blood pressure increases slowly with increasing age and 43 in old age, both those who are still active and those who are no longer productive will experience changes in the

function and structure of the blood vessel system as a form of the body's response as we age, which can cause narrowing and stiffness of the blood vessels, making us more susceptible to disease. Research by Sari et al. (2021) stated that older adults are at very high risk of developing hypertension; this is due to changes in the elasticity of the aortic wall. Research Novi Maulana's (2021) revealed that age influences both the prevalence of hypertension and adherence to treatment. Decreased physiological function and increased risk of cardiovascular complications make hypertension more common and dangerous in the elderly. Medication adherence in older people can be hampered by factors such as the complexity of the drug regimen, side effects, and cognitive decline.

Based on research, more than half of the respondents (56.5%), as many as 48 people, suffered from hypertension suffered by female respondents. This research is in line with research results (Fauziah et al., 2019; Pratiwi et al., 2021); women tend to be more at risk of developing hypertension after menopause due to decreased levels of estrogen and HDL (High-Density Lipoprotein). In fact, it is stated that at the age of more than 65 years, the prevalence of women suffering from hypertension is higher than men, which is caused by hormonal factors. In Erlina's (2023) research, it was stated that women tend to have a higher increase in blood pressure compared to men because women experiencing menopause is one of the factors causing increased blood pressure. Hence, the incidence of hypertension tends to be higher than in men.

Daulay's (2020) research, it was concluded that more women experience hypertension because the hormone estrogen has a protective effect against high blood pressure. However, after menopause, estrogen levels decrease so that the risk of hypertension increases significantly. 44 Based on the research results, researchers are of the opinion that as a person gets older, the person's vascular system changes in the blood vessels. There is a reduction in elastic tissue in the arteries, causing them to become stiffer, which causes blood pressure to increase. Age is related to the incidence of hypertension due to natural changes in the body, which result in the heart, blood vessels, and hormones experiencing changes in the vascular system, resulting in blood pressure increasing, which causes hypertension. Based on the education level of respondents, it shows that the majority of respondents 30 people have a final level of junior high school education (35.3%), where education can influence a person's behavior; the higher a person's education, the easier it is to receive and digest knowledge. This is in line with research conducted by (Al Rasyid et al., 2022) that people with low levels of education experience more hypertension than respondents who have high levels of education.

Nugroho's research (2019) states that hypertension with low education is caused by a person with low education's lack of knowledge about the importance of health and difficulty/not quickly receiving information (counseling) delivered by health workers, which has an impact on healthy living behavior. Moreover, in Syahda's (2021) research, it is explained that individuals with low education may have limited access to information regarding the causes of hypertension and the benefits of medication adherence. Based on the research results, researchers are of the 85 respondents, the majority of older adults's knowledge level is in the medium category. The majority of respondents have an education level at the end of junior high school, so the higher a person's education, the higher the pattern of knowledge level. The knowledge possessed by 45 respondents played a good role in attitude-forming behavior, so they were compliant in taking hypertension medication. Based on the level of employment, it shows that the majority of respondents (37.6%) work as farmers, namely 32 people. This happens because work can create stress, which affects blood pressure. Factors or types of work influence a person's physical activity patterns, whereas if the job does not rely on regular physical activity, it can affect blood pressure. This result is in line with research (Pratiwi et al., 2023), which found that the majority of respondents' employment data were farmers, 33.7%. According to (Riskesdas, 2007) in (Pratiwi et al., 2023), the results of Riskesdas state that hypertension tends to be high in people who work as farmers/laborers/fishermen. In this research, it is possible that respondents who work as farmers will have a low socio-economic condition, which may contribute to the high level of stress in the research subjects.

In research conducted by Assiddiqy (2020), work with high physical or mental demands can increase stress levels, which is the leading risk factor for hypertension. Excessive stress can cause an increase in blood pressure through the body's response mechanism to psychosocial stress. Purwanto's (2019) research concluded that working for long hours without adequate rest can cause physical and mental fatigue, disrupt sleep patterns, and affect the body's circadian rhythm. This imbalance can cause an increase in the risk of hypertension 2. Level of Compliance Based on the research results in Table 4.6, the respondents who had the highest percentage were 56.5%, totaling 48 people with a moderate level of compliance with taking medication. Compliance (adherence) is a form of behavior that arises as a result of interactions between health workers and clients so that clients understand the plan with all its consequences, agree to the plan, and carry it out (Ministry of Health of the Republic of Indonesia, 2018). Obedience comes from the basic word obedient, which means discipline and obedience. Obedient is like obeying orders, commands, or rules. In research (Burnier, 2019), compliance with

hypertension treatment in the elderly is often less than optimal. Several studies show that drug compliance in the elderly ranges from 50% to 70%. Older adults face a variety of challenges that impact their adherence to medication regimens, including complexity of medication regimens, cognitive impairment, medication side effects, and vision and hearing problems. Additionally, insufficient social support and isolation may worsen adherence.

Omboni (2019) stated that the challenges of medication adherence in the elderly are very diverse and complex. The complexity of drug regimens, cognitive impairment such as dementia, and drug side effects such as dizziness and nausea often lead to confusion and noncompliance. Vision and hearing problems can hinder seniors' ability to read medication labels and follow medical instructions. Lack of social support also makes it difficult for older adults who live alone to manage their medication. The results of this study are in accordance with research by Mursiany (2013), which shows that the majority of hypertensive patients have a moderate level of compliance (52.40%). Apart from that, it is also in accordance with research, which shows that the level of compliance with the highest percentage is in the medium category (45.14%). This shows that there are still many hypertensive patients who are not compliant with taking hypertension medication Noverda Ayu (2018). Reduced cognitive function is related to poor treatment. Elderly patients have a moderate tendency to adhere to medication compared to other ages, such as young people. Reduced ability to remember in the elderly is one of the reasons for not taking hypertension medication because they often forget, do not bring medication when traveling, and do not finish prescribed medication, resulting in uncontrolled blood pressure. The length of treatment and the number of doses of medication taken by hypertension sufferers affect compliance. Patenrengi, I. (2020) stated that the longer a patient suffers from hypertension, the less adherent they are to treatment. Older adults who take hypertension medication continuously feel bored and only take the medication when symptoms such as headaches, dizziness, body weakness, and others appear. Long-term treatment causes boredom, resulting in low compliance among older adults in taking medication. Based on the opinion of researchers, the level of elderly compliance in taking medication is in the moderate category. This is because taking hypertension medication is lifelong or long-term, which makes the elderly bored and bored, which results in a lack of compliance.

Vision and hearing problems. Additionally, insufficient social support and isolation may worsen adherence. Omboni (2019) stated that the challenges of medication adherence in the elderly are very diverse and complex. The complexity of drug regimens, cognitive impairment such as dementia, and drug side effects such as dizziness and nausea often lead to confusion and noncompliance. Vision and hearing problems can hinder seniors' ability to read medication labels and follow medical instructions. Lack of social support also makes it difficult for older adults who live alone to manage their medication.

Implications

This research has important implications in various aspects. Practically, the research results show the need to improve health education for the elderly so that they better understand the importance of complying with hypertension treatment. Education can be done through simple approaches such as illustrated leaflets or group counseling, especially for elderly people with low levels of education. In a clinical context, this study emphasizes the importance of a multidisciplinary approach involving health professionals, families, and communities to support treatment adherence. Regular monitoring and interventions such as technology-based medication reminders are also recommended.

From a policy perspective, this research can encourage local governments to allocate resources to programs to increase medication compliance, such as hypertension exercises and health campaigns that are integrated with promoting healthy lifestyles. This research also provides a basis for further studies exploring factors that influence medication adherence and can be used as a guide in developing training modules for health workers. These findings can potentially improve hypertension management in the elderly, prevent complications, and reduce the national health burden.

Limitations and Recommendations

This research has several limitations, such as the use of descriptive methods with a cross-sectional approach, which does not allow analysis of cause-and-effect relationships. The research location, which is limited to the work area of the Aranio Community Health Center, also limits the generalizability of the results. Additionally, data collected via the MMAS questionnaire is susceptible to respondent subjectivity bias, and the study did not explore other factors that may influence adherence, such as family support or access to health services.

To overcome this limitation, further research is recommended to use a longitudinal design to evaluate changes in adherence over a more extended period. Similar studies must also be conducted in broader populations and locations to increase generalizability. More comprehensive health education, such as through digital technology or group counseling, is also recommended to support treatment adherence. In addition, multidisciplinary collaboration involving families and health workers needs to be strengthened, and validation of measuring tools such as the MMAS questionnaire must be

carried out to be more appropriate to the local cultural context.

CONCLUSIONS

This study found that the level of medication compliance among elderly people with hypertension in the Aranio Community Health Center service area is moderate, indicating the need for targeted interventions. Elderly patients must enhance their adherence to medication to effectively manage hypertension and prevent complications. Nurses and healthcare providers play a crucial role in educating and supporting elderly patients, ensuring regular follow-ups and establishing a structured medication schedule. Collaborative efforts involving families and healthcare professionals are essential to address barriers to compliance. Future studies are recommended to explore other influencing factors such as social support and access to healthcare, as well as to expand the scope to a broader population.

Declaration of Interest

In the process of conducting research until the publication of research results, there is no conflict of interest between the researcher and related parties.

Funding

In this study, there are no sponsors or other funders, this research is conducted independently.

Acknowledgment

The researcher would like to thank College of Health Sciences Intan Martapura for providing the opportunity for researchers to conduct this research, then we also thank the respondents and our research site for their cooperation.

Authors' Contributions

All authors contributed substantially to the conceptualization, design, data curation, formal analysis, interpretation, writing, review, and editing of the paper. All authors approve the final version to be published.

Data Availability

The datasets generated during and analyzed during the current study are available from the corresponding author upon reasonable request.

REFERENCES

Ahmad Assiddiqy. 2020. Hubungan Kualitas Tidur Dengan Tekanan Darah Pada Lansia Di Posyandu Lansia RW II Puskesmas Kedungkandang Kota Malang. Jurnal Kesehatan Mesencephalon, Vol 6, No. 1.

Akbar, F., Darmianti, Arfan, F., & Putri, A. (2021). Pelatihan dan Pendampingan Kader Posyandu Lansia di Kecamatan Wonomulyo. Jurnal Abdidas,2(2)

Azzahro,(2019). Kualitas tidur berhubungan dengan perubahan tekanan darah pada lansia. Jurnal Kesmas Asclepius.

Aspiani, R. yuli. (2016). Asuhan Keperawatan Klien Gangguan Kardiovaskular.

Andarmayo, S. (2018).Laporan Akhir Ipteks Bagi Masyarakat (ibm) Internal Tahun Anggaran 2017/2018.

Afina, N.A., 2018. Gambaran Kepatuhan Minum Obat Antihipertensi Pada Lansia Hipertensi di Posbindu Sumber Sehat Desa Kangkung Sragen.

Burnier, M., & Egan, B. M. (2019). Kepatuhan dalam hipertensi: tinjauan prevalensi, faktor risiko, dampak, dan pengelolaan. Circulation Research, 124(7), 1124-1140.

Dinas Kesehatan Kabupaten Banjar. 2022. Profil Kesehatan Kabupaten Banjar 2021.

Erlina Fazriana, dkk. 2023. Hubungan Kualitas Tidur Dengan Tekanan Darah Pada Lansia Risiko Di Puskesmas Linggar Kabupaten Bandung. Health Information : Jurnal Penelitian, 15(2), Version 1.

Hariawan, H., & Tatisina, C. M. (2020). Pelaksanaan Pemberdayaan Keluarga Dan Senam Hipertensi Sebagai Upaya Manajemen Diri Penderita Hipertensi. Jurnal Pengabdian Masyarakat.

Harijanto, W., Rudijanto, A., & N, A. A. (2015). Pengaruh Konseling Motivational Interviewing terhadap Kepatuhan Minum Obat Penderita Hipertensi Effect of Motivational Interviewing Counseling on Hypertension Patients's Adherence of Taking Medicine. Jurnal Kedokteran Brawijaya, 28(4), 354–353.

Handayani, S., Nurhaini, R., & Aprilia, T. J. (2019). Faktor-Faktor yang Mempengaruhi Kepatuhan Pasien Dalam Mengkonsumsi Obat Antihipertensi Di Puskesmas Jatinom. CERATA Jurnal Ilmu Farmasi, 10(2), 39-44

Kemenkes RI. 2019. Laporan Riset Kesehatan Dasar Riskesdas 2018. Badan Penelitian dan Pengembangan Kesehatan Kementerian RI Jakarta.

Lailatushifah, S. N. F. (2012). Kepatuhan pasien yang menderita penyakit kronis dalam mengkonsumsi obat harian. Naskah Publikasi. Yogyakarta: Fakultas Paikologi, Universitas Mercu Buana Yogyakarta

Sumarwan. (2013). Metodologi Penelitian Ilmu Keperawatan : pendekatan praktis. Salemba Medika

Notoadmojo, & Soekidjo. (2012). Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta.

Novi Maulana. 2021. Kualitas Tidur Berhubungan Dengan Tingkat Hipertensi Pada Lansia

Penderita Hipertensi. Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal, 11 (4)

Nursalam. (2017). Metodologi Penelitian Ilmu Keperawatan : pendekatan praktis. Salemba Medika: Jakarta

Omboni, S., & Caserini, M. (2018). Efektivitas intervensi apoteker dalam pengelolaan penyakit kardiovaskular. Open Heart, 5(1). Swarjana, I. K. (2015). Metodologi Penelitian Kesehatan. (M. Bendatu, Ed.) (Edisi Revi). Yogyakarta: CV. Andi Offset.

Susanto, D. H., Fransiska, S., Warubu, F. A., Veronika, E., & Dewi, W. W. P. (2018). Faktor Risiko Ketidakpatuhan Minum Obat Anti Hipertensi pada Pasien Hipertensi di Puskesmas Kecamatan Palmerah Juli 2016.Jurnal Kedokteran Meditek

Salma. (2020). Aktivitas Fisik Sebagai Faktor Penyebab Tekanan Darah Pada Penderita Hipertensi. Jurnal Keperawatan STIKES Yogyakarta.

Sari, dkk. 2021. Hubungan Kualitas Tidur dengan Derajat Hipertensi pada Lansia di Puskesmas Sintuk Tahun 2021. Baiturrahmah Medical Journal, 1(2).

Syahda Mutiara Dewi, dkk, 2021. Hubungan Konsumsi Alkohol Dan Kualitas Tidur Terhadap Kejadian Hipertensi. Jurnal Keperawatan Hang Tuah, 1(2)

Sugiyono. (2017). Metode Penelitian Kuantitau, Kualitatif dan R&D. Bandung: Alfabeta..

Thirunavukarasu, M. &. (2018). Hypertension The Silent Killer A Guide For Primary Cre Physicians and Healthcare Professionals. Kumaran Book.

Triyanto. (2018). Pelayanan keperawatan Bagi Penderita Hipertensi secara terpadu . Yogyakarta.

\Purwo Setio Nugroho, Yonita Sari. 2019. Hubungan Tingkat Pendidikan Dan Usia Dengan Kejadian Hipertensi Di Wilayah Kerja Puskesmas Palaran. Jurnal Dunia Kesmas, 8(4)

Wulandari, D. H. (2018). Analisis Faktor-Faktor yang Berhubungan dengan Kepatuhan Pasien Tuberkulosis Paru Tahap Lanjutan Untuk Minum Obat di RS Rumah Sehat Terpadu Tahun 2015

WHO. 2017. Topik Penyakit. Diakses http//apps. who.int/gho/data/node.main. A875STAND.