Increasing The Ability to Manage Hypertension Care in The Elderly Using a Pocket Book

Mia Fatma Ekasari*, Aan Nurhasanah, Eros Siti Suryati, Siti Badriah,
Puspita Hanggit Lestari, Dzia Ulhaq Rohadatul Aisy, Pudjiati, Tien Hartini
Poltekkes Kemenkes Jakarta III, Indonesia
**email: miafatma74@gmail.com*

ABSTRACT

Family support is very influential in the success of hypertension care management through health education or information education about hypertension care, one of which is by using a pocket book containing information about hypertension care management for the elderly. The aim of the research was to determine the family's ability to manage hypertension in the elderly using a pocket book. This research uses a quasi-experimental design with a pre-test and post-test control group design approach. of 70 families selected by purposive sampling. Data was collected using a pretest in the treatment group and control group to determine the basic values used to determine the influence of the independent variables. The treatment group was given intervention through the provision of pocket books; while the control group received a booklet about high blood pressure. The results of data collection were analyzed using univariate and bivariate using the t test. The results of this study found that after the intervention was implemented in the intervention group there were differences in knowledge, attitudes and skills between the intervention group and the control group. Researchers suggest using pocket books as a medium to increase the family's ability to manage hypertension in the elderly.
Keywords*: Elderly; Hypertension ;Pocket books.*

ABSTRAK
Dukungan keluarga sangat berpengaruh dalam keberhasilan penatalaksanaan perawatan hipertensi melalui pendidikan kesehatan atau edukasi informasi tentang perawatan hipertensi salah satunya dengan menggunakan buku saku yang berisi informasi tentang penatalaksanaan perawatan hipertensi lansia.Tujuan penelitian ingin mengetahui kemampuan keluarga mengelola hipertensi pada lansia menggunakan buku saku. Penelitian ini menggunakan *desain quasi eksperimen* dengan pendekatan *pre-test* dan *post-test control group design*. terhadap 70

keluarga yang dipilih secara *purposif sampling*. Data dikumpulkan menggunakan Pretest pada kelompok perlakuan dan kelompok kontrol untuk mengetahui nilai dasar yang digunakan untuk mengetahui pengaruh variabel independen. Kelompok perlakuan diberikan intervensi melalui pemberian buku saku; sedangkan Kelompok kontrol mendapat *booklet* tentang tekanan darah tinggi. Hasil pengumpulan data dianalisis menggunakan *univariate*, dan *bivariate* menggunakn uji t test, Hasil penelitian terdapat perbedaan pengetahuan, sikap, dan keterampilan antara kelompok intervensi dan kelompok kontrol. Peneliti menyarankan agar penggunaan buku saku sebagai media dalam meningkatkan kemampuan keluarga dalam mengelola hipertensi pada lansia.

Kata Kunci: Lansia; Hipertensi; Buku saku

INTRODUCTION

The number of elderly people is increasing from year to year, this is due to one of the reasons for the increasingly advanced health sector. Globally, there were 727 million people aged 65 years or more in 2020 (Martono, 2018). This number is projected to double to 1.5 billion by 2050. Over the last fifty years, the percentage of the elderly population in Indonesia has increased from 4.5 percent in 1971 to around 10.7 percent in 2020 (Tobe, 2022). This figure is projected to continue to increase until it reaches 19.9 percent in 2045.

As they age, the majority of elderly suffer from non-communicable diseases because the degenerative process reduces the physiological function of the elderly (Kemenkes.RI, 2017). Non-communicable diseases (NCDs) experienced by the elderly are degenerative, namely heart disease, diabetes mellitus, stroke, rheumatism and injury (BPS, 2021).

The results of research by Irawati Novita1, et al (2023) concluded that the results of implementation based on Evidence Based Nursing Practice (EBNP) on hypertensive clients showed that providing hypertension self-care management education with a hypertension control book was considered effective in increasing knowledge of self-care management in families to overcome hypertension.

The role of family and community is very important in improving the health status and quality of life of the elderly, namely through changing behavior towards clean and healthy living behavior in family and community settings, improving the environment (physical, psychological, socio-cultural, economic), helping to provide health services through promotive, preventive, curative, rehabilitative strategies, and participating in the process of control and evaluation of the implementation of elderly services (Madanih, 2021); (Muttaqin, 2018). The most important thing about health services is the awareness of each individual to maintain health and prepare for old age as

well and as early as possible (Erna, 2010)(Hassanah, 2016)

Based on the results of Riskesdas in 2018, the most common disease among the elderly was hypertension at 63.5% (Kemenkes.RI, 2018). Hypertension is the main cause of premature death in the world (Kemenkes RI, 2019b). If a person suffers from hypertension, further complications are likely to occur, kidney disease, myocardial infarction (MI), heart failure, and stroke, (Sharon L. Lewis, Margaret M., Jeffrey Kwong, 2014) The higher the blood pressure, the greater the risk of suffering from other diseases (Hardi, K & Huda, 2015). This is not in line with efforts to control hypertension which continue to be promoted by the government (Kementerian Kesehatan RI, 2022).

The prevalence rate for controlled hypertension is only 4% and uncontrolled 56.4% (Kemenkes RI, 2019a) The reason is because elderly people do not follow healthy living behavior, including not controlling it regularly, not doing the right diet, sleeping irregularly, lack of exercise. and stress (WHO, 2023). High blood pressure can be controlled through a healthy lifestyle. However, there are still many patients who do not practice healthy behavior, and the frequency of high blood pressure is increasing (Sekunda, Tokan and Owa, 2021).

The family is a support system that helps maintain the health of the elderly. The role of a family nurse includes the family's ability to recognize health problems in the elderly, make decisions about elderly health problems, care for family or sick elderly people, and provide appropriate responses to changes in the elderly, using healthy health facilities. Proven to influence elderly behavior in preventing hypertension complications (Primasari, Devianto and Intan Sari, 2022)

Family support is very influential in the successful management of hypertension treatment. Family support influences behavior to prevent hypertension recurrence. The greater the family support for elderly people with high blood pressure, the better their behavior in preventing hypertension. Families can help elderly people to develop a healthier lifestyle and can take the time to check their blood pressure regularly (Pratiwi, Bayhakki and Zukhara, 2021). Family support influences elderly compliance in taking anti-hypertension medication and improves the elderly's quality of life (Sasmita, Utomo and Nauli, 2021)

Factors needed to strengthen family support to encourage elderly compliance in managing hypertension care are health education about hypertension treatment and feedback after obtaining information

about hypertension (Widiandari, Widiani and Rosdiana, 2018). Information support has an important contribution in improving the quality of life of hypertensive elderly (Astuti, 2016).

Based on the above phenomenon, research was conducted as an effort to carry out health promotion activities for the elderly to improve the health of elderly people with hypertension health problems. Researchers designed a pocket book containing information regarding the management of hypertension elderly care. This pocket book is designed not only as a medium of information and education for the elderly but also as a medium used to guide the elderly in managing daily hypertension care. In this study, researchers measured the effect of using pocket books on the management of hypertension care in the elderly in the DKI Jakarta area.

METHOD

This research uses quasi experimental design with approach pre test-post test with control group design. A pre-test was carried out on the intervention group and control group to determine the value baseline used and to determine the effect of providing independent variables. The intervention group was given a pocket book. Meanwhile, the control group received pamphlet media. At the end of the study, both groups completed a posttest. The results of the pretest and posttest after the intervention, as well as the results of the treatment and control groups were then compared. This research was conducted in the target area of Cakung District, East Jakarta. The sample in this study was 70 for the intervention group and 70 for the control group. Samples are determined based on the method purposive sampling with inclusion criteria: All elderly (60-74 years), live with family (husband, wife, children, in-laws, grandchildren), able to use writing tools, able to speak Indonesian and communicate well, able to read and write, able to do activities, not bed rest, not experiencing visual or hearing problems and willing to be respondents.

DISCUSSION

1. **Description of the Characteristics of the Elderly**

The results of the analysis of the characteristics of the elderly in the two groups based on age and duration of illness are as follows:

Table 1 provides an overview of the characteristics of the intervention and control groups. The majority are aged between 65 and 74 years. both groups were educated women, the majority had primary education, and the jobs in the intervention and control groups were civil servants. On

the other hand, the majority of the intervention and control groups were Sundanese..

2. Differences in knowledge, attitudes and skills scores before and after intervention with the use of pocket books

Analysis results Table 2. There is a significant difference in the knowledge variable of the intervention group and the control group before and after the intervention using pocket books and the difference in grades mean the increase in knowledge is a p-value = 0,000. Value mean score The difference in the average score of the intervention group was 3.157 and the difference in the average score was 0.043. In addition, the results of the attitude variable analysis showed that there were significant differences between the intervention group before and after the intervention paperback (p value = 0.000), and there is a difference in the average increase in attitude scores. The difference in scores in the intervention group is quite large (value difference = 6.314), and the average difference in scores in the intervention group is 0.014.

Likewise, the skills variable shows a significant difference in the use of pocket books in the intervention group before and after the intervention (p-value = 0.000), which shows that there is a difference in the mean value of control for increasing skill scores. The mean difference in scores for the intervention group was 7.257, while the mean difference in scores for the control group was 0.000.

The results of the analysis in table 3 show that there is a difference in knowledge about the results of the analysis in Table 3 show that there is a difference in knowledge about the elderly between the intervention group and the control group after the intervention on the use of pocket books (p=0.001). Likewise, there were differences in the attitudes of the elderly between the intervention and control groups (p = 0.018). Likewise, after the pocket book use intervention, there were differences in elderly skills between the intervention and control groups (p = 0.007).

Table 1. Distribution of Elderly Characteristics Based on Age, Gender, Education, Occupation, Ethnic Origin Nation, Duration of illness

Variable	Ex. Intervention		Ex. Control		Total	
	N	%	N	%	N	%
Elderly Age						
1. $\leq$ 65 years old	32	45,7	30	42,9	62	44

Variable	Ex. Intervention		Ex. Control		Total	
	N	%	N	%	N	%
2.$\geq$ 65 years old	38	54,3	40	57,1	78	56
Gender						
1. Male	21	30	20	28,6	41	29
2. Female	49	70	50	71,4	99	71
Education						
1.Primary school	36	51,4	47	67,1	83	59
2.Junior high school	11	15,7	7	10	18	12
3. Senior high school	21	30	15	21,4	36	25
4. Academy/PT	2	2,9	1	1,4	3	2
Pekerjaan						
1. Government Employees	60	85,7	59	84,3	119	85
2.Private sector employee	3	4,3	3	4,3	6	4
3.Entrepreneur	6	8,6	7	10	13	9
4. Labor	1	1,4	1	1,4	2	1
Ethnic Group						
1. Java	19	27,1	19	27,1	38	27
2. Betawi	7	10	7	10	14	10
3. Sundanese	18	25,7	38	54,3	56	40
4. Sumatra	26	37,1	6	8,6	32	22
Duration of Hypertension						
1. One year	47	67,1	36	51,4	83	59
2. Two years	8	11,4	15	21,4	23	17
3. Three years	13	18,6	19	27,1	32	23
4. Five years	1	1,4	0	0	1	1

Table 2. Analysis of Knowledge, Attitude and Skill Scores Before and After the Pocket Book

Use Intervention

Variable	Group	Mean	SD	95% CI	T	P value
Score	Ex. Intervention					
	Before	5,39	1,739	--3.664-2.436	-12.436	**0.000**
	After	8,54	1,304			
	Difference	-3,157				
Knowledge	Ex. Kontrol					
	Before	5.38	1.739	-0.91-0.006	-.758	**0.083**
	After	5.43	1.742			
	Difference	0.043				
	Ex. Intervention					
	Before	26.93	2.688	-7.260-5.168	-11.852	**0.000**
	After	33.14	3.307			
Attitude	Difference	-6.214				
	Ex. Kontrol					
	Before	26.93	2.688	--035-	5575	**0.567**
	After	26.04	2.691	0.480064		
	Difference	-0.014				
	Ex. Intervention					
	Before	25.04	3.303	-8.735-5.779	-9.795	**0.000**
	After	32.30	4.836			
Skills	Difference	-7.257				
	Ex. Kontrol					
	Before	25.04	3.303	--041-0.041	0	**0.1000**
	After	25.04	2.325			
	Difference	0				

Table 3. Analysis of knowledge, attitudes and skills scores after the Pocket Book Use intervention

Variabel	Group	N	Mean	SD	95% CI	F	P value
Knowledge	Intervention	70	8,54	1.304	2.600-3.628	11.417	**0.001**
	Control	70	5.43	1.741			
Attitude	Intervention	70	33,14	3.307	5.221-7236	5.762	**0,018**
	Control	70	26.91	2.691			
Skills	Intervention	70	32,3	4838		7.618	**0.007**

Control	70	25.04	3.325	5.870-8.644		

RESULT

The age characteristics of the elderly in this study for intervention were ≥ 67.14 years and for control 66.83 years. This age is the elderly category (Kemenkes RI, 2019b). The differences in the age characteristics of respondents in the intervention group and the control group indicate that this is normal and natural, because the respondents come from various regions and each respondent has a different mother who gave birth to them at a different time. Age is the period of time since a person existed and can be measured using time units from a chronological perspective. Normal individuals can be seen to have the same degree of anatomical and physiological development (Sonang et al., 2019). Age describes the same chronology and degree of anatomical and physiological development (Sonang, Purba and Pardede, 2019). A person's level of maturity can be seen from increasing age. Likewise, his level of maturity and strength in thinking become more mature. This causes elderly people to think about improving their health level.

As age increases, the physiological functions of the human body naturally decrease. This weakens the immune system and makes the elderly more susceptible to various diseases. When organs do not function properly, an elderly person's health may worsen. Additionally, age-related hormonal and metabolic changes may increase the risk of chronic diseases. Lifestyle factors such as unhealthy eating habits, lack of physical activity, and stress also worsen the health of the elderly, making them more vulnerable and susceptible to infectious and non-communicable diseases (Pratiwi, Untari and Robiyanto, 2020) one of them is hypertension.

Hypertension increases with age due to the presence of collagen in the muscle layer which thickens the walls of the arteries, thereby causing a decrease in the elasticity of the blood vessels, making them stiff. As we age, the body experiences natural changes that can increase the risk of hypertension. The elasticity of blood vessels decreases so they become stiff and narrow. In addition, decreased kidney function can disrupt the regulation of fluid and electrolyte balance in the body, thereby contributing to an increase in blood pressure.

Hormonal changes that occur in women during menopause can also be a risk factor. When combined with an unhealthy lifestyle, namely unhealthy eating patterns and lack of exercise, these factors further

increase the risk of high blood pressure in elderly people (Anwar and Masnina, 2019). Gender or gender has a significant relationship with the prevalence of hypertension in the elderly (Kusumawardana, Tamtomo and Sugiarto, 2017).

Gender is one of the factors that influences the increase in blood pressure which causes hypertension, this is because women who have gone through menopause experience a decrease in estrogen levels. This is in line with the theory put forward by Podungge (2020) which states that women who have not yet reached menopause are protected by the hormone estrogen which plays a role in increasing High Density Lipoprotein (HDL) levels. High HDL cholesterol levels are a protective factor in preventing the process of atherosclerosis (Riyadina, 2019 in Podungge, 2020). Research conducted by Everet and Zajacova (2015 in Falah, 2019) shows that men have higher levels of hypertension than women but Men have a lower level of awareness of hypertension than women, Hypertension in women can occur when a woman experiences menopause. A decrease in the hormone estrogen means there is no protection for blood vessels. The hormone estrogen plays a protective role in the cardiovascular system, especially in premenopausal women. One of these protective mechanisms is to increase

levels high-density lipoprotein (HDL). HDL has the function of removing excess cholesterol from the blood and returning it to the liver for processing. Therefore, HDL helps prevent plaque formation on artery walls. Therefore, high HDL levels are considered a protective factor against heart disease (Setyaningrum, 2021).

HDL cholesterol, often referred to as "good cholesterol", has an important role in protecting the body from atherosclerosis. HDL helps prevent plaque buildup on artery walls which is a hallmark of atherosclerosis.

The majority of education levels in this study were elementary school education, both for the control group (47 (67.1%) and for the intervention group 36 (51.4%). Education is the main foundation in forming a person's knowledge. Through a structured learning process, individuals obtain information , skills, and a broad understanding of various fields of science. Education allows individuals to connect various information, solve problems, and develop new ideas. The higher a person's level of education, generally the broader their knowledge and insight.

Whether behavior is good or bad is influenced by a person's level of education in receiving and processing information that will have an impact on their health

status. A behavior in preventing hypertension. A person's good knowledge regarding the causes, risk factors, signs and symptoms of hypertension as well as the limits of stable and unstable blood pressure, will make a person avoid triggers (Notoatmodjo, 2010)

People with low education tend to lack information on health, including hypertension, so they have difficulty receiving information about healthy lifestyles such as healthy diet, exercise and maintaining an ideal body weight.

Media is a means of providing health education with the aim of clarifying the information provided and can also facilitate the delivery of information, one example is a pocket book. Pocket book sa process of support and education self care management hypertension. Self care management is a procedure for individuals to regulate their own behavior. Which can encourage patients to use existing resources to manage the disease they are experiencing. Self care management for hypertension sufferers includes controlling blood pressure and medication, improving lifestyle and preventing future complications occurred (Sakinah, S., Ratu, J. M., & Weraman, P.,2020). This is in line with the results of research by Irawati Novita, Halina Rahayu, H. Amandus in 2023 which proves that the

use of pocket books as a component in intervention can help provide information in written form and assist patients in documenting activities and habits in managing hypertension.

Approach self-care education can be used as a self-regulation medium so that hypertensive elderly carry out the treatment program obediently. The use of a pocket book in managing hypertension provides enormous benefits because vital signs, especially blood pressure, are clearly monitored as well as other aspects.

The employment status of many respondents was working, either control with 84.3%, or intervention with 85.7%. Elderly work is an activity that can affect the physical aspects of the elderly and their quality of life (Rebokh, Rayanti and Natawirarindry, 2023).

The results of the analysis show that there are significant differences in knowledge, attitudes and skills in the intervention group and the control group before and after the intervention in using the Pocket Book. This shows that family knowledge regarding hypertension management has increased, which has led to changes in attitudes and behavior. Hypertension education using booklets or books is more effective than counseling in increasing hypertension diet compliance (Mohammed

Nawi *et al.*, 2021). Health education using pocket book media resulted in an increase in the average diet compliance score before and after (Lestari, Cantika Audia and Sriyati Sipora, 2023).

Health education requires learning media. Learning media acts as a very effective tool in the health education process. By utilizing various types of media, such as visual, audio, or a combination of both, the learning process becomes more interesting and interactive. Learning media not only functions to convey information more clearly and easily understood, but is also able to foster interest and motivation to learn. Using the right media, educational messages can be conveyed more effectively. Apart from that, learning media can also provide stimulation that stimulates students' thinking and creativity, so that they are more actively involved in the learning process (Lestari, Cantika Audia and Sriyati Sipora, 2023). Pocket books are a means of health promotion. The pocket book contains information about hypertension, meaning hypertension, serious complications in hypertension, decreased function of body organs due to degenerative processes (Cherfan *et al.*, 2020). One effective way to control hypertension is by providing health education using various interesting media, one of which is a pocket book.

Differences in knowledge, attitude and skill scores between groups using pocket books. The results of the study showed that there was a difference in knowledge among the elderly (p= 0.001) between the intervention group and the control group after the Pocket Book Use intervention. There were also differences in the attitudes of the elderly between the intervention group and the control group (p= 0.018). Likewise, after the intervention, there were differences in elderly skills (p= 0.007) between the intervention group and the control group.

Pocket books are a type of print media that can be used for health education. Books are intended to generate interest in educational subjects, provide incentives to achieve goals, and ensure that messages are communicated clearly to recipients (Kurniawan and Yani, 2021). Pocket books contain a collection of information about something as the main source and can be filled in by the user in the form of daily events or activities. The pocket book is an effort to keep the elderly healthy, active and productive.

Pocket books containing various information are printed media for health promotion. The pocket book is filled in by the user in the form of daily events or activities. Pocket books not only contain

written suggestions and instructions, but are also equipped with pictures, to make them more interesting to readers, so that more knowledge can be obtained through the senses of sight and others. This book provides examples of daily menus for hypertension sufferers, types of food and portion sizes, sodium intake and food sources, as well as monitoring diet patterns for hypertension sufferers.

CONCLUSION

The average age of respondents in the intervention group was 67.14 years, while in the control group the average age of the elderly was 66.83 years. There were differences in knowledge, attitudes and skills between the intervention group and the control group after the intervention was carried out in the intervention group.

It is hoped that the results of this research can be developed further as a means of increasing the family's ability to care for elderly people with hypertension. Health workers can distribute pocket books to families, cadres and patients with hypertension, thereby increasing the family's ability to care for elderly people with hypertension.

REFERENCES

Anwar, K. and Masnina, R. (2019) "Hubungan Kepatuhan Minum Obat Antihipertensi denganTekanan Darah Pada Lansia Penderita Hipertensi di Wilayah Kerja Puskesmas Air Putih Samarinda," *Borneo Student Research* , 1(1), pp. 494–501.

Astuti, A.D. (2016) "Dukungan Informasi Dari Keluarga Dapat Meningkatkan Kualitas Hidup Lansia Hipertensi," *Jurnal Wacana Kesehatan*, 1(2), pp. 1–10. doi:10.52822/jwk.v1i2.23.

BPS (2021) *Statistik Penduduk Lanjut Usia 2021*. Jakarta: Badan Pusat Statistik.

Cherfan, M. *et al.* (2020) "Unhealthy behaviors and risk of uncontrolled hypertension among treated individuals-The CONSTANCES population-based study," *Scientific Reports*, 10(1), pp. 1–12. doi:10.1038/s41598-020-58685-1.

Falah, M. (2019). Hubungan Jenis Kelamin Dengan Angka Kejadian Hipertensi Pada Masyarakat Di Kelurahan Tamansari Kota Tasikmalaya. Jurnal Keperawatan & Kebidanan STIKes Mitra Kencana Tasikmalaya,3(1), 88

Hardi, K & Huda, A. (2015) *Aplikasi Asuhan Keperawatan Berdasarkan Diagnosa Medis dan Nanda Nic-Noc Jilid 11*. Yogyakarta: Midiaction Publishing.

Kemenkes.RI (2017) *Profil Penyakit Tidak Menular Tahun 2016*. Kemenkes

RI.

Kemenkes.RI (2018) *Riskesdas, Kemenkes RI.*

Kemenkes RI (2019a) "Hipertensi/Tekanan darah tinggi," *Direktorat P2PTM*, pp. 1–10. Available at: http://p2ptm.kemkes.go.id/uploads/ VHcrbkVobjRzUDN3UCs4eUJ0dV Bndz09/2019/01/Leaflet_PDF_15_x _15_cm_Hipertensi_Tekanan_Darah _Tinggi.pdf.

Kemenkes RI (2019b) "Hipertensi Si Pembunuh Senyap," *Kementrian Kesehatan RI*, pp. 1–5. Available at: https://pusdatin.kemkes.go.id/resour ces/download/pusdatin/infodatin/inf odatin-hipertensi-si-pembunuh-senyap.pdf.

Kementerian Kesehatan RI (2022) "Infodatin Lansia 2022," *Report*, p. 8.

Kurniawan, Y. and Yani, S. (2021) "Efektifitas Pendidikan Kesehatan Berbasis Health Belief Model Terhadap Penyakit Kronis: A Systematic Review," *Riset Media Keperawatan*, 4(1), pp. 24–45.

Kusumawardana, I., Tamtomo, D. and Sugiarto (2017) "Relationship between Knowledge and Family Support regarding Hypertension with Blood Pressure Control in Elders," *Indonesian Journal of Medicine*, 02(01), pp. 1–9. doi:10.26911/theijmed.2017.02.01.0 1.

Lestari, R., Cantika Audia and Sriyati Sipora (2023) "Pendidikan Kesehatan Dengan Media Buku Saku Terhadap Kepatuhan Diet Hipertensi Di Desa Purwomartani Kalasan," *Jurnal Kesehatan Mercusuar*, 6(2), pp. 081–087. doi:10.36984/jkm.v6i2.420.

Maylasari, I. *et al.* (2019) *Statistik Pendudul Lanjut Usia*. Jakarta: BPS.

Mohammed Nawi, A. *et al.* (2021) "The Prevalence and Risk Factors of Hypertension among the Urban Population in Southeast Asian Countries: A Systematic Review and Meta-Analysis," *International Journal of Hypertension*, 2021. doi:10.1155/2021/6657003.

Podungge, Y. (2020). Hubungan Umur danPendidikan dengan Hipertensi pada Menopause. Gorontalo Journal of Public Health, 3(2), 154–161.

Pratiwi, G.F., Bayhakki and Zukhara, R.M. (2021) "Hubungan Dukungan Keluarga Dengan Prilaku Pencegahan Kekambuhan Hipertensi Pada Lansia," *Jurnal Online Mahasiswa*, pp. 20–28.

Pratiwi, N.P., Untari, E.K. and Robiyanto, R. (2020) "Hubungan Persepsi dengan Kualitas Hidup Pasien Hipertensi Lanjut Usia di RSUD Sultan Syarif Mohamad Alkadrie Pontianak," *JURNAL MANAJEMEN DAN PELAYANAN FARMASI (Journal of Management and Pharmacy Practice)*, 10(2), p. 118. doi:10.22146/jmpf.45579.

Primasari, N.A., Devianto, A. and Intan Sari, H. (2022) "Dukungan Keluarga dan Kepatuhan Konsumsi Obat Hipertensi pada Lansia: Literature Review," *Jurnal Penelitian Kesehatan "SUARA FORIKES,"* 13(4), pp. 34–39. Available at: http://forikes-ejournal.com/index.php/SF.

Rebokh, F.Y., Rayanti, R.E. and Natawirarindry, C. (2023) "Hubungan Perawat Edukator, Manajemen Hipertensi, Dan Usia

Pada Lansia," *Jurnal Keperawatan*, 16, pp. 563–572. Available at: http://journal.stikeskendal.ac.id/index.php/Keperawatan.

Sakinah, S., Ratu, J. M., & Weraman, P. (2020). Hubungan antara karakteristik demografi dan pengetahuan dengan self management hipertensi pada masyarakat suku timor: penelitian cross sectional. Jurnal Penelitian Kesehatan" SUARA FORIKES"(Journal of Health Research" Forikes Voice"), 11(3), 245-252

Sasmita, W., Utomo, W. and Nauli, F.A. (2021) "HUBUNGAN DUKUNGAN KELUARGA DAN KEPATUHAN MINUM OBAT ANTIHIPERTENSI DENGAN KUALITAS HIDUP LANSIA PENDERITA HIPERTENSI DI WILAYAH KERJA PUSKESMAS.pdf."

Sekunda, M.S., Tokan, P.K. and Owa, K. (2021) "Hubungan Faktor Predisposisi dengan Kepatuhan Pengobatan bagi Penderita Hipertensi," 6(1), pp. 43–51.

Setyaningrum, H. (2021) "Faktor-faktor yang Mempengaruhi Hipertensi Pada Lansia : Scoping Review Prosiding Seminar Nasional Kesehatan 2021 Lembaga Penelitian dan Pengabdian Masyarakat Universit," pp. 1790–1800.

Sharon L. Lewis, Linda Bucher, Margaret M. Heitkemper, Mariann M. Harding, Jeffrey Kwong, D.R. (2014) *Medical Surgical Nursing; Assessment and Management of Clinical*. Missouri: Elsevier.

Sonang, S., Purba, A.T. and Pardede, F.O.I. (2019) "Pengelompokan Jumlah Penduduk Berdasarkan Kategori Usia Dengan Metode K-Means," *Jurnal Teknik Informasi dan Komputer (Tekinkom)*, 2(2), p. 166. doi:10.37600/tekinkom.v2i2.115.

WHO (2023) "Hypertension." Available at: https://www.who.int/news-room/fact-sheets/detail/hypertension.

Widiandari, T.D., Widiani, E. and Rosdiana, Y. (2018) "Hubungan Dukungan Keluarga Terhadap Motivasi Lansia Dalam Pengelolaan Penyakit Hipertensi Di Poli Interna RST Dr. Soepraoen Malang," *Nursing News*, 3(1), pp. 785–790. Available at: https://publikasi.unitri.ac.id/index.php/fikes/article/view/784/611.