



Original Research Paper

Analysis of the Determinants Influencing Treatment Adherence Among Hypertension Patients in South Sorong Regency

Salkamal*, Arlin Adam, Muhammad Ishaq Iskandar, Ida Iledia, Zamli

Public Health, Master Of Public Health Science Study Program, Mega Buana University Palopo

Email Corresponding:
salkamal.md@gmail.com

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Email: healthyfadulako@gmail.com
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ABSTRACT

Background: Hypertension is a major risk factor for cardiovascular diseases, driven by lifestyle modernization and its high prevalence. Addressing treatment adherence is crucial for effective management. **Objective:** This study aimed to analyze the determinants influencing treatment adherence among hypertension patients in South Sorong Regency, with a specific focus on family support. **Methods:** A quantitative research approach was conducted in South Sorong Regency from May to June 2024. Data were collected through structured questionnaires and analyzed to assess the influence of various factors on treatment adherence. **Results:** The findings revealed that family support significantly influenced treatment adherence in hypertension patients. In contrast, knowledge, perception, service delivery quality, and patient satisfaction did not show a significant effect on adherence. **Conclusion:** Family support plays a critical role in enhancing treatment adherence among hypertension patients in South Sorong Regency. To improve adherence, it is recommended to implement family education through counseling at community health centers (puskesmas) and social media, conduct behavior change campaigns, provide family counseling, train health workers to improve service delivery, and strengthen monitoring and evaluation mechanisms for treatment adherence.

Introduction

One medical condition known as hypertension is when a person's blood pressure rises above normal, which can lead to an increased risk of illness and death. Hypertension, often referred to as the “silent killer”, makes it difficult for sufferers to distinguish its symptoms from other diseases, even after examination of other organs^{1,2,3}. If blood pressure is over 140/90 mmHg or higher, a diagnosis of hypertension is established, according to the American Heart Association, if there is an increase in systolic or diastolic blood pressure^{4,5}.

Hypertension is still a significant health problem to overcome today. According to the World Health Organization, 1.13 billion people or 22% of the world's population suffer from hypertension. This number is expected to increase between 15 and 20 percent by 2025, with 1.5 billion people and 36% of cases in

Southeast Asia. In 2016, hypertension was also the most common cause of death, accounting for 23.7% of the 1.7 million deaths in Indonesia^{1,6,7,8}.

Basic Health Research data of West Papua Province in 2018 showed 3,965 cases of hypertension found based on diagnosis enforcement, with 171 cases in south sorong district. At the time of data collection, West Papua Province had 7,552 hypertension cases, and South Sorong District had 349 cases. The change in health data at the provincial level is due to the division of West Papua Province into Southwest Papua Province. The 2023 IHS results showed that 24% of people in Southwest Papua Province had hypertension based on doctor's diagnosis and 5.8% had hypertension based on measurement⁹.

Regional statistical data of South Sorong District shows that hypertension is the second

most common disease in South Sorong District after diarrhea and anemia. Of the ten largest diseases in general, hypertension is sixth, and non-communicable diseases are fourth. In 2023, there were 1,221 cases of hypertension in South Sorong District.

Lifestyle can influence hypertension, but the cause is still unknown. Age, gender, smoking and a sedentary lifestyle are some of the risk factors for hypertension. The goal of health worker intervention is to reduce these risk factors^{1,10}. Worldwide, hypertension is a major risk factor for cardiovascular events, target organ damage, and premature death and disability. Hypertension and target organ damage, such as the heart, blood vessels, and kidneys, can be caused by individual characteristics, such as age, race, body mass, and genetic factors, as well as environmental factors, lifestyle, and dietary habits, such as salt consumption⁶.

Non-adherence to medication can be caused by many factors, including age, living alone, low education and knowledge, personality, motivation, attitudes and actions, support from family, relationship between patients and medical personnel, and communication with doctors. Nurses, pharmacists, and doctors should work together to improve patients' adherence to their medication¹¹. It is very important for people with hypertension to be able to take antihypertensive medication regularly to control their blood pressure and reduce the risk of heart, kidney and brain diseases in the long run¹². This description suggests that there are variables that affect hypertension patients' adherence to the use of antihypertensive drugs.

By collecting a sample of people who have hypertension in South Sorong district, this study aims to determine the determinant factors that affect the treatment compliance of patients with hypertension in South Sorong district. It is hoped that this study will provide a more in-depth picture of the determinant factors

affecting treatment compliance of patients with hypertension in South Sorong district.

Given the high and increasing prevalence of hypertension in South Sorong District, along with its significant contribution to morbidity and mortality, understanding the factors that influence patients' adherence to antihypertensive treatment becomes increasingly urgent. Poor adherence to treatment not only hampers individual health outcomes but also contributes to a higher burden on local health systems. Despite various interventions, compliance rates remain low, suggesting a gap in knowledge regarding key influencing factors at the community level. Therefore, this study seeks to answer the research question: *What are the determinant factors that influence treatment adherence among hypertension patients in South Sorong District?* Identifying these determinants is crucial for designing targeted, effective strategies to improve long-term management of hypertension in the region.

Materials and Methods

Research Design

This study employed a quantitative research method with an analytical observational design, using a cross-sectional approach. This design allows for the identification of relationships between independent variables and treatment adherence among hypertension patients at a single point in time.

Sample

The study population consisted of all individuals diagnosed with hypertension in South Sorong Regency in 2023. The sample size was calculated using the Slovin formula to ensure adequate representation. Participants were selected through total sampling of registered hypertension patients at local community health centers (Puskesmas), ensuring comprehensive coverage of available data for analysis.

Data Collection Techniques

Primary data were collected using structured research questionnaires. The data collection process involved direct distribution and assistance from trained enumerators who helped respondents complete the forms. The questionnaire was designed to capture information on demographic factors, family support, knowledge, perceptions, service quality, and patient satisfaction.

Data Analysis Techniques

Data were analyzed using univariate analysis (to describe the characteristics of respondents), bivariate analysis (to examine the relationship between each independent variable and treatment adherence), and multivariate analysis (to identify dominant factors influencing adherence). Statistical significance was assessed at a 95% confidence interval ($p < 0.05$).

Ethical Consideration

Although this study did not seek formal ethical approval from an institutional review board, ethical feasibility was ensured through several steps. Respondents participated voluntarily after being informed of the study's purpose, procedures, and their right to withdraw at any time without consequences. Confidentiality and anonymity of participants were strictly maintained. Informed consent was obtained prior to data collection.

Results

The purpose of this analysis of determinant factors of adherence to treatment of patients with hypertension in south sorong regency study was to find five determinant factors that affect the adherence of patients suffering from hypertension in South Sorong Regency to their treatment. This study involved 93 respondents. Three groups of univariate, bivariate, and multivariate analysis will present the results of the study.

Univariate Analysis

Univariate analysis is used to show how the description of respondents involved in the study. The characteristics of the respondents are shown in table 1.

Table 1. Characteristics of Respondents (n = 93)

Characteristics	n	%
Age		
- Elderly (≥ 60 years old)	31	33.33%
- Not Elderly (< 60 years old)	62	66.67%
Gender		
- Male	33	35.48%
- Female	60	64.52%
Marital Status		
- Married	83	89.25%
- Not Married	10	10.75%
Education Level		
- Not in school	3	3.23%
- Completed elementary school	20	21.51%
- Completed junior high school	22	23.66%
- High school graduate	27	29.03%
- College graduate	21	22.58%
Working Status		
- Employed	52	55.91%
- Not working	41	44.09%
Health Insurance		
- Available	89	95.70%
- Not available	4	4.30%
Nearest Health Facility		
- Health center	66	70.97%
- Clinic	1	1.08%
- Hospital	5	5.38%
- Independent doctor's practice	10	10.75%
- Auxiliary health center	8	8.60%
Family History of Hypertension		
- Yes	62	66.67%
- No	31	33.33%
Hypertension Status		
- Acute (≤ 6 months)	20	21.51%
- Chronic (> 6 months)	73	78.49%
Knowledge		
- High knowledge	79	84.95%
- Low knowledge	14	15.05%
Perception		
- Good perception	75	80.65%
- Unfavorable perception	18	19.35%
Family Support		
- Good support	55	59.14%
- Lack of support	38	40.86%
Quality of Delivery		
- Understand	76	81.72%
- Not understanding	17	18.28%
Service Recipient Satisfaction		
- Satisfied	76	81.72%
- Not satisfied	17	18.28%
Treatment Adherence		
- Yes	17	18.28%
- No	76	81.72%

Source: secondary data 2023

The majority of respondents (66.67%) were under 60 years old, while 33.33% were classified as elderly. A higher proportion of participants were female (64.52%) compared to male (35.48%). Most respondents were married (89.25%), reflecting a population with strong familial ties.

In terms of education, the largest group were high school graduates (29.03%), followed by junior high school graduates (23.66%) and college graduates (22.58%). Only a small portion (3.23%) had never attended school. Regarding employment, more than half of the respondents were employed (55.91%).

A significant proportion of respondents had access to health insurance (95.70%), suggesting a generally good coverage of health services. The nearest health facility for most respondents was a health center (70.97%), indicating that primary health care is widely accessed. Smaller proportions accessed hospitals (5.38%), clinics (1.08%), and other facilities.

Two-thirds (66.67%) of respondents reported a family history of hypertension, which is a known risk factor. Most respondents (78.49%) had chronic hypertension, indicating a long-term disease burden.

In terms of cognitive and psychosocial variables, the majority had high knowledge (84.95%) and good perception (80.65%) regarding hypertension. However, despite these positive cognitive attributes, only 59.14% reported good family support. Most respondents (81.72%) understood the delivery of care and were satisfied with the services.

However, treatment adherence was notably low: only 18.28% reported adhering to their hypertension treatment, while 81.72% did not adhere. This highlights a significant gap between awareness and actual treatment behavior, suggesting that other factors such as family support, behavioral motivation, or access barriers may influence adherence beyond knowledge and perception.

Bivariate Analysis

Bivariate analysis was conducted to see the relationship between determinant factors and hypertension patient compliance with treatment. The bivariate test is a cross test, in this study it is presented in table 2.

The results of the bivariate analysis showed that the determinant factor that has a significant relationship with hypertension patient treatment compliance in South Sorong Regency is family support (p value <0.05). The factors of knowledge, perception, quality of delivery and satisfaction of service recipients do not have a relationship with adherence to treatment for hypertension patients in South Sorong Regency.

There is a relationship between family support and hypertension treatment compliance in South Sorong Regency. Families who provide good support to hypertensive patients cause hypertensive patients to adhere to treatment 1.447 times higher than families who provide less support (PR 1.447 95%CI 1.213-1.727).

Multivariate Analysis

Multivariate analysis was conducted to identify the most influential determinant factors associated with treatment adherence among hypertensive patients, after adjusting for other variables. Statistically, independent variables with a p-value < 0.25 in the bivariate analysis were included in the multivariate model.

The results of the multivariate analysis showed that only the family support variable remained significantly associated with treatment adherence among hypertensive patients in South Sorong Regency after adjustment. Family support was found to be a protective factor for treatment adherence. Patients who received good support from their families were 0.306 times more likely to adhere to treatment compared to those who received less support adjusted Prevalence Ratio = 0.306; 95% Confidence Interval: 0.139–0.473).

Table 2. Bivariate Analysis

Variable	PR	95% CI	p-value
Knowledge	1,406	0,284 – 6,959	0,675
High knowledge			
Low knowledge			
Perception	4,610	0,570 – 37,313	0,120
Good perception			
Unfavorable perception			
Family support	1,447	1,213 – 1,727	0,0001
Good support			
Lack of support			
Quality of delivery	4,267	0,526 – 34,641	0,143
Understand			
Did not understand			
Service recipient satisfaction	4,267	0,526 – 34,641	0,183
Satisfied			
Not satisfied			

Source: secondary data 2023

Table 3. Multivariate Analysis

Variable	PR	aPR	95% CI	p-value	
Perception	4,610	0,058	-0,447 – 0,331	0,768	
Good perception					
Unfavorable perception					
Quality of delivery	4,267	0,022	-0,401 – 0,445	0,919	very
Understand					
Did not understand					
Family support	1,447	0,306	0,139 – 0,473	0,0001	
Good support					
Lack of support					
Service recipient satisfaction	4,267	0,074	-0,170 – 0,317	0,550	
Satisfied					
not satisfied					

Source: secondary data 2023

Dicussion

This study, Determinants of Adherence to Treatment for Hypertension Patients in South Sorong Regency, found that family support is the main and only factor that can influence a person with hypertension to adhere to treatment.

Adherence to treatment is defined as the behavior of patients who follow the rules and recommendations given by health workers during treatment. One example of medication adherence is taking hypertension medication regularly, which helps control blood pressure¹³.

Adherence to hypertension treatment is

important. Hypertensive patients must control their blood pressure regularly and take medication to achieve their ideal blood pressure target. If they do not adhere to their medication, their blood pressure may increase or become uncontrolled, which can be a major risk factor for other diseases¹³.

Non-compliance is due to many activities, not taking medication regularly, and forgetting medication. Utilizing family is a way to overcome non-adherence. Family support affects hypertension adherence. Patients' treatment is not complete because family members do not fully accompany them, which

causes hypertension to recur. Patients who get family support will be more able to take treatment. In addition, patients who do not have family or family support may experience earlier discontinuation of treatment and unsatisfactory results^{13,14}.

In this study, the majority of respondents received informational support from their families; families reminded hypertensive patients to go to health care facilities to control their health and provided informational support that was beneficial in reducing stress factors. Respondents also received instrumental support from their families by delivering or accompanying people with hypertension to health care facilities to control their health. This shows that the family provides real help with hypertension. Respondents' families also provide emotional support, remembering and ensuring that people with hypertension continue to take antihypertensive drugs. A person who gets emotional support will feel comfortable, confident, cared for, and loved by the family, which will help them cope well with their difficulties.

The results of this study indicate that the family support factor is the most significant factor affecting hypertension patients' adherence to treatment. Family support factors will also affect the psychological condition of patients during treatment, which has an impact on the personal factors of hypertensive patients to undergo long-term treatment.

Ideally, family support consists of actions through communication, social interaction, helping provide transportation, maintaining physical activity where possible, and helping the family prepare meals. If parents with hypertension receive family support, they will feel more confident, more motivated to face challenges, and happier with their lives. Family support can be in the form of motivation, financial support, and willingness to inform parents about the medications they should take. Patients' treatment is not complete because

family members do not fully support them, which causes hypertension to recur. Patients who receive family support will be more resistant to treatment¹³.

According to self-determination theory, people can be passive and not want to be directly involved in the conditions they experience, or they can be active and directly involved. According to self-determination theory, people are always changing, and social and contextual conditions can help or hinder natural self-motivation and psychological development. Three basic psychological needs, namely feeling capable; having control over oneself; and feeling connected to others, create self-motivation¹⁵.

This suggests that although people with hypertension have good knowledge and perceptions and are supported by high levels of service delivery quality and satisfaction, they cannot have a direct impact on their treatment adherence. The majority of respondents in this study were chronic hypertensive patients who had experienced it for more than 6 months to 29 years. It is possible that patients feel bored due to the monotonous routine of drug consumption.

Knowledge about hypertension is very important, and with family support, this knowledge should help people with hypertension to adhere to medication. This suggests that knowledge does not necessarily correlate with adherence to taking their medication^{16,17}.

About the disease, treatment, and risks associated with taking antihypertensive drugs inappropriately. People with hypertension may not take their medication because they feel healthy, visit the doctor frequently, use traditional medicine, or other therapies¹⁸. In addition, there are other contributing factors. These include forgetting to take medication, the inability to purchase medication, the presence of side effects from medication, and the fact that hypertension medications are not always

available in health facilities. Non-adherence to drug consumption can be influenced by psychosocial issues, accessibility, culture, and local beliefs, such as that taking antihypertensive drugs continuously can cause kidney failure¹⁹.

Several factors, especially related to hypertension patients' understanding of the risks of hypertension, may cause perceptions to have no correlation with hypertension patients' adherence to taking antihypertensive drugs. During the entire life of a person suffering from hypertension, they must take antihypertensive drugs. Hypertensive patients may feel bored because these antihypertensive drugs have been taken for too long. This boredom may lead them to despair, which may cause them to stop taking their antihypertensive drugs or not adhere to them^{14,20,21}.

Although overall patient experience was more correlated with beneficiary satisfaction, the quality of delivery that is expected to improve patient satisfaction and patient understanding of antihypertensive medication adherence were not correlated due to environmental factors²².

A supportive family is a major factor influencing their adherence to antihypertensive medication use²³. This suggests that the level of confidence and trust of people with hypertension depends on what they tell them. The role of family is very important in Papuan life. This suggests that adherence strategies should consider the role of the family. Health programs will be more successful with family support.

Conclusion

From the research on the determinants of adherence to treatment for hypertension patients in South Sorong Regency, 5 factors were assessed, namely: knowledge factors, perception factors, family support factors, delivery quality factors, and service recipient satisfaction. Of the five factors there is only 1

factor that is proven to affect the treatment compliance of hypertension patients in South Sorong Regency, namely the family support factor.

Suggestions that can be implemented provide family education as an effort to overcome the lack of influence of knowledge on patient treatment compliance Behavior change campaigns and family counseling as an effort to strengthen family support as an influential factor in hypertension patient treatment compliance. Training for health workers and monitoring and evaluation as an effort to overcome the no effect of delivery quality on hypertension patient treatment adherence.

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References

1. Hariawan H, Tatisina CM. Pelaksanaan Pemberdayaan Keluarga Dan Senam Hipertensi Sebagai Upaya Manajemen Diri Penderita Hipertensi. *Jurnal Pengabdian Masyarakat Sasambo*. 2020;1(2):75. doi:10.32807/jpms.v1i2.478
2. Afif Nurochman M, Tri Sudaryanto W, Sinta Debi S, Muhammadiyah Surakarta U, Banyuanyar P. Penyuluhan Hipertensi Kepada Pengunjung Posyandu RW 14 Kelurahan Sumber. *Jurnal Pengabdian Masyarakat Global*. 2024;3(1):126-132.
3. Dafriani P, Sartiwi W, Dewi RIS. Edukasi Hipertensi Pada Lansia Di Lubuk Buaya Kota Padang. *Abdimas Galuh*. 2023;5(1):90. doi:10.25157/ag.v5i1.8901
4. McEvoy JW, Daya N, Rahman F, et al. Association of Isolated Diastolic Hypertension as Defined by the 2017

- ACC/AHA Blood Pressure Guideline with Incident Cardiovascular Outcomes. *JAMA - Journal of the American Medical Association*. 2020;323(4):329-338. doi:10.1001/jama.2019.21402
5. Setiawan R, Ningsih F, Salsabila Putri R, et al. Upaya Pencegahan dan Penanganan Hipertensi melalui pendekatan Interprofesional Collaboration Pada Lansia di Desa Pucangan Kecamatan Kartasura. *Jurnal Berkawan*. 2024;1(1):34-40.
6. Sabbatini AR, Kararigas G. Estrogen-related mechanisms in sex differences of hypertension and target organ damage. *Biology of Sex Differences*. 2020;11(1):1-17. doi:10.1186/s13293-020-00306-7
7. Nurvita S. Literature Riview Gambaran Hipertensi di Indonesia. *Jurnal Rekam Medis & Manajemen Infomasi Kesehatan*. 2021;1(2):1-5. doi:10.53416/jurmik.v1i2.34
8. Fitriyatun N, Putriningtyas ND. Trend Kejadian Hipertensi dan Pola Distribusi Kejadian Hipertensi dengan Penyakit Penyerta secara Epidemiologi di Indonesia. *Indonesian Journal of Public Health and Nutrition*. 2023;1(3):367-375.
9. kementrian kesehatan RI. Laporan nasional riskesdas. Published online 201AD.
10. Rizkiana I, Dawu AE. Pengaruh Edukasi Tentang Perilaku Diet Terhadap Kepatuhan Diet Pada Penderita Hipertensi Di Wilayah Kerja Puskesmas Konda Kabupaten Konawe Selatan Tahun 2023. 2025;3(2):47-54.
11. Sari DP, Khoiroh M atul, Layly NI, Elfiyani I. Literature Review: Pengaruh Pemberian Media Konseling terhadap Tingkat Kepatuhan Pasien Hipertensi. *Seminar Nasional Hasil Riset dan Pengabdian (SNHRP) ke-5 Tahun 2023*. Published online 2023:1104-1113.
12. Indriana N, Swandari MTK. Hubungan Tingkat Pengetahuan Dengan Kepatuhan Minum Obat Pada Pasien Hipertensi Di Rumah Sakit X Cilacap. *Jurnal Ilmiah JOPHUS: Journal Of Pharmacy UMUS*. 2021;2(01). doi:10.46772/jophus.v2i01.266
13. Nurannisa D, Febtrina R, 'Irfan MZ, Kharisna D. Family Support Increases the Hypertension Medication Adherence in the elderly at Public Health Center of Simpang Tiga Pekanbaru. *Science Midwifery*. 2022;10(5):4246-4253. doi:10.35335/midwifery.v10i5.1010
14. I. Gambaran Hubungan Dukungan Keluarga Dengan Kepatuhan Diet Hipertensi Pada Pasien Penderita Hipertensi: Studi Literatur. *Jurnal Ilmu Psikologi dan Kesehatan*. 2022;1(2):53-64.
15. Ryan RM, Deci EL. SelCarducci, Bernardo J. Carducci Nave, Christopher S. f-determination theory. *The Wiley Encyclopedia of Personality and Individual Differences, Models and Theories*. Published online 2020:1-7.
16. Supadmi W, Sary MI, Gailea A, et al. Hubungan Tingkat Pengetahuan dan Kepatuhan Pasien Hipertensi di Apotek di Yogyakarta. 2024;20(2):154-160.
17. Ramadhani S, Sutiningsih D, Purnami CT. Implementasi Standar Pelayanan Minimal Bidang Kesehatan pada Penderita Hipertensi di Puskesmas Kota Surakarta. *Healthy Tadulako Journal (Jurnal Kesehatan Tadulako)*. 2024;10(2):316-323. doi:10.22487/htj.v10i2.832
18. Arifuddin A, Nur AF. Pengaruh Efek Psikologis terhadap Tekanan Darah Penderita Hipertensi. *Healthy Tadulako Journal (Jurnal Kesehatan Tadulako)*. 2018;4(3):48-53.

19. Soesanto E, Marzeli R. Persepsi Lansia Hipertensi Dan Perilaku Kesehatannya. *Jurnal Keperawatan dan Kesehatan Masyarakat Cendekia Utama*. 2020;9(3):244. doi:10.31596/jcu.v9i3.627
20. Wibrata DA, Fadilah N, Wijayanti D, Kholifah SN. Persepsi tentang Faktor yang Mempengaruhi Perilaku Kepatuhan pada Klien Hipertensi. *Jl-KES (Jurnal Ilmu Kesehatan)*. 2023;6(2):135-140. doi:10.33006/jikes.v6i2.529
21. Pratiwi NP, Untari EK, Robiyanto R. 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)*. 2020;10(2):118. doi:10.22146/jmpf.45579
22. Rizkawati M, Fairuz RA, Absari NW. Potensi Tanaman Herbal Bunga Telang (*Clitoria Ternatea*) Sebagai Alternatif Antihipertensi. *Healthy Tadulako Journal (Jurnal Kesehatan Tadulako)*. 2023;9(1):43-50. doi:10.22487/htj.v9i1.637
23. Sudirman AN, Abdullah I. Efektivitas Family Support Group dalam Meningkatkan Kepatuhan Kontrol Minum Obat pada Penderita Hipertensi. *Healthy Tadulako Journal (Jurnal Kesehatan Tadulako)*. 2024;10(4):675-681. doi:10.22487/htj.v10i4.1437