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Research Article

Factors Influencing Compliance with Blood Pressure Control in Hypertensive Patients at Bawomataluo Community Health Center, South Nias Regency, Indonesia

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Abstract: Based on data from the South Nias District Health Office, the number of hypertension cases at Bawomataluo Public Health Center increased steadily from 2022 to 2024. This condition posed a high risk of leading to severe complications such as heart disease, stroke, kidney failure, and damage to other organs. This study aimed to examine the factors influencing compliance with blood pressure control among hypertensive patients within the working area of Bawomataluo Public Health Center in the year 2025. This research employed a quantitative method using an analytic survey design with a cross-sectional approach. The population consisted of 185 individuals who had been diagnosed with hypertension over the past six months (from July to December 2024). A purposive sampling technique was used to select 127 participants. Data analysis included univariate, bivariate, and multivariate analyses. Using logistic regression with the forward method, the results showed that knowledge had a significance value of 0.002 with an Exp(B) of 5.680; family support had a significance value of 0.000 with an Exp(B) of 6.740; motivation had a significance value of 0.000 with an Exp(B) of 6.947; and self-confidence had a significance value of 0.001 with an Exp(B) of 5.706. Among these, motivation was identified as the most dominant factor due to having the highest odds ratio (Exp(B)). The findings indicated that knowledge, family support, motivation, and self-confidence significantly affected compliance with blood pressure control among hypertensive patients at Bawomataluo Public Health Center. Motivation emerged as the most influential factor. It was recommended that the health center actively provide support and encouragement to patients suffering from hypertension.

Keywords: Family Support; Hypertension**;** Knowledge; Motivation; Self-Confidence.

1. Introduction

Hypertension, commonly referred to as high blood pressure, is a major non-communicable disease (NCD) with an increasing prevalence worldwide, including in Indonesia. This condition is considered a "silent killer" because it often develops without obvious symptoms but can lead to severe complications such as cardiovascular disease, stroke, kidney failure, and other organ damage if not properly managed (Nu'man, 2023; Nurshahab, Ichwansyah, & Muhammadiyah, 2022). In Indonesia, the prevalence of hypertension in adults aged 18 years and older reached 34.1% in 2020, and in North Sumatra Province alone, more than 3.28 million individuals were recorded as hypertensive in 2023, although only 18.61% of them received health services (Badan Pusat Statistik Provinsi Sumatera Utara, 2023).

The incidence of hypertension tends to increase with age, with 60–75% of elderly individuals being affected (Purwono, Sari, Ratnasari, & Budianto, 2024). Self-care management and adherence to a healthy lifestyle—including diet regulation, regular physical activity, avoiding risk factors such as smoking and alcohol consumption, and routine medical check-ups—are crucial in controlling blood pressure and preventing complications (Khairunisa, Yuwindry, Mukti, & Syamsu, 2024). However, low levels of knowledge, weak motivation, limited social support, insufficient health worker involvement, and reduced self-confidence remain challenges that hinder hypertensive patients from consistently adhering to treatment and lifestyle modifications (Khotimah, 2024; Kusumadayanti, Hamim, & Sunanto, 2023).

Self-efficacy plays a critical role in influencing health behaviors, as patients who believe in their ability to follow medical advice are more likely to comply with lifestyle recommendations (Cleopatra, 2023). In addition, family support has been identified as an important determinant of adherence in hypertensive patients, since encouragement and involvement from family members strengthen the patient's ability to maintain blood pressure control (Alfarizi, 2024; Yuliyanti, Aderita, & Ningsih, 2022). Previous studies also show that community-based interventions such as counseling, education, and empowerment programs contribute to improved lifestyle compliance and disease management among hypertensive populations (Veranita & Pardede, 2023; Yuniar et al., 2025).

The Bawomataluo Health Center (Puskesmas Bawomataluo) in South Nias Regency has experienced a significant rise in hypertension cases in recent years. Data from the South Nias Health Office show that the number of hypertensive patients increased from 39 in 2022 to 73 in 2023, and further escalated to 322 in 2024 (Badan Pusat Statistik Provinsi Sumatera Utara, 2023). The majority of the population in the Bawomataluo working area are farmers, ranchers, and fishermen, which influences their dietary habits, particularly the frequent consumption of salty foods and sea fish—factors that contribute to higher risks of developing hypertension (Rambe, 2022; Dela, Putri, Yuliyatni, & Aryani, 2023).

Based on these conditions, this study aims to analyze the determinants of adherence to blood pressure control among hypertensive patients in the working area of Puskesmas Bawomataluo, South Nias Regency. The specific objectives are: (1) to analyze the effect of patients' knowledge on adherence to a healthy lifestyle, (2) to assess the influence of family support, (3) to evaluate the role of motivation, (4) to determine the contribution of health workers, and (5) to examine the effect of self-efficacy in controlling blood pressure.

2. Literature Review

Hypertension is hypertension is an increase in blood pressure that can have a negative impact on health, especially increasing the risk of cardiovascular disease, stroke, and kidney failure with categories : Normal: < 120/80 mmHg, Stage 1 hypertension: 140-159/90-99 mmHg, Stage 2 hypertension: ③ 160/100 mmHg, systolic isolation hypertension: ③ 140 mmHg with diastolic < 90 mmHg. Hypertension is a medical condition in which blood pressure in the arteries is abnormally elevated (11). Hypertension can be categorized into factors that are primary (essential) and secondary.

Primary factors consisting of genetic and hereditary factors, environmental factors and lifestyle also play a major role in the development of hypertension. Some contributing environmental factors include: 1. Diet that is high consumption of salt, saturated fat, and low potassium intake can increase the risk of hypertension; 2. Physical inactivity contributes to obesity; 3. Obesity is an important risk factor that can increase blood pressure through mechanisms involving insulin resistance and increased blood volume; 4. Chronic stress can lead to increased blood pressure through hormonal and behavioral mechanisms, such as increased alcohol consumption and smoking; 5.With age, the risk of hypertension increases, partly due to changes in the elasticity of blood vessels(Karmita, 2024).

Next are secondary factors caused by certain medical conditions, such as kidney disease, hormonal disorders (eg, hyperaldosteronism), and the use of certain medications pathophysiology of hypertension.

3. Methodology

The design of the study used quantitative methods conducted analytical surveys with cross sectional study approach. The population in this study is all hypertensive patients who visit the Health Center. The population in this study was 185 people with cases of hypertension during the last 6 months, July 2024 - December 2024. The number of samples taken by Slovin formula numbered 127 people with sampling techniques namely Purposive sampling.

4. Results

Selection of incoming candidates meet the criteria for multivariate test with multiple Linear regression phase 1

No	Subvariabel	*P value*
1	Knowledge	0,001
2	Family Support	0,000
3	Motivation	0,001
4	The Role Of Health Workers	0,167
5	Self-Confidence	0,001

The results of the analysis showed the value of p value variable using the enter method is, knowledge p value (0.001), family support (0.000) motivation (0.001), the role of health workers (0.167) and self-confidence (0.001). Based on the results in Table 4.19, it can be concluded that all variables will be included in the logistic regression test, although the variable role of health workers has a p value > 0.05 in the bivariate test, but when the candidate test found the value is still smaller than 0.25, it still meets the requirements in the multivariate test. Logistic Regression Test Using Forward Method (Phase 2)

No	Research Variables	*Df*	*Sig.*	*Exp(B)*
1	Knowledge	1	0,002	5.680
2	Family Support	1	0,000	6.740
3	Motivation	1	0,000	6.947
4	Self-Confidence	1	0,001	5.706
	Constant	**1**	**0,000**	**-11.742**

The results of logistic regression analysis showed that there are four (4) variables that affect compliance with blood pressure control in hypertensive patients, namely, knowledge, family support, motivation and self-confidence, while the role of health workers is eliminated. it can be known from all variables, the most dominant variable affecting compliance with blood pressure control in hypertensive patients is the motivation variable. This can be seen from the motivation factor that has the highest Exp(B) or Odd Ratio value, which is 6,947 with the provision that the greater the Exp(B) value of the degrees of freedom (df 1) value, it means that the increased chance of positive events, towards compliance in blood pressure control.

The effect of knowledge on compliance with Blood Pressure Control in hypertensive patients in the Working Area of Bawomataluo Puskesmas, South Nias Regency in 2025

The result of this analysis is known that knowledge has an influence on compliance with blood pressure control with sig values of 0.002 and Exp (B) of 5.680. Knowledge is the result of a person's learning process acquired through experience, observation, education, or information. In the context of Health Behavior, knowledge plays an important role because it is the initial foundation for a person to understand his health condition and how to maintain and treat it. According to Lawrence Green, knowledge falls into the category of predisposing factors, that is, factors that precede behavior and provide motivation or rational reasons for a person to act. A good knowledge of hypertension, including its causes, symptoms, long-term effects, as well as how it is treated, will encourage patients to take more responsibility

for their health. Individuals with a high level of knowledge are more likely to understand the importance of compliance in blood pressure control and will strive to live a healthy lifestyle as a form of self-awareness (12).

Knowledge also plays a role in improving a person's ability to make informed decisions when it comes to self-care. In the context of hypertension, patients who know how to measure blood pressure, understand the importance of reducing salt, quitting smoking, and regularly taking medication will be better able to manage the disease independently. Individuals with low knowledge are often dependent on others or rely on a belief in alternative medicine without a scientific basis, which can worsen their health condition. educational interventions that are repetitive, contextual, and involve an interpersonal approach will increase the effectiveness of the patient's knowledge. Community-based education programs, group counseling, and one-on-one guidance from health workers who understand the local socio-cultural context will be much more effective than a one-way information approach. Therefore, in the management of hypertension, knowledge is not only instilled through information, but also must be grown through an empathic and participatory approach (13).

The effect of family support with blood pressure control compliance in hypertensive patients in the working area of Bawomataluo Puskesmas, South Nias Regency in 2025

Based on the results of the study showed that the variable family support has a sig-p value of 0.000 with Exp (B) 6.740, meaning that family support affects blood pressure control in hypertensive patients at the Bawomataluo Health Center in South Nias Regency in 2025.

Family support is one of the important factors that influence a person's health behavior, especially in managing chronic diseases such as hypertension. According to Friedman's (2010) theory, the family has a role as a provider of emotional, informational, and instrumental support for members who are experiencing health problems. In the context of blood pressure control, this support can be a reminder to take medication, accompany to a health facility, prepare a healthy meal, or simply encourage and feel safe. All these forms of support will form a conducive environment for hypertensive patients to remain compliant in undergoing treatment (14).

In theory, social support provided by the family can strengthen a person's belief that he is able to cope with his illness. This is in line with the stress-buffering theory of Cohen and Wills, which states that social support can reduce the negative impact of stress on health. Patients who receive support from those closest to them will feel less alone, have a place to rely on, and are motivated to survive the long-term treatment process. In the management of hypertension that is chronic and requires high discipline, support from the family plays a major role in maintaining consistency and motivation of patients.

The effect of motivation on compliance with blood pressure control in hypertensive patients in the working area of Bawomataluo Puskesmas, South Nias Regency in 2025

Based on the results showed that the motivation variable has a sig-p value of 0.001 with the highest Exp (B), which is 6,947, which means that motivation has the most influence on compliance in controlling blood pressure. Motivation is an internal or external impulse that affects the direction, intensity and persistence of a person's behavior. In the context of health behavior, motivation has an important role in encouraging individuals to take preventive, promotive, and curative actions against the disease at hand. Deci and Ryan's Self-Determination theory states that motivation can be intrinsic (from within) or extrinsic (due to environmental influences). Both can influence the extent to which a person is willing to take decisions to behave healthily, including in controlling blood pressure in people with hypertension (15). According to the Health Belief Model, a person will be motivated to take an action if they believe that the action will provide tangible benefits and can reduce risks. In the case of hypertension, patients who believe that controlling blood pressure can prolong life and prevent stroke or kidney failure will be more encouraged to be obedient. On the contrary, patients who feel that the effort is not very important or that it does not give immediate results tend to have low motivation and give up easily. Psychologically, motivation provides energy and direction in behavior. Patients with high motivation tend to be able to overcome obstacles such as boredom, drug side effects, or the temptation to return to the old lifestyle. They are also more open to new information, willing to make changes, and have the fighting power in the face of treatment challenges. On the contrary, a lack of motivation is often the main reason that patients do not comply, even though they have sufficient knowledge and social support. This shows that motivation is the main driver of compliance.

The relationship of the role of health workers with compliance with blood pressure control in hypertensive patients in the working area of the Bawomataluo Puskesmas, South Nias Regency in 2025

Based on the results of the study shows that the variable role of health workers has a GIS value of 0.053 > 0.05, meaning that the role of health workers does not affect the control of blood pressure in hypertensive patients at the Bawomataluo Health Center in South Nias Regency in 2025. This condition shows that although theoretically health workers have a strategic position in providing education and counseling, in field practice their role is sometimes not strong enough to encourage patient obedient behavior. Health workers have a very strategic role in shaping people's healthy behavior, including in efforts to control blood pressure in people with hypertension. Based on role theory in health services, health workers act as educators, facilitators, motivators, and direct service providers. In the context of chronic diseases such as hypertension, health workers are expected to not only provide treatment but also nurture patients through health education, regular monitoring, and ongoing emotional support. Green's theory in the PRECEDE-PROCEED model states that health workers are included in the reinforcing factors that can affect individual health behavior. The presence and active involvement of health workers can reinforce the patient's intention and decision to comply with treatment. Through counseling, counseling, and empathetic and ongoing communication, health workers can increase knowledge, reduce anxiety, and build trusting relationships with patients. When health workers play an optimal role, patients feel accompanied and cared for, which can ultimately improve their compliance.

Relationship of self-confidence with blood pressure control compliance in hypertensive patients in the working area of Bawomataluo Puskesmas, South Nias Regency 2025

Based on the results of the study showed that the self-confidence variable has a GIS value of 0.000 with Exp(B) 5.706, meaning that self-confidence affects blood pressure control in hypertensive patients at the Bawomataluo Health Center, South Nias Regency in 2025.

Self-confidence, or rather self-efficacy, was defined by Albert Bandura as a person's belief in his ability to organize and carry out the necessary actions in order to achieve a specific goal. In the context of health, self-efficacy is very important because it plays a role in determining whether a person will initiate and maintain healthy behaviors. A person with a high level of self-confidence tends to have the perception that he is able to control his illness, including taking regular medication, avoiding food restrictions, and following a healthy lifestyle according to medical recommendations.

Self-efficacy is one of the main components in various theories of health behavior, such as Social Cognitive Theory and Health Promotion Model. In this theory, belief in one's own abilities affects not only the decision to initiate a particular action, but also how much effort is made and how long one is able to maintain the action, especially when faced with obstacles. In the case of hypertension, patients who believe they can manage their blood pressure will be more likely to adhere to treatment, routine control, and avoid unhealthy lifestyles (4)

Confidence in one's own abilities also has a strong psychological effect. Individuals who have high self-efficacy tend to be more optimistic, resilient, and problem-solving oriented. They are better prepared to face challenges during treatment, including dealing with drug side effects, fatigue in undergoing periodic controls, or pressure from an unfavorable social environment. Meanwhile, patients with low self-efficacy are more prone to give up, feel inadequate, and perceive their illness as something that cannot be controlled, making them more prone to disobeying medical advice.

6. Conclusions

Based on the results of data analysis and discussion, it can be seen that there is an influence of knowledge, family support, motivation, confidence on compliance with blood pressure control in hypertensive patients at the Bawomataluo Health Center, South Nias Regency in 2025 with the greatest influence being motivation. There is a factor pran health workers who do not affect the role of Health tnaga in this study

References

Alfarizi, M. R. (2024). Hubungan pengetahuan dan dukungan keluarga dalam perilaku pengendalian tekanan darah penderita hipertensi di Desa Batursari Kabupaten Brebes. Jurnal Kesehatan Pengabdian Masyarakat, 4(1), 1–23. https://doi.org/10.33761/jkpm.v2i1.1461

Badan Pusat Statistik Provinsi Sumatera Utara. (2023). Distribusi persentase penduduk yang mempunyai keluhan kesehatan selama sebulan terakhir dan tidak berobat jalan menurut kabupaten/kota dan alasan utama tidak berobat jalan di Provinsi Sumatera Utara. Retrieved from https://sumut.bps.go.id

Cleopatra, M. (2023). Pengaruh gaya hidup dan motivasi belajar terhadap prestasi belajar matematika. Formatif: Jurnal Ilmiah Pendidikan MIPA, 5(2), 168–181. https://doi.org/10.30998/formatif.v5i2.336

Dela, E. R. S., Putri, W. C. W. S., Yuliyatni, P. C. D., & Aryani, P. (2023). Faktor predisposisi, pendukung, dan pendorong perbedaan perilaku skrining penyakit tidak menular di Kota Denpasar, Provinsi Bali. E-Jurnal Medika Udayana, 12(2), 43. https://doi.org/10.24843/MU.2023.V12.i02.P09

Karmita, Mokhtar, S., Rasfayanah, Dahliah, & Iskandar, D. (2024). Analisis faktor-faktor yang memengaruhi kejadian hipertensi. Fakumi Medical Journal Mahasiswa Kedokteran, 4(8), 572–578. https://doi.org/10.33096/fmj.v4i8.490

Khairunisa, A. F., Yuwindry, I., Mukti, Y. A., & Syamsu, E. (2024). Analisis pola perilaku self-care pada pasien hipertensi patuh pengobatan dengan pendekatan Health Belief Model. Journal of Pharmaceutical Care Sciences, 5(1), 53–64. https://doi.org/10.33859/jpcs.v5i1.653

Khotimah, N. K. (2024). Model peningkatan kepatuhan gaya hidup sehat pada pasien hipertensi berbasis social cognitive theory di wilayah kerja Puskesmas Kota Bima (Tesis). Universitas Airlangga. Retrieved from http://repository.unair.ac.id/77510/

Kusumadayanti, H. Y., Hamim, N., & Sunanto. (2023). Hubungan dukungan keluarga dengan monitoring pengendalian tekanan darah pada penderita hipertensi di Puskesmas Kanigaran Kota Probolinggo. Jurnal Ilmu Kesehatan, 2(10), 514–523.

Nu'man, M. (2023). Hipertensi: Pengembangan ilmu dan praktik kesehatan. Aleph, 87(1–2), 149–200. Retrieved from https://repositorio.ufsc.br/xmlui/bitstream/handle/123456789/167638/341506.pdf

Nurshahab, M. M., Ichwansyah, F., & Muhammadiyah, U. A. (2022). Faktor risiko hipertensi di wilayah kerja Puskesmas Meuraxa Kecamatan Meuraxa Kota Banda Aceh tahun 2022. Journal of Health and Medical Sciences, 1(4), 162–170.

Purwono, J., Sari, R., Ratnasari, A., & Budianto, A. (2024). Pola konsumsi garam dengan kejadian hipertensi pada lansia. Jurnal Wacana Kesehatan, 5(1), 531. https://doi.org/10.52822/jwk.v5i1.120

Rambe, H. (2022). Program studi kebidanan program sarjana fakultas kesehatan Universitas Aufa Royhan di Kota Padangsidimpuan 2022 (pp. 1–88).

Veranita, A., & Pardede, L. R. S. (2023). Peningkatan kepatuhan pola hidup melalui penyuluhan kesehatan pada klien hipertensi. Jurnal Ilmiah Keperawatan Altruistik, 3(2), 38–47. https://doi.org/10.48079/Vol3.Iss2.66

Yuliyanti, T., Aderita, N. I., & Ningsih, S. (2022). Pengaruh dukungan keluarga terhadap perilaku self-management hipertensi pada masa pandemi Covid-19. Jurnal Kesehatan, 11(2), 156–165.

Yuniar, A., Sidik, H., Studi, P., Kesehatan, M., Kesehatan, F. I., Maju, I., et al. (2025). Penguatan kebijakan pencegahan hipertensi melalui kader kesehatan di Kabupaten Belitung Timur. Jurnal Kebijakan dan Pengembangan Daerah, 9(1), 128–145. https://doi.org/10.56945/jkpd.v9i1.363