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Determinants of Hypertension among Adults in Coastal Communities: A Cross-Sectional Study at Benteng Primary Health Center

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ABSTRACT

Introduction: Hypertension remains a major global public health problem and a leading risk factor for cardiovascular complications, with high prevalence and low awareness particularly in coastal communities. This study aims to identify factors associated with hypertension incidence in the coastal area of Benteng Community Health Center.
Objective: This study aims to analyze the factors associated with the incidence of hypertension in the coastal area of the Benteng Community Health Center in 2025, including gender, coffee consumption, seafood consumption, smoking habits, and sodium intake.
Method: This study used a quantitative approach with a cross-sectional design. The population in this study were hypertensive patients in the Benteng Public Health Center working area. The sample size was 66 individuals using purposive sampling. Data were collected using a questionnaire on the frequency of coffee consumption, seafood consumption, smoking, and sodium consumption. Data analysis was performed using the chi-square test with $\alpha < 0.05$.
Result: The results showed a relationship between gender and the incidence of hypertension (0.042 < 0.05). Meanwhile, coffee consumption (0.619 > 0.05), seafood consumption (0.723 > 0.05), smoking (0.240 > 0.05), and sodium consumption (0.733 > 0.05) were not associated with the incidence of hypertension. The conclusion of this study is that there is a relationship between gender and the incidence of hypertension in the Benteng Community Health Center work area. Meanwhile, coffee consumption, seafood consumption, smoking, and sodium consumption were not associated with hypertension incidence in the Benteng Community Health Center Work Area in 2025.
Conclusion: This study recommends that the results can be used as literature or a reference, highlighting the need for hypertension prevention efforts that focus more on controlling related risk factors through healthy lifestyle education and routine blood pressure monitoring, supported by further research with more comprehensive methods and variables.

Keywords: coffee consumption, gender, hypertension, seafood consumption, smoking, sodium consumption

Introduction

Hypertension is a condition where systolic blood pressure exceeds 140 mmHg or diastolic blood pressure exceeds 90 mmHg. This condition is referred to as the silent disease because most sufferers are unaware of their condition until a blood pressure test is performed (Isbandiyah et al., 2024).

The World Health Organization (2023) reports that by 2023, an estimated 1.28 billion adults aged 30–79 years were living with hypertension worldwide. Approximately two-thirds of these cases are in low- and middle-income countries. Furthermore, data shows that nearly half of those with hypertension are unaware of their condition, while approximately 42% have been diagnosed and are undergoing treatment, and only about 21% are able to maintain their blood pressure within controlled limits. Hypertension is also recognized as a leading cause of premature death globally. In line with efforts to control non-communicable diseases, a global target of reducing the prevalence of hypertension by 33% between 2010 and 2030 has been set.

According to the 2023 Indonesian Health Survey (SKI), the prevalence of hypertension has decreased compared to the 2018 Basic Health Research (Riskesdas). Among residents aged 18 and over, the hypertension rate, as measured by blood pressure measurements, decreased from 34.1% in 2018 to 30.8% in 2023. However, public awareness of their hypertension remains relatively low. In the 18–59 age group, there is a significant difference between the prevalence of hypertension diagnosed by medical professionals (5.9%) and blood pressure measurements (26%), with a difference of approximately 20%. For those aged 60 and over, the gap is even greater, reaching 33.9%, with the prevalence based on doctor diagnoses at 22.9% and blood pressure measurements at 56.8%. This situation indicates the importance of increasing public awareness and early detection of hypertension as a preventative measure against various complications, including cardiovascular disease and blood vessel disorders (Ministry of Health of the Republic of Indonesia, 2024).

According to a report from the Bangka Belitung Provincial Health Office (2023), healthcare services for hypertension sufferers are still suboptimal. Of the estimated 319,154 hypertension patients aged 15 years and over, only 247,944 (77.68%) received healthcare services. No district achieved the 100% target. In the Central Bangka region, the number of hypertension sufferers was recorded at 45,488, but only 26,486 received healthcare services (Bangka Belitung Health Office, 2023). In 2024, the Benteng Community Health Center (Puskesmas Benteng) recorded 1,053 hypertension sufferers, comprising 891 men and 162 women. The majority were over 55 years old (720 people), followed by 45–54 years old (264 people) and 18–44 years old (69 people).

Hypertension is a health condition that can potentially increase the risk of cardiovascular disease, cerebrovascular disorders, kidney damage, and various other health complications. The World Health Organization (2024) explains that hypertension is characterized by a systolic blood pressure of 140 mmHg or higher, or a diastolic blood pressure of 90 mmHg or higher. This condition is generally influenced by lifestyle factors, including a diet high in sodium and low in potassium, being overweight, smoking, alcohol consumption, and low levels of physical activity. Therefore, hypertension control requires early detection, appropriate management, and the implementation of healthy lifestyle changes to maintain blood pressure below 140/90 mmHg (World Health Organization 2024).

According to Falah (2019), gender is a non-modifiable factor, with women at higher risk, especially after menopause due to decreased estrogen levels. This decrease in estrogen lowers HDL and, if LDL is high, can trigger atherosclerosis, which increases blood pressure.

According to Herlin Indriani & Djannah (2023), coffee can cause increased blood pressure because caffeine acts as an antagonist to adenosine, triggering adrenaline production, which causes vasoconstriction and increased peripheral resistance. The effects of caffeine typically appear within 5–30 minutes and last up to 12 hours. Diet can trigger hypertension, for example, through excessive seafood consumption. Sodium in raw fish varies between species, and excessive sodium intake increases extracellular fluid, increasing blood volume and increasing the risk of hypertension (Maharani et al., 2025). Smoking negatively impacts the circulatory system, increasing blood pressure and heart rate through increased adrenaline and norepinephrine. In the long term, smoking can damage blood vessels, disrupt endothelial function, increase inflammatory substances, and trigger hypertension.

Judging from the high prevalence of hypertension in the Benteng Community Health Center's work area in 2024, there were 1,053 people. Furthermore, several previous studies have also indicated several risk factors for hypertension, such as gender, coffee consumption, seafood consumption, smoking, and sodium consumption. Considering these phenomena, researchers are interested in understanding the "Factors Associated with the Incidence of Hypertension in the Coastal Area of the Benteng Community Health Center in 2025."

Objective

This study aims to analyze the factors associated with the incidence of hypertension in the coastal area of the Benteng Community Health Center in 2025, including gender, coffee consumption, seafood consumption, smoking habits, and sodium intake.

Method

This study employed a quantitative approach with a cross-sectional design to examine the association between risk factors and the incidence of hypertension among coastal communities. The research was conducted in the working area of Benteng Community Health Center. The study population consisted of all registered hypertension patients in 2024, totaling 370 individuals. A sample of 66 respondents was selected using purposive sampling based on predetermined inclusion and exclusion criteria.

Data were collected using a structured questionnaire that included respondents' characteristics and study variables, namely gender, coffee consumption, seafood consumption, smoking habits, and sodium intake. Hypertension status was obtained from blood pressure measurements and available medical records at the health facility. All participants provided informed consent after receiving an explanation of the study objectives.

Data analysis was performed using univariate analysis to describe the distribution of respondents' characteristics and study variables. Bivariate analysis was conducted using the chi-square test to determine the association between variables, with a significance level set at 0.05. The results are presented in the form of frequency distribution tables and p-values to identify statistically significant relationships.

Result

Table 1. The Relationship Between Gender and the Incidence of Hypertension in Hypertensive Patients

Gender	Hypertension				Total		*p-value*
	Hypertension stage 1		Hypertension stage 2				
	n	%	N	%	n	%	
Males	15	45.5	18	54.5	33	100	
Females	17	51.5	16	48.5	33	100	0.805
Total	32	48.5	34	51.5	66	100	

Based on table 1, respondents with stage 1 hypertension were more common among women (17 individuals) than men. Meanwhile, stage 2 hypertension was more common among men (18 individuals) than women (54.5%). Based on the table above, it is concluded that there is no relationship between gender and the incidence of hypertension with the results of the chi-square calculation using the SPSS application obtaining a p value of 0.805 with an alpha of 0.05. In this study, the p value (0.805) > α (0.05), so it is concluded that there is no relationship between gender and the incidence of hypertension.The Relationship Between Gender and the Incidence of Hypertension in Hypertensive Patients

Table 2. Relationship between coffee consumption and hypertension in hypertensive patients

Coffee Consumption	Hypertension				Total		POR	CI (95%)	*p-value*
	Hypertension stage 1		Hypertension stage 2						
	n	%	n	%	n	%			
Mild	22	48.9	23	51.1	45	100	1.052	0.373-2.967	1.000
Severe	10	47.6	11	52.4	21	100			
Total	32	48.5	34	51.5	66	100			

Based on table 2, respondents with stage 1 hypertension were more likely to consume light coffee (22 people) than heavy coffee consumers. Meanwhile, respondents with stage 2 hypertension were more likely to consume light coffee (23 people) than heavy coffee consumers.

Based on the table above, it can be concluded that there is no relationship between coffee consumption and the incidence of hypertension. The results of the chi-square calculation using the SPSS application obtained a p-value of 1.000 with an alpha of 0.05. In this study, the p-value (1.000) > α (0.05), so it is concluded that there is no relationship between coffee consumption and the incidence of hypertension.

Table 3. Relationship between seafood consumption and hypertension in hypertensive patients

Seafood Consumption	Hypertension				Total		POR	CI (95%)	*p-value*
	Hypertension stage 1		Hypertension stage 2						
	n	%	n	%	n	%			
Mild	6	54.5	5	45.5	11	100	1.338	0.365-4.909	0.748
Severe	26	47.3	29	52.7	55	100			
Total	32	48.5	34	51.5	66	100			

Based on table 3, respondents with stage 1 hypertension were more likely to consume heavy seafood (26 people (47.3%) than those with low seafood consumption. Meanwhile, respondents with stage 2 hypertension were more likely to consume heavy seafood (29 people (52.7%) than those with low seafood consumption.

Based on the table above, it is concluded that there is no relationship between seafood consumption and the incidence of hypertension. The chi-square calculation using SPSS obtained a p-value of 0.748 with an alpha of 0.05. In this study, the p-value (0.748) > α (0.05), so it is concluded that there is no relationship between seafood consumption and the incidence of hypertension.

Table 4. Relationship between smoking and hypertension in hypertensive patients

Smoking	Hypertension				Total		POR	CI (95%)	*p-value*
	Hypertension stage 1		Hypertension stage 2						
	n	%	n	%	n	%			
Light smoking	22	45.8	26	54.2	48	100	0.677	0.228-2.012	0.669
Heavy smoking	10	55.6	8	44.4	18	100			
Total	32	48.5	34	51.5	66	100			

Based on table 4, respondents with stage 1 hypertension were more likely to have light smoking habits (22 people (45.8%) than heavy smoking habits. Meanwhile, respondents with stage 2 hypertension were more likely to have light smoking habits (26 people (54.2%) than heavy smoking habits.

Based on the table above, it is concluded that there is no relationship between smoking and the incidence of hypertension. The chi-square calculation using the SPSS application obtained a p-value of 0.669 with an alpha of 0.05. In this study, the p-value (0.669) > α (0.05), so it is concluded that there is no relationship between smoking and the incidence of hypertension.

Table 5. The Relationship Between Sodium Consumption and the Incident of Hypertension in Hypertensive Patients

Sodium Consumption	Hypertension				Total		POR	CI (95%)	*p-value*
	Hypertension stage 1		Hypertension stage 2						
	n	%	n	%	n	%			
Light smoking	15	37.5	25	62.5	40	100	0.318	0.113-0.890	0.050
Heavy smoking	17	65.4	9	34.6	26	100			
Total	32	48.5	34	51.5	66	100			

Based on Table 5, respondents with stage 1 hypertension were more likely to consume sodium frequently (17 people (65.4%) than those who never consumed sodium. Meanwhile, respondents with stage 2 hypertension were more likely to never consume sodium (25 people (62.5%) than those who frequently consumed sodium.

Based on the table above, it can be concluded that there is a relationship between sodium consumption and the incidence of hypertension. The results of the chi-square calculation using the SPSS application obtained a p-value of 0.050 with an alpha of 0.05. In this study, the p-value (0.050) = α (0.05), so it was concluded that there was a relationship between sodium consumption and the incidence of hypertension.

Discussion

Based on the research results, no association was found between gender and the incidence of hypertension in the Benteng Community Health Center work area. Researchers believe that this condition can be explained by the characteristics of coastal communities, which have exposure to hypertension risk factors that tend to be similar in both men and women. In coastal communities, fairly heavy physical activity, economic pressures, and women's involvement in productive and domestic activities result in workloads and stress levels experienced relatively equally by both sexes. Furthermore, this condition can also be explained by the characteristics of coastal communities, which have a relatively uniform pattern of risk factor exposure in both sexes. The habit of consuming high-sodium foods from processed seafood, fairly heavy physical activity, and socioeconomic pressures due to dependence on coastal natural conditions are experienced almost equally by men and women. These conditions make environmental factors and lifestyles typical of coastal areas more dominant determinants than biological differences based on sex. Thus, although theory suggests a difference in the risk of hypertension between men and women, in the context of coastal communities, this influence may be overshadowed by environmental factors and collective behavior, so the relationship between gender and hypertension incidence does not appear significant in this study.

Based on the research results, the researchers conclude that the results indicate no relationship between coffee consumption and hypertension incidence. They assume that coffee consumption among respondents is not a direct contributing factor to increased blood pressure. Furthermore, most respondents in this study did not consume coffee, so no relationship was found between coffee consumption and hypertension incidence in the Benteng Community Health Center work area. However, physiologically, caffeine can increase blood pressure through vasoconstriction and stimulation of the sympathetic nervous system. However, these effects are temporary and more pronounced in individuals who are not

accustomed to consuming coffee. In coffee drinkers, the body's adaptation to caffeine can reduce the response to increased blood pressure, minimizing the effect. In addition to physiological tolerance to caffeine, the lack of a relationship between coffee consumption and hypertension incidence in the Benteng Community Health Center work area can also be explained by the coffee consumption patterns of coastal communities, which generally do not occur in isolation but occur in conjunction with high levels of physical activity. Coastal communities, both men and women, tend to engage in work that requires significant strength and high mobility, such as fishing, hauling nets, processing catches, and productive domestic activities. This intense physical activity plays a role in increasing blood vessel elasticity and heart efficiency, thereby mitigating the effects of caffeine consumption on blood pressure. Therefore, the impact of coffee on blood pressure is relatively small and does not appear statistically significant. In coastal communities, other, stronger risk factors for hypertension dominate, such as high sodium consumption from processed seafood, exposure to psychosocial stress due to dependence on natural conditions, and limited access to preventive health services. These factors contribute cumulatively to increased blood pressure and potentially overshadow the effect of coffee consumption as a single factor. Therefore, in the context of coastal communities, coffee consumption does not act as a primary determinant of hypertension, but rather as an additional factor with a relatively small influence compared to other environmental and lifestyle factors. Overall, the results of this study confirm that coffee consumption is not a primary risk factor for hypertension in the studied population, and that other variables besides coffee consumption likely have a more dominant influence in determining an individual's blood pressure status.

Based on the research results, the researchers concluded that there was no relationship between seafood consumption and the incidence of hypertension in the coastal community within the Benteng Community Health Center (Puskesmas Benteng) work area. This finding indicates that the habit of consuming salted fish, fried foods, foods in coconut milk, and high-cholesterol seafood did not directly affect the blood pressure of the respondents at the time of the study. Coastal communities have distinctive dietary patterns passed down through generations, particularly seafood consumption. However, this study found no relationship between seafood consumption and the incidence of hypertension in the Benteng Community Health Center work area. Therefore, the researchers assumed that seafood consumption was not the primary factor causing hypertension. It is likely that other factors such as genetics, physical activity, stress levels, work environment conditions, and overall lifestyle play a greater role in influencing blood pressure than seafood consumption itself. This aligns with the concept that hypertension is a multifactorial disease and cannot be explained by a single type of food intake.

Therefore, the researchers concluded that there was no association between smoking habits and the incidence of hypertension in the Benteng Community Health Center work area. Therefore, the researchers assumed that smoking behavior among respondents in this study has not been proven to directly contribute to increased blood pressure. This situation is likely influenced by the lower proportion of smokers compared to non-smokers. In coastal communities, smoking is often part of social interactions and work activities, particularly during breaks after fishing or working in the fisheries sector. This smoking pattern is generally less intensive and situational, resulting in relatively lower nicotine exposure compared to heavy smokers in urban areas. This condition causes the physiological effects of smoking on increased blood pressure to be temporary and not always detected by routine blood pressure measurements.

High levels of physical activity in coastal communities also act as a protective factor against the negative impacts of smoking. Work that requires significant effort, such as fishing, pulling nets, and processing the catch, is carried out routinely and continuously by most respondents. This high level of physical activity contributes to maintaining cardiovascular function and blood vessel elasticity, thus offsetting the vasoconstrictive effects of nicotine. In this context, the effect of smoking on blood pressure is relatively small compared to other lifestyle factors that work simultaneously.

Furthermore, variations in smoking duration and intensity among respondents also have the potential to obscure the relationship between smoking and hypertension. Some respondents who smoke have a relatively short smoking history or a low number of cigarettes, which is insufficient to cause chronic physiological changes in the cardiovascular system. This condition shows that in the context of coastal communities, smoking habits are not necessarily the main determinant of hypertension occurrence, but rather interact with various other environmental, behavioral, and socio-economic factors.

Conclusion

There was a significant relationship between gender and the incidence of hypertension, while coffee consumption, seafood consumption, smoking, and sodium consumption were not significantly associated with the incidence of hypertension in the coastal area of Benteng Community Health Center in 2025.

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Authors' contribution

Each author contributed equally in all the parts of the research. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this paper. This research was conducted independently without any financial, commercial, or personal relationships that could be construed as a potential conflict of interest. All processes, including study design, data collection, analysis, and manuscript preparation, were carried out objectively and without external influence.

Ethical consideration

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References

1. Aini, N., & Khasanah, H. (2022). Hubungan usia, jenis kelamin, dan status obesitas dengan kejadian hipertensi di wilayah Puskesmas Sumbang II. *Jurnal Bina Cipta Husada*, 18(1), 43–55.

2. Andrianto, & Ardiana, M. (2022). *Menangani hipertensi*. Airlangga University Press.
3. Annisa, N., Nurlinda, A., & Sumiaty. (2024). Faktor yang berhubungan dengan kejadian hipertensi di Pustu Pulau Langkai Kota Makassar. *Window of Public Health Journal*, 5(4), 503–514. https://doi.org/10.33096/woph.v5i4.766
4. Bimantara, A. M. (2022). Hubungan kebiasaan merokok dengan kejadian insomnia pada remaja SMKN 1 Bendo Magetan. STIKes Bhakti Husada Mulia Madiun.
5. Dinas Kesehatan Provinsi Bangka Belitung. (2023). *Profil kesehatan Provinsi Bangka Belitung*.
6. Efriandi, N. (2022). Hubungan perilaku merokok dengan kejadian hipertensi pada usia produktif di wilayah kerja Puskesmas Jekan Raya.
7. Ekaningrum, A. Y. (2021). Hubungan asupan natrium, lemak, gangguan mental emosional, dan gaya hidup dengan hipertensi pada dewasa di DKI Jakarta. *Jurnal Kesehatan*, 10, 82–92.
8. Ekasari, M. F., Suryati, E. S., Badriah, S., Narendra, S. R., & Amini, F. I. (2021). *Kenali hipertensi*.
9. Falah, M. (2019). Association of gender and hypertension prevalence in Tamansari Village, Tasikmalaya City. *Jurnal Keperawatan & Kebidanan STIKes Mitra Kencana*, 3(1), 85–94.
10. Farhat, Y., & Yanti, R. (2021). Faktor yang berhubungan dengan hipertensi pada lansia di Puskesmas Astambul Martapura. 12(2), 105–114.
11. Fauziah, T., Nurmayni, Putri, R., Pidia, S., & Sari, S. (2021). *Hipertensi si pembunuh senyap: Yuk kenali pencegahan dan penanganannya*.
12. Firman, F. (2024). Hubungan konsumsi natrium/garam dengan status hipertensi: Studi cross-sectional di Kota Makassar. *Multidisciplinary Journal of Education, Economic and Culture*, 2(1), 43–49. https://doi.org/10.61231/mjeec.v2i1.234
13. Fitri, H. I. M., & S. H. A. H. (2022). Hubungan konsumsi natrium dan aktivitas fisik dengan kejadian hipertensi pada masyarakat pesisir Lemo-Lemo, Kabupaten Bombana.
14. Ggreni, D. (2022). *Buku ajar*. STIKes Majapahit Mojokerto.
15. Herlin Indriani, M., & Djannah, S. (2023). Pengaruh konsumsi kopi terhadap kejadian hipertensi: Studi literatur. *Jurnal Kesehatan Masyarakat Indonesia*, 18(2), 35.
16. Hezkia, S., Kurnia, T., & Malinti, E. (2020). Hubungan kebiasaan merokok dengan tekanan darah laki-laki dewasa. 288, 1–6.
17. Isbandiyah, Mandiricha, T., Rahmanda, R. A., Permadi, F. J., Anugrah, D. F., Amalia, R., & Cahya, L. D. (2024). Identifikasi faktor risiko hipertensi pada masyarakat pesisir pantai. *CoMPHI Journal*, 4(3), 249–256. https://doi.org/10.37148/comphijournal.v4i3.189
18. Junaedi, J., & Wahab, A. (2023). Hipotesis penelitian dalam kesehatan. *Jurnal Pendidikan dan Teknologi Kesehatan*, 6(2), 142–146.
19. Kurniawan, D., & Solikhah. (2023). Faktor risiko yang berhubungan dengan kejadian hipertensi di wilayah pesisir Kabupaten Bantul.
20. Kusuma Dewi, Y., Pratomo, H., & Karjoso, T. (2022). Faktor sosial dan budaya yang berhubungan dengan kejadian hipertensi: Literature review. *Media Publikasi Promosi Kesehatan Indonesia*, 5(8), 890–898. https://doi.org/10.56338/mppki.v5i8.2483

21. Nabila, I., & Ariyanto, S. (2025). Hubungan jenis kelamin, tingkat pendidikan, dan indeks massa tubuh dengan kejadian hipertensi pada lansia di wilayah kerja Puskesmas Gunungsari Lombok Barat. 13(1), 364–373.
22. Nafi', S. U., & Putriningtyas, N. D. (2023). Faktor yang memengaruhi kejadian hipertensi masyarakat pesisir di wilayah kerja Puskesmas Kedung II Jepara. *Journal of Nutrition College*, 12(1), 53–60. https://doi.org/10.14710/jnc.v12i1.36230
23. Nur Indah Rahma Dilla, N., Susanti, N., Andini, Z., & Marpaung, F. A. H. (2024). Hubungan perilaku merokok dengan hipertensi pada usia produktif. *Ibnu Sina: Jurnal Kedokteran dan Kesehatan*, 23(2), 298–306. https://doi.org/10.30743/ibnusina.v23i2.685
24. Nurhayati, U. A., Ariyanto, A., & Syafriakhwan, F. (2025). Hubungan usia dan jenis kelamin terhadap kejadian hipertensi. 363–369.
25. Prang, M. F., Kaunang, W. P. J., & Sekeon, S. A. S. (2021). Hubungan kebiasaan merokok dengan hipertensi di Kota Tomohon. 10(6), 117–123.
26. Raihan, L. N., Dewi, A. P., & Erwin. (2014). Faktor-faktor yang berhubungan dengan kejadian hipertensi primer di wilayah kerja Puskesmas Rumbai Pesisir. *JOM Psik*, 1, 1–10.
27. Rizal, R., Shandy, V. R., Rusdi, M. S., & Afriyeni, H. (2024). Kepuasan pasien terhadap pelayanan kefarmasian di apotek rawat jalan RSUD Sungai Dareh. *Jurnal Penelitian dan Pengkajian Ilmiah Eksakta*, 3(2), 58–67. https://doi.org/10.47233/jppie.v3i2.1518
28. Saragih, M., & Karimah, I. (2023). Faktor-faktor yang berpengaruh terhadap hipertensi. 7(35), 573–577.
29. Slater, P. (2025). Fundamentals of quantitative research methods in mental health nursing. *Journal of Psychiatric and Mental Health Nursing*, 32(2), 457–460. https://doi.org/10.1111/jpm.13130
30. Sommers, M. S. (2018). *Davis's diseases & disorders: A nursing therapeutics manual*.
31. Yuliana, et al. (2023). Hipertensi dan cara pengobatannya. 17, 302.
32. Zikra, M., Yulia, A., & Wahyuni, L. T. (2020). Faktor-faktor yang mempengaruhi kejadian hipertensi. *Jurnal Amanah Kesehatan*, 2(1), 1–11. https://doi.org/10.55866/jak.v2i1.3