

Sociodemographic Characteristics of Hypertension Patients in the Coastal Area of Maitara Island

Ratyh Jihan Safira* , Eko Sudarmo D P, Wahyunita Do Toka
 Universitas Khairun, Indonesia
 Email: ekosudarmodo@gmail.com*

ABSTRACT:

Hypertension is becoming one of the threats to the global health world as it can lead to some serious diseases that threaten the quality of life of the victims even their lives. In 2018 Tidore City of the Islands registered 754 cases of hypertension (23,59%). Hypertension cases of North Tidore District of Maitara Island registered in 2021 as many as 60 patients diagnosed with high blood pressure, in 2022 registered as much as 77 patients with diagnosed hypertensive disease, and in 2023 from January-November registered 80 patients who have diagnosed hypertense disease. This research uses descriptive research with a cross sectional approach. The data used in this study is primary data obtained from the questionnaire. The social demographic characteristics of people suffering from hypertension in the coastal area of the island of Maitara based on the majority of degrees are at the last age 28.7% of patients obtained hypertensive, the highest sex is among women with a total of 73.8% of patients with hypertensive, obesity obtaining the most is grade 1 Obesity with the total of 38.8% of people with high blood pressure, job obtains the most i.e. not working with the number of 78.3% of people who have high pressure, cigarette consumption the most obtained i. e. not smoking with the amount of 68.8% of the patients with hypertensious, salt intake most obts among subjects with the proportion of 72.5% of the people with hipertension, and descendants obtain the most history of hypertonic as 58.8% hypertensious patients.

Keywords: Hypertension; Characteristics; Maitara Island.

INTRODUCTION

Hypertension is one of the threats to the global health world because it can cause several serious diseases that threaten the quality of life of sufferers (Forouzanfar et al., 2016). Hypertension is aimed at a condition where systolic ≥ 160 mmHg and diastolic ≥ 80 mmHg (Muhadi, 2016; Siti, Idrus and W, 2017). Hypertension is a disease that is not easily transmitted but can cause death (WHO, 2021). The prevalence of hypertension according to the World Health Organization (WHO) in 2019 reached 1.28 billion in 2019 and is reported to continue to increase every year and is estimated to be 1.5 billion in 2025, accompanied by 9.4 million hypertensive patients diing. The African region ranks first with a percentage of 27% and Southeast Asia ranks 3rd with a percentage of 25% of the incidence of hypertensive hypertension worldwide.

The estimated number of hypertension cases in Indonesia is 63,309,620 people with a death rate due to hypertension in Indonesia of 427. 218 deaths (World Health Organization, 2018; Ministry of Health of the Republic of Indonesia, 2019). The prevalence of hypertension in 2018 based on the results of measurements in Indonesia in people aged ≥ 18 years was 34.1% and in South Kalimantan Province occupied the highest position at 44.1% while Papua occupied the lowest position at 22.2% (Ministry of Health of the Republic of Indonesia, 2019).

The results of blood pressure measurement in the population aged > 18 years showed a result of 21.2% in 2013 and increased to 24.65% in 2018 and Tidore Islands District was recorded at 754 (23.59%). Hypertension cases in North Tidore District, Maitara island in 2021 showed the results of 60 patients diagnosed with hypertension and there was an increase in 2022 of 77 patients and in

2023 from January–November there were results of 80 patients diagnosed with hypertension (Health Office, 2020).

Scientists Oktadoni Saputra said that although hypertension is one of the non-communicable diseases, it is necessary to be careful, especially in coastal locations where around 60% of the Indonesian population lives on the coast. Coastal environments have a higher prevalence rate and risk of hypertension. It is because of this height that it is very important to conduct further research on hypertensive diseases on the coast. Understanding that high blood pressure in coastal areas is still very high from this study, we can prevent and change lifestyle. Coastal areas that have the potential to suffer from hypertension due to the consumption patterns of the community itself such as consuming seafood that contains high sodium (shrimp, shellfish, cuttlefish, squid, salted fish, sardines, pindang fish, dried anchovies) (Susanti, and Novi, 2020).

The prevalence of hypertension in the population in coastal areas is in the range of 6.5–33.3% (Astutik et al., 2020; Chen et al., 2014). Salt is a common ingredient in seafood such as fish and is also used in food management for daily needs, the high prevalence of coastal hypertension is not permanent to high daily sodium intake (Alifariki et al., 2021; Frisoli et al., 2012). Frequent consumption of seafood is also associated with high sodium content in fish, including sodium added to processed marine fish as well as naturally occurring sodium (Soleha and Qomaruddin, 2020).

Based on the theory and information above, the researcher is interested in conducting further research on the socio-demographics of hypertensive patients with food consumption patterns that can cause hypertension in the coastal area of Maitara Island. Achieving the highest levels of public health is necessary to be able to carry out environmental management and health policies in the coastal areas of Maitara Island, especially for those aged ≥ 17 and ≥ 65 years.

METHOD

This study is with a univariate method with a cross sectional approach on the coast of Maitara Island in November–December 2023. The population is divided into target population and affordable population. The target population in this study is the entire community diagnosed with hypertension. The affordable population is all hypertension patients registered at the Rumbalibunga health center, North Tidore District. The inclusion criteria in this study are in the form of patient data obtained from the Rumbalibunga health center, North Tidore District from January–November 2023, and complete patient data according to the research variables. The sample obtained in this study was 80 patients with a total sampling technique.

RESULTS AND DISCUSSION

Age	Frequency (n)	Percentage (%)
17-25 years old	1	1.3
26-35 years old	5	6.3
36-45 years old	19	23.8
46-55 years old	14	17.5
56-65 years old	22	27.5
>65 years old	19	23.8
Total	80	100

Table 2. Hypertensive Patients by Gender

Gender	Frequency (n)	Percentage (%)
Women	59	73.8
Male	21	26.3
Total	80	100

Table 3. Hypertension Patients by Obesity

Obesity	Frequency (n)	Percentage (%)
Normal	7	8.8
<i>Overweight</i>	9	11.3
Obesity 1	44	55.0
Obesity 2	20	25.0
Total	80	100

Table 4. Hypertension Patients by Occupation

Jobs	Frequency (n)	Percentage (%)
Housewives	56	70.0
Fisherman	16	20.0
Entrepreneurs	3	3.8
hip	2	2.5
Bentor driver	3	3.8
Not working		
Total	80	100

Table 5. Hypertension Patients based on Cigarette Consumption

Cigarette Consumption	Frequency (n)	Percentage (%)
Smoking	25	31.3
No smoking	55	68.8
Total	80	100

Table 6. Hypertension Patients by Salt Consumption

Salt Consumption	Frequency (n)	Percentage (%)
Normal	5	6.3
Medium	58	72.5
Height	17	21.3
Total	80	100

Table 7. Hypertension Patients by Heredity

Descent	Frequency (n)	Percentage (%)
There is a history	47	58.8
No history	33	41.3
Total	80	100

Based on the results of the study, the distribution of hypertension by age was found in vulnerable 56-65 years with a total of 22 patients (27.5%). The results of this study are in line with

Saskia Dyah et al. at Siloam Hospital who stated that hypertension developed at a significant age obtained at the age of 56-65 years as many as 45 patients (38.1%) (Handari, Rahmasari and Adhela, 2023). The results of this study obtained by Muhammad Yunus et al. stated that there was a relationship between age and hypertension obtained in 51-60 years with a total of 135 patients (50.4%).

As we age, the arteries become stiffer and wider and there is a reduction in the amount of blood that can pass through the blood vessels. Increased peripheral plasma concentration, disruption of neurohormonal mechanisms such as the renin-angiotensin-aldosterone system, and the presence of age-related glomerulosclerosis and intestinal fibrosis increase vasoconstriction and vascular resistance resulting in an increase in blood pressure (Nuraeni, 2019).

Based on the results of the study in table 5.2, the highest gender distribution is women with a total of 59 patients (73.8%). The results of the above study are in line with the research obtained by Desi Angraeni et al. which stated that the gender of hypertension patients was mostly women who entered the menopause period with a total of 59 patients (63.4%) obtained by women (Angraeni, Tresnasari and Sakinah, 2023). The results of the above study are in line with those obtained by Mahalini et al. which stated that there is a relationship between female sex and the incidence of hypertension obtained in women as many as 34 patients (68%) (Malini and Prima Gusti, 2022).

Women have a higher risk of hypertension compared to men because the menopausal phase will result in a decrease in estrogen hormone levels. Women who have not experienced menopause have the hormone estrogen which functions to increase levels of high density lipoprotein (HDL) until postmenopause low density lipoprotein (LDL) is at high risk of increasing so that it can cause atherosclerosis which can trigger an increase in blood pressure (Woodard et al., 2011).

Based on the results of the study in table 5.3, the distribution of hypertension based on obesity was most commonly found in the obesity category 1 as many as 44 patients (55.0%). The results of the above study are in line with those obtained by Juwita et al. which stated that there is a relationship between weight gain and the incidence of hypertension which in this study was obtained by 40 patients (40.0%) (Kartika and Purwaningsih, 2020).

Visceral tissue can cause resistance to insulin and leptin, it is also a place where the secretion of molecules and hormones such as adiponectin, leptin, resistin, TNF and IL-6 is altered, which ultimately results in the occurrence of cardiovascular disease, changes in the activity of incretin and DP-4 (dipeptidyl peptidase-4) also play a role in the occurrence of hypertension in obesity (Shariq and McKenzie, 2020).

Based on the results of the study in table 5.4, it shows that the distribution of hypertension based on work is highest among housewives with a total of 56 patients (70.0%). The results of the above study are in line with those obtained by Nia Inriana et al. saying that there is a relationship between hypertension and the work of housewives where the physical activity is lighter obtained in this study is 32 patients (40.5%) patients who are categorized as housewives have a history of hypertension (Indriana and Swandari, 2021). The results of the above study are in line with those obtained by Susanti et al. saying that there is a relationship between hypertension and housewives which was obtained in this study 117 (38.6%) housewife patients who suffer from hypertension (Susanti et al., 2022).

Lack of physical activity and stress experienced by housewives can cause a sedentary lifestyle to be one of the significant factors for hypertension. A sedentary lifestyle is strongly associated with decreased muscle strength, poor performance from activities of daily living as well

as decreased physical activity in leisure time and being overweight (Twilight) et al., 2018). Meanwhile, stress is often associated with high blood pressure because when a person is stressed, the sympathetic nervous system will be activated. Tension in the sympathetic nerves will trigger the release of catecholamines so that the heart rate increases (Suling, Agustian and Enggar, 2018).

Based on the results of the study, table 5.5 shows the distribution of hypertension based on cigarette consumption and is most commonly found in patients who do not consume cigarettes with a total of 55 patients (68.8%). The results of the above study are in line with those obtained by Ivan Wijaya et al. who said that there was no relationship between cigarette consumption and the incidence of hypertension which was obtained by 24 patients (32.4%) who did not consume cigarettes (Wijaya, Nur Kurniawan. K and Haris, 2020). The results of the above study are in line with those obtained by Sulfia Ulin et al. who said that there was no relationship between cigarette consumption and increased blood pressure on the coast which was obtained by 52 patients (73.2%) who did not consume cigarettes (Nafi' and Putriningtyas, 2023).

In theory, it is said that people who consume cigarettes have a relationship with hypertension, but nevertheless this study found that there is no relationship between cigarette consumption and people who have a history of hypertension on the coast because people who do not smoke have the same risk or there may be other factors that cause an increase in the incidence of hypertension such as high consumption of foods that contain high salt and many housewives in this study (Nafi' and Putriningtyas, 2023).

Based on the results of the study in table 5.6, the distribution of hypertension based on salt consumption was found in subjects who consumed moderate amounts of salt as many as 58 patients (72.5%). The results of the above study are in line with the research obtained by Janu Purwono et al. which said that excessive salt consumption can result in hypertension which was obtained by 28 patients (54.9%)(Purwono et al., 2020).

Excessive salt consumption in coastal communities is one of the causes of hypertension. When sodium is absorbed into the blood vessels from high salt consumption, it can result in water retention so that the volume in the blood increases. High sodium intake can result in excessive hormone production so that the sotriouretic will indirectly experience an increase in blood pressure (Kamaruddin et al., 2023).

Based on the results of the study in table 5.7, the distribution of hypertension based on heredity was most commonly found in patients with a history of hypertension as many as 47 patients (58.8%). The results of the above study are in line with the research obtained by Erlana et al. which said that there was a hereditary relationship with the incidence of hypertension obtained by 39 patients (83.0%). The results of the above study are in line with the research obtained by Mayasari which said that there was a significant relationship between hereditary factors and hypertension obtained by 37 patients (48.7%) (Rahmadhani, 2021).

Hypertension is a hereditary disease where if both parents have a history of hypertension, then there is a 60% chance that it will be experienced by their offspring, then there is a relationship with an increase in intracellular sodium levels and a low ratio between potassium to sodium individuals and parents (Kalangi, Umboh and Pateda, 2015).

CONCLUSION

This descriptive cross-sectional study on the sociodemographic characteristics of 80 hypertension patients in the coastal area of Maitara Island reveals key patterns: the majority were aged 56-65 years (27.5%), women (73.8%), grade 1 obese (55.0%), housewives (70.0%), non-smokers (68.8%), moderate salt consumers (72.5%), and had a family history of hypertension

(58.8%). These findings align with prior research linking age-related vascular changes, menopausal estrogen decline, obesity-induced insulin resistance, sedentary lifestyles among housewives, high-sodium coastal diets, and genetic factors to elevated hypertension risk in similar populations. For future research, longitudinal cohort studies could investigate causal relationships between these sociodemographic factors and hypertension incidence, incorporating interventions like sodium reduction programs or physical activity promotion tailored to coastal communities such as *Maitara Island* to inform targeted health policies.

REFERENCES

- Alifariki, L.O. *et al.* (2021) 'Differences of sodium consumption pattern hypertension sufferer in coastal and highland communities in Wakatobi islands', *Bionatura*, 6(2), pp. 1736–1740. Available at: <https://doi.org/10.21931/RB/2021.01.02.12>.
- Angraeni, D., Tresnasari, C. and Sakinah, R.K. (2023) 'Characteristics of Hypertension in Internal Medicine Clinical Polysm', *Bandung Conference Series: Medical Science*, 3(1), pp. 695–701. Available at: <https://doi.org/10.29313/bcsms.v3i1.6504>.
- Astutik, E. *et al.* (2020) 'Prevalence and Risk Factors of High Blood Pressure among Adults in Banyuwangi Coastal Communities, Indonesia', *Ethiopian journal of health sciences*, 30(6), pp. 941–950. Available at: <https://doi.org/10.4314/ejhs.v30i6.12>.
- Forouzanfar, M.H. *et al.* (2016) 'Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015', *The Lancet*, 388(10053), pp. 1659–1724. Available at: [https://doi.org/10.1016/S0140-6736\(16\)31679-8](https://doi.org/10.1016/S0140-6736(16)31679-8).
- Handari, S.D., Rahmasari, M. and Adhela, Y.D. (2023) 'The Relationship between Diabetes Mellitus, Cholesterol and Calcium Score in Hypertensive Patients with Obesity Nutritional Status', *Amerta Nutrition*, 7(1), pp. 7–13. Available at: <https://doi.org/10.20473/amnt.v7i1.2023.7-13>.
- Indriana, N. and Swandari, M.T.K. (2021) 'The Relationship of Knowledge Level with Medication Adherence in Hypertensive Patients at X Cilacap Hospital', *JOPHUS Scientific Journal: Journal of Pharmacy UMUS*, 2(01). Available at: <https://doi.org/10.46772/jophus.v2i01.266>.
- Kalangi, J.A., Umboh, A. and Pateda, V. (2015) 'The Relationship of Genetic Factors with Blood Pressure in Adolescents', *e-CliniC*, 3(1), pp. 3–7. Available at: <https://doi.org/10.35790/ecl.3.1.2015.6602>.
- Kamaruddin, I. *et al.* (2023) 'Smoking habits and excessive salt consumption on the incidence of hypertension in the elderly', *Holistic Health Journal*, 17(1), pp. 9–16. Available at: <https://doi.org/10.33024/hjk.v17i1.9120>.
- Kartika, J. and Purwaningsih, E. (2020) 'The Relationship between Obesity in the Pre-Elderly and the Incidence of Hypertension in Senen District, Central Jakarta in 2017-2018', *Journal of Medicine and Health*, 16(1), p. 35. Available at: <https://doi.org/10.24853/jkk.16.1.35-40>.
- Ministry of Health of the Republic of Indonesia (2019) 'Riskendas 2019', *National Report of Riskendas 2019*, 44(8), pp. 181–222. Available at: <https://p2ptm.kemkes.go.id/tag/hari-hipertensi-dunia-2019-know-your-number-kendalikan-tekanan-darahmu-dengan-cerdik>.
- Malini, H. and Prima Gusti, R. (2022) 'Jurnal Kesehatan is licensed under CC BY-SA 4.0 © Jurnal Kesehatan', 13, pp. 23–026. Available at: <http://ejurnal.stikesprimanusantara.ac.id/>.

- Nafi', S.U. and Putriningtyas, N.D. (2023) 'Factors Influencing the Incidence of Hypertension in Coastal Communities (Study on Communities in the Working Area of the Kedung Ii Jepara Health Center)', *Journal of Nutrition College*, 12(1), pp. 53–60. Available at: <https://doi.org/10.14710/jnc.v12i1.36230>.
- Nuraeni, E. (2019) 'Age and Gender Relationship at Risk with the Incidence of Hypertension at Clinic X in Tangerang City', *, 4(1), p. 1. Available at: <https://doi.org/10.31000/jkft.v4i1.1996>.*
- Purwono, J. *et al.* (2020) 'Salt Consumption Patterns with the Incidence of Hypertension in the Elderly', *Journal of Health Discourse*, 5(1), p. 531. Available at: <https://doi.org/10.52822/jwk.v5i1.120>.
- Rahmadhani, M. (2021) 'Factors Influencing the Occurrence of Hypertension in the Community in Bedagai Village, Kota Pinang', *Journal of Medicine STM (Medical Science and Technology)*, 4(1), pp. 52–62. Available at: <https://doi.org/10.30743/stm.v4i1.132>.
- Shariq, O.A. and Mckenzie, T.J. (2020) 'Obesity-related hypertension: A review of pathophysiology, management, and the role of metabolic surgery', *Gland Surgery*, 9(1), pp. 80–93. Available at: <https://doi.org/10.21037/g.s.2019.12.03>.
- Siti, S., Idrus, A. and W, S.A. (2017) *Internal Medicine Science Volume II Edition IV*. IV. Jakarta: Interna Publishing.
- Soleha, U. and Qomaruddin, M.B. (2020) 'Saltwater fish consumption pattern and incidence of hypertension in adults: A study on the population of Gresik coast, Indonesia', *Journal of Public Health Research*, 9(2), pp. 212–214. Available at: <https://doi.org/10.4081/jphr.2020.1846>.
- Suling, F.R.W., Agustian, Z. and Enggar, D. (2018) '18 Prevalence of Hypertension and Its Complication in Emergency Room Christian University of Indonesia Hospital in 2017', *Journal of Hypertension*, 36(Supplement 2), p. e5. Available at: <https://doi.org/10.1097/01.hjh.0000544383.36453.a9>.
- Susanti, and Novi, P.A.S. and R.F. (2020) 'Determinants of Hypertension Incidence in Coastal Communities Based on Socio-Demographic Conditions and Food Consumption. LPPM Yapenas Academy of Nursing, .', *Health Scientific Journal*, 2(1)(1), p. 44.
- Susanti, S. *et al.* (2022) 'The Relationship between Self Efficacy and Self-Management of Hypertension Patients at the Kassi-Kassi Health Center, Makassar City in 2022', *Journal of Jambi Health Sciences*, 6(2), pp. 48–58. Available at: <https://doi.org/10.22437/jkmj.v6i2.20540>.
- WHO (2021) *hypertension*. Available at: <https://www.who.int/news-room/factsheets/detail/hypertension>.
- Wijaya, I., Nur Kurniawan, K, R. and Haris, H. (2020) 'The Relationship between Lifestyle and Diet to the Incidence of Hypertension in the Working Area of the Towata Health Center, Takalar Regency', *Indonesian Health Promotion Publication Media (MPPKI)*, 3(1), pp. 5–11. Available at: <https://doi.org/10.56338/mppki.v3i1.1012>.
- World Health Organization (2018) 'Global status report on noncommunicable diseases', *World Health Organization*, 53(9), pp. 1689–1699. Available at: <https://doi.org/10.1017/CBO9781107415324.004>.

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