

The Factors Influence to Incidence of Hypertension in Baucau Municipality Timor Leste 2022

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Article Information

Submitted: 29 August 2022

Accepted:

September 2022

Online Publish: 20 September 2022

Abstract

Introduction: Hypertension is a serious problem in public health programs that affects individual health, and can affect the body and kill people. High blood pressure, also called hypertension, is **blood pressure that is higher than normal**. Blood pressure changes throughout the day based on your activity. Having a blood pressure measurement consistently above normal can lead to a diagnosis of high blood pressure or hypertension. Hypertension is known as a killer disease and a heterogeneous group of diseases. The ministry of health of timor leste, stated that the incidence of hypertension was 41.66% and cases of death were 27% of hospitalized patients.

Method: this study used quantitative and quantitative methods together, in particular a prospective population study in the municipality of baucau where interviews with the head of the family or someone else takes the responsibility. **Results and discussion:** the results of data analysis using pearson product moment with p-value $0.000 < 0.05$ is a stress factor that affects the cause of hypertension. Also salt consumption is 0.741 between the interval coefficients 0.60 - 0.799 classified as severe hypertension). Other tests also showed that alcohol consumption had an effect on the incidence of hypertension because the p-value was $0.466 > 0.05$. **Conclusion:** based on the results of data analysis, stress factors, salt and alcohol consumption have an effect on the incidence of hypertension in the people of baucau city, timor leste.

Keywords: Stress; Salt Consumption Factor; Alcohol Consumption; Hypertension;

How to Cite

DOI

e-ISSN/p-ISSN

Published by

Joaquim Pinto, Ostelino da Silva Belo, Alexandra Maria Pires, Manuel da Costa Fernandes, Acacio Guterres Pereira, Eduardo C. Gaio, Serafina Casilda Freitas Belo/ The Factors Influence to Incidence of Hypertension in Baucau Municipality Timor Leste 2022. Vol. 1, No. 12, 2022

<https://doi.org/10.54543/kesans.v1i12.107>

2808-7178 / 2808-7380

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Introduction

Blood pressure is the force exerted by circulating blood against the walls of the body's arteries, the major blood vessels in the body. Hypertension is when blood pressure is too high. Blood pressure is written as two numbers namely the first (systolic) number represents the pressure in blood vessels when the heart contracts or beats. The second (diastolic) number represents the pressure in the vessels when the heart rests between beats. Hypertension is diagnosed if, when it is measured on two different days, the systolic blood pressure readings on both days is ≥ 140 mmHg and/or the diastolic blood pressure readings on both days is ≥ 90 mmHg. The hypertension is a serious medical condition that significantly increases the risks of heart, brain, kidney and other diseases so that needed prevention (Ernawati et al., 2020)

Also the Report WHO (2016), cardiovascular disease caused mortality rate about 17 millions in each year because complicated by hypertension is 9,4 millions in worldwide of adult (18 year) about 22%, and estimated 29% from population with elderly is 1.56 millions so that need a better planning for non communicable disease prevention, such hypertension because caused of sudden death and asymptomatic². Stress factor contribute to incidence mortality hypertension in ASEAN region about 1,5 millions and 1/3 from population adult majority with hypertension and hypertension cases include Timor Leste is 36%³. Also report WHO about hypertension is a seriously problem and need maximum attention because a serious problem and caused mortality rate the population in the worldwide about 1.13 millions. The number of adults with hypertension increased from 594 million in 1975 to 1.13 billion in 2015, with the increase seen largely in low- and middle-income countries. This increase is due mainly to a rise in hypertension risk factors in those populations

The report from American Heart Association (AHA) the population caused hypertension with male 49% and female 51% (Badan Litbangkes Kementerian Kesehatan RI, 2018) and report from Indonesia Basic Research, non communicable disease in Indonesia about 25,8% with hypertension (Organization, 2015). Also the Ministry of Health Timor Leste (MoH, 2016) announced incidence hypertension and caused by stress 4,166% and 27 of patients death from inpatients in the hospital. The result of surveyed by MoH-TL and University National Timor Loro Sae (2014 showed the risk factor caused incidence hypertension is stress and obesitas is 10,3%, alcohol consumption 57,7%, salt consumption or add salt when lunch or dinner is 78%. Another important factor contributed increased incidence hypertension in Timor Leste was tobacco consumption in the aged of population 18 – 44 years old is 43,0% and from aged 45-69 with 63,1%. (Organization, 2015)

The recommendation of WHO to provides evidence-based recommendations for the initiation of treatment of hypertension, and recommended intervals for follow-up. The document also includes target blood pressure to be achieved for control, and information on who, in the health-care system, can initiate treatment. Also to support the governments

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in strengthening the prevention and control of cardiovascular disease. Also provide Healthy-lifestyle counselling, evidence-based treatment protocols, access to essential medicines and technology, risk-based management, team-based care, and systems for monitoring, provide a strategic approach to improve cardiovascular health in countries across the world (Organization, 2021)

Table 1

The frequency distribution hypertension cases in Baucau Municipality, 2022

No.	Period	Frequency	%
1	2020	2,867	44,4
2	2019	2625	40,2
3	2018	965	14,90
Total		6.457	100

Source : The Health information System Baucau Municipality, 2022

According to the reported from The Health information System Baucau Municipality showed the incidence cases of hypertension increased from time to time because in 14,90% in 2018 and up to 44,4% in 2020.

Also the report from Health information System of Community Health Center Laga showed:

Table 2

No.	Period	Frequency	%	Obs
1	2020	222	30,16	
2	2019	187	25,41	
3	2018	327	44,43	
Total		736	100	

Source : The Health information System Laga Community Health Centre, 2022

According to the reported from The Health information System Laga showed the incidence cases of hypertension increased in 2018 (44,43% and decreased in 2019 (25,41%).

Table 3

The of population distributed in subdistrict Laga, Baucau Municipality with interval aged 35 – 90 years old as below:

Area	Female	Male	Total
Bulubai	261	179	440
caicasalari	377	472	849
Itidaho	352	313	665
samaguia	283	285	568
Total	1273	1249	2522

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Methods

This explanatory, descriptive study used both quantitative and qualitative methods in conjunction with each other to generate more-in-depth understanding of the quantitative results (Creswell & Creswell, 2017). The two methods included a cross-sectional study of simple random sampling and interviews with the population (Sugiyono, 2018) and measured blood pressure with aged 35th – 90th years old. From the total of 101 samples population who agreed interview and measure BP in Baucau Municipality. The total population distributed at there are 2522 and selected 20% (n=101) using a simple random sampling. The inclusion criteria for the population with aged 35th – 90th year's available to participated of study.

Table 4

Calculation of study cases by community health centre

No.	Number of Cases	No. Cases to be included (n=) (20% of total cases)
1	106	21
2	120	24
3	149	30
4	130	26
Total	505	101

Ethical clearance was obtained from the Technical and Ethical Committee of the National Institute of Health for Ethical Review prior to data collection. Confidentiality was maintained throughout the study. Data collected from the interview and measure BP where focused on population with aged 35th – 90th and lived in subdistrict Laga, Bauau and agree to participate of study. Case file review data were coded on the basis of yes/no responses and entered into the statistic package for social sciences (SPSS) (Pallant, 2020)

Results and Discussion

Results of the study are presented according to factor stress, salt consumption, alcohol and tabaco consumption as below:

Table 5

Characteristic and level of education of population in Baucau municipality

No	Aged			Sex		
	Old	F	%		F	%
1	70-90	12	11.9	Male	53	52.5
2	50-69	51	50.5	Female	48	47.5
3	35-49	38	37.6			
Total		101	100.0			100

The population agreed to participated of the study was 101 from 2.522 distributed in 4 areas selected in Baucau Municipality is 50.5% of 50-69 years old and minim participation was 11.9% of 70-90. According to sex have a balance of participated

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because 52.5% of male and 47.5% of female. Its mean the participated of elderly needed to educate or counseling more for importance of health. According to goverment DECRET Law N0. 25 /2017 of 26 july for regulated legality of institute social solidarity to protected of elderly and provide submission \$50 each month and waranty all health conditions based to Timor Leste constitute.

Factors Stress

Stress can cause hypertension through repeated blood pressure elevations as well as by stimulation of the nervous system to produce large amounts of vasoconstricting hormones that increase blood pressure. Factors affecting blood pressure through stress include white coat hypertension, job strain, race, social environment, and emotional distress. when one risk factor is coupled with other stress producing factors, the effect on blood pressure is multiplied (Kulkarni et al., 1998) The resulted of study show that the stress more contributed of incidence hypertension because 41% of the population in Baucau municipality suffered mid stress, moderate 26,7% and 5% to category severe stress. The prevention of hypertension needed comfortable and relaxation, mediation, acupressure and music therapy. According to report Thomson H.X (2002) showed In 95% of these cases, the cause of hypertension is unknown and they are categorized as "essential" hypertension (Thompson et al., 2002). When did screening at community level the majority of population not present sings and symptoms of hypertension.

Table 6

The factor stress influenced to incidence hypertention in Baucau munipality

No	Level stress	F	%	Product Moment	
1	Normal	28	27,7	Coefficient	P-Value
2	Mid stress	41	41	0,278	0,005
3	Moderate	27	26,7		
4	Severe	5	4,6		
Total		101	100		

The analysed bivariate used person product moment with P-Value=0,000. Significant P-Value=0,000<0,05 maka H_0 accepted and rejected in H_a . And value correlation (r) = 0,278, mean stress factor influenced incidence hypertension with category less correlation because between 0,20 – 0,399. Cardiovascular disease (CVD), and hypertension as one of its major components, is a major cause of morbidity and mortality in modern society (Rosenthal & Alter, 2012). Occupational strain or stress is considered one of factor to contribute hypertension because the study the show that factor stress influenced to incidence hypertension in Baucau municipality.

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Salt Consumptions

Sodium is the main cation (positively charged ion) in the extracellular fluid while chloride is the main anion (negatively charged ion). Sodium is important for many cellular functions and together with chloride, they are responsible for the osmolarity of the extracellular fluid. In addition, sodium is essential for the excitation of nerve and muscle cells, acid-base balance and the secretion of some digestive enzymes (Rust & Ekmekcioglu, 2016)

Table 7

Adherence to guidelines for salt consumption and incidence hypertension in Baucau municipality, 2022

No	Salt consumption	F	%	Product Moment	
1	Moderate consumption	29	28,7	Kofisiente	P-Value
2	More consumption	72	71,3	0,741	0,000
Total		101	100		

The analysed data show that the population lived in Baucau Municipality is maioritas consumption sodium is 71,3% and moderate is 28,7% from total population. The result of tested by statistic person product moment showed P-Value=0,000. Significant P-Value=0,000<0,05 with test hypotesis was accepted. Its mean factor consumption of salt contributed incidence hypertension in Baucau Municipality. The value (r) = 0,741 or 74,1% of the salt consumption directly contributed incidence hypertension. The publication of R. Ghada Sayed high salt intake is deleterious to the cardiovascular system both in normo- as well as in hypertensive individuals. Many food products contain salt, and one should be aware of the salt content in their diet to avoid high consumption (Youssef, 2022)

Alcohol Consumptions

High-dose alcohol consumption has a biphasic effect on BP; it decreases BP up to 12 hours after consumption and increases BP > 13 hours after consumption. High-dose alcohol increases BP at all times up to 24 hours.

Table 8

The alcohol consumption and influenced hypertension in Baucau municipality

No	Alcohol consumption	F	%	Product Moment	
1	Less	41	40,60	0,466	0,000
2	moderate	35	34,70		
3	Much more	25	24,70		
Total		101	100		

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According to table 8 showed majority of the populations response they are limited consume salt about 40,6% but 24,70% of the populations unlimited using salt every time.

The analyse ppm showed $p\text{-value}=0,000$ and if $P\text{-Value}=0,000<0,05$ is category H_0 rejected. The alcohol consumptions are influenced to incidence hypertention, its mean the population Baucau needed health education and promotion for contribute reduction of alcohol use. The value of correlation (r) = 0,466 or 46,6% was alcohol influenced high hypertension but 53,4% external factors also contributed incidence hypertension like lifestyle, exercise, daily activities, etc.

Conclusion

Alcohol consumption; While regular low to moderate consumption of alcohol is protective against CHD, concerns about other cardiovascular and health risks associated with alcohol consumption (including stroke, hypertension and some cancers) do not favour a general recommendation for its use. The stress and salt was contributed incidence hypertension so that health professional improve quality health education and promotion to population in rural area.

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Youssef, G. S. (2022). Salt and hypertension: current views. *E-Journal of Cardiology Practice*, 55(3), 1–10.

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(2022)

First publication right:

KESANS: International Journal Health and Science