

# Factors that Influence Hypertension in the Community Aged 50-65 in Becora Community Health Center, Cristo-Rei Administrative Post, Dili Municipality, in 2023

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**Abstract:** There is a shift in the epidemiology of non-communicable diseases due to socio-economic, environmental, and demographic changes, resulting in healthier lifestyles within communities. The Global Status Report on Non-communicable Diseases (2010) indicates that 40% of developing economies are affected by hypertension compared to 35% in developed countries. The objective of the research is to know about the factors of obesity, family history of hypertension, salt intake, smoking habits, physical activity, and alcohol consumption for the occurrence of hypertension in communities aged 50-65 years in Becora Community Health Center in 2023.

The definition of hypertension is a blood pressure that rises or falls with systolic pressure above 140 mmHg and diastolic pressure above 90 mmHg in twice the measurement of meter blood pressure meter under quiet conditions Yonitasari, 2018). With the condition increasing, it can cause complications to other organs, such as brain disturbance, blindness, stroke, renal failure, and right ventricular hypertrophy.

The method implements quantitative research with a cross-sectional approach based on positivity (concrete data), with a total population of 347 hypertension patients who are actively treated at Becora CHC, with a sample of 78 respondents. The data analysis technique uses chi-square with univariate and bivariate variance.

The results showed that there is a significant relationship between obesity  $X_1$  to hypertension, with  $p\text{-value} = 0.020 < 0.05$ ; Family history  $X_2$  to hypertension, with  $p\text{-value} = 0.001 < 0.05$ ; smoking habit  $X_4$  to hypertension, with  $p\text{-value} = 0.013 > 0.05$ ; and physical activity  $X_5$  to hypertension, with  $p\text{-value} = 0.005$ . alcoholic  $X_6$  for hypertension with  $p\text{-value} = 0.02 < 0.05$ , Salt consumption  $X_3$  for hypertension with  $p\text{-value} = 0.062 > 0.05$  (no significant relationship).

Conclude that variables  $X_1$ ,  $X_2$ ,  $X_4$ ,  $X_5$ , and  $X_6$  influence the occurrence of hypertension in the community in Becora Community Health Center, in 2023, therefore suggest to health personnel to continue to provide treatment to the community aged 50-65 with certain information so that they can prevent the occurrence of hypertension.

**Keywords:** Risk Factors, Hypertension.

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## I. INTRODUCTION

The occurrence of epidemiological transition, demographic transition, and technological transition in the global world has resulted in a change in disease patterns, from infectious diseases to non-communicable diseases. This epidemiological transition results from socio-economic, environmental, and demographic changes leading to unhealthy lifestyle choices, such as reduced physical activity, smoking, high-fat and calorie diets, and regular alcohol consumption. (Gultawatvichai et al., 2023).

Timor Leste is also involved in developing countries, although a small country with an area of 15,410 km<sup>2</sup> and a population of 1,318,445 inhabitants. It also requires human resources specializing in non-communicable diseases to encourage health personnel to share their experience in treating non-communicable diseases with attention. In 2021, the Ministry of Health resisted hypertension cases in Timor Leste amounting to 11,646 cases. According to data from HMIS-TL (Health Management Information System-Timor Leste 2022), hypertension cases amounted to 39,586 cases. The data shows that the number of female cases is more compared to the number of male cases. In addition, the researcher also obtained data from the National Hospital Guido Valadares in 2021, amounting to 790 cases, and in 2022, amounting to 988 cases. (Fifita et al., 2024)

According to data from the National Hospital Guido Valadares, registered patients affected by stroke complications due to hypertension, in 2020, a total of 157 cases, 97 of men and 60 cases. From 2021, there were 164 cases of 116 men and 48 women. In 2022, the World Health Organization announced that 156 deaths of hypertension patients in 2021 involved 60, meaning that the majority of deaths, 24.21/100,000 (per 100,000) of the population of Timor-Leste, die from hypertension. The aimed to find out the association of the factors that influence hypertension in the community aged 50-65 in Becora Community Health Center, Cristo-Rei Administrative Post, Dili Municipality, in 2023. According to study in Timor-Leste found that prevalence of self-reported hypertension (diagnosed within the past 12 months) was 2.8% across both genders. Of those with self-reported hypertension, only 47.7% were currently taking prescribed blood pressure medication (46.6% of men and 48.7% of women). This proportion was higher in the 45-69 age group (total: 53.9%; men: 47.8%; women: 60.5%) compared to younger age groups. (Marcos Carvalho, Levi Anatolia S.M. Exposto, 2024)

Slightly more than one in every four adults aged 35 years or older had hypertension in Gondar city (28.3%). This prevalence is high and may be considered as a major public health problem in this community. As a result complications of hypertension such as disabilities are more likely to occur in this community particularly among those not aware of being hypertensive. (Awoke et al., 2012).

Our results show generally low levels of awareness of hypertensive status with North African countries having relatively better levels. The levels in Africa are much lower than those in North America and Europe where temporal

reviews have shown an improvement in awareness from twenty years ago when the levels were similar to the level currently seen in Africa to the present rate of over 65%. Most of this improved awareness has been attributed to rigorous education programs on hypertension after the realization that hypertension was a major player in morbidity and mortality in these countries. Whereas the heterogeneous nature of the designs of the study reviewed here could not allow the establishment of a temporal trend in this review, no improvement was realised in countries that had multiple consecutive studies such as Tanzania. It is possible that similar appreciation of hypertension as leading cause of death would lead to improved education and therefore improved awareness. (Kayima et al., 2013).

The previous study indicated that prevention efficacy, 46.2% were categorized as practicing good prevention, and 53.8% as bad prevention. A chi-square P-value of 0.014 was reported, reflecting a significant relationship between secondary data utilization and the prevention of hypertension, corroborating a positive relationship. (Pereira et al., 2025)

### ➤ Research Design

Quantitative research is an investigation of social problems based on testing theories that consist of variables, measured or counted with numbers, analyzed with statistical procedures to determine whether the predictive generalization of the theory is true or not. Therefore, the researcher conducted this research using a quantitative method with a cross-sectional approach, based on the causes of hypertension that occur in the community, especially in the communities that come to consult at the Becora Community Health Center. The population in this study was 347 patients, and a sample of 78 respondents.

### ➤ Data Analysis Techniques

After collecting data, the following steps will be implemented: editing, coding, processing, and analysis in accordance with the objectives of this research. And after processing the descriptive analysis of inference using univariate and bivariate analysis with SPSS version 21.

## II. RESULTS

### ➤ Respondent Characteristics

The characteristics of hypertension patients based on Age, Sex, Marital Status, Education Level and Type of Service are as follows: hypertension patients aged 50-59 with a frequency of 42 (53.8%), age 60-65 with a frequency of 36 (46.2%) concluded that: patients with hypertension are the majority 50-59, the minority is aged 60-65.

Hypertension patients with female sex with a frequency of 49 (62.8%), male with a frequency of 29 (37.2%), concluded that: patients who suffer from hypertension mostly happen to women, and the minority happens to men. Hypertension patients with marital status, 78 patients, 100% were married. Hypertension patients with illiterate education, with a frequency of 11 (14.1%), primary school and pre-secondary school, with a frequency of 15 (19.2%), secondary school and university, with a frequency of 52 (66.7%),

concluded that: patients who suffer from hypertension mostly have secondary school & university education, happens to are also illiterate. Hypertension patients with agricultural services with a frequency of 42 (54%), civil servants with a frequency of 11 (14%), and private institutions with a frequency of 25 (32%) concluded that: patients who suffer from hypertension mostly happen to agriculture and a

minority happen to civil servants. (Boavida Tilman et al., 2025)

#### ➤ Results Analysis

The variables to be analyzed are: Obesity  $X_1$ , Family History of Hypertension  $X_2$ , Salt Consumption  $X_3$ , Smoking Habit  $X_4$ , Physical Activity  $X_5$ , and Alcohol Consumption  $X_6$  for the Occurrence of Hypertension Variable Y.

Table 1. The Obesity to the Occurrence of Hypertension at Becora CHC in 2023

Obesity	Hypertension		Total	$X^2$	P.-Value	CI-95%
	Not Hypertension	On Hypertension				
Yes	8 (14%)	49 (86%)	57(100%)	3.769	0.020	1.187-11.965
No	8 (38.1%)	13 (61.9%)	21 (100%)			
Total	16(20.5)	62(79.5%)	78 (100%)			

Based on the results of the analysis with the cross table above shows that from the variable Obesity  $X_1$  to the occurrence of hypertension Y in Becora Community Health Center in 2023 from 78 respondents showed that the choice of Alternative Yes (At Risk of Obesity) with a total of 57 with a percentage (100) of the total risk of hypertension is not 8 with a percentage (14%) were at risk of hypertension with a total of 49 with a percentage (86%). In addition to this choice, Alternative No (No risk of obesity) with a total of 21, with a

percentage (100) this total has no risk of hypertension; a total of 8, with a percentage of 38.1%; a risk of hypertension, with a total of 62, with a percentage of 79.5%. The following is based on the results of the hypothesis test of the variable Obesity for the occurrence, showing that the value of  $P_{\text{Value}}$  0.020, which is lower than the value of determination or 0.05, or  $0.020 < 0.05$ , with the value of Chi-Square  $X_2$  3.769, with the lower limit or Lower 1.187 and the upper limit of 1.15. Confidence Interval CI-95%.

Table 2. The Family History, with Frequency Respondent at Becora CHC in 2023

Alternate Answer	Frequency	Percentage (%)
No	16	20.5
Yes	62	79.5
Total	78	100

Based on the results above show that out of a total of 78 respondents who answered no, 16 respondents (20.5%). And respondents who answered yes totaled 62 respondents

(79.5%). Based on the above data describes that respondents who responded Yes to family history, with its frequency, compared to respondents who responded No.

Table 3. The Family History of Hypertension at Becora CHC in 2023

Family History of hypertension	Hipertension		Total	$X^2$	P.-Value	CI-95%
	Not Hypertension	Hypertension				
Yes	4 (8.5%)	43 (91.5%)	47 (100%)	6.789	0.001	1.938-23.788
No	12(38.7%)	19 (61.2%)	31 (100%)			
Total	16(20.5)	62(79.5%)	78 (100%)			

Based on the results of the analysis with the cross table above showed that from the variable of Family History of Hypertension to the Occurrence of Hypertension in Becora Community Health Center in 2023 from 78 respondents

showed that the choice of Alternative Yes (At Risk of Family History) with a total of 47 percent (100 percent) with a total risk of this with percentage (8.5%) at risk of hypertension with a total of 43 with percentage (91.5%).

Table 4. The Salt Consumption More Frequently Compared to Respondents Who do not Involve Themselves at CHC Becora in 2023

Alternative Answer	Frequency	Percentage (%)
No	24	30.8
Yes	54	69.2
Total	78	100

Based on the results above show that out of a total of 78 respondents who answered no, 24 respondents (30.8%). And respondents who answered yes totaled 54 respondents

(69.2%). Based on the above data, described that respondents who answer yes to salt consumption more frequently compared to respondents who do not involve themselves.

Table 5. The Salt Consumption More Frequently Compared to Respondents Who do not Involve Themselves at CHC Becora in 2023

Salt Consumption $X_2$	Hipertention		Total	$X^2$	P-Value	CI-95%
	without Hypertension	On Hypertension				
Yes	8 (14.8%)	46 (85.2%)	54(100%)	2.875	0.042	0.926-8.928
No	8(33.3%)	16 (66.7%)	24(100%)			
Total	16(20.5)	62 (79.5%)	78 (100%)			

Based on the results of the analysis with the cross table above shows that from the variable Salt Consumption to the Occurrence of Hypertension Y in Becora Community Health Center in 2023 from 78 respondents showed that the choice of Alternative Yes (At Risk) with a total of 54 with a percentage number (100) of this total is not at risk of hypertension with a total of 8 percentile (14.8%) were at risk

of hypertension with a total of 46 with percentage number (85.2%)

In addition to this choice, Alternative No (No risk of salt consumption) with a total of 24, with a percentage (100) of this total, no risk of hypertension with a total of 8, with a percentage (33.3%); at risk of hypertension with a total of 16, with a percentage (66.7%).

Table 6. The have a Habit of Smoking Tobacco More Frequently Compared to Respondents Who are not Involved in Tobacco Smoking at CHC Becora in 2023

Alternate Answer	Frequency	Percentage (%)
No	37	47.4
Yes	41	52.6
Total	78	100

Based on table 7 above shows that out of a total of 78 respondents who answered no, 37 respondents (47.4%). And respondents who answered yes totaled 41 respondents (52.6%). Based on the above data describes that respondents

who answered yes have a habit of smoking tobacco more frequently compared to respondents who are not involved in tobacco smoking.

Table 7. The Smoking Habit to the Occurrence of Hypertension at CHC Becora in 2023

Habitual Smoking	Hipertention		Total	$X^2$	P-Value	CI-95%
	Not Hypertension	Hypertension				
Yes	4 (9.8%)	37(90.2%)	41(100%)	4.44	0.013	1.285-15345
No	12 (32.4%)	25 (67.6%)	37 (100%)			
Total	16 (20.5%)	62 (79.5%)	78 (100%)			

Based on the results of the analysis with the cross table above showed that from the variable Smoking habit to the occurrence of hypertension in Becora Community Health Center in 2023 from 78 respondents showed that the choice

of Alternative yes (At Risk) with a total of 41 percentage (100) (9.8%) were at risk of hypertension with a total of 37 with percentage number (90.2%)

Table 8. The Physical Activity with More Frequently Compared to Respondents Who do not Perform Physical Activity at CHC Becora in 2023

Alternative Answer	Frequency	Percentage (%)
No	36	46.2
Yes	42	53.8
Total	78	100

Based on the above results showed that out of a total of 78 respondents who answered no, 36 respondents (46.2%). And respondents who answered yes totaled 42 respondents (53.8%). Based on the above data describes that respondents

who answer yes to physical activity with more frequently compared to respondents who do not perform physical activity.

Table 9. The Physical Activity to the Occurrence of Hypertension at CHC Becora in 2023

Physical Activity	Hipertention		Total	$X^2$	P-Value	CI-95%
	Not Hypertension	Hypertension				
Yes	5 (11.9%)	37(88.1%)	42 (100%)	3.256	0.042	1.008-6.695
No	11 (30.6%)	25(69.4%)	36 (100%)			
Total	16 (20.5)	62(79.5%)	78 (100%)			

Based on the results of the analysis with the cross table above showed that from the variable Physical Activity X5 to the occurrence of hypertension Y in Becora Community Health Center in 2023 from 78 respondents showed that the choice of Alternative Yes (At Risk) with a total of 42 with a percentage (100) of the total risk of hypertension is not 5 with a percentage number (11.9%) were at risk of hypertension with a total of 37 with a percentage number (88.1%)

In addition, choose Alternative No (No Risk of Hypertension) with a total of 36, with a percentage (100) of this total no risk of hypertension, with a total of 11, with a percentage (30.6%) at risk of hypertension, with a total of 25, with a percentage (69.4%).

Table 10. The Alcohol Consumption with its Frequency More Compared to Respondents Who do Not Consume Alcohol at CHC Becora in 2023

Alternative Answer	Frequency	Persentajen (%)
No	28	35.9
Yes	50	64.1
Total	78	100.0

Table 11 above shows that out of a total of 78 respondents who answered no, 28 respondents (35.9%). The respondents who answered 'yes' totaled 50 (64.1%). Based on

the above data describes that respondents who answer yes to alcohol consumption with its frequency more compared to respondents who do not consume alcohol.

Table 11. the Alcohol Consumption to the Occurrence of Hypertension at CHC Becora in 2023

Alcoholic Consumption	Hipertention		Total	$X^2$	P. Value	CI-95%
	without Hypertension	Hypertension				
Yes	5 (10%)	45 (90%)	50 (100%)	5.842	0.02	1.762-19.245
No	11(39.3%)	45 (90.0%)	28 (100%)			
Total	16(20.5)	62 (79.5%)	78 (100%)			

Based on the results of the analysis with the cross table above showed that from the variable Alcohol Consumption X6 to the occurrence of hypertension Y in Becora Community Health Center in 2023 from 78 respondents showed that the choice Alternative yes (At risk) with a total of 50 with a percentage (1000) of hypertension with a total number of this number of with a percentage number (10%) at risk of hypertension with a total of 45 with a percentage number (90%).

abnormal to cause health problems. Obesity does not cause hypertension, but the prevalence of hypertension in people with obesity occurs because the body is larger; the relative risk of suffering from hypertension for people who are obese is 5 times higher than for people with a normal weight.(Deng et al., 2025)

### III. DISCUSSION

There are several factors of obesity that contribute to the occurrence of hypertension in the Becora Community Health Center in 2023. The test results of the obesity variable for the occurrence showed that the P-value is 0.020, which is lower than the determination value of 0.05, or  $0.020 < 0.059$ , with the limit of the Chi-Square value 3769. Lower or Lower 1.187 and Upper Limit 11.965 with Confidential Interval CI-95%. Obesity is excessive fat or fat that can be considered

According to the first research implemented by researcher Desy Amanda, Santi Martini 2018 in Puskesmas Sidoarjo Jawa Timur Indonesia with its title: characteristic relationship with the state of central obesity and the occurrence of hypertension for patients aged 59 to < 59 data analysis showed that hypertension patients with central obesity are at higher risk compared to the age group > 59 with  $p_{\text{value}} = 0.000$ , male sex with  $p_{\text{value}} = 0.044$  and obesity status  $P = 0.001$ .

Based on the results of the hypothesis test of the variable Family history for the occurrence of hypertension showed that the value of P-value is 0.001, which is smaller than the



value of determination or 0.05, or  $0.001 < 0.05$ , with a value of Chi-Square X2 6.789, with a lower limit of 1.98 and upper limit 23.788 with a Confidence Interval CI-95%. A History of hypertension obtained from parents will also increase the risk of the occurrence of essential hypertension for the next generation. (Piccoli et al., 2025)

This research was also implemented by Widyaningtyas, The results of case control research implemented in Puskesmas Bangkala Jenepono Regency in 2012 based on chi-square test showed that: family history relationship with the occurrence of hypertension with an OR value of 4.36 showed that; people with a family history of hypertension are 4.36 times more likely to develop hypertension compared to people without a family history of hypertension.

Based on the results of the hypothesis test of the variable salt consumption for hypertension showed that the value is 0.062, which is greater than the determination value of 0.05, or  $0.062 > 0.05$ , with a Chi-Square X2 value of 2.875, with the lower limit of 0.926 and the upper limit of 0.926. Confidential Interval CI-95%.

According to Sulistyaninsih (Acharya et al., 2025) salt is a compound (compound) that consists of positive ions (cations) and negative ions (anions), thus transforming compounds compounds) neutral. Salt is an important component of the needs of the human body, and the main component is sodium chloride. Consumption of more than 2300 milligrams/day for a long time can lead to hypertension.

According to the research implemented by the first researcher, Rosiana Eva Rayanti, with her title; The relationship between salt intake and hypertension in women in Batur, Central Java 2019, showed that there is no relationship between systolic pressure with its P value:  $(0.373) > 0.05$  determination number, and diastolic pressure with its P value:  $(0.002)$ .

Based on the results of the hypothesis test of the variable Habitual Smoking for hypertension showed that the P-value is 0.013, which is lower than the determination value of 0.05 or  $0.013 < 0.05$ , with a Chi-Square value of 4.440, with a lower limit or Lower 1.285 and an Upper Limit of 1535. Confidential Interval CI-95%. (Kim et al., 2024)

This research is also the first research implemented by Yashinta Octavia Gita Setyanda, Delmi Sulastri, and Yuniar Lestari entitled: The relationship between smoking and the occurrence of hypertension for men aged 35-65 years in the city of Padang / West Sumatra, Indonesia. By chi-square test analysis with p-value  $< 0.05$  for significance. The results showed that there is a relationship between smoking habit and hypertension value ( $p=0.003$ ), influenced by long-term smoking with value ( $p=0.017$ ) and type of tobacco ( $p=0.017$ ), but there is no relationship between the amount of tobacco and the occurrence of hypertension with value ( $p=0.412$ ).

Based on the results of the hypothesis test of the variable Physical Activity for hypertension, Y showed that the P-value is 0.042, which is lower than the determination value of 0.05 or  $0.042 < 0.05$ , with a Chi-Square value of 3.256 with a lower limit of 1.008 and an upper limit of 1.85. Confidential Interval CI-95%.

Physical activity is a body movement produced by skeletal muscles that requires energy expenditure. Lack of physical activity is an independent risk factor in chronic diseases that can lead to overall mortality. (Zhu et al., 2024). Based on the results of the hypothesis test of the variable Alcohol Consumption for hypertension showed that the P-value is 0.002, which is lower than the determination value of 0.05, or  $0.002 < 0.05$ , with a Chi-Square value of 5.824, with a lower limit or Lower 1.762 and an Upper Limit of 1.25. Confidential Interval CI-95%. (Cho & Park, 2024) This research is similar to the first research implemented by Tarore G Grace, Angela F.C. Kalesaran, Wulan P.J. Kaunang, 2018, with its title: Relationship between alcohol consumption and hypertension for outpatients aged 17-60 years in Community Health Center Kolangan, post Kalawan city, Minahasa North / Indonesia. Cross-sectional study design with chi-square test with  $\alpha$ . 0.05 and CI = 95% results indicate that in the last month (40.0%), with the description of hypertension events (54.4%), with pre-hypertension category, with a significance value  $P = 0.048$ , meaning that there is a relationship between alcohol consumption and hypertension events for outpatients in the community health center or community post in North/Indonesia. 2018.

#### IV. CONCLUSION

Based on the research that the researcher conducted at the Becora Community Health Center, Kamea District, Cristo Rei Administrative Post, Dili Municipality is as follows, the impact of obesity influences 3,769 times the occurrence of hypertension. In fact, Family History influenced 3,789 times. There is an impact on the occurrence of hypertensive disease. There is a relative risk impact of 2,875 times the occurrence of hypertension in the Becora Community Health Center in 2023.

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