Research Article **ISSN 2835-6276**

American Journal of Medical and Clinical Research & Reviews

Relations Amid Food Consumption Patterns that Touch and Give Risk for Hypertension Diseases in Aged 40-70 Years, in Laleia Health Center of Manatuto Timor-Leste (2026)

Carlos Boavida Tilman, Messias Ribeiro Goncalves, Fidélio Mesquita Soares, Ferengina Bakhita Rosva Siak, Nicodemos da Silva, Paulo Henriques.

*Correspondence: Carlos Boavida Tilman

Received: 20 Jan 2026; *Accepted:* 30 Jan 2026; *Published:* 05 Feb 2026

Citation: Carlos Boavida Tilman. Relations Amid Food Consumption Patterns that Touch and Give Risk for Hypertension Diseases in Aged 40-70 Years, in Laleia Health Center of Manatuto Timor-Leste (2026). AJMCRR. 2026; 5(2): 1-8.

Abstract

Introduction: *According to the latest WHO data published in 2024, deaths from hypertension in Timor-Leste reached 158 or 2.23% of the total mortality. The age-adjusted mortality rate for those aged 35-60 years is 24.16 per 100,000 population, ranking Timor-Leste 60th in the world. (World Health Organization, 2024). The data of patients who suffered from hypertension diseases in the Laleia Health Center Manatuto in the year 2025 with a total of 587, males with 244 people and females with 243 people who undergo treatment for hypertension disease. (Laleia, 2026).*

Research Objective: *To study more about the relationships amid food consumption patterns that touch and increase the risk of hypertension in people aged 40-70 years.*

Research Methodology: *The Spearman rank method is used with quantitative analysis with a cross-sectional study approach.*

Research Result: *Based on Spearman 's analysis , the probability value is 0.05 greater than sig (1-tailed) or 0.5> 0.02, with the result showing that there is a relationship between food consumption and hypertension cases cited by (Tilman CB., et al, 2026).*

Conclusion: *This research demonstrations that the food consumption variable has an influence on hypertension for people aged 40-70 years based on the Spearman Rank statistical analysis.*

Keywords: Relationships between patterns, consume food, touch, risk.

Introduction

The hypertension (blood pressure) is a disease that we are all familiar with, hypertension is still the most common non-communicable disease but it can be incurable. This phenomenon of high blood pressure

befalls mainly regardless of age, one of them is middle age in people who have survived this disease cases (Funaria and Adriane, 2022; Tilman CB., et al, 2026). Middle age is the start of the entry into the pre-elderly period, where the body's condition begins to weakening, so that it is very easy to hurt from chronic diseases, one of which is hypertension case. High blood pressure is a condition in which blood pressure is higher than normal, or is often called high blood weight. Pressure is an increase in systolic blood pressure greater than 140 mmHg or more than systolic blood pressure greater than 90 mmHg or more that has the same cause people with hypertension processing (Monica and Wallander, 2023; Tilman CB., et al, 2026).

The factors that exist for hypertension are: age, genetics, tobacco consumption, alcohol consumption, caffeine, salt consumption with too much quantity, cholesterol level, more and less physical activity in each person has a case (Antis Nuer, 2019). The World Health Organization (WHO) states that about 973 million people in the world with a percentage of 27.4% suffer from hypertension. The data indicate 972 million people, 333 million people live in developed countries and 638 are in developing countries phenomenal according to (WHO, 2023). Globally, the WHO (2019) estimates that the prevalence of hypertensive people in all nations is about 28.4% or 974 million people who suffer from hypertension, this number will increase in 2022 to 30.2%. The WHO (2018) estimates that about 9.3 million people die every year due to complications of hypertension. According to the latest WHO data published in 2022, deaths from hypertension in Timor-Leste reached 155 or 2.22% of the total mortality. The age-adjusted mortality rate is 23.12 per 100,000 population aged 35-60 years, ranking Timor-Leste moderately 60th in the world. (World Health Organization, 2023; cited by Tilman CB., et al, 2026).

In Timor-Leste, the Manatuto Municipal Health Service (MMHS) recorded cases of hypertension in approximately 4,521 people during the months of January - May. Based on the number above the six centers that exist in Manatuto are Laleia Health Center composed of 1,824 people, Laleia Health Center composed of 353, Laclo Health Center composed of 176, Soibada Health Center composed of 212 and Laclubar Health Center composed of 52 people. (MMHS, 2025).

Laleia Health Center Manatuto is a public facility that provides primary health care to the population located in the Administrative Post the Municipality of Manatuto. Its objective is to promote community awareness of primary health care and includes prevention, promotion, curative and rehabilitation for community health care and provides primary health care in the needs of the population and includes for patients of visitors who have primary health care at the Laleia Health Center, which is an alternative for accessing primary health care. Data on patients who suffered from hypertension at the Laleia Health Center in 2024 totaled 397, 254 males and 341 females who underwent treatment for hypertension. (Laleia, 2026). Based on the above background, it showed that the number of people who die from hypertension increases, so the researcher wanted to research the title about “Relationships between food consumption patterns that touch and give risk for hypertension diseases with people aged 40-70 years, at the Laleia Health Center of the Municipality of Manatuto Timor-Leste, 2025.”

Research Objectives: To study more about “relationships between food consumption patterns

that disturb and give rise to risk for hypertensive diseases among people aged 40-70 years, at the Laleia Health Center in Municipality of Manatuto Timor-Leste, 2025."

Theoretical Framework

Diet is a method or effort to regulate the quantity and type of food with descriptive information, including health maintenance, nutritional status, prevention or help in the cure of diseases connected to nutritional status (Ministry of Health, 2023; Tilman CB., et al, 2026). The components of the food consumption pattern are head to 3 models:

1. **Food model:** They are substances consumed by living beings to obtain nutrients that are then processed into energy. Carbohydrates, fats, proteins, vitamins and minerals are nutrients in food that the human body needs.
2. **Food frequency:** It consists of several meals a day including a daily breakfast, lunch, dinner and snacks that are commonly used in the community preparation of food according to (Ministry of Health, 2023; Tilman CB., et al, 2026).
3. **Amount of food:** It is calculated in units, for example, a seed, a grain and so on.

Foods that can cause Hypertension

1. **Salt (Natrium chorida):** Salt is a component that is collected of natrium and chorida. Blood pressure when consuming mixed foods because it has the influence of sodium that exists in the food. Natrium chorida not only in salt but flavors such as MSG (mono sodium glutamate) and food preservatives natrium benzoate, which is used in food in the factory preparations for use (Dincs, 2019).
2. **Fat:** Fat intake is related to obesity as a primary risk factor for atherosclerosis. The influence of dietary fat on coronary heart disease is related to the lipid and cholesterol content of the blood, mainly LDL (Low Density Lipoprotein) cholesterol. High levels of fat in the blood can constrict blood vessels and can also cause cardiovascular system problems. Fat can cause cardiovascular disease but not directly can cause hypertension in the first place according to the study (Dew, HIR, 2018; Tilman CB., et al, 2026).

Prevention

1. **Diet Training:** Consume nutrients that are balanced with less salt and fat, which is recommended for people suffering from hypertension to control blood pressure in order to reduce the risk of complications going on. On the other hand, to understand this reason, consume vitamins such as fruits such as bananas, oranges and others that contain calorie and avoid industrial foods because they have high natrium in them. (Teixeira RA, Abreu LQ, 2022; Tilman CB., et al, 2026).
2. **Healthy lifestyle change:** Healthy lifestyle habits, routines that include time and commitment to a task or lifestyle, are beneficial to health body. Therefore, talking about healthy lifestyle habits means taking into account two important concepts: habits and health, although having good health is not just about having a healthy body free from diseases. People who have suffered from hypertension can directly resolution hypertension by taking medication, but the problem of being overweight cannot be resolved. A problem such as going on a culinary trip, consuming foods that contain a lot of salt and fat.

The hypertension (blood pressure) is a multifactorial clinical condition characterized by a sustained elevation of oppressive levels >140 and/or 90 mmHg. It is frequently associated with metabolic disorders, functional and/or structural alterations of target organs, and is serious by the presence of other risk factors, such as dyslipidemia, abdominal obesity, glucose narrow-mindedness, and diabetes mellitus (DM). It maintains an independent association with events such as sudden death, stroke, and acute myocardial infarction (AMI), fatal and non-fatal. Hypertension, also known as high blood pressure, happens when blood has difficulty circulating in the blood vessels, causing the heart to exhausted with greater force, which can lead to complications such as arrhythmia, stroke, and kidney failure. The pressure category is based on the Brazilian Guideline (BG, 2023; cited by Tilman CB., et al, 2026).

Pressure category	Systolic	Diastolic
Excellent	<120 mmHg	< 80 mmHg
Normal	120-129 mmHg	80-85 mmHg
Pre-hypertensive	130-139 mmHg	85-89 mmHg
Hypertension stage 1	140-159 mmHg	90-99 mmHg
Stage 2 hypertension	160-179 mmHg	100-109 mmHg
Stage 3 hypertension	≥180 mmHg	≥110 mmHg

Vital Signs and Symptoms of Hypertension

A person suffering from hypertension will present several symptoms, including: Headache; Chest pain; Fatigue and/or vomiting; Vision problems; Difficulty breathing and Ringing in the ears and others. The factors that give risk for hypertension are 2 (Santos, JCD, & Moreira, TMM (2020): modifiable factors and non-modifiable factors.

The modifiable factor stands out for:

- Alcohol in take

  Between 5-21% of hypertension cases are alcohol. The relationship between hypertension and alcohol is still unclear. But the researcher said that the risk of high blood pressure is doubled when consuming food and alcohol 3 times or more day. (ALCOHOLICS Anonymous, 2023).

- Obesity

  It is the excess of body fat, in an amount that causes harm to health. A person is considered obese when their Body Mass Index (BMI) is greater than or equal to 30 kg/m² and the normal weight range varies between 18.5 and 24.9 kg/m². Although it has several causes, it can be prevented with an adequate diet and physical activity. (Update of the guidelines for the Pharmacological Treatment of Obesity and Overweight, 2024).

- Smoking

  Smoking is also a risk factor for hypertension. It is a chemical substance found in tobacco, such as nicotine and carbon monoxide in tobacco (smoke), which causes the heart to use the blood pump to increase blood pressure nothing good for people. (Araújo, A. José et al., 2023; Tilman CB., et al, 2026).

- Less activity

  Modern life has an influence on all people with a healthy life, time passes faster and makes it difficult to have the opportunity to practice sports as physical exercise. In addition, it is very easy to offer, so people do not feel like walking, and therefore less physical activity can cause the arterial wall to lack flexibility, blood circulation

(uncomfortable) and cause obesity, this factor that can cause of hypertension conditions. (Nutri Net Brazil , 2018; Tilman CB., et al, 2026.

The non-modifiable factor stands out:

- Age

  Age is one of the risk factors that influences hypertension that cannot be modified. Generally, age increases the risk factor for hypertension and also increases more in human life. Based on the researcher who has a tendency to say that men aged 45 or older have a possibility of suffering from high blood pressure, it also includes women with high blood pressure aged 55 and older who have an influence according to global agreement in various studies according (WHO, 2023; Tilman CB., et al, 2026).

- Genetics

  The hypertension is also a genetic disease. The Family with the history of hypertension disease has the greater possibility to suffer from hypertension disease for their generation, the family member with the history of hypertension for the relatives like father or mother who suffer from hypertension disease, considered of the hereditary factor transformations of hypertension to the family. (Read, Andrew & Dunai, Diane., 2023; Tilman CB., et al, 2026).

- Sex.

  Hypertension mostly occurs in adults. It also occurs in women aged 5 years or older.

Prevention of Hypertension Disease

There are several steps you can take to prevent high blood pressure, namely: Eating healthy foods, such as fruits and vegetables.

1. Limit salt intake (less than 5g per day).
2. Reduce excessive coffeine consumption.
3. Quit smoking.
4. Maintain Wight.
5. Limit your intake of foods high in saturated fat and eliminate/reduce trans fats from your diet.

Adequate healthy eating is very important for middle age. Hungriness decreases at the age of 35-60 years, therefore, in middle age we struggle to consume healthy and nutritious foods to maintain a balanced weight body (Tilman CB., et al, 2026).

Research Methodology

A quantitative analytical method with a cross-sectional study approach was used to analyze the relationships between patterns of food consumption that touch health and the risk of hypertension among people aged 40-70 years. The respondents had 96 samples. A non- probabilistic sampling method was used, approached by approximation with accidental sampling. The data collection instrument that the researcher used in this study was the Ffq. (Food frequency question). The data analysis technique is Univariate analysis to explain or describe the characteristics of each research variable (sex, age, marital status, level of education). Generally, the objective of univariate analysis is to obtain the result of frequency and percentage distribution of each variable and analysis. Bivariate analysis is performed between two variables that are thought to be related or correlated. Statistical test uses Spearman Rank a = 0.05, the significant level with 5% with rules such as $p < a$ (0.05) means there is a relationship and $p > a$ means there is no relationship. In this study, data entry uses the computer program SPSS (Statistical Package for the Social Sciences) in 26 version.

Result Discussions

Based on this research, the subject by the characteristics that consume food because of the hypertension disease in the Laleia Health Center, Municipality of Manatuto as the following in the table interpretations.

Table 1: Distribution and frequencies of subjects by sex.

Sex.	Frequency (n)	Percentage (%)
Feminine	54	56.3
Masculine	42	43.8
Total	96	100

Based on the table above, it shows that based on gender, the respondents were female, consisting of 54 and with a percentage of 56.3%, and the respondents were male, consisting of 43.8 and with a percentage of 43.8 %. And here the researcher wanted to conclude that the total respondents based on gender show that the female respondent was composed of 54 and a percentage of 56.3%, according to the research result.

Table 2: Distribution and frequencies of subjects by age.

Age	Frequency (n)	Percentage (%)
40-49	28	29.2
50-59	42	43.8
< 70	26	27.1
Total	96	100

Based on the table above, the characteristics of respondents are based on the age group 40-49, comprising 28 and with a percentage of 29.2%, ages 50 -59, comprising 42 and with a percentage of 43.8% and ages 50-59, comprising 42 and with a percentage of 43.8%. And here the researcher wanted to conclude that the majority of respondents aged 70 years have a higher frequency and percentage than others according to the research results.

Table 3: Distribution and frequencies of subjects by profession.

Profession	Frequency (n)	Percentage (%)
Teachers	9	9,4%
Dealer	15	15.6
Agriculture	18	18.8%
Employee	6	6.3%
Unemployment	48	50%
Total	96	100%

Based on the table above, it shows that the characteristic of respondents based on the profession shows that teachers composed of 9 respondents and percentage of 9.4%, trader composed of 15 respondents and percentage of 15.6%, agriculture composed of 18 respondents and percentage of 18.8%, employee composed of 6 respondents and a percentage of 6.3% and unemployment composed of 48 respondents and a percentage of 50.0%. And I wanted to conclude that unemployment has the majority of frequency and percentage higher than the others in the analysis of results.

Table 4: Distribution of respondents based on relationships between food consumption patterns.

Category	Frequency (n)	Percentage (%)
Good	0	0
Enough	29	30.2
Less	67	69.8
Total	96	100

Based on the table above, it shows that all respondents who consume good food with a frequency of 0 and a percentage of 0% and respondents who consume sufficient food with a frequency of 29 and a percentage of 30.2% and respondents who consume less composed food with a frequency of 67 and a percentage of 39.8%. And here the researcher wanted to conclude that the total number of respondents based on the pattern in which they consume food, the majority is less with a total of 67 (39.8%).

Table 5: Distribution of respondents based on hypertension.

Hypertension	Category	Frequency (n)	Percentage (%)
Light	140-159/90-99	27	28.1%
Moderate	160-170/100-109	32	33.3%
Serious	180-209/100-119	37	38.5%
Total		96	100%

Based on the table above, it shows that respondents with mild hypertension have a frequency of 27, respondents with moderate hypertension have a frequency of 32 and severe hypertension have a frequency of 37. And I wanted to conclude that the total number of respondents is based on hypertension with the majority of severe hypertension having 37 and a percentage of 38.5%.

The statistical test you use to find out the relationship between food consumption patterns that affect the risk of hypertension in people aged 40-70 years.

Table 6: Food consumption pattern that touches and poses a risk for hypertension.

Food consumption pattern	Hypertension						P-Value
	Light		Serious		Total		
	F	%	F	%	F	%	
Less	19	28.4	48	71.6	67	39.8	0.02
Enough	12	41.4	17	58.6	29	30.2	
Total	31	32	65	67.7	96	100	

Based on Table 6, it shows that the Sig. value (2-tailed) with the value of 0.02 < 0.05) and therefore it can be said that the variable in which it shows that the respondent who consumes food has a relationship with hypertension. And the correlation coefficient value between two variables indicates a positive correlation with 0.75 and therefore it can be said that the two variables have a relationship. The result of the Spearman Rank Statistical Test with the value p = 0.02, then it means that there is a relationship between food consumption and hypertension at the Laleia Health Center.

Hypertension in middle-aged patients depends on consumption habits, so this statistical test result is Spearman Rank Coefficient with the value of p = 0.02 then (p<0.05). It means that it has a positive influence, the consumption of food for the disease hypertension for middle age at the Laleia Health Center in Municipality of Manatuto Timor-Leste. The questionnaire analysis of the respondent has much less consumption habit with the severe hypertension category because they consume unhealthy food and do not have the standard, from this result so the researcher wanted to conclude that the relationship between food consumption is a determining factor that can give the influence to the diseases of hypertension with people aged 40-70. The habit of consuming inadequate food gives significant influence to hypertension diseases because insufficient consumption means that middle-aged people do not meet the need for nutrients of the human body and need to do activity every day fundamental to understanding according to the need faced (Tilman CB., et al, 2026).

Conclusion

From this research, people aged 40-70 years were identified, consisting of 96 respondents who went to the Laleia Health Center in Municipality of Manatuto Timor-Leste for consultation, the majority of whom consumed enough food (30.2%) and less (69.8%) of results research.

- Hypertension

From this research, people aged 40-70 were

identified, consisting of 96 respondents who went to consult at the Laleia Health Center in Municipality of Manatuto, the majority with mild hypertension (28.1%), moderate hypertension (33.3%) and severe hypertension (38.5%) of study field in Community Health Center of Laleia.

- Relationships between foods that affect and increase the risk of hypertension cases are available.

Based on the research that the researcher showed that the sig value (2-side) to carry out the cross-sectional study the two variables with the spearman rank coefficient value of 0.02 <0.05, therefore they can interpretation that the influence between two variables food consumption and hypertension has the relationship between food consumption and hypertension for people aged 40-70 years, it is important to know and understand the reality of the phenomenon well implementation program in Community Health Center of Laleia Manatuto Timor-Leste second (Tilman CB., et al, 2026).

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