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## Arterial Hypertension in The Population Over 20 Years of Age in The Community of Quinshul, Parish of Chical

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### Abstract

The objective of the following research study was to identify the prevalence of arterial hypertension by taking blood pressure through a workshop for the entire population aged 20 and over in the Quinshul community of the El Chical parish. This work was developed through the mixed modality combining the qualitative-quantitative paradigms to carry out an analysis and interpretation of the results obtained in the investigation, in addition descriptive, correlational, explanatory, field and bibliographical research was used, using methods such as the inductive-deductive, analytical -synthetic, historical-logical and the systemic approach, using the survey as an instrument for collecting information, which was applied to 30 residents of the Quinshul community, allowing to obtain as a result that 71% of the population does not know what it is. arterial hypertension, also within the risk factors it stands out that 43% of users have the habit of smoking and 28% consume alcohol. Conclusion The lifestyles that the residents of Quinshul lead are not healthy since they are directly related to bad eating habits such as excess salt in meals, tobacco and alcohol consumption, lack of physical exercise caused by sedentary lifestyle that people have today.

**Key words:** High blood pressure, Prevalence, Quinshul Community

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### Introduction

High blood pressure is an independent, consistent, and powerful risk factor for cardiovascular and kidney disease. It is also considered an important precursor of atherosclerotic disease, i.e. stroke, myocardial infarction and sudden non-traumatic death. Interest in the issue of determining arterial hypertension in the young adult population has been increasing and, in this regard, the WHO emphasizes the importance of periodic measurement of blood pressure in routine examinations of healthy persons, in order to detect a possible elevation early; This is how adolescents and adults with high blood pressure or untreated hypertension show evidence of ventricular hypertrophy and atherosclerotic changes.

That is why it is very important to determine the disease and manage high blood pressure. In the Quinshul community there is no study that shows that arterial hypertension in the population is controlled, in addition to the fact that the hypertensive population is aware of it; Therefore, it was

considered important to identify the level of knowledge about arterial hypertension in the population between 20 years and older, in order to help increase knowledge of the pathology and avoid poor control of it and its complications.

According to WHO, high blood pressure is considered one of the most important health problems in the world, although it is not a communicable disease, it is of greater concern to both public health doctors and the general population, since this disease is one of the main causes of death worldwide. Worldwide, it is estimated that more than 7.5 million deaths per year are due to cardiovascular risk factors. Of these, the most relevant mortality percentages are hypertension (12.8%), diabetes (5.8%) and overweight/obesity (4.8%). Therefore, the control of arterial hypertension could reduce the risk of stroke by 40% and acute myocardial infarction by 15% (1).

In Latin America, a study was carried out in seven major cities: Barquisimeto, Bogota, Buenos Aires, Lima, Mexico, Quito and Santiago de Chile. The results show that the prevalence of hypertension was 18%. According to the cities, the prevalence range shows that it was between 9% for Quito and 29% for Buenos Aires, and the majority of hypertensive patients have other risk factors such as hypercholesterolemia (14%), diabetes (7%), obesity (23%) and smoking (30%). About 13% of the subjects reported that they had family members with cardiovascular disease and 2% reported that they had suffered a previous heart attack (2).

In Ecuador, according to research conducted by the World Health Organization (WHO) and the Pan American Health Organization (PAHO), it shows that more than a third of the population over 10 years of age is prehypertensive and the population between 10 and 59 years of age suffers from high blood pressure. In 2011 there were 4,381 deaths from hypertensive diseases, with a rate of 28.70 per 100,000 people. In addition, it is estimated that the highest prevalence of hypertension is recorded in the African region, with 46% of adults over 25 years of age, while the lowest is observed in the Region of the Americas, with 35% (3).

A risk factor for high blood pressure that is being treated in this study is the lack of diagnosis, which is part of the risk factors for this disease. Taking into account that the population is not aware that a bad lifestyle can cause people to gain weight, resulting in many diseases that can even lead to death. Another factor for the research is due to the fact that in Ecuador there is still a lack of knowledge and importance of a balanced diet and a good lifestyle that can avoid many problems in the future and the patients are mostly dedicated to their work, so they work long hours and do not have a marked schedule for their proper nutrition. In the population of Quinshul, a significant increase in this pathology is observed, but the causes that motivate this increase are not identified, and it is also unknown what is the degree of determination of hypertension and what are the causes or related factors that motivate such failure, so it was proposed to document the incidence, risk factors and results.

The present research will be carried out in the Province of Carchi in the parish of Chical in the community of Quinshul, from the point of view of theoretical knowledge this research will increase the knowledge of the group of users of the community, in order to reduce hypertensive patients in this population. With the development of this research, it is intended to provide health education to the people of this community, so that they know about arterial hypertension, in this way it contributes to avoid 7 complications in their health status, which have a greater cost to the health center, to the family, as well as to medical treatment. Consequently, this is a global public health disease; It is vitally important to implement an educational program for health promotion aimed at hypertensive patients, in order to promote active participation in the prevention of complications and improve healthy lifestyles. The research is of interest since the community of Quinshul does not have previous studies carried out on this subject and it will favor them a lot since it will benefit the population, with this research it will be possible to know people with Arterial Hypertension. It is vitally important to know that high blood pressure shortens people's life expectancy, so its treatment has a dual objective; Even if it is not possible to modify mortality, the time of life with clinical disease, i.e. morbidity, should at least be reduced.

This project will be focused on continuous and effective education, training them about a good lifestyle, risk factors and complications from Arterial Hypertension, educating them when they should go to have their blood pressure checked and explaining in a better way that it is of utmost

importance that they lead a good lifestyle. This research has sufficient material, economic and human resources to carry it out in all its context. On the other hand, it should be noted that the main beneficiaries of the development of this research topic are the people of this population.

The objective of the research is to identify the prevalence of arterial hypertension by taking blood pressure through a workshop to the entire population of 20 years and older in the community of Quinshul in the parish of El Chical.

### **High blood pressure**

Arterial hypertension (HTN) is a systemic pathology of multifactorial etiology, which consists of the chronic elevation of blood pressure levels above normal values. The optimal blood pressure value should be less than or equal to 120/80 mmHg (millimeters of mercury). Arterial hypertension is considered when the systolic blood pressure figures are equal to or greater than 140 mmHg and 90 mmHg diastolic blood pressure and in the presence of diseases such as diabetes, chronic kidney disease, these values are at the limit of 130/80 mmHg. It is associated with significant damage to target organs (heart, kidneys, blood vessels, vision organ and brain). All of these conditions significantly increase the likelihood of presenting risks of cardiovascular events (8).

### **Risk Factors**

The prevalent factors that promote the development of hypertension are multiple and are classified as modifiable and non-modifiable.

- The non-modifiable risk factors on which we cannot act are: age, sex, family pathological history.
- The modifiable risk factors on which we can act to reduce the risk are: Eating habits, Smoking, Alcoholism, Physical Activity.

**Development and validation of the AUDIT.** The AUDIT was developed and evaluated over time, and has been shown to provide a correct measure of risk according to gender, age and different types of cultures. The AUDIT test comprises 10 questions about recent drinking, symptoms of dependence, and alcohol-related problems. As the first screening test specifically designed for use in primary care, the AUDIT has the following advantages: Transnational standardization: The AUDIT has been validated in primary care patients in 6 countries. It is the only screening test designed specifically for international use; Identifies risky alcohol consumption as well as possible dependence; it's short, fast, and flexible; Designed for primary health care personnel; It is consistent with ICD-10 definitions of alcohol dependence and harmful use; It focuses on recent alcohol consumption (9).

### **Physical activity.**

Physical activity and sport are important factors for weight control, as they contribute between 25% and 50% of total daily energy expenditure, preventing overweight and obesity. In addition, there is evidence that active people have healthier body mass and composition than inactive individuals. Physical activity is used as a preventive measure, but as a measure it is a complicated one to see different types of activities and the dependence it has on the frequency of performing the exercise, however it has been evidenced that physical activity can prolong the presence of cardiovascular problems, of course this is always associated with other risk factors such as age, sex, family history, eating habits (10).

Physical exercise can reduce the occurrence of systolic blood pressure, this is as effective as some medications used in high blood pressure. For some people, physical activity is enough to reduce the need to take blood pressure medication (10). If an individual's blood pressure is at an appropriate level, less than 120/80 mm Hg, physical exercise can help prevent it from increasing with age.

**Pathophysiology.** Hypertension is the product of cardiac output multiplied by peripheral resistance. Cardiac output is the product of heart rate multiplied by stroke volume. In normal circulation, pressure is transferred from the heart muscle to the blood each time the heart

contracts, and then the pressure is exerted by the blood as it flows through the blood vessels. Hypertension is due to increased cardiac output, increased peripheral resistance (constriction of blood vessels), or both. Although in most cases hypertension cannot be identified as having a precise cause, hypertension is known to be a multifactorial condition. Since hypertension is a sign, it is very likely to have many causes, just as fever has many causes, for hypertension to occur there must be a change in one or more of the factors that affect peripheral resistance or cardiac output. There must also be a problem with the body control systems that monitor or regulate pressure. A few rare types of hypertension have identified single-gene mutations related to the mechanisms the kidneys use to absorb sodium ions, but most types of hypertension are thought to be polygenic (i.e., mutations in more than a single gene) (11).

### **Clinical manifestations.**

High blood pressure is also called a silent killer in most people it does not present symptoms, but in other cases it does, especially when there is already vascular damage:

- Headache
- Blurred vision
- Nausea
- Vomiting
- Exhaustion
- Shortness of breath
- Vertigo
- Anxiety
- Chest pain
- Nosebleeds and retinal bleeds
- Heart palpitations (11).

**How Much Physical Activity a Patient Needs** Physical activity can be effective in controlling high blood pressure. However, flexibility and strengthening exercises are also important in an overall physical activity plan. You don't need to spend hours in the gym every day to reap the benefits of physical activity. Just doing moderate physical activity will help improve your lifestyle. Any physical activity that increases the heart and breathing rate is considered an activity, within which we find active sports, such as basketball or tennis, climbing stairs, walking, jogging, cycling, swimming, dancing

The International Physical Activity Questionnaire (IPAQ) justifies its application in various studies of physical exercise. With the relevant studies that have applied the IPAQ test, a description of the characteristics and psychometric properties is made, for its different forms of application. There are several versions of the instrument depending on the number of questions, the evaluation period and the method of application; For use in adults between 18 and 65 years of age. The short version is the one that provides information on the time spent walking, in activities of moderate intensity, vigorous intensity and in sedentary activities. The IPAQ test emerged as a standardized questionnaire for population-based studies worldwide, which cushioned the excess of uncontrolled information following the excessive application of evaluation questionnaires that have made it difficult to compare results and the inadequacy to assess physical activity from different settings (12).

**Non-pharmacological treatment** Non-pharmacological treatment consists of lifestyle modifications, for which the patient must have the support and follow-up of the health team, especially doctors and nurses who intervene in the educational field in terms of healthy habits; hypertensive clubs, the family, the community. In order for non-pharmacological treatment to be successful, a healthy lifestyle should be adopted, emphasizing the following aspects: physical activity, smoking cessation, reducing salt intake, losing weight and keeping it stable, reducing excessive alcohol consumption, reducing the consumption of saturated fats and unsaturated fats, and consuming a healthy diet through fruits and vegetables (12).

**Drug** treatment decreases the strength and speed of myocardial contractions, peripheral resistance, and blood volume. When a patient has uncomplicated hypertension and without

specific indications for another drug, he or she is started with diuretics and beta blockers or both in low doses; If the blood pressure does not decrease to less than 140/90, the doses are increased and another medication is added if necessary to achieve control, when the pressure is less than 140/90 over the course of a year, the doses and types of medication are gradually decreased.

Some of the drugs described below are the most commonly used in our environment: Spironolactone, Carvedilol, Furosemide, Chlorthalidone, Atenolol, Nifedipine, Amlodipine, Enalapril, Captopril, Losartan, among others (12).

## **Materials and Methods**

### **Modality and types of research**

The present research addresses both the qualitative and the quantitative modalities.

**Qualitative modality.** It allows an analysis and interpretation of the statistical data of the inhabitants of Quinshul, observations that describe the routine and the current situation, as well as serving as a guide for an interpretative orientation of the results.

**Quantitative modality.** It was used for the collection and analysis of results that were obtained in the application of numerical statistics and representation in graphical percentages of the acquired responses, and in the process of selecting the population and sample that will participate in this research.

### **Types of research.**

The types of research used for the development of our project were:

**Descriptive research.** The purpose is to describe the situations and events that manifest themselves in the determined phases of the determination of Arterial Hypertension. This type of research will be used because it describes, specifies and measures each of the probable causes that it can bring as irreversible consequences and predominant attitudes in the population towards this problem.

**Correlational research.** Try to see how the various anomalies that occur are related to each other. This was used in the period in which the dependent and independent variables were related, to determine whether the application of prevention and care strategies improved the patients' lifestyles.

**Explanatory research.** It will be used at the time of knowing the diagnoses helps to explain the main phases and causes that lead to complications in hypertensive patients due to the inadequate interaction of the family.

**Field Research.** It makes it possible to determine the existing problem and to be able to provide solutions through surveys, interviews and observation to patients and their families to determine the relationship in their care and treatment, this facilitated the obtaining of direct information.

**Literature research.** It allows the compilation of information from books, magazines, protocols, and internet pages, which allowed the elaboration of the theoretical framework necessary for the understanding of the problem and the corresponding solution.

### **Research Techniques and Instruments.**

**Survey.** The survey consisted of surveying a group with a series of questions to find out their personal opinion on the existing problem.

#### **Instrument.**

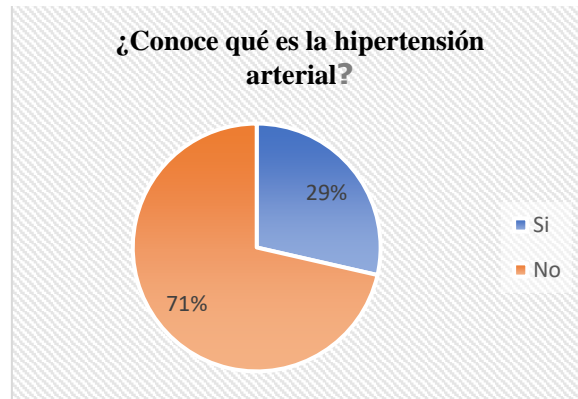
**Questionnaire.** A group of questions were posed to facilitate both the respondents and the interviewers the subsequent analysis of the results.

### **Population and sample.**

**Population:** The study population of the research was 30 inhabitants of the Quinshul community.

**Sample:** As it is a relatively small population, it is not necessary to apply a type of sampling, rather a population census will be used in the research, in which the entire universe of study will be part of the research process and to which the respective surveys will be applied.

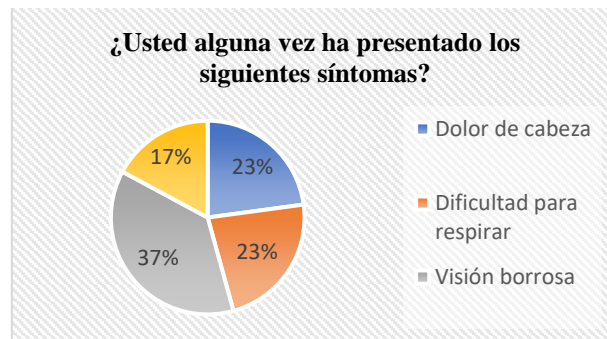
**Results and Discussion**



**Graphic 1 Knowledge of Arterial Hypertension Fountain.** Authors of the project

**Analysis and interpretation**

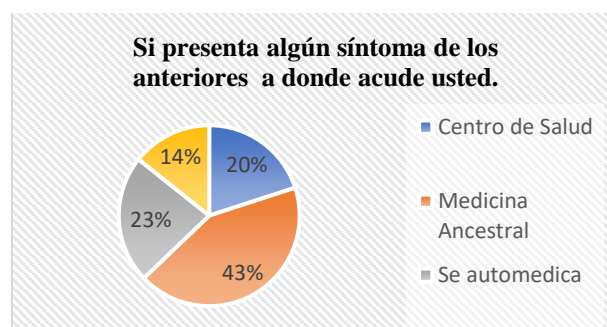
According to the survey, most of the users surveyed "in the population of Quinshul, do not have knowledge about Arterial Hypertension, therefore, this is a factor that increases the possibility that people develop this disease since they do not know about the causes of this disease and its complications.



**Graphic 2 Symptoms of Hypertension Source:** Project authors

**Analysis and interpretation**

According to the survey applied, it was determined that the inhabitants of the population of Quinshul, the majority of patients, 35% if they have presented blurred vision, these symptoms can lead to more serious eye diseases, followed by 29% have presented difficulty breathing.

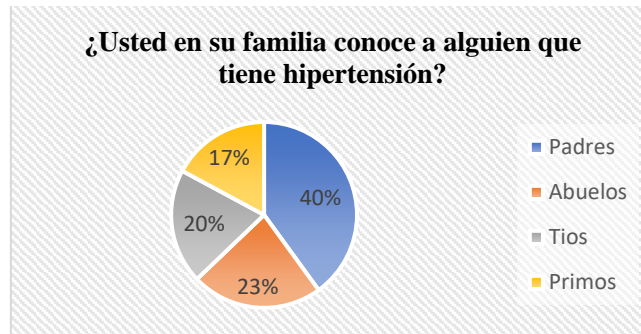


**Graphic 3 Where you go**

**Source:** Project authors

**Analysis and interpretation**

According to the data obtained in the survey carried out, it indicates that most people, if they present any symptoms of this disease, are treated with ancestral medicine since the population has a high knowledge of a diversity of medicinal plants (leaves, roots, barks, flowers, seeds, resins, oils) and in the combination of these to prepare infusions, syrups, which they use in the healing of different physical ailments. For this community, health and healing are closely linked to their spiritual world and in connection with nature.

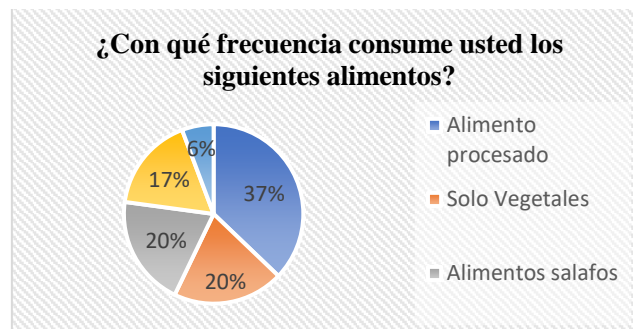


**Graphic 4** Aftermath

**Fountain.** Authors of the project

**Analysis and interpretation**

According to the survey of the population of Quinshul, 42 per cent said their parents suffer from high blood pressure, 32 per cent grandparents, 16 per cent uncles and 10 per cent cousins. This high percentage represents that people do have a high risk of presenting arterial hypertension since this is a disease with a hereditary pattern of complex traits (non-Mendelian inheritance), multifactorial and polygenic that appears as a consequence of the interaction between environmental risk factors and certain genetic susceptibility.

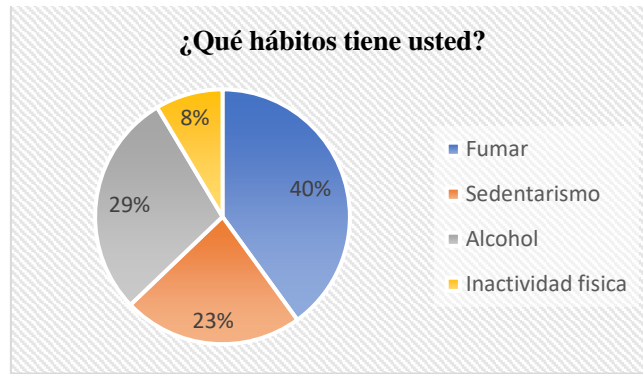


**Graphic 5** feeding

**Source:** Project authors

**Analysis and interpretation**

Most patients consume processed foods, they state that consuming these foods could not influence the increase in blood pressure, this being a risk factor since excessive salt consumption causes the arteries, which transport blood through the body, to lose elasticity and become more rigid. The heart is unable to pump the blood needed by the body. The population does not establish a diet without restriction, being one of the causes of the pathology, a diet without restriction due to its sodium content, produces fluid retention so the blood pressure on the arteries will be higher, based on this it is necessary that users follow a restricted diet which benefits them for the future to avoid a disease adherent to arterial hypertension, A low-sodium diet has been shown to help lower blood pressure and maintain a healthy quality of life.

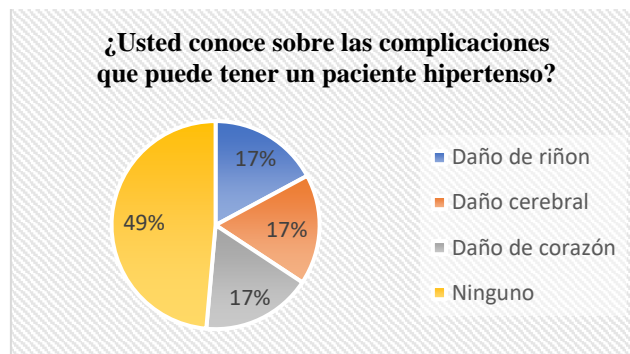


**Graphic 6 Habits**

**Source:** Project Authors

**Analysis and interpretation**

According to the survey applied to the population, most of them lead bad lifestyles, since these are factors associated with hypertension, with 43% of users having a bad smoking habit, 28% consuming alcohol and 23% being sedentary. Consuming more than three drinks at one time can temporarily raise your blood pressure, but repeated binge drinking can lead to long-term blood pressure spikes.

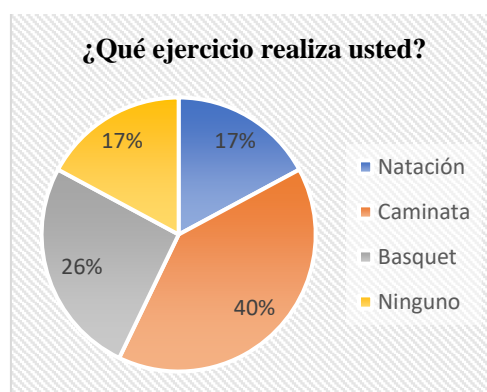


**Graphic 7 Complications**

**Source:** Project Authors

**Analysis and interpretation**

According to the survey applied to the inhabitants of Quinshul it was determined that most patients believe that Arterial Hypertension can lead to kidney damage that seriously affects their health status because this complication of this can damage the blood vessels, as well as the organs of their body, hypertension can cause hardening and thickening of the arteries, which can lead to a heart attack.



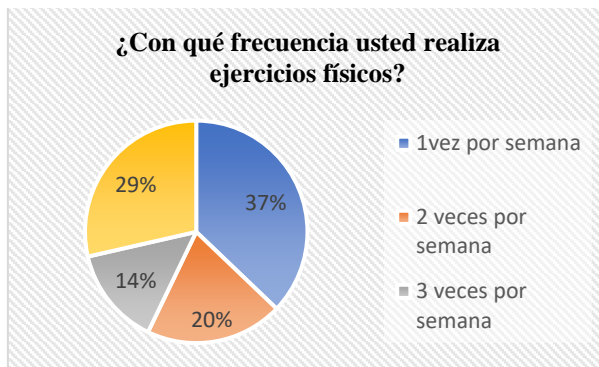
**Graphic 8 Exercise**



**Fountain. Authors of the project**

**Analysis and interpretation**

According to the survey applied to the inhabitants of Quinshul, the majority of users, represented by 44%, only walk within walking distance only when they have to go out to the store without any knowledge, since walking helps people to promote endurance work and the cardiorespiratory system (heart and lungs).

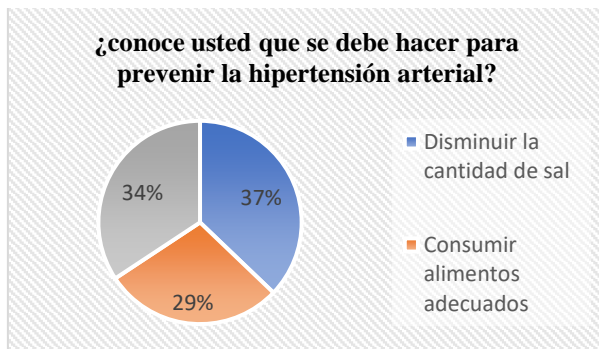


**Graphic 9 Exercise**

**Fountain. Authors of the project**

**Analysis and interpretation**

According to the survey applied to the majority of patients, representing 57% of the population, exercise once a week, something very worrying since a sedentary lifestyle is one of the risk factors for this disease, since doing physical activity helps us maintain a healthy weight, reduces the risk of obesity, and high blood pressure.



**Graphic 10 Prevention of high blood pressure**

**Fountain. Authors of the project**

**Analysis and interpretation**

According to the data obtained in the survey of the inhabitants of the community of Quinshul, they indicate that 45% who correspond to the option of reducing the amount of salt and the other consuming adequate food, which also represents 45%, believe that perhaps reducing the amount of salt and consuming adequate foods could favor that their blood pressure does not rise. But it is worrisome since 10% do not know foods that they should avoid in order not to suffer from hypertension.

Through educational strategies based on the promotion of knowledge about the causes, risks and consequences of high blood pressure in adults, such as promoting family communication since there is the presence of myths, taboos, customs and religions in families, providing information about all the appropriate care, an adequate diet, changing their lifestyle, The intervention is aimed at the inhabitants of Quinshul in the parish of El Chical.

It is important to note that the determination of high blood pressure should be performed by a trained health professional, such as doctors or nurses, and following established protocols and clinical guidelines. In addition, regular blood pressure monitoring is essential to detect and treat high blood pressure early and prevent complications.

## Conclusion

The lifestyles led by the inhabitants of Quinshul are not healthy since they are directly related to their bad eating habits such as unbalanced diets and excess salt in meals, harmful habits such as tobacco and alcohol consumption, the lack of physical exercise produced by the sedentary lifestyle that people have today.

Lifestyle modification should be a fundamental part of the treatment of all hypertensive people. Practicing moderate and regular physical exercise is recommended for the proper functioning of the cardiovascular system and to control excess weight

Pharmacology therapy is sometimes deficient as patients do not combine it with an adequate lifestyle, thus leading to life-threatening complications.

It was possible to clear doubts and unknowns about the risks that can trigger the complications of this pathology in the future, in addition the knowledge acquired by the participants will be disseminated to relatives or close friends of the inhabitants of Quinshul, thus preventing this pathology from affecting other people.

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