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# Factores de riesgo de la hipertensión arterial. Centro de Salud San Simón Distrito 02D01, Zona 5, Bolívar, 2023

*Risk factors for high blood pressure. San Simón Health Center District 02D01, Zone 5, Bolivar - Dates 2023*

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**Palabras claves:**
hipertensión arterial, factor de riesgo, incidencia, prevalencia.

**Resumen**

**Introducción:** la hipertensión arterial constituye uno de los principales problemas que afecta la salud pública; debido a la presencia de factores de riesgo, cada día avanza en el mundo y cada vez es mayor el número de personas que resultan afectadas en su calidad de vida. **Objetivo**: caracterizar los factores de riesgo de la hipertensión arterial en pacientes del Centro de Salud de San Simón en el año 2023. **Metodología**: se realizó un estudio observacional, descriptivo de corte transversal. El universo y muestra del estudio estuvo constituido por 16 pacientes con Diagnostico de hipertensión arterial del área de San Simón al ser un número óptimo para el estudio y que acuden al control frecuente de su patología. Las variables utilizadas fueron: edad, sexo, ocupación, factores de riesgo de la hipertensión arterial (antecedentes patológicos personales, antecedentes patológicos familiares, sedentarismo, obesidad, hábitos alimenticios, hábitos tóxicos como alcoholismo, tabaquismo y consumo de cafeína. **Resultados**: el 75% de los pacientes se encontraban en la edad de más de 51 años. Se encontró predominio del sexo femenino ocupando este el 75%. El 31 % son jubilados. El 56% de los pacientes presentan como factor de riesgo los APF, predominando el sexo femenino con 12 pacientes, seguido por los antecedentes patológicos personales. **Conclusiones:** la elevada predisposición genética, la edad y el padecimiento de comorbilidades asociadas y factores de riesgo modificables en la población estudiada aumenta el riesgo de padecer hipertensión arterial. **Área de estudio general:** Medicina. **Área de estudio específica:** Cardiología. **Tipo de estudio:** original.

**Keywords:**
arterial hypertension, risk factor, incidence, prevalence.

**Abstract**

**Introduction:** Arterial hypertension is one of the main problems affecting public health; Due to the presence of risk factors, it is advancing every day in the world and the number of people who are affected in their quality of life is increasing. Objective: To characterize the risk factors for hypertension in patients at the San Simón Health Center in 2023. Methodology: An observational, descriptive cross-sectional study was conducted. The universe and sample of the study consisted of 16 patients

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diagnosed with arterial hypertension from the San Simón area, thus it is an optimal number for the study and who attend to frequent control of their pathology. The variables used were age, sex, occupation, risk factors for hypertension (personal pathological history, family pathological history, sedentary lifestyle, obesity, eating habits, toxic habits such as alcoholism, smoking and caffeine consumption. Results: 75% of the patients were over 51 years of age. A predominance of women was found, occupying 75%. APF was a risk factor for 56% of patients, with 12 patients predominating females, followed by personal pathological history. predisposition, age and the suffering of associated comorbidities and modifiable risk factors in the studied population increase the risk of hypertension. General Area of Study: Medicine. Specific area of study: Cardiology. Type of study: original.

## Introduction

Arterial hypertension (HTA) is a non-communicable disease, generally asymptomatic, that affects a large percentage of the adult population and causes damage to noble organs such as the heart, brain and kidney. According to Munir et al. (2018), hypertension as a non-communicable disease will be one of the main causes of functional disability in the next two decades. For this reason, hypertension is a public health problem due to its magnitude, risks, difficulty in management, high medical and social costs and serious cardiovascular and renal complications.(Cabrera et al., 2002).

Non-communicable chronic diseases (NCDs) are one of the most important and complex health problems in developed countries and in many developing countries. Among non-communicable diseases, arterial hypertension (AH) is a very important factor due to its high prevalence and its action on vital organs, which makes it considered a tracer among non-communicable diseases, constituting a disease in itself, as well as a risk factor for other diseases.

According to Nicolás Robles (2008) “blood pressure (BP) is a changing parameter that follows the presence of intrinsic organic rhythms, environmental, physical and emotional factors that act on individuals”. Normal systolic blood pressure corresponds to less than 120 mmHg and normal diastolic blood pressure corresponds to less than 80 mmHg. If the average blood pressure is equal to or greater than 140 mmHg (systolic) or equal to or greater than 90 mmHg (diastolic) it is considered HTA.(Munir et al.,2018)This value is a

generally accepted lower limit as the starting point from which morbidity and mortality related to this disease increases significantly (Cabrera et al., 2002).

In the 3rd century AD, the Indian physician Juan Miguel de Mora (1990) first mentioned in his texts the symptoms that could be consistent with hypertension. Personalities such as the Yellow Emperor in China, the physician Cornelius Celsus and Hippocrates studied how to treat it (Buzzi, 2016). Its modern understanding begins in the years 1578-1657 by the physician William Harvey in his book De motu cordis. In 1733 Stephen Hales stood out for being the first to take blood pressure in history.

In recent years, the prevalence of hypertension has mainly affected developed countries, where inadequate treatment and control increases the risk of generating conditions that can be fatal to humans.(Salazar, 2016). According to thePan American Health Organization [PAHO] & World Health Organization [WHO](2013), a person is considered hypertensive when their blood pressure is higher than 140/90 mmHg. Therefore, there is a high increase in HTA worldwide, in which one of the most vulnerable groups are older adults due to the aging process, in which there may be an "increase in the stiffness of the arteries and vascular remodeling."

Researchers estimate that hypertension is the cause of nine million deaths each year. By 2050, one-fifth of the world's population will be over 80 years old. One in three adults in Latin America suffers from high blood pressure, defined as a sustained elevation of systolic, diastolic, or both blood pressures, which affects the majority of the adult population.(Ministry of Public Health [MSP], 2014).

High blood pressure increases with age, with rising obesity rates and an ageing population. It is expected that 1.5 billion people will be affected by hypertension by 2025. Currently, around 54% of strokes and 47% of ischemic heart disease worldwide are attributable to high blood pressure.(Rivero et al., 2018).

ThePan American Health Organization [PAHO] & World Health Organization [WHO](2013) reports that the highest prevalence of hypertension is recorded in the African Region, with 46%, and the lowest is observed in the Region of the Americas, with 35%.

In Ecuador, according to the National Health and Nutrition Survey 2011-2013, 9.3% of the population has hypertension, and 37.2% suffer from prehypertension between the ages of 18 and 59 years; of these, the highest prevalence is in the age group 50 to 59 years with 45.5% and 22.7% respectively (MSP, 2014). The total prevalence of hypertension in the female sex is 7.5% and prehypertension is 27.1%; in the male sex, the prevalence of hypertension is 11.2% and prehypertension is 48.0%.(MSP, 2014).

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The average systolic blood pressure (SBP) and diastolic blood pressure (DBP) increase with age. In people aged 50 to 59, hypertension is seven times higher than in the 20 to 29 age group and for prehypertension it is twice as high. In the 50 to 59 age group, the rate of SBP and DBP is higher in men than in women. The prevalence of hypertension according to ethnicity for the 18 to 59 age group is higher for the Montubio and Afro-Ecuadorian ethnic groups than for indigenous people. According to the economic quintile, the highest prevalence of arterial hypertension is in the poorest quintile, and the lowest prevalence is found in the fifth quintile. According to the geographic area, the highest prevalence of hypertension is in the rural coast and the lowest prevalence is in the rural Amazon.(MSP, 2014). According to the planning area, zone 5 (Santa Elena, Guayas, Bolívar, Los Ríos and Galápagos, has the highest prevalence of high blood pressure in Ecuador. In San Simón, which is one of the eight parishes of the Guaranda canton, there are about 180 people diagnosed with high blood pressure, who regularly attend the health unit for check-ups.

**Methodology**

An observational, descriptive, cross-sectional study was carried out in the period from September to November 2023. The study population consisted of 16 patients with arterial hypertension treated at the San Simón health center in district 2D01, Zone 5 Bolívar.

For the development of this research, several methods were used that allowed the study, collection and processing of all the information to solve the problem posed, such as: Empirical method: observation, interviews and analysis of documents. For the collection of data, the observation guide and the interview guide were used, through which the Individual Clinical Histories and the Family Health Histories were prepared, which provided us with the required information. The variables to be studied that corresponded to the objectives of the research were taken into account.

The variables used were: age, sex, occupation, risk factors for high blood pressure (personal history, family history, sedentary lifestyle, obesity, eating habits, toxic habits). We used individual medical records and family health records with ethical parameters: all people who made up the study sample were interviewed to fill out the Family Health Records with prior consent and were informed that the data obtained would be used for research work, and their participation was affirmative. No conflicts of interest were declared.

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*Information processing and analysis,analysis of results*

The results and relevant discussions of the information collected during the study will be presented below. During the research, 16 patients were studied, diagnosed with arterial hypertension, all of whom met the inclusion criteria, with their ability to complete the medical interview.

**Table 1**

*Age of patients with high blood pressure treated at the San Simón Health Center*

| Category | Frequency (f) | Percentage (%) |
|---|---|---|
| 15-20 years | 0 | 0 |
| 21 to 30 years | 0 | 0 |
| 31 to 40 years | 0 | 0 |
| 41-50 years | 1 | 6 |
| From 51 to more | 15 | 94 |
| Total | 16 | 100 |

**Note:**Individual and family health history

Of the 16 patients with arterial hypertension registered in this study, it was found that 94% (15) were over 51 years old; 1 patient was 41 to 50 years old. Adult age predominated.

**Table 2**

*Gender of patients with high blood pressure treated at the San Simón Health Center*

| Category | Frequency (f) | Percentage (%) |
|---|---|---|
| Man | 4 | 25 |
| Women | 12 | 75 |
| Total | 16 | 100 |

**Note:**Individual and family health history

Of the 16 patients recorded in this study, 75% with high blood pressure were women.

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**Table 3**

*Occupation of patients with high blood pressure treated at the San Simón Health Center*

| Category | Frequency (f) | Percentage (%) |
|---|---|---|
| Student | 0 | 0 |
| Farmer | 4 | 25 |
| Employee | 3 | 19 |
| Retired | 5 | 31 |
| None | 4 | 25 |
| Total | 16 | 100 |

**Note:**Individual and family health history

Of the 100% of patients in this study, 31% are retired, followed by 25% of patients who are farmers, 19% are employees and there are 4 patients who have no occupation.

**Table 4**

*Education level of patients with high blood pressure treated at the San Simón Health Center*

| Category | Frequency (f) | Percentage (%) |
|---|---|---|
| Primary | 9 | 56 |
| Secondary | 4 | 25 |
| Third Level | 3 | 19 |
| None | 0 | 0 |
| Total | 16 | 100 |

**Note:**Individual and family health history

Of the 100% of patients in this study, 56% have primary education, while 44% have secondary and third level education.

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**Table 5**

*Personal medical history of patients treated for high blood pressure at the San Simón Health Center*

| Category | Frequency (f) | Percentage (%) |
|---|---|---|
| Kidney Diseases | 2 | 13 |
| Diabetes mellitus | 2 | 13 |
| Other diseases | 5 | 31 |
| They have no diseases | 7 | 43 |
| Total | 16 | 100 |

**Note:**Individual and family health history. Other diseases: cholelithiasis, pulmonary fibrosis, polycythemia, breast cancer, hypothyroidism, prostatic hypertrophy.

Of the 100% of patients in the study, it was found that 13% of the patients showed a personal history of kidney disease; 13% showed diabetes mellitus, 31% had other added comorbidities and 43% had no significant pathological history.

**Table 6**

*Family pathological history presence of relatives with arterial hypertension*

| Category | Frequency (f) | Percentage (%) |
|---|---|---|
| Mother | 2 | 12 |
| Father | 4 | 25 |
| Siblings | 2 | 13 |
| Grandparents | 1 | 6 |
| Unknown | 7 | 44 |
| Total | 16 | 100 |

**Note:**Individual and family health history

Of the 16 patients in the study, it was found that 25% have a father who is a carrier of the disease, 13% have a brother with the genetics, 12% have a mother with the genetics of the disease, and the remaining 44% do not know if any close relatives have high blood pressure.

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**Table 7**

*Distribution of risk factors in patients treated for high blood pressure at the San Simón Health Center*

| Category | Frequency (f) | Percentage (%) |
|---|---|---|
| Age over 51 years | 15 | 75 |
| Age 41-50 years | 1 | 25 |
| Sedentary lifestyle | 13 | 81 |
| Do physical activities | 3 | 19 |
| Obesity | 9 | 56 |
| Normal Weight | 7 | 43 |
| Bad eating habits | 13 | 81 |
| Proper eating habits | 3 | 19 |
| Toxic habits | 6 | 37 |

**Note:**Individual and family health history

Of the 100% of patients in the study, it was found that (75%) corresponds to the age of the elderly, sedentary lifestyle with 81%, obesity with (56%), inadequate eating habits (81%), and toxic habits (37%) are the risk factors with high prevalence.

**Table 8**

*Blood relationship of patients with high blood pressure treated at the San Simón Health Center*

| Category | Frequency (f) | Percentage (%) |
|---|---|---|
| Mother | 2 | 13 |
| Father | 3 | 19 |
| Siblings | 2 | 12 |
| Grandparents | 1 | 6 |
| Unknown | 8 | 50 |
| Total | 16 | 100 |

**Note:**Individual and family health history

Of the 16 patients in the study, it was found that 19% have a father with a genetic factor for the disease, 13% have a mother with a genetic factor, 12% have an uncle with a

predisposing genetic factor for the disease, the remaining 50% do not know if their relatives have a predisposing factor for the disease, 6% corresponds to the genetic factor inherited from grandparents.

**Discussion**

Arterial hypertension has become an alarming problem for humanity due to its high incidence and prevalence. Hypertension is, among chronic diseases, one of the most frequent with important repercussions on personal, economic and health matters.

The negative impact of hypertension is growing globally, due to the increase in demographic aging, population growth and greater exposure of the population to risk factors.(Morejón et al., 2020).

Regarding the sociodemographic characteristics of the population studied, the female sex predominated with 75%, as in the study ofLlisterriet al. (2008), whose study population was hypertensive patients treated in the Marianao municipality (Cuba) with 63.20%, and studies by Mena-Díaz et al. (2018), whose population was hypertensive patients using the cardiovascular health program of a family health center (Chile) with 75.9%, stating that sex has an influence on the existence of the disease.

Regarding the level of education, 56% of patients only have primary education, as opposed to college studies.Ojeda (2019), 56.7% had secondary education, 52.2% had higher education (Alférez, 2019), and 42.60% are illiterate. According to the occupation in our study, 31% were retired and 25% were farmers, the results of the other studies were: 35.7% had businesses, and 36.7% are civil servants (Ojeda, 2019), the discrepancy in terms of occupation is evident.

Due to the individual genetic predisposition, associated comorbidities and the influence of modifiable factors. According to Baglietto-Hernández et al. (2020), the genetic component plays a very important role in the disease. Research shows that the most predominant factor is the family pathological history of hypertension,

A study conducted by Morejón et al. (2020) describes that having this history increases the risk of suffering from hypertension by 6 times. Associated pathologies turned out to be the second most important risk factor, present in 44% of patients in the study sample with diabetes mellitus, and other associated comorbidities.

Other risk factors present are sedentary lifestyle, obesity, inadequate eating habits and toxic habits. When analyzing the lifestyle practiced by the patients with arterial hypertension studied, it is evident overall that the patients have 81% with sedentary lifestyle, 56% with obesity, 37% with toxic habits, a regular lifestyle, and 19% have a good lifestyle, results that differ from the study ofCornejo et al. (2023),who found in their

study that the lifestyle is mostly average or unhealthy with 42.5% and 57.5% healthy. The study ofCornejo et al. (2023), agrees with the study by reporting in its results that the lifestyle in relation to the practice of self-care is regular, deficient or inadequate in 80% and adequate in 20%. However, our results differ from the study ofMena-Diazet al. (2018), who found in their results that the lifestyle that hypertensive patients led was mostly good at 70%.

For this reason, it is important to emphasize the implementation of health promotion and prevention measures in terms of lifestyle changes such as improving diet, avoiding a sedentary lifestyle, and avoiding alcohol and/or tobacco consumption, which are predisposing factors for developing cardiovascular diseases.

Population aging and the increase in unhealthy lifestyles require the implementation of actions to promote and prevent hypertension, characterized by its high incidence and prevalence each year worldwide. The presence of risk factors for hypertension in the population is becoming more evident, and its influence on the acceleration of the onset of the disease has been scientifically proven. It is time to focus on actions to reduce the large number of patients, starting with the correct dispensing of the population and from there directing individual and collective actions.

**Conclusions**

- Through the bibliographic review it has been shown that arterial hypertension is a hereditary disorder that is characterized by being a public health problem due to its magnitude, the risks, the difficulty in management, the high medical and social costs and the serious cardiovascular and renal complications, which makes it considered as a tracer within the non-communicable diseases, constituting in itself a disease, as well as a risk factor for other diseases.
- After carrying out this study, it was observed that, of the 16 patients in this Health Unit, each of them had a close relative with high blood pressure.
- Personal history of renal disease, diabetes mellitus, and other comorbidities in hypertensive patients is considered a factor influencing the history.
- Modifiable risk factors such as a sedentary lifestyle, obesity, poor eating habits, and frequent toxic habits increase the risk of high blood pressure.
- Patients currently being treated may be at greater risk of complications due to both their illness and age-related comorbidities.
- The high genetic predisposition, the suffering of associated comorbidities and modifiable risk factors in the population studied increases the risk of suffering from arterial hypertension, a disease of high prevalence and incidence in the world and in our country.

**Conflict of interest**

The authors declare that they have no conflict of interest.

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