



Prevalence and Epidemiology of the Arterial Hypertension of the Adult in Kamina in the Democratic Republic of the Congo

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Abstract

High blood pressure (HTA) is a cardiovascular disease more prevalent in consultations in internal medicine; it is until now less controlled in the world, especially in developing countries where the majority of hypertensives are not controlled. In general, it is estimated that hypertension affects between 10% to 15% of the adult population. In some countries the prevalence is slightly higher (about 20% of the adult population) and in some Eastern European countries an even higher prevalence has been observed (up to 30%). This is a cross-sectional descriptive study on the prevalence and epidemiology of HTA in Kamina. The study was spread over a 12-month period from January 2017 to December 2017. This study found that out of 222 patients received in internal medicine at the Kamina General Referral Hospital in 2014, 187 subjects represented 84 patients. 2% had different pathologies compared to 35 subjects, *i.e.* 15.8% had hypertension. We found that participants aged 60 and over are more represented with a workforce of 18% or 51.4% while subjects aged 40 - 59 represent only a workforce of 5% or 14.3%. As for sex, women are more affected by HTA with a workforce of 21% or 60% while men represent a workforce of 14% or 40%. To better contribute to the reduction of the morbidity and mortality associated with the complications of hypertension, it is necessary to act early upstream according to the extent of this pathology, even at the level of the basic health centers. The significant proportion of severely hypertensive patients requires greater awareness to consult for their follow-up and management.

Subject Areas

Internal Medicine

Keywords

Prevalence, Epidemiology, Arterial Hypertension

1. Introduction

High blood pressure is a more common cardiovascular disease in internal medicine consultations; it is until now less controlled in the world, especially in developing countries where the majority of hypertensives are not controlled [1].

In general, it is estimated that hypertension affects between 10% to 15% of the adult population [2]. In some countries the prevalence is slightly higher (about 20% of the adult population) and in some Eastern European countries an even higher prevalence has been observed (up to 30%) [3]. In contrast, in some populations with a developed lifestyle, including some populations in Latin America, Africa and Oceania, the prevalence of hypertension is significantly lower. The data are all based on the conventional maximum pressure of 160/95 mmHg, but using the recently recommended 140/90 mmHg level [2], the prevalence increases significantly to levels above 30% of adult population.

Around the world in 2000, the HTA affected about 26.6% for men and 26.1% for women; by the year 2025, it would reach 29.2% of the general population, *i.e.* 29% of men and 29.5% of women.

Of the 972 million hypertensive adults, 333 million or 34.3% come from developed countries and 639 million or 65.7% are from developing countries [4].

Just under eight million deaths worldwide are thought to be due to hypertension and this is believed to be the cause of stroke and heart disease [5].

In Canada, 22.7% of adults over the age of 20 had diagnosed hypertension between 2006-2007. The population aged 60 years and over who took antihypertensive drugs was 46% for women and 38% for men.

More than four million antihypertensive prescriptions are issued monthly.

The cost associated with HTA consisting of medical consultation, antihypertensive medications and laboratory tests was \$2.3 billion Canadian in 2003 [6].

In France, the HTA concerned 10% to 15% of the population, probably fourteen million patients, including eight million treated for a cost of three billion euros [7].

The figure tends to increase from 8.6 to 10.5 million people treated as a public health and care problem.

In sub-Saharan Africa, the proportion for controlled hypertensives does not exceed 5%; despite efforts in the various regions, high blood pressure is a major public health problem [1].

In addition, numerous studies conducted around the world have shown that

arterial hypertension affects about 15% of the adult population and is responsible for 10% to 20% of all deaths [8].

Currently, it is estimated that about 1 billion people worldwide suffer from hypertension and this number is expected to increase with the aging of the population [9].

In Africa before the 1930s, cardiovascular diseases and certain chronic diseases such as diabetes and cancer remained non-existent, yet they were a major cause of morbidity and mortality in Europe before the Second World War. Currently, high blood pressure is emerging and together with other cardiovascular diseases will constitute a major public health problem in sub-Saharan Africa by 2020 [10].

In fact, the prevalence of arterial hypertension in several African countries varies between 5% and 20% [1]; in France it was estimated at 11.8% for women and 9.4% for men between July 1994 and June 1995; in the Democratic Republic of Congo (DRC), the HTA reaches more than 30% of adults in the city of Kinshasa. The prevalence of hypertension is even higher in South Kivu, eastern DRC, where it affects 40% of adult subjects [11].

The last study on the prevalence and epidemiology of arterial hypertension in Kamina, in health centers, was done in 2008 [12].

The present study aims to determine the prevalence and epidemiology of adult arterial hypertension in Kamina.

2. Materials and Method

2.1. Place of Study

The present study was conducted at the Kamina General Reference Hospital (HGR) in the province of Haut-Lomami in the Democratic Republic of the Congo.

2.2. Type of Study and Period of Study

This is a cross-sectional descriptive study on the prevalence and epidemiology of HTA in Kamina. The study spanned a 12-month period from January 2017 to December 2017.

2.3. Sample Size

Our target population is all HAM/KAMINA patients in the internal medicine department during the reporting period, numbering 222. Among them, 35 patients with hypertension arterial hypertension (HTA) constituted our sample. Our sample is therefore exhaustive. Blood pressure was taken from sitting, left arm, 2nd, 5th and 10th minute rest, then the mean was calculated; the tension was taken by one and the same nurse. Has been recognized hypertensive, anyone with a mean Systolic Blood Pressure (PAS) greater than or equal to 140 mmHg and/or a Diastolic Blood Pressure (DBP) greater than or equal to 90 mmHg; or any person already taking one or more antihypertensive medications, so we have taken into account the pre-treatment tension figures, as recorded in their con-

sultation sheet.

2.4. Data Management, Collection and Analysis

The different patient information was collected from individual files or survey forms previously prepared and used as data carriers.

The collected data were encoded, entered, processed and analyzed using the software Epi info 7. Moreover, the representation of the variables in the form of graphs was carried out by the Excel 2007 software.

The description of the study population, the epidemiological profile of hypertensive patients, and the prevalence of arterial hypertension were studied.

2.5. Inclusion Criterion

Included in this study were all hypertensive patients who received HGR/kamina in the internal medicine department for whom information was found.

2.6. Exclusion Criterion

In our study, we excluded any patient who presented any pathology other than hypertension and hypertensives whose information was not found.

2.7. Ethical Considerations

While it is true that any study on human beings requires respect for human rights. Our study was spared. all hypertensive patients received information about the purpose of the research. We are reassured of the good understanding and we asked for their consent after the free and informed choice when all the mental faculties are in place. We reassured them about the anonymity and confidentiality of the information.

3. Results

3.1. Prevalence of Hypertension

Figure 1 shows that out of 222 patients received in internal medicine at the HGR/Kamina in 2017, 187 subjects or 84.2% had different pathologies compared to 35 cases or 15.8% had hypertension.

3.2. Socio-Demographic Characteristics

The analysis of this **Figure 2** presents us with 21 subjects that is 60% coming from Kamina whereas 14 cases or 40% come from outside Kamina.

With regard to this **Figure 3** we find that the participants of 60 years and more are more represented with a staff of 18 is 51.4% whereas the subjects of 40 - 59 years represent only a staff of 5 is 14.3%.

On **Figure 4** we see that women are more affected by HTA with a workforce of 21% or 60% while men represent a workforce of 14% or 40%.

The analysis of this **Figure 5** shows that the hypertensives who were unemployed accounted for 9 cases, or 22.8%, followed by blacksmiths and housework

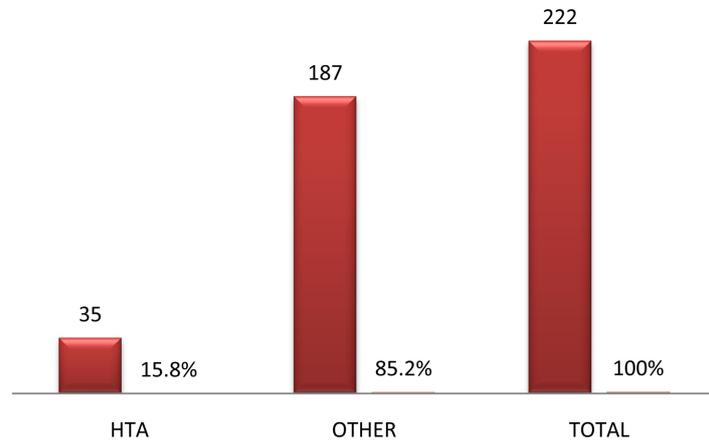


Figure 1. Distribution of data according to the pathology of the patient.

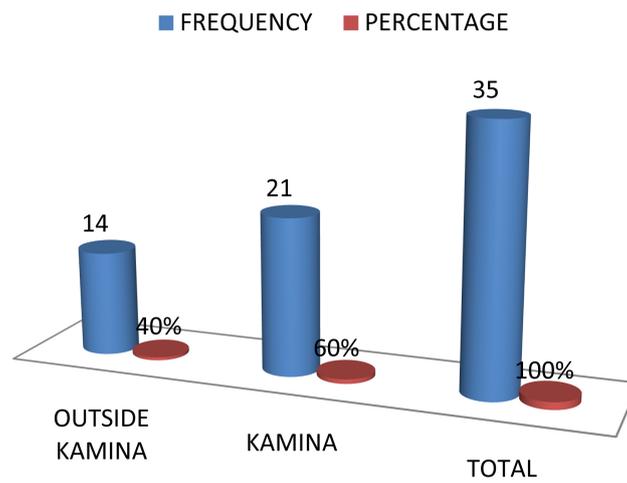


Figure 2. Distribution of hypertensive subjects by source.

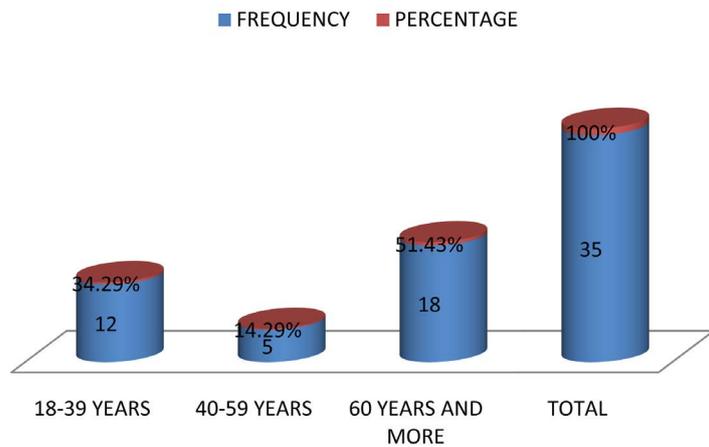


Figure 3. Distribution of hypertensive subjects by age group.

with a staff of 6% or 17% against the police who presented a single case, 2.8%.

In **Figure 6** we note that the married are more represented with a staff of 16 is 45.7% while widowers show only 4 cases is 11.4%.

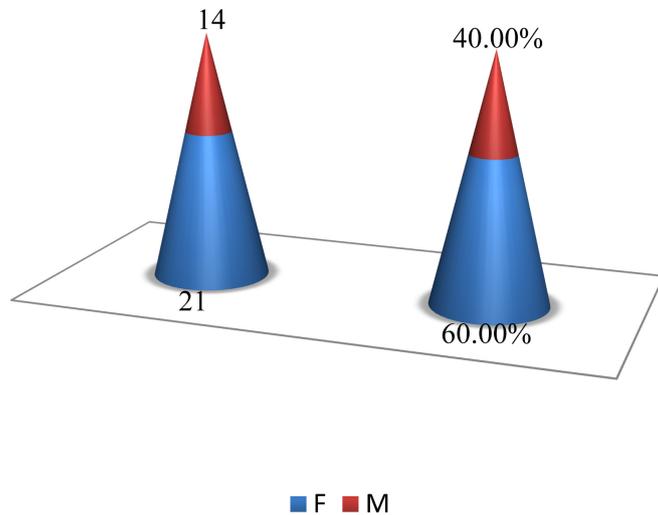


Figure 4. Distribution of hypertensive subjects by gender.

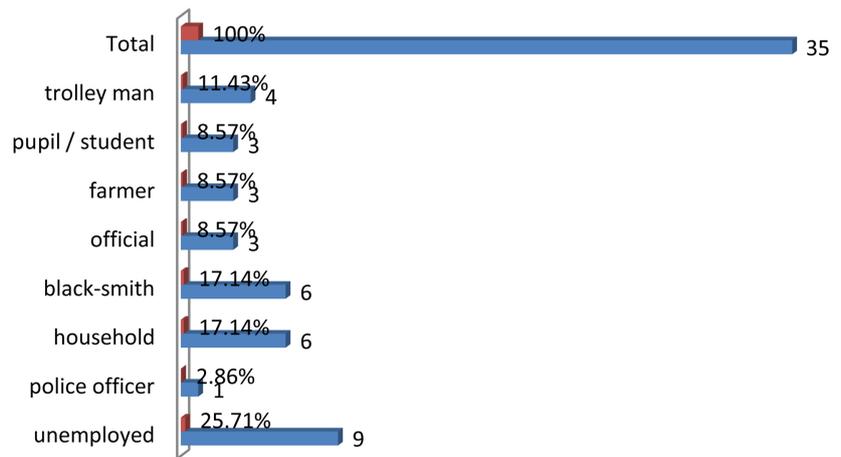


Figure 5. Distribution of hypertensive subjects by occupation.

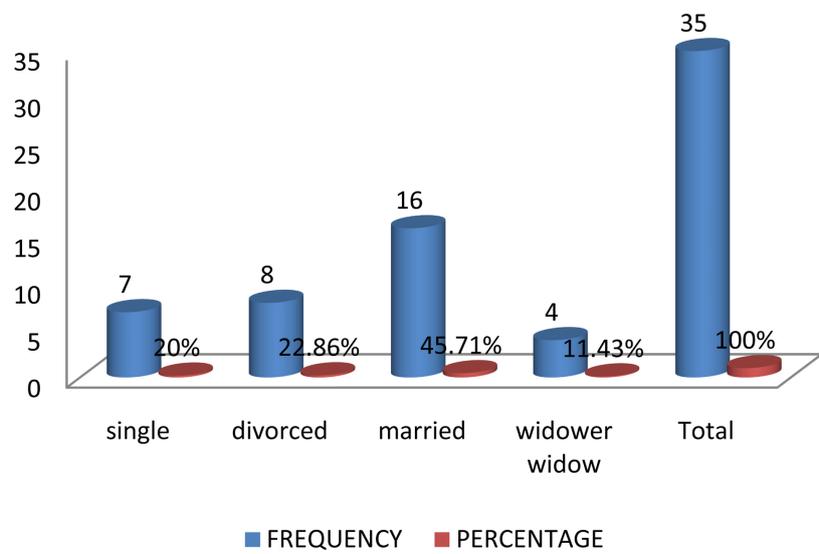


Figure 6. Distribution of hypertensive subjects by marital status.

4. Discussion

We conducted a cross-sectional descriptive study at HGR/KAMINA in the internal medicine department for a 12-month period from January 2017 to December 2017.

After interpreting the results of our investigations, in this chapter we will try to paraphrase them with those of our few predecessors.

4.1. Prevalence of Hypertension

The prevalence we found in our study is 15.77%, slightly higher than that found at 15% in the global adult population [8]; as well as that obtained in rural Kinshasa at 14.2% [10].

However, it is lower than that determined in 2008 in Kamina, 20% [12]; 31.1% in Tanzania [13], 32.5% in Congo Brazzaville in 2004 [14], 31.0% in France according to the Godet-Thobie study and collaborators in 2006-2007 [15], 28.6% in the United States in 2003 [16] and 27% to 28% in Sub-Saharan Africa [17]. A larger study across Europe in 2006 found a higher prevalence of 44% in 2006 [18].

This aspect is due to the variation of the study environments; this is how we believe that a large scale prospective study could shed light on the true prevalence of hypertension in our environment.

4.2. Socio-Demographic Characteristics

In our study, the age ranges from 18 to 84 years old and the average is 48.69 years old. The most affected age group is 60 years and older, which represents 51.43% of patients. These data are on the one hand close to those reported 2013 in the USA [19] having recorded an age which varies between 18 years and 72 years with an average of 38 years where the subjects of 60 years and more were also more represented with 65, 0%, on the other hand remote from the fact that participants aged 40 to 59 were poorly represented compared to 18 - 39 year olds in our study, which is recognized as the opposite in theirs.

This would be due to the increase in blood pressure figures with age.

The distribution by sex gave the female predominance with a sex ratio of 0.67, which was confirmed by the results of the study conducted in 2002 [6]; Didier Duhot (1995) also proved it with 11.8% among women and 9.4% among men [11]. This female predominance could be explained by the fact that women tend to consult more than men. Finally, women are much more numerous than men, in our country, as in the world. Despite this clear predominance of women in the study population, the frequency of hypertension was still significantly higher among men than women, respectively 34% and 30.6% according to a study conducted in Brazzaville in 2004 [14]; 34.1% and 27.8% according to a study of the National School Nutrition Health (ENNS) in France in 2006 [15] and finally 47% and 35% according to the Mona Lisa study in France in 2005-2007 [20]. Women would be much more protected against hypertension before menopause [20].

The occupational distribution showed a predominance of non-employed participants followed by blacksmiths, housekeepers and chariomans.

Referring to marital status, our investigations have shown a predominance of married couples.

5. Conclusions

In Kamina, arterial hypertension is a significant public health problem because of its prevalence, which is significant at 15.77% in the HGR/KAMINA, it affects more women than men, and it is frequent especially in individuals belonging to a remote social rank, unemployed, related to heavy work and toxic habits.

The prevalence of this pathology increases with age; it is more prevalent among married and divorced people. To better contribute to the reduction of the morbidity and mortality associated with the complications of hypertension, it is necessary to act early upstream according to the extent of this pathology, even at the level of the basic health centers. The significant proportion of severely hypertensive patients requires greater awareness to consult for their follow-up and management.

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