

Research Article

Perception of Arterial Hypertension in Hypertensive Patients Undergoing Routine Consultation and Hospitalisation in Bangui

Doyama-woza Rodrigue Herman^{1,*} , Fand éna Emmanuel¹ , Piamal é Germain¹ ,
Woromogo Sylvain Honor é² , Syazo Voto Chacuni ère Marguerite¹ ,
Longo Jean de Dieu^{1,2} , Diemer Saint-Calvaire Henri^{1,2} 

¹Department of Public Health, Faculty of Health Sciences, Bangui, Central African Republic

²Doctoral School of Human and Veterinary Health Sciences, University of Bangui, Bangui, Central African Republic

Abstracts

High blood pressure (HTA) has long been considered the preserve of wealthy countries. However, it also affects low-income countries such as the Central African Republic. The aim of this study was to assess the level of knowledge of patients suffering from hypertension and their perception of prevention and management of the disease. It was a cross-sectional analytical study carried out in the three university hospitals and urban health centers of Bangui from April 15 to May 31, 2022. All consenting hypertensive patients were included. A total of 201 outpatients and inpatients with hypertension. Age ranged from 30 to 88 years, with an average of 43 years (± 6.8 years), and 60.2% of the population was under 60. Of the 201 people surveyed, 78% were unfamiliar with the risk factors for the disease, 75% were unaware of the complications of hypertension, and 87% did not know how to prevent the disease or its complications. As for the perception of treatment, 23.8% thought that medication (oral antihypertensives) was ineffective and 51.3% thought it was restrictive. Diet was considered effective by 91.3%, but restrictive by 89% (high cost and complexity). The use of pharmacopoeias in addition to prescribed oral antihypertensives was reported by 36.3%. This study highlighted patients' low level of knowledge about the disease and the high cost of treatment and diet. Hence the importance of information, education and communication about this disease.

Keywords

Perception, Hypertension, Hypertensive Patients, Bangui

1. Introduction

Noncommunicable diseases (NCDs) cause more than 36 million deaths each year, nearly two-thirds of all deaths worldwide, including 17 million deaths from cardiovascular disease (CVD) [1]. Of the CVD deaths that occur each year,

an estimated 9.4 million are due to complications of hypertension, in this case stroke, myocardial infarction, heart failure and renal failure. Approximately 80% of these deaths occur in low- and middle-income countries [2, 3]. More than a

*Corresponding author: doyama25@gmail.com (Doyama-woza Rodrigue Herman)

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quarter (26.4%) of the world's adult population has high blood pressure, and if nothing is done, this figure will rise to 29.2% by 2025. What's more, nearly three-quarters of these patients will live in developing countries [4]. Long considered the prerogative of wealthy countries, hypertension also affects low-income countries such as the Central African Republic (CAR), where its prevalence is poorly documented despite its inclusion in national priorities [5]. In addition, hypertension has an unsustainable economic impact on African countries, ranging from high medical costs to reduced productivity, at both the individual and national levels [5].

For low-income countries, primary prevention remains the best solution, given that hypertension, like other NCDs, requires lifelong treatment that ultimately impoverishes individuals, households and states [6]. To reduce cardiovascular disease and its impact on overall mortality and economic development, it is necessary to control the disease by acting on its modifiable risk factors. The Programme National de Lutte contre les Maladies Non Transmissibles en RCA (PNLMNT) (National Program for the Control of Non-Communicable Diseases in CAR), which includes hypertension, aims to overcome the lack of information on hypertensive disease, to promote early detection and management of the disease, and to encourage the adoption of a health-promoting lifestyle, notably physical activity and a healthy, balanced diet [7]. The aim of our study was to assess patients' level of knowledge and perceptions of disease prevention and management, in order to develop appropriate strategies for disease control in our context.

2. Methodology

This was a cross-sectional, analytical study carried out in 03 Centres Hospitaliers Universitaires de Bangui (CHUB) and 17 Centres de Sant éUrbain de Bangui (CSUB) from April 15 to May 31, 2021, i.e. 1.5 months. All hypertensive patients over 18 years of age were included in the study. We conducted an exhaustive survey of hypertensive patients attending outpatient or inpatient clinics at the above-mentioned facilities during the study period. Data were collected using a pre-designed survey form that had been pre-tested for clarity. The data collection form enabled us to gather information concerning:

1. Socio-demographic characteristics of respondents.
2. Level of knowledge of the disease (risk factors, complications, means of preventing complications and evolution).
3. Perception of treatment (medication, diet, physical activity).

Our dependent variable was knowledge of disease risk factors, and the independent variables were socio-demographic characteristics (age, level of education and patient occupation). Informed consent was signed by participants before all interviews, and data were treated with strict confidentiality. Data entry and analysis were carried out using Epi-Info version 7 software. Proportions were used to de-

scribe qualitative variables. We used the Chi-2 test of independence to compare proportions in the case of crosses between two categorical variables. We used a significance level of $\alpha = 5\%$ (0.05). For any significance level $p < 0.05$, we concluded that there was a statistically significant association between the dependent variable and the independent variables. The identification of associated factors was done first by a univariate analysis between the dependent variable and the independent variables of interest. Measures of association were estimated by odds ratio (OR) and their 95% confidence interval (CI).

3. Results

Socio-demographic characteristics of the study population:

Age ranged from 30 to 88 years, with a mean of 43 (± 6.8) years, and a median age of 42. Patients under 40 were in the majority (39.80%). The sex ratio was 0.63. Slightly more than half (61.20%) had secondary education or higher. Almost half (24.38%) were unemployed or students.

Table 1. Distribution of the study population by socio-demographic characteristics in Bangui in 2022.

Socio-demographic characteristics	Number (n)	Percentage (%)
Age (in year)		
< 40	80	39.80
40 - 60	45	22.39
≥ 60	76	37.81
Gender		
Male	78	38.80
Female	123	61.20
Education level		
No education/Primary	78	38.80
Secondary	77	38.31
Higher	46	22.89
Occupation		
Informal sector	47	23.38
Manual worker	32	15.92
Salaried/civil servant	73	36.32
Unemployed	49	24.38

Patients' level of knowledge about the disease: The majority (78%) of patients had poor knowledge of the disease's risk factors and of ways to prevent it (87%).

Table 2. Patients' level of knowledge about the disease in Bangui in 2022.

Level of knowledge about the disease	Number (n)	Percentage (%)
Knowledge of risk factors for hypertension		
Cited five factors	20	10.00
Cited three factors	24	12.00
Cited only one factor	102	50.75
Cited none	55	27.25
Knowledge of ways to prevent hypertension		
Cited at least two means of prevention	26	13.00
Cited one means of prevention	82	41.00
Cited none	92	46.00
Knowledge of complications of hypertension		
Cited five complications	16	8.00
Cited three complications	35	17.00
Cited only one complication	78	39.0
Cited none	72	36.00
Knowledge of how to prevent complications of hypertension		
Cited at least two means of prevention	26	13.00
Cited one means of prevention	68	34.00
Cited none	107	53.00

4. Participants' Perceptions of the Management of Hypertension

Table 3. Distribution of the study population according to their perception of care in Bangui in 2022.

Perception of care	Number (n)	Percentage (%)
Efficacy of oral antihypertensives		
Effective	153	76.20
Not effective	48	23.80
Constraints of oral antihypertensives		
Constraining α	103	51.30
Not restrictive	98	48.70
Effectiveness of diet in hypertension		
Effective	184	91.30
Not effective	17	8.70
Constraints of the HTA diet		
Restrictive β	179	89.00
Not restrictive	22	11.00
Effectiveness of physical activity		

Perception of care	Number (n)	Percentage (%)
Daily physical activity	26	13.00
No physical activity	175	87.00
Use of pharmacopoeia medication in addition to oral antihypertensives		
YES	73	36.30
NO	128	63.70

α = The constraints of antihypertensives mentioned were: the high cost of the drugs, their daily intake, adherence to dosing times and side effect
 β = Diet constraints were related to the high cost of the diet and its complexity (no salt, no fat etc.)

Influence of sociodemographic characteristics on their level of knowledge of disease risk factors (RF): The factors associated with a high score for insufficient knowledge of disease risk factors were: patients' age, level of education and un-employed professional status (Table 4).

Table 4. Influence of socio-demographic characteristics on the level of knowledge of disease risk factors among patients in Bangui in 2022.

Characteristics	Level of knowledge of disease risk factors						p
	Total	Good ^α		Bad ^β		OR [IC 95%]	
	(201)	(n=44)		(n=157)			
	N	n	%	n	%		
Age (in year)							
< 40	45	24	53.33	21	46.67	1	
40 - 60	80	11	13.75	69	86.5	7.14 [3 - 17]	<0.001
≥ 60	76	9	11.84	67	88.16	14.17 [5.9 – 33.90]	<0.001
Level of education							
None/Primary	78	10	12.82	68	87.18	1	
Secondary and above	123	34	27.65	89	72.35	0.39 [0.17 – 0.83]	<0.001
Occupation							
Informal sector	48	7	14.58	41	85.42	1	
Manual worker	31	4	12.90	27	87.10	1.15 [0.26 – 5.80]	1
Salaried/civil servant	76	12	15.79	64	84.2	0.91 [0.33 – 2.50]	>0.05
Unemployed	46	21	45.65	25	54.35	0.20 [0.07 – 0.54]	<0.001

α = Cited at least three risk factors for hypertension

β = Cited only one or none of the risk factors for hypertension

5. Discussion

Two hundred and one (201) outpatients and inpatients with hypertension were included in our study. This number is higher than that reported by another similar hospital-based

study conducted in Burkina Faso in 2018, which reported a sample size of 88 patients [8].

Socio-demographic characteristics: The average age in our study was 43 years (± 6.8). This finding has been reported by several authors. Indeed, ageing has been identified as a risk factor for hypertension [9-12]. This could be explained by the

physiological change in blood vessels that occurs as the age of the individual increases. Our study included 61.20% (123) women and 38.80% (78) men. The sex ratio was 0.63. Results on the study of gender as a risk factor for hypertension are divergent. Several authors have found that the prevalence of hypertension is higher in men [13, 14]. In terms of participants' occupation, salaried employees/civil servants were the most represented (36.32%), followed by the unemployed (24.28%) and the informal sector (23.28%). Wage-earners/civil servants are stressful occupations that can contribute to high blood pressure. Patients with high-pressure jobs are more likely to develop unhealthy behaviors, such as poor diet or excessive alcohol consumption, to cope with stress, which are factors conducive to high blood pressure. Many of the participants in this category work in offices, and with the effects of new technology (computers and NICTs) are increasingly sedentary with less physical activity, which is a risk factor for hypertension. On the other hand, jobs requiring regular physical activity can help maintain healthy blood pressure. Several authors have highlighted the link between stress and sedentary lifestyle in relation to the occupation of hypertensive people and the disease [1].

Knowledge of the disease: An assessment of knowledge levels in the study population as a whole revealed that people with hypertension are not well informed about their disease and its risks. Of the 201 people surveyed, only 22% identified at least 3 risk factors for the disease. However, a quarter (25%) identified at least 3 types of complications. In most cases, patients with hypertension try to compensate for this lack of information by turning to unreliable or unscrupulous sources that may provide erroneous or even dangerous information for their management. Studies conducted in Africa have also found that the majority of people with hypertension have no idea what factors contribute to the development of the disease [15, 16]. Patients often refer to hypertension as "the disease of the obese," which leads them to automatically associate the origin of the disease with excessive consumption of sugary foods, overlooking other risk factors such as sedentary lifestyle, stress, etc. Fezeu et al [17] have also reported this lack of information on risk factors in Cameroon, with the population focusing on obesity.

Perception of oral antihypertensives: In our study, 76.2% of people recognized the efficacy of the medication, and 51.3% thought it was very restrictive. The main constraints cited by patients related to the high cost of the drugs, taking them every day, adherence to dosing times and side effects. Several authors have also reported that the poor therapeutic compliance frequently noted in daily practice is largely explained by the high cost of medication [1].

Perception of regular physical activity for disease prevention: In our series, 87% of patients were not physically active. This can be explained by the fact that the majority of patients and those around them are not sufficiently informed about the benefits of physical exercise in preventing complications of hypertension. To this must be added the influence of envi-

ronmental factors such as ease of transport, dense traffic, lack of green space, etc. Many authors have asserted that, in large cities, people walk little and take cabs from home to work [18, 19]. Some authors have reported that individuals who engage in vigorous daily physical activity have a reduced risk of developing hypertension, with lower blood pressure figures than those who do not engage in vigorous physical activity [14]. The reduction of oxidative stress and psychological stress by physical activity are some of the mechanisms evoked by a systematic review to explain the effect of physical activity on blood pressure [20].

Perception of a balanced diet for disease prevention: Almost all (91.3%) of those questioned felt that the diet was effective. However, 89% thought the diet was restrictive. Adequate consumption of fruit and vegetables protects against hypertension. Studies have demonstrated the important role played by the antioxidants contained in fruit and vegetables (carotenoids, polyphenols and other antioxidant compounds) in neutralizing the free radicals produced especially during the arteriosclerosis process. Thus, Stewart de Ramirez et al. in their study carried out in three sub-Saharan African countries (Malawi, Rwanda, Tanzania) observed that high frequency of fruit and vegetable consumption was significantly associated with low systolic and diastolic blood pressure and low mean arterial pressure [14]. To this end, the WHO recommends that countries take action to promote better dietary quality and a healthy lifestyle through regular physical activity, in order to combat hypertension and protect the population against its cardiovascular consequences [3].

Perception of pharmacopoeia for the treatment of hypertension: In our study, 36.3% of those surveyed resorted to traditional medicine. This may be interpreted as insufficient access to information, medicines and customary beliefs. Numerous authors in Africa and elsewhere have reported that more than three-quarters of patients suffering from a chronic disease such as hypertension admit to using a traditional treatment as part of the management of their illness, notably based on plants such as *Morinaga oleifera*, commonly known as "nébédaye" [21].

Influence of sociodemographic characteristics on their level of knowledge of disease risk factors: Sociodemographic characteristics, notably age, level of education and occupation (job) have an influence on the knowledge of hypertensive people. In our study, older people, those with a higher level of education and those with stable jobs had better knowledge of the disease, with a statistically significant difference ($P < 0.05$). Several studies have shown this to be true [14, 19].

6. Conclusion

This study revealed a low level of knowledge among patients about the disease, with its restrictive treatment and diet. The results of this study should lead us to translate the suggestions made into action, in order to put in place strategies that can contribute to improving the quality of life of people

living with this disease, and to prevention.

Abbreviations

CIGLE	Signification
CAR	Central African Republic
CHUB	Centres Hospitaliers Universitaires de Bangui
CSUB	Centres de Santé Urbain de Bangui
PNLMNT	National Program for the Control of Non-Communicable Diseases in CAR
WHO	World Health Organization

Author Contributions

Doyama-woza Rodrigue Herman: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Writing – original draft

Fandéna Emmanuel: Data curation, Formal Analysis, Investigation, Methodology, Writing – review & editing

Piamalé Germain: Investigation, Methodology, Visualization, Writing – review & editing

Woromogo Sylvain Honoré: Data curation, Formal Analysis, Methodology, Visualization, Writing – review & editing

Syazo Voto Chacunière Marguerite : Data collection.

Longo Jean de Dieu: Project administration, Validation, Visualization, Writing – review & editing

Diemer Saint-Calvaire Henri: Supervision, Validation, Visualization, Writing – review & editing

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Conflicts of Interest

The authors declare no conflicts of interest.

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