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# Profile of registered users with hypertension in Paraíba

Perfil de usuários registrados com hipertensão na paraíba

Perfil de usuarios registrados con hipertensión en paraíba

## RESUMO

Objetivo: analisar o perfil de usuários de usuários registrados com hipertensão na Paraíba entre 2009 a 2013. Método: estudo ecológico, descritivo, retrospectivo com abordagem quantitativa com base em dados registrados no DATA/SUS entre os anos 2009 a 2013. Os dados foram analisados por meio de frequências relativas e absolutas. Resultados: a maioria dos pacientes registrados no HIPERDIA residiam na macrorregião de saúde III (58,0%) do estado, são do sexo feminino (67,0%), com idade entre 40 a 59 anos (40,9%), considerados sedentários (51,5%) e não tabagistas (73,0%). No tocante as comorbidades associadas a hipertensão, os registros indicam que 5,6% apresentam doença renal, 3,4% amputação por pé diabético, 5,2% pé diabético, 7,0 outras doenças coronarianas e 9,8 já sofreu infarto agudo do miocárdio. Conclusões: os dados indicam que o perfil de pessoas com hipertensão é predominantemente residente da terceira macrorregião do estado, mulheres, sedentários, não tabagistas, sem sobrepeso e com comorbidades associadas.

**DESCRIÇÕES:** Hipertensão; Perfil de saúde; Atenção Primária à Saúde.

## ABSTRACT

Objective: to analyze the profile of users of registered users with hypertension in Paraíba between 2009 and 2013. Method: ecological, descriptive, retrospective study with a quantitative approach based on data registered in DATA/SUS between 2009 and 2013. Data were analyzed through relative and absolute frequencies. Results: most patients registered in HIPERDIA lived in the health macro-region III (58.0%) of the state, are female (67.0%), aged between 40 and 59 years (40.9%), considered sedentary (51.5%) and non-smokers (73.0%). With regard to comorbidities associated with hypertension, records indicate that 5.6% have kidney disease, 3.4% amputation for diabetic foot, 5.2% diabetic foot, 7.0 other coronary diseases and 9.8 already suffered an acute infarction of the myocardium. Conclusions: the data indicate that the profile of people with hypertension is predominantly resident of the third macro-region of the state, women, sedentary, non-smokers, without overweight and with associated comorbidities.

**DESCRIPTORS:** Hypertension; Health Profile; Primary Health Care.

## RESUMEN

Objetivo: analizar el perfil de usuarios de usuarios registrados con hipertensión en Paraíba entre 2009 y 2013. Método: estudio ecológico, descriptivo, retrospectivo con enfoque cuantitativo basado en datos registrados en DATA / SUS entre 2009 y 2013. Los datos fueron analizados mediante y frecuencias absolutas. Resultados: la mayoría de los pacientes registrados en HIPERDIA vivían en la macrorregión de salud III (58.0%) del estado, son mujeres (67.0%), con edades entre 40 y 59 años (40.9%), considerados sedentarios (51.5%) y no fumadores (73.0%). En cuanto a las comorbilidades asociadas a la hipertensión, los registros indican que el 5,6% tiene enfermedad renal, el 3,4% amputación por pie diabético, el 5,2% pie diabético, 7,0 otras enfermedades coronarias y el 9,8 ya sufrió un infarto agudo de miocardio. Conclusiones: los datos indican que el perfil de personas con hipertensión arterial es predominantemente residente de la tercera macrorregión del estado, mujeres, sedentarias, no fumadoras, sin sobrepeso y con comorbilidades asociadas.

**DESCRIPTORES:** Hipertensión; Perfil de Salud; Atención Primaria de Salud

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## Elizabeth Diniz Nóbrega

Graduation in Medicine (FAMENE/PB). Resident Physician (R2) in Family and Community Medicine. Institution: Municipal Health Department of João Pessoa/ Faculty of Medical Sciences of Paraíba (FCM).

ORCID: 0000-0001-9593-3337

## Theresa Rhaquel Sobreira França Viegas

Graduation in Medicine (FAMENE/PB). Resident Physician (R2) in Family and Community Medicine. Institution: Municipal Health Department of João Pessoa/ Faculty of Medical Sciences of Paraíba (FCM).  
ORCID: 0000-0003-0006-3055

## INTRODUCTION

Changes in lifestyle, inappropriate habits, smoking, overweight, environmental vulnerability and socioeconomic factors are causes that in the long term predispose to the onset of Chronic Non-Communicable Diseases (NCDs), affecting the quality of physical, social and mental well-being. NCDs burden the health system economically, especially in poor, vulnerable and developing countries, in addition to raising the mortality rate.<sup>2</sup>

To minimize this situation, it is essential to promote health, control diseases and actively search for these users. However, failures in the system to early detect patients prone to the disease becomes a challenge in public health.<sup>1</sup>

In the sphere of comorbidities found in CNCDs, the most prevalent in Brazil, representing a third of deaths, are cardiovascular diseases,<sup>3</sup> among these, arterial hypertension (SAH) is the most prevalent.<sup>4</sup> The Northeast region of the country has the highest rate of mortality from CNCD. A study carried out with data on hypertension in the Northeast revealed that the State of Paraíba is the fifth state with the highest prevalence of hypertensive people.<sup>5</sup>

With the purpose of controlling these most dominant diseases in the country, the Ministry of Health developed public policies, which, in 2002, created the Plan for the Reorganization of Attention to Arterial Hypertension and Diabetes Mellitus, popularly known as HiperDia. HiperDia is a registration system for patients with diabetes mellitus and arterial hypertension monitored in the Family Health Strategy (ESF). Its role is to collect information from users, distribute medications, implement guidelines for the active search for patients in order to diagnose the patient as early as possible, promote the prevention

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of risk factors and thus offer the best treatment that the patient needs.<sup>6</sup>

Information on the profile of users registered with HiperDia is found in the database of the Information Technology Department of the Unified Health System. DATASUS allows knowing the entire profile of patients registered in HiperDia, providing subsidies to plan and direct effective and resolute actions to improve both patient care and adequate treatment.

A study carried out in a basic unit in the city of Belém do Pará showed that the low adherence of users to actions to control hypertension is a challenge and the lack of understanding of health professionals regarding the characterization of users becomes an obstacle in this challenge. This favors a generalized consultation, without focusing on the individuality of each patient and their needs.<sup>8</sup>

Another study carried out in basic units in the city of Pelotas adds that SAH is a public health problem and to promote effective actions and improve adherence, it is essential to carry out research on the identification of the epidemiological profile of users.<sup>9</sup> The medical professional, knowing the characteristics of users, will have relevant subsidies to assist the patient in its entirety, individuality and needs according to the context experienced by the patient. Knowing the profile of hypertensive users in Paraíba, through scientific research, is essential for the non-drug and drug treatment to be directed to the assisted population and to be effective in the conduct.

In view of all the problems mentioned above, the guiding question is: How is the profile of registered users with hypertension in the State of Paraíba characterized? This study aims to analyze the profile of registered users with hypertension in Paraíba between 2009 and 2013.

**METHOD**

This is an ecological, descriptive and retrospective study with a quantitative approach to register hypertensive patients in the last 5 years (2009 to 2013) in the Registration and Monitoring System for Hypertensive and Diabetic Patients (HIPERDIA), available at DATA/SUS.

Data were collected from the Ministry of Health's system, made available electronically by the Information Technology Department of the Unified Health System (DATASUS), at <http://www2.datasus.gov.br/>.

Data collection from registered users took place at TABNET, in the "Epidemiological and Morbidity" tab, in the "Hypertension and Diabetes" section, then the state of Paraíba was selected. All available records from the last five years (2009 to 2013) were selected. Figure 1 below reflects the flowchart of access to the DATASUS system.

The variables were classified into two categories, namely: characterization of the sample and lifestyle habits (macroregion of health, gender, age group, overweight, sedentary lifestyle and smoking) and associated comorbidities (kidney disease,

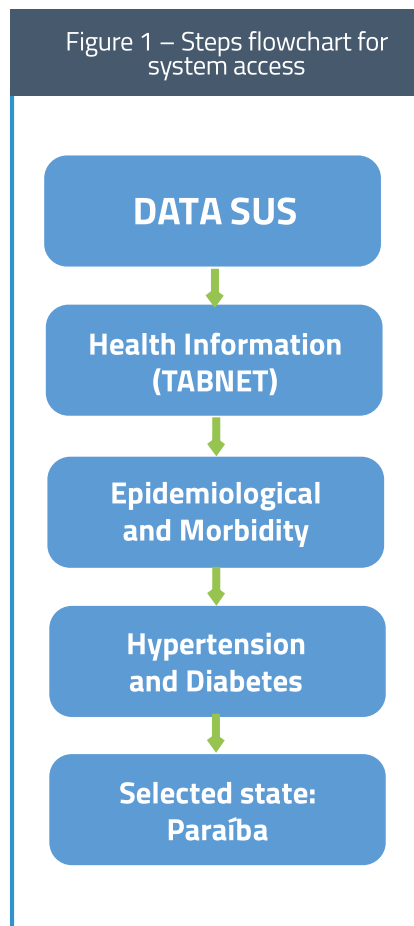
amputation due to diabetes, diabetic foot, cerebrovascular accident, other coronary diseases and acute myocardial infarction).

Data were analyzed descriptively, using relative and absolute relative frequency and presented in the format of tables. As this is a research with data collection from secondary sources, the Ethics and Research Committee's consideration was not required.

**RESULTS**

The data presented consist of records of hypertensive patients registered between the last five years available in the DATA-SUS system (2009 to 2013). It is possible to highlight that the drop in the number of registrations observed in 2013 is related to the incomplete registration of the highlighted year, since the system only presents data up to the month of April.

With regard to the health macro-region, it is possible to notice a greater number of cases of hypertensive patients concentrated in the first region (58,6%) in all years of study, with a higher incidence also in all years of hypertension among females (67,0%) and the age group between 40 and 59 years (40,9%). Most registered users were



Source: Own elaboration, 2021.

Table 1 – Characterization of the sample and life habits according to year. Paraíba, Brazil. 2021.

	2009		2010		2011		2012		2013		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>HEALTH MACRO-REGION</b>												
Macro-region III – Sertão/Alto Sertão	1136	17,3	872	16,7	923	13,7	458	11,9	55	15,3	3444	15,2
Macro-region II – Campina Grande	2210	33,6	1408	27,0	1414	21,0	804	20,9	127	35,4	5963	26,2
Macro-region I – João Pessoa	3236	49,2	2934	56,3	4394	65,3	2582	67,2	177	49,3	13323	58,6
<b>SEX</b>												
Male	2146	32,6	1679	32,2	2225	33,1	1317	34,3	131	36,5	7498	33,0
Female	4436	67,4	3535	67,8	4506	66,9	2527	65,7	228	63,5	15232	67,0
<b>AGE GROUP</b>												
Up to 14 y/o	17	0,3	16	0,3	30	0,4	15	0,4	-	-	78	0,3
15 to 19 y/o	22	0,3	14	0,3	23	0,3	10	0,3	2	0,6	69	0,3

# artigo

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20 to 39 y/o	519	7,9	549	10,5	703	10,4	413	10,7	34	9,5	2184	9,8
40 to 59 y/o	2511	38,1	2088	40,0	2822	41,9	1725	44,9	131	36,5	9146	40,9
60 to 74 y/o	2491	37,8	1869	35,8	2289	34,0	1249	32,5	146	33,1	7898	35,3
75 and older	1022	15,5	678	13,0	864	12,8	432	11,2	46	186,6	2996	13,4
<b>OVERWEIGHT</b>												
Yes	3010	45,7	2236	42,9	2980	44,3	1908	49,6	185	51,5	10319	45,4
No	3572	54,3	2978	57,1	3751	55,7	1936	50,4	0	0,0	12237	53,8
<b>SEDENTARY LIFESTYLE</b>												
Yes	3412	51,8	2527	48,5	3439	51,1	2132	55,5	191	53,2	11701	51,5
No	3170	48,2	2687	51,5	3292	48,9	1712	44,5	168	46,8	11029	48,5
<b>SMOKING HABITS</b>												
Yes	1732	26,3	1440	27,6	1809	26,9	1042	27,1	111	30,9	6134	27,0
No	4850	73,7	3774	72,4	4922	73,1	2802	72,9	248	69,1	16596	73,0

Source: DATASUS, 2021.

Table 2 – Comorbidities associated with hypertension by year. Paraíba, Brazil. 2021.

	2009		2010		2011		2012		2013		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
<b>KIDNEY DISEASE</b>												
Yes	343	5,2	343	6,6	375	5,6	200	5,2	16	4,5	1277	5,6
No	6239	94,8	4871	93,4	6356	94,4	3644	94,8	343	95,5	21453	94,4
<b>AMPUT FOR DIABETIC</b>												
Yes	224	3,4	193	3,7	214	3,2	129	3,4	11	3,1	771	3,4
No	6358	96,6	5021	96,3	6517	96,8	3715	96,6	348	96,9	21959	96,6
<b>DIABETIC FOOT</b>												
Yes	302	4,6	301	5,8	323	4,8	193	5,0	14	3,9	1133	5,2
No	6280	95,4	4913	94,2	6408	95,2	3651	95,0	345	96,1	21597	95,0
<b>CEREBRAL VASCULAR ACCIDENT</b>												
Sim	756	11,5	668	12,8	781	11,6	450	11,7	28	7,8	2683	13,4
Não	5826	88,5	4546	87,2	5950	88,4	3394	88,3	331	92,2	20047	88,2
<b>OTHER CORONARY DISEASES</b>												
Yes	415	6,3	353	6,8	434	6,4	265	6,9	21	5,8	1488	7,0
No	6167	93,7	4861	93,2	6297	93,6	3579	93,1	338	94,2	21242	93,5
<b>ACUTE MYOCARDIAL INFARCTION</b>												
Yes	568	8,6	525	10,1	603	9,0	312	8,1	18	5,0	2026	9,8
No	6014	91,4	4689	89,9	6128	91,0	3532	91,9	341	95,0	20704	91,1

Source: DATASUS, 2021.

considered not to be overweight (53,8%), although most are considered sedentary (51,5%) and non-smokers (73,0%).

During the years collected, most participants manifested kidney disease (94,4%), as well as amputations due to diabetes (96,6%), diabetic foot (95,0%), stroke (88,2%), other coronary heart disease (93,5%) and acute myocardial infarction (AMI) (91,1%), as shown in table 02.

## DISCUSSION

In the period studied, it was evident that macroregion I – João Pessoa has a higher concentration of hypertensive individuals. This result is similar to the survey carried out in 2019, by the Surveillance of Risk Factors and Protection for Chronic Diseases by Telephone Survey (Vigitel), which found that João Pessoa is among the capitals with a high rate of hypertensive patients.<sup>10</sup>

Age distribution was centered on older adults aged 40 to 59 years, this may be associated with gradual stiffness and decreased artery compliance due to natural aging.<sup>11</sup> In addition, it is after the age of 40 that there is greater evidence of hemodynamic changes, such as increased blood pressure.<sup>12</sup>

Studies<sup>13,14</sup> carried out in Brazil also had a high percentage of hypertensive patients in this age group. In some studies<sup>15,16</sup> this range is prolonged until the age of the elderly population and this is associated with bodily changes that tend to increase with advancing age.

Another significant variable in this study is "gender", in which women appear with twice as many cases of hypertension compared to men. Females have an instinct to take care of their health much more noticeable and this leads to constant demand for health services, being diagnosed earlier.<sup>16</sup>

Factors such as the period of menopause, use of oral and injectable contraceptives, polycystic ovary syndromes and hormone replacements can raise blood pressure levels, making it possible for women to have high blood pressure.<sup>5</sup> Several researches<sup>17,18</sup> corroborate the finding, however, ac-

ording to the Brazilian Blood Pressure Guidelines, 11 the male sex is more predominant in the young age group and over the years women lead with 68% and men with 61,5%. Noting that, according to the literature, the difference between the sexes is not as discrepant as found in the study.

Also according to the mentioned guideline, sedentary lifestyle is a risk factor for hypertension.<sup>11</sup> Sedentary lifestyle raises cholesterol, thus increasing blood pressure. In the quantitative findings of the research, most hypertensive patients had a sedentary lifestyle. However, the literature shows that this variable is declining, physical activities in João Pessoa are at a median level with 47%, below other capitals, including Florianópolis (56,3%), Teresina (55,1%) and Belém (53,9%) and above Porto Velho (42,7%), Cuiabá (43,7%) and Belo Horizonte (43,8%).<sup>10</sup>

Awareness of physical activity practices reduces sedentary lifestyle and increases the well-being of people with hypertension. A study, applying a mixed protocol of physical exercise to elderly people at high risk for cardiovascular disease, showed that at the end of the experience, the elderly became a moderate risk.<sup>19</sup>

In the same perspective of the study above, in another one, carried out in a basic unit in the city of Manaus/AM, it was observed that the planning and practice of meetings with dialogues, the elderly showed significant control of hypertension and more awareness.<sup>20</sup> It is also worth noting that guiding and encouraging patients to perform physical activities is part of the non-drug treatment, helping to control the disease and improve quality of life.<sup>21</sup>

Regarding the variable "hypertension-associated comorbidities" it is possible to observe a higher prevalence of records of hypertensive patients with kidney disease, amputation for diabetes, diabetic foot and AMI in 2013 and equivalence of records in 2011 for stroke and other coronary heart disease.

The sum of the existence of hypertension in the individual with uncontrolled risk factors leads to greater chances of af-

fecting organs and increasing the risk of coronary heart disease. The kidneys are two of the main target organs that are affected in these patients.<sup>22</sup> Corroborating the study carried out with hypertensive patients in the city of Madrid, which revealed that in these patients, the kidney is a very affected organ and that age and the advance of hypertension further increased the chances of kidney disease.<sup>23</sup>

Finally, amputation for diabetics and diabetic foot, complications of diabetes mellitus, had an expressive result in this study, consequently diabetes is the most affected comorbidity in hypertensive patients. This may be related to two factors that increase blood pressure, namely: the use of medications and all the stress that diabetes provides, especially when the patient needs to readjust to a new routine.<sup>22</sup>

## CONCLUSION

The results obtained in this study made it possible to know the profile of hypertensive users in Paraíba, in which a greater predominance can be observed in João Pessoa, women, sedentary, non-smokers, without being overweight and without associated comorbidities.

Thus, knowledge of the profile of hypertensive patients subsidizes the physician to promote actions, drug and non-drug therapies appropriate to the population, in order to reduce morbidity and mortality and promote actions to promote and prevent injuries, providing humanized and individualized care, respecting the needs of each patient.

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