

## Family and Community Health Medical Residency Program for Hypertense Care

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### Abstract

The objective of the present study was to evaluate the care provided to patients with systemic arterial hypertension by comparing the basic health units (BHU) of the municipality of Gurupi-TO with and without the family and community health residency program. This is a descriptive, cross-sectional and retrospective research conducted in twelve BHUs.

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Project approved by the research ethics committee of the University of Gurupi, in which health servants answered the QualiAB assessment and monitoring instrument and the data were tested by the chi-square test to verify if there is a difference in care considering  $p \leq 5\%$  or 0,05. Of the 21 items analyzed, 14 obtained better levels in UBS with MRPFCH. Therefore, it is concluded that BHU with MRPFCH, as single health system policies, have better quality in the care of hypertension.

**Keywords:** Primary Care; Arterial hypertension; Health Unic System.

## 1. Introduction

Primary Care (PC) is the initial factor in relation to the Unified Health System (SUS). It is considered the basis of the structuring of the national health system and presents the objective of priority care, expanding access and advancing in the process of universalization of health services thus improving its resolvability [1]. The Strategy for Qualifying Health Care Networks (HCN) created in 2013 addressed as a priority the expansion of Medical Residency Programs in Family and Community Health (MRPFCH) in Brazil. The main idea is to train qualified physicians in the clinical area, with continuous integrative practice, to work with multidisciplinary teams inserted in priority regions, developing their actions on epidemiological bases. The MRPFCH aims to train physicians with knowledge and skills in prevention, early diagnosis, treatment and recovery of the most frequent diseases, seeking high rates of the problem-solving capacity of the population's health problems. It should consider integrality with a focus on the family and social centers that make up the community [1,2]. Systemic arterial hypertension (SAH) is considered a major global public health problem, being considered one of the most commonly found clinical conditions in Primary Health Care, accounting for approximately 9,4 million deaths per year in the world. This is not only one of the biggest risk factors for other cardiovascular diseases, but also a syndrome with manifestations and characteristics of its own [3]. SAH is a multifactorial clinical condition characterized by sustained elevation of blood pressure levels  $\geq 140$  and/or 90 mmHg. Metabolic disorders, functional and/or structural changes of target organs are often associated, being aggravated by the presence of other risk factors (RF), such as dyslipidemia, abdominal obesity, glucose intolerance, and diabetes mellitus [4]. Epidemiological studies have provided unambiguous evidence for the association between hypertension and mortality from ischemic heart disease, Cerebral Vascular Accident (CVA) and vascular diseases. Additionally, there is a robust association between lowering blood pressure (BP) and prevention of Coronary Artery Disease (CAD) and CVA [5]. Considering data from the early 2000s, the worldwide prevalence of SAH was approximately 25,9 to 31.1% of the adult population in 2010, representing an increase of 5,2% in these 10 years. In developed countries, as in this period, there was a 2,6% reduction in the prevalence of the disease, in developing countries there was an increase of 7,7%. In Brazil, studies compiling data from some cities indicate that SAH affects about 30% of adults, which corresponds to 36 million individuals [3]. The absolute growth of the hypertensive population should lead to an increase in the use of health services, which brings to the fore the need to identify and treat hypertension, to avoid managing the costs of complications associated with it [5]. The diagnosis of arterial hypertension is considered a complicating to its coping due to its asymptomatic course. Another challenge for patients and health professionals is the treatment of chronic diseases itself especially since the disappearance of symptoms leads the sick person to believe that the disease has been cured [6]. In this context, adherence to the treatment of arterial hypertension is considered

a complex and broad behavioral process influenced by several factors among them: by the environment, by the individual's particularities, by the relationship with professionals of health that assist it and the therapy adopted. Thus, it permeates biological, socioeconomic, psychological and cultural dimensions [6]. It is possible to prevent the development of SAH or improve the prognosis and quality of life of the population, besides avoiding health expenditures. It is in Primary Health Care that the population has its first contact with the prevention and treatment of this disease. The Family Registration in the SUS makes it possible to raise information on the prevalence of these diseases, so that a greater exploitation of these data is important for greater knowledge and monitoring of these morbidities, contributing to the allocation of health resources to the areas of greatest risk, in addition to verifying whether existing public health policies are effective in reducing the incidence of this disease [7]. Thus, based on this situation, characterized by a large number of people with SAH who demand health care and health professionals who need to serve them at risk to health, this study was proposed whose objective was to analyze operational indicators of SAH care in basic health units with and without MRPFCH of the municipality of Gurupi-TO for the analysis of the current conjuncture regarding the diagnosis, treatment, and follow-up of the disease, through the QualiAB tool.

## **2. Materials and Methods**

This is a descriptive, cross-sectional and retrospective study from December 2017 to March 2018. The study result of the dissertation presented to the professional master's degree in Health Sciences of the Federal University of Tocantins with the title residency of family medicine and community promotes improvement in primary health care. In which 107 health servants answered the QualiAB 2016 questionnaire which is self-applicable containing 115 questions, where questions 61, 64 and 65 of multiple-choice were extracted for this study. The sample calculation was made and the number of 107 employees was determined. Heterogeneity of 50%, margin of error of 5% and confidence level of 95% was used. All participants were approached directly in the unit itself to which it is crowded. After applying the questions, the data were entered in a computerized spreadsheet of excel 2016. Subsequently, the chi-square test was applied to compare the quality of services between the UBS groups with and without MRPFCH. The significance level of  $p < 0,05$  or 5% through the EPILNFO program. The result of the quality degree of services found was analyzed contrasting with the indicators recommended in the National Health Survey (NHS) related to the Gold Standard of Quality of the SUS as well as other specialized literature on the theme. The research participants signed the free and informed consent form (ICF), strictly obeying the Resolution n°. 466/2012 and 510 of 07 of April of 2016 National Health Council. It was approved by the ethics committee on human research at Gurupi/UnirG university under the opinion n°. 2.255.519/2017 and Certificate of Presentation for Ethical Appreciation (CPEA): 73302917.4.0000.5518. This research received support from the Department of Science and Technology (DST), *Secretariat of Science, Technology and Strategic Inputs of the Ministry of Health* (SSTSI), National Council for Scientific and Technological Development (CNPq), Tocantins State Health Secretariat (SESAU/TO) and Tocantins Research Support Foundation (FAPT) through the notice Research Program for the Tocantins State SUS (PPSUS/TO)01/2017.

## **3. Results**

Of the 107 health servants surveyed, 61 were from BHU with MRPFCH and 46 from BHU without. Were

interviewed physicians, nurses, nursing technicians and community health agents (CHA). Data presented in table 1

**Table 1:** Distribution of the type of professionals surveyed in the BHU studied.

Professional Category	BHU* With		BHU Without		n***. total by category	% total by category
	MRPFCH **		MRPFCH			
	n.	%	n.	%		
Community health agent	45	73.77%	25	54.35%	70	65,42%
Nurse	7	11.47%	8	17.39%	15	14.02%
Nursing Technician	3	4.91%	6	13.04%	9	8.41%
Doctor	6	9.85%	7	15.22%	13	12.15%
	61		46		107	100%

BHU\*: Basic Health Units;

MRPFCH\*\*: Medical Residency Program in Family and Community Health;

n\*\*\*: Number of health servants.

Question 64 of the QualiAB questionnaire is twelve items about routine activities performed in case of patients with hypertension. In items such as measurement of three measurements at different times or press map for diagnosis, diet orientation, treatment and/or prevention of obesity, introduction of non-drug therapy as the first alternative, whenever indicated, cardiovascular risk assessment for the introduction of drug therapy, physical activity orientation, orientation and support for smoking cessation, investigation of alcohol and other drugs abuse, the perception of the interviewees was that they are better in units with implanted MRPFCH, data proved by the percentile less than 0,05%. Data presented in table 2.

BHU\*: Basic Health Units;

MRPFCH \*\*: Medical Residency Program in Family and Community Health;

n\*\*\*: Number of health servants;

$\chi^2$ \*\*\*\*: chi-square test;

P\*\*\*\*\*: significance level.

**Table 2:** Comparison of routine activities performed with patients with hypertension, in the Basic Health Units with and without Medical Residency in Family Health and community in Gurupi-TO, Brazil, 2019.

Item		BHU* With MRPFCH **		BHU Without MRPFCH		$\chi^{2****}$	P*****
		n.***	%	n.	%		
1) Service without specific protocol	Yes	5	10.87%	13	21.67%	2.1531	0.1423
	No	41	89.13%	47	78.33%		
2) Monitoring with protocol	Yes	9	19.57%	14	22.95%	0.1781	0.6730
	No	37	80.43%	47	77.05%		
3) 3 measurement measurements at different times or press map for diagnosis	Yes	37	80.43%	35	57.38%	6.3344	0.0118
	No	9	19.57%	26	42.62%		
4) Diet orientation	Yes	36	85.71%	39	67.24%	4.4335	0.0352
	No	6	14.29%	19	32.76%		
5) Treatment and/or prevention of obesity	Yes	33	71.74%	32	52.46%	4.0882	0.0432
	No	13	28.26%	29	47.54%		
6) Periodic request for exams	Yes	36	83.72%	41	69.49%	2.7218	0.0990
	No	7	16.28%	18	30.51%		
7) Introduction of non-drug therapy as a first alternative, where indicated	Yes	31	67.39%	17	27.87%	16.5602	0.0000
	No	15	32.61%	44	72.13%		
8) Cardiovascular risk assessment for introduction of drug therapy	Yes	38	82.61%	23	37.70%	21.5749	0.0000
	No	8	17.39%	38	62.30%		
9) Group activities (walking, blood pressure measurement, others)	Yes	3	6.52%	12	19.67%	3.7624	0.0524
	No	43	93.48%	49	80.33%		
10) Physical activity orientation	Yes	39	84.78%	38	62.30%	6.5727	0.0103
	No	7	15.22%	23	37.70%		
11) Guidance and support for smoking cessation	Yes	29	63.04%	23	37.70%	6.7401	0.0094
	No	17	36.96%	38	62.30%		
12) Investigation of alcohol and other drug abuse	Yes	27	58.70%	17	27.87%	10.2928	0.0013
	No	19	41.30%	44	72.13%		

Question 65 of the QualiAB questionnaire is nine items about routine activities performed in case of patients with Hypertension. In serum creatinine items, total cholesterol in LDL and HDL fractions, triglycerides, uric acid, electrocardiogram – ECG, eye background examination, the perception of health servers was that they are better in units with implanted MRPFCH ( $p < 0,05\%$ ). Data presented in table 3.

**Table 3:** Comparison of routine tests requested from patients with hypertension, in the Basic Health Units with and without Medical Residency in Family Health and community in Gurupi-TO, Brazil, 2019.

Item		BHU* With		BHU Without		$\chi^2$ ****	P*****
		MRPFCH **		MRPFCH			
		n.***	%	n.	%		
1) Urine I	Yes	38	82.61%	44	72.13%	1.6078	0.2048
	No	8	17.39%	17	27.87%		
2) Potassium	Yes	31	68.89%	31	51.67%	3.1541	0.0758
	No	14	31.11%	29	48.33%		
3) Serum creatinine	Yes	36	81.82%	35	59.32%	5.9559	0.0147
	No	8	18.18%	24	40.68%		
4) Fasting glycemia	Yes	36	78.26%	42	68.85%	1.1749	0.2784
	No	10	21.74%	19	31.15%		
5) Total cholesterol, fractions (LDL and HDL)	Yes	39	88.64%	41	68.33%	5.8946	0.0152
	No	5	11.36%	19	31.67%		
6) Triglycerides	Yes	41	89.13%	43	70.49%	5.3987	0.0201
	No	5	10.87%	18	29.51%		
7) Uric acid	Yes	41	89.13%	39	63.93%	8.8243	0.0030
	No	5	10.87%	22	36.07%		
8) Electrocardiogram - ECG	Yes	34	73.91%	33	54.10%	4.3986	0.0360
	No	12	26.09%	28	45.90%		
9) Eye background examination	Yes	32	69.57%	19	31.15%	15.5158	0.0000
	No	14	30.43%	42	68.85%		

BHU\*: Basic Health Units;

MRPFCH\*\*: Medical Residency Program in Family and Community Health;

n\*\*\*: Number of health servants;

$\chi^2$ \*\*\*\*: chi-square test;

P\*\*\*\*\*: significance level

#### 4. Discussion

Primary care of the municipality of Gurupi-TO is registered with twelve BHU in the National Register of Health Establishment (NRHE) in the urban area, four BHU with MRPFCH and eight without MRPFCH. Table 1 shows that there was a greater participation of CHA in completing the questionnaire due to being a higher number in the

units, analyzing a multidisciplinary team that has at least a general practitioner or health specialist from the family and community, general nurse or family health specialist, nursing technician or auxiliary and community health agents [1]. It was observed during the research explanation meeting that CHA felt valued for providing their integration into the research, informing the day-to-day of the unit in such important matters, which could justify the interest of this category in participating in the study. CHA both play an integration role between the health team and the community, as part of them [8]. Thus, his work developed in BHU, it is important for the implementation of the expanded concept of health [9]. It is understood that the work developed in the BHU is the main responsible for improvements in the health indicators of the country, acting through the guidelines and principles recommended by the unified health system (SUS), with a positive impact on the health conditions of the Population [10]. In association with this premise, it is observed in Table 2 that the activities indicated by the arterial hypertension guideline recommended by the Ministry of Health (MH) are more frequent followed in the BHU with the MRPFCH, in the context of screening, diagnosis, treatment, and prevention of this disease. Thus, promoting a better approach in the control of affection. Therefore, there is consensus that residency programs, as well as preceptor training programs, have intense strategic influence on the training of qualified professionals to work in the SUS [11, 12]. The residence makes it possible to strengthen and qualify the SUS, contributing to the production of comprehensive care to the user [13]. And thus, it is observed that the quality of service and the number of professionals inserted in permanent education processes and investment in professional improvement is a requirement for maintaining the quality of the actions developed [14]. The Family and Community Medical Residency Program is the most structuring action in the reform of the BHU in Rio de Janeiro, and that it is insufficient to increase the number of family health teams if it does not have problem-solving professionals with good training in care Primary [15]. Thus, continuing education participates as an investment in the valorization of health servants, with consequent satisfaction of workers, these who are multipliers of knowledge, and reflect in the community the result of their effort. The QualiAB questionnaire addresses in particular process situations, more than structure and results, and are under the management of managers and local teams of services, which positions it best to compose quality improvement initiatives [16]. SAH is an associated clinical condition as a risk factor for some diseases such as Cerebral Vascular Accident (CVA), acute myocardial infarction (AMI), heart failure (HF), peripheral arterial disease (CAD) and chronic kidney disease (CKD), fatal and non-fatal, for this reason, a service followed by protocols recommended by the MH is required [3, 4]. Table 2 presents specific situations of these recommendations that have a positive factor in the conduction of these patients. Among them, the study addressed the measurement of three measurements at different times or a press map in order to the actual diagnosis of SAH, aiming to eliminate adverse situations that may alter the results such as cases of white apron effect, which is BP difference between the measurements obtained in the office and outside it [3, 5, 17]. Another situation is masked hypertension that is characterized by normal BP values in the office, however with increased BP in the Outpatient Blood Pressure Monitoring (ABPM) examination or residential measures, and also isolated systolic hypertension which is increased systolic blood pressure with normal diastolic blood pressure [3, 5, 17]. These circumstances may change the diagnosis and according to item three in table 2, the BHU with the program presented significantly better ( $p= 0.0118$ ). According to MH, when indicated, it is recommended to start the treatment of SAH by non-drug intervention, because some essential risk factors of the disease such as weight gain, increased sodium intake, as well as sedentary lifestyle, can be resolved in some cases indents of this intervention. One of the recommendations is with respect to the DASH diet (Dietary Approaches

to Stop Hypertension) that emphasizes the consumption of fruits, vegetables, and low-fat dairy products, associated with physical exercises with at least 30 minutes per day of moderate-intensity and Continuously once for 30 minutes or accumulated 2 times 15 minutes or 3 times 10 minutes in 5 to 7 days of the week [3, 5, 17]. Table two shows that in items four, five, seven and ten that deal respectively with these approaches, were better applied in the BHU with the MRPFCH, ( $p < 0,05\%$ ). Another orientation recommended by the MH is about smoking cessation because it is related to the risk of more than 25 diseases, including the group of cardiovascular diseases, besides being pointed out as a negative factor in the control of hypertensive patients. And about alcohol intake, because chronic and high alcohol consumption increase BP consistently [17]. And according to table 2 were also better pointed out in the BHU with the MRPFCH, ( $p < 0,05\%$ ). Table 2 also addressed with the evaluation of cardiovascular risk for the introduction of drug therapy, because according to MS, hypertensive individuals are more predisposed to cardiovascular complications, such as AMI and CVA, thus necessary this evaluation for in some cases if necessary, to make a more aggressive therapeutic intervention aiming at the best prognostic possible for the patient. As well as informing risk factors to the patient is pointing out how a situation can improve the efficiency of pharmacological and non-pharmacological measures [3, 17–19]. As shown in Table 2, the BHU with MRPFCH presented the  $p = 0.0000$ , demonstrating to be significantly better addressed in this specific group. In association with a clinical approach through anamnesis and physical examination, it is necessary to request laboratory tests to identify situations that may become possible cardiovascular risk factors, as well as the presence of target organs are subclinical or clinically manifest, as well as research of other associated diseases, as well as secondary reasons for SAH. Thus, aiming to obtain clinical data to set goals for an efficient therapeutic intervention to improve morbidity and mortality of this patient [6, 7, 17–19]. The study conducted a research of the tests recommended by the MH in the SAH routine, observing which group of the BHU presented the best results in the requests for specific tests for hypertensive patients. According to table 3, the results were significantly better in the BHU with the MRPFCH ( $p < 0,05$ ).

## 5. Conclusion

It is concluded that the Basic Health Units that have the MRPFCH of Gurupi university have better quality in the service of patients with Hypertension, as a policy of the Unified Health System carried out in the municipality of Gurupi-TO. Considering the indicators of the QualiAB 2016 questionnaire, there was a significant difference between basic health units with and without the MRPFCH based on the results of the  $p < 0,05$ . This research is, therefore, a study that provides subsidies to open new paths, debates between the different modalities of Medical Residencies in the scope of Primary Health Care, to expand this discussion and to use the different data and results for the improvement of health actions, as well as to strengthen the integration of teaching, health services, and the community, thus favoring the continuation of MRPFCH and consequent qualification of medical professionals who will be absorbed by the services of other BHU.

## Acknowledgments

Indexing system and library-NORMATIZA. That during the course, it provided us with the publication of this article. This research received support from the Department of Science and Technology (DST), *Secretariat of Science, Technology and Strategic Inputs of the Ministry of Health (SSTSI)*, National Council for Scientific and

Technological Development (CNPq), Tocantins State Health Secretariat (SESAU/TO) and Tocantins Research Support Foundation (FAPT) through the notice Research Program for the Tocantins State SUS (PPSUS/TO) 01/2017.

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