ORIGINAL ARTICLE *DOI: 10.4025/cienccuidsaude.v18i4.46518*

MEDICATION PROFILE OF PEOPLE WITH HYPERTENSION[1]

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ABSTRACT

Objective: to characterize the medication profile of people with hypertension followed-up by the Family Health Strategy (ESF). **Method:** A cross-sectional study with 417 people in the municipality of Maringá, located in the northwestern part of the state of Paraná, Brazil. Data collection took place in the first semester of 2016. An instrument was used to evaluate the satisfaction of users with arterial hypertension on the services provided by Primary Health Care (APS). In this study, only questions related to sociodemographic and drug profile were used. In the data analysis, descriptive statistics were applied. **Results:** there was a prevalence of the elderly (62.3%), most female (67.9%), with complete primary schooling (78.4%), color/race white (62.3%), retirees/pensioners (55.2%), predominance of individuals with partners (58.3%) and economically classified in C level (43.9%). Regarding medication, 34.8% were classified as polypharmacy and 58.8% received medication by the public health system. The most commonly used drugs were those of the cardiovascular, nervous, digestive and metabolic system. **Conclusion:** Through this study, it was possible to know the medication profile of patients with hypertension, which contributes to the adequate follow-up of patients in the basic healthcare network.

Keywords: Drug utilization. Pharmacoepidemiology. Hypertension. Chronic disease. Family health strategy.

INTRODUCTION

Currently, cardiovascular system diseases are the main cause of morbidity and mortality in the world, with notoriety for coronary, cerebrovascular and heart failure. Hypertension (AH) is the main risk factor for these diseases[1-3].

The worldwide prevalence of AH is on average 31%, representing 63% of the 38 million adult deaths. Data from the World Health Organization (WHO) show that the African continent has a high prevalence of individuals over 25 years of age diagnosed with AH (46%), while the North American continent presents a lower prevalence (35%)[2]. In Brazil, the prevalence of AH is approximately (24%) in adults[3].

The treatment for AH is commonly based on drug therapy in conjunction with changes in eating habits and practice of physical activity, and still generates doubts and anxiety in people diagnosed with morbidity. The complexity of living with the disease interferes with the habitual dynamics of these people, there is inadequate understanding about the therapeutic actions, inadequate transmission of information, schedules and prescribed dosages[4].

Medication treatment of AH aims to reduce cardiovascular (CV) morbidity and mortality. The initial choice of antihypertensive drugs will invariably be those that offer a proven reduction in CV events. The other medicines are reserved for different conditions, in which it is necessary to combine several medications to reach the desired blood pressure levels[5].

With the combination of drugs, there may be ignorance about the adverse effects, mainly due to the lack of information that should be presented by the health professionals. The AH-related comorbidities allow the presence of polypharmacy, which is the combination of five or more drugs per day. This factor should be investigated and monitored by

[1]Study extracted from the mater´s dissertation entitled "Evaluation of satisfaction of people with hypertension users the services of primary health care", linked to the State University of Maringá (UEM), 2016.

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professionals, especially those in the primary health care network, due to prolonged treatment[3-7].

The complexity of the therapeutic schemes for AH and its multiple associations, together with the current medicalization culture that results in the indiscriminate use of drugs[3-7], brings the need to understand the drug characteristics of the population under morbidity treatment, in order to a subsequent performance of health professionals, aiming at the real pressure control of this population[8].

Knowing the drug profile for AH treatment and adequacy of pressure control may also potentiate the discussion about the accessibility of medications in Primary Health Care (APS) and contribute to the development of therapeutic strategies to treat the disease[8]. Therefore, the objective of this study was to characterize the medical profile of people with hypertension followed-up by the Family Health Strategy (ESF).

METHOD

A cross-sectional study from a larger project entitled "Evaluation of satisfaction of people with hypertension users the services of primary health care" carried out with AH patients, followed-up by the ESF and residents of the municipality of Maringá, located in the northwest of the state of Paraná. The population of the municipality is estimated at 406,693 inhabitants and primary care support is organized in a decentralized way, through 30 Basic Health Units (UBS) and 74 ESF teams, covering 68.01% of the population[9].

Table 1. Stratified sampling of individuals with arterial hypertension followed-up by the Family Health Strategy. Maringá (PR), Brazil, 2016

UBS	Followed-up	Stratified sampling	Interviewees
Aclimação	528	8	8
Alvorada I	1,549	23	20
Alvorada II	1,673	27	27
Céu Azul	606	10	10
Cidade Alta	1,035	17	17
Grevíleas	770	12	12
Guaiapó	1,164	19	19
Iguaçu	1,337	20	19
Império do Sol	169	3	3
Industrial	907	15	15
Internorte	932	15	15
Jardim Olímpico	851	15	15
Mandacaru	1,243	19	18
Maringá Velho	581	9	9
Morangueira	1,510	22	19
Ney Braga	1,132	18	18
Paris	448	7	6
Parigot de Souza	672	11	10
Pinheiros	2,136	33	31
Piatã	766	12	11
Portal das Torres	674	11	11
Quebec	2,098	32	29
São Silvestre	423	7	6
Tuiuti	1,311	21	19
Universo	555	9	8
Vila Esperança	603	10	10
Vila Operária	868	13	13
Vila Vardelina	221	4	4
Zona Seis	410	6	6
Zona Sul	569	9	9
Total	**27,741**	**437**	**417**

UBS: Basic Health Unit

In this study, participants were individuals attended by the ESF and enrolled in the Registering System of Follow-up for people with Hypertension and Diabetes mellitus (SISHIPERDIA) in the outpatient network of the Unified Health System (SUS). This system includes people with hypertension and/or diabetes mellitus who receive continuous and systematic follow-up from health professionals.

For the sampling, the total of 27,741 individuals registered in the SISHIPERDIA system was considered. The stratified random sampling calculation was then applied, considering the error of 5%, 95% confidence interval and 15% increase for possible losses, according to the number of people followed by each UBS of the municipality, as presented in Table 1. The final sample counted 417 people, considering losses due to death or difficulties of verbalization and refusals.

The study included adults older than 18 years old, living in the urban area of the municipality, enrolled in SISHIPERDIA and who, at the time of data collection, had attended at the UBS by a health professional in the last six months. The exclusion criterion was to be pregnant at the time of the interview, since women in this condition are fully served by the services in the care network for women in the management and puerperium, and not by SISHIPERDIA.

Data collection was done through previous contact with managers and health team of UBS, and later approach of the participants of the research, individual interviews were conducted for data from the larger study and requested authorization for access to medical records. The meetings were held during the follow-up groups of the members of SISHIPERDIA, which took place between 8am and 5pm, depending on the schedule of each ESF team. Data collection took place between February and June 2016.

Two instruments were used in the interviews. The first one for participants' socioeconomic profile, as indicated by the Brazilian Association of Research Companies (ABEP), categorized in classes AB, C and DE in this study[10]. The second instrument was adapted and validated by Paes[9], guided by the Primary Health Care Assessment Tool (PCATool)[11] and evaluated the services provided by APS. For this study, the variables of the questions regarding the sociodemographic profile, the questions related to the use of medication, and their division by therapeutic groups were used.

After the interviews, information was collected from the electronic health records of the UBS, with the authorization of the nurse responsible for the team. The data referring to the medications in use were extracted from the prescription pad on the electronic medical record and later passed on to the data collection instrument. The drugs were classified according to their active principle, identified with the help of the Pharmaceutical Specialties Dictionary (DEF), and later grouped according to the guidelines of the Anatomical Therapeutic Chemical Classification System (ATC)[12]. Medication not classified according to the ATC were excluded.

Before entering the data, all the questionnaires were checked to identify and correct possible failures. As there were some inconsistencies in the data collected, for example, the type and dosages of medications from the medical records, it was necessary to correct/adequate and solution of all the inconsistencies. After verification, the data were double transcribed to the Microsoft Excel 2013 spreadsheet and analyzed descriptively, with absolute and relative frequency presentation, through the Statistical Package for Social Sciences program (SPSS), version 20.0.

The study was developed in accordance with the guidelines of Resolution 466/12 of the National Health Council/Ministry of Health, sent to the Standing Committee on Ethics in Research with Humans of the State University of Maringá (COPEP) under protocol CAAE number 47380215.6 .0000.0104 and approved with opinion number 1,407,687/2016. All the interviewees signed the Free and Informed Consent Term (TCLE) in two ways.

RESULTS

A total of 417 people was interviewed in AH treatment followed-up by the Family Health Strategy (ESF). Most of the study population were elderly, female, white, retired/pensioners, economically classified in C level, living with partners and low schooling (Table 2).

Table 2. Sociodemographic profile of individuals with hypertension followed-up by the Family Health Strategy. Maringá (PR), Brazil, 2016

	n	%
Age		
≤ 59 years	157	37.7
≥ 60 years	260	623
Gender		
Male	134	32.1
Female	283	67.9
Schooling		
Elementary School	327	78.4
High School or higher	90	21.6
Race/Color		
White	260	62.3
Non-White	157	37.7
Occupation		
Employed	96	23
Unemployed	91	21.8
Retired/pensioners	230	55.2
Marital status		
With a partner	243	58.3
Without a partner	174	417
ABEP		
AB	148	35.5
C	183	43.9
DE	86	20.6

In Table 3, it is possible to observe the presence of polypharmacy in 34.8% of the interviewees. The majority (77.7%) reported that they do not skip medications daily, and that they were questioned by health professionals about compliance with the times and use frequency of prescribed medications. More than half (72.7%) reported no side effects of medications in use, and 58.8% got medications from the public health system.

Table 3. Characteristics of drug use according to variables related to health and the use of health services of individuals with hypertension from the Family Health Strategy. Maringá (PR), Brazil, 2016

	N	%
Polypharmacy *		
Yes	145	34.8
No	272	65.2
Skip medications?		
Yes	26	6.2
No	324	77.7
Sometimes	67	16.1
Is questioned by health professional about the frequency and time of taking the medication?		
Yes	298	71.5
No	27	6.4
Sometimes	92	22.1
Side effects from medications?		
Yes	62	14.9
No	303	72.7
Sometimes	52	12.5
Get medications from the public health system?		
Yes	245	58.8
No	94	22.5
Sometimes	78	18.7

*use of 5 or more medications.

Table 4 shows the groups of drugs, considering the 1st, 2nd and 3rd levels of ATC. The results of the distribution of drugs by therapeutic group demonstrate that the most used medications by patients with AH in APS belong to the group of cardiovascular system, digestive and metabolic system and nervous system. The groups with the least results were sensitive organs and antiparasitic, insecticidal and intestinal products.

Of the total medications, the most prevalent were classified as "agents acting on the renin-angiotensin system", "antibacterials for systemic use", specific to the group of "hypoglycemic drugs, excluding insulins" and belonging to the class of "diuretics" (Table 3).

Table 4. Medications most frequently used by hypertensive users followed-up by the Family Health Strategy, considering the therapeutic group and the 1st, 2nd or 3rd level of the Anatomical Therapeutic Chemical (ACT). Maringá (PR), Brazil, 2016

Pharmacological subgroup (ATC 1st, 2nd or 3rd level)	ATC Code	N*	%
Cardiovascular system			
Renin-angiotensin system agents	C09	302	10.3
Diuretics	C03	253	8.6
Beta blocking agents	C07A	143	4.9
Antihypertensives	C02	41	1.4
Calcium channel blockers	C08	39	1.3
Digestive and metabolic system			
Hypoglycemic drugs, excluding insulins	A10B	266	9.1
Antidiarrheals, anti-inflammatory and intestinal anti-infection agents	A07E	64	2.2
Antacids, medication for peptic ulcer and flatulence	A02B	176	6
Thyroid Therapy	H03	79	2.7
Mineral Supplements	A12	51	1.7
Blood and Hematopoietic Organs			
Antithrombotic agents	B01A	205	7
Musculoskeletal system agents			
Anti-inflammatory and antirheumatic	M01	170	5.8
Medication for bone diseases	M05	39	1.3
Systemic hormonal preparations, excluding hormones			
Thyroid Therapy	H03	79	2.7
General anti-infectives for systemic use			
Antibacterials for systemic use	J01	269	9.2
Nervous system			
Analgesics	N02	170	5.8
Psycholeptics	N05	53	1.8
Psychoanaleptics	N06	71	2.4
Antiepileptics	N03A	60	2
Antiparasitic, insecticidal and intestinal products			
Anti-helminths	P02	40	1.4

*Participants used more than one drug class, unweighted n value.

When considered the 4th and 5th level of ATC, the most prevalent drugs were acetylsalicylic acid, hydrochlorothiazide, losartan, sulfamethoxazole trimethoprim, ibuprofen, omeprazole, metformin, paracetamol and atenolol (Table 5).

Table 5. Medications most commonly used by arterial hypertension users followed-up by the Family Health Strategy, considering the 4th and 5th level of the Anatomical Therapeutic Chemical (ACT). Maringá (PR), Brazil, 2016

Medication name	ATC Code	N*	%
Acetylsalicylic acid	N02BA01	117	4
Hydrochlorothiazide	C03AA03	216	7.3
Losartan	C09CA01	182	6.2
Sulfamethoxazole trimethoprim	J01EE	171	5.8
Ibuprofen	N02BE51	142	4.8
Omeprazole	A02BC01	127	4.3
Metformin	A10BA02	121	4.1
Paracetamol	N02BE01	94	3.2
Atenolol	C07AB03	93	3.1
Levothyroxine	H03AA01	79	2.7
Dipyrone	N02BB02	70	2.4
Amlodipine	C08CA01	69	2.3
Enalapril	C09AA02	52	1.8
Caulcium carbonate	A11AA02	47	1.6
Gliclazide	A10BB09	47	1.6
Captopril 25Mg	C09BA01	42	1.4
B vitamin complex	A11EA	34	1.2
Prednisone	H02AB07	32	1.1
Glibenclamide	A10BB01	31	1.0
Amitriptilyne	N06AA09	30	1.0
Fluoxetine	N06AB03	30	1.0
Clonazepan	N03AE01	28	0.9
Propanolol	C07AA05	25	0.8
Nifedipine	C08CA05	23	0.8

** Participants used more than one drug class, unweighted n value.
*According to Anatomical Therapeutic Chemical Classification System (ATC).

DISCUSSION

The analysis of the medication use profile by people with AH followed-up by the ESF presented in this study contributes to broadening the knowledge of the care process, favours the development of programmed and reassigned interventions, and allows greater effective control of blood pressure and quality of life to people who experience the disease.

The data from this study corroborate scientific evidence of prevalence of the disease in women with low schooling and economically classified in C level[13-14]. The highest occurrence in women is justified by their known more proactive behavior in the search for diagnosis and health care[1-2]. In AH, it is also known that the hormonal component, causes the woman a condition of greater vulnerability to the disease after the climacteric period[1-2,15].

Low educational level and economic situation is also highlighted, since these conditions in elderly people can infer in knowledge about the disease, understanding about medications and other guidelines[16]. In this perspective, educational measures are necessary to avoid misinformation, which results in errors in drug administration, and to reinforce the importance of medications for effective blood pressure control[15].

Most of the participants in this study presented polypharmacy, with a higher frequency in people over 60 years of age, supposedly due to the prevalence of chronic diseases. Health care professionals should be aware that inadequate prescription of medications can lead to changes in pharmacokinetics and pharmacodynamics caused by marked physiological changes during aging, besides the conception of elderly on the indiscriminate use of drugs, which threatens their health[5,16].

More than half of those interviewed reported that they do not skip taking the prescribed medications. This result corroborates an integrative review study, which indicated greater adherence justified by the greater engagement of the subjects with the self-care and support of family members and health professionals[17]. Despite not having the objective focused on adherence to drug therapy, this data indicates a greater effort of the interviewees to maintain adequate blood pressure control with the correct use of prescribed drugs.

This study also revealed that more than half of the respondents were questioned by health professionals about adherence to drug therapy. Health professionals are an important piece for information on new drugs and those of continuous use. In addition, the use of technological support, such as informative materials and efficient verbal communication, is encouraged to reduce disinformation and improve adherence to drug therapy[18].

An alarming portion of the interviewees reported not being questioned by health professionals about the correct use of medications, therefore, it is encouraged the creation of a link with AH patients to reinforce educational practices and knowledge of possible barriers that may interfere with adherence to drug therapy[19].

More than half of the respondents receive medications from the public health system. Despite the effectiveness of SUS in making medications available free of charge, lack of information is still the main reason for buying medications. Since the public health system provides most drugs for AH treatment, guidelines are needed to reduce these disparities[1-3, 6].

The literature indicates that a portion of the population still has difficulties accessing medications, associated with poor adherence to drug therapy and inadequate blood pressure control[6], as well as prescriptions performed by professionals responsible for specialties not integrated with public health services[7].

Study of the National Survey on Access, Use and Promotion of Rational Use of Medications, which investigates the use of drugs by Primary Care users of the Unified Health System (SUS) in Brazil, pointed out that many Brazilians use over-the-counter medication, commonly indicated in pharmacies, which can generate adverse events, since these patients are not followed-up by health teams[20].

Among AH carriers, in the distribution by therapeutic groups, the most used drugs were those that work in the cardiovascular system, followed by those that work in the digestive system and metabolism, and central nervous

system. These results are in line with other studies[4,21]. The higher use of medications in the cardiovascular system is associated with the disease in the population studied, mainly in relation to the use of antihypertensive drugs, and in agreement with the literature[5,21].

As representatives of the cardiovascular system, there is a prevalence of hydrochlorothiazide, atenolol, amlodipine, enalapril, captopril and propranolol. The use of these drugs is consistent with that recommended by the Brazilian Hypertension Guidelines, and medications are the preferred in the monotherapy method [5,21-22].

Another group of drugs prevalent in this study was the digestive and metabolic system agents, with hypoglycemic drugs, excluding insulins. This result can be explained by the fact that people with AH are followed-up by SISHIPERDIA, which is a group of people with AH and Diabetes mellitus (DM). Data corroborating this study were found in a study carried out in Minas Gerais[22], in which DM was associated factor for the high rates of polypharmacy.

The use of drugs among the elderly is beneficial when done in a proper and careful way, with correct handling and attention with drug interactions[4], without adopting medication consumption on all other ways of treating and caring, and assigning them the "super healing power", shaping lifestyles to risks disclaiming the individual for his/her health[17].

Another group of drugs with high prevalence found in this study was the class of blood and hematopoietic organs in medicines with antithrombotic agents, such as acetylsalicylic acid. Similar results were found in a study of the National Survey on Access, Use and Promotion of Rational Use of Medicines, which investigates the use of drugs by users of Primary Health Care in Brazil[20].

The use of drugs for diseases of the nervous system, such as psycholeptic analgesics, psychoanalytics and antiepileptics, was represented by amitriptyline, clonazepam and fluoxetine. These results corroborate a study carried out in Minas Gerais[22]. The use of drugs to treat diseases of the nervous system requires psychological monitoring, since only the medication is not determinant for the effectiveness of the treatment[20].

The study has limitations such as the use of self-reported information, mainly in elderly patients, and because the medication information was collected from the prescription in the medical record. Studies that correlate the conditions of polypharmacy and blood pressure are encouraged, in order to implement appropriate management of chronic patients, to reduce the exaggerated use of medications and to encourage the control of risk factors for the disease.

CONCLUSION

The results obtained in this study corroborate with the scientific literature, in which most of the patients are female, elderly, of low schooling, presence of polypharmacy and use of drugs of the therapeutic group of the cardiovascular system. Most individuals take the medications daily and are questioned by health professionals about the correct use of the drugs.

Since in this population all have AH, the most prevalent class of medications was the cardiovascular system, with medications guided by the Brazilian Society of Cardiology, standard procedure for treatment and follow-up of patients diagnosed with morbidity. An expanded number of drugs for the nervous system were also observed.

It is concluded that the study provided knowledge about the medication profile of people with AH, which contributes to the adequate follow-up of these patients in the basic network of health care and adoption of educational strategies for guidance to patients with chronic diseases.

FINANCING

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001.

PERFIL MEDICAMENTOSO DE PESSOAS COM HIPERTENSÃO ARTERIAL

RESUMO

Objetivo: caracterizar o perfil medicamentoso de pessoas com hipertensão arterial acompanhadas pela Estratégia Saúde da Família (ESF). **Método:** estudo transversal realizado com 417 pessoas, no município de Maringá, localizado no noroeste do estado do Paraná, Brasil. A coleta de dados foi realizada no primeiro semestre de 2016. Foi utilizado um instrumento para avaliar a satisfação de usuários com hipertensão arterial com os serviços prestados pela Atenção Primária à Saúde (APS). Neste estudo, foram usadas somente as questões referentes ao perfil sociodemográfico e medicamentoso. Na análise dos dados, aplicou-se estatística descritiva. **Resultado:** houve prevalência de idosos (62,3%), grande parte do sexo feminino (67,9%), com até o ensino fundamental completo (78,4%), da raça/cor branca (62,3%), aposentados/pensionistas (55,2%), predomínio de indivíduos com companheiro (58,3%) e classificados economicamente em extrato C (43,9%). Em relação aos medicamentos, 34,8% foram classificados em polifarmácia e 58,8% receberam a medicação pelo sistema público de saúde. Os remédios mais utilizados foram os do grupo do sistema cardiovascular, nervoso, digestivo e metabólico. **Conclusão:** através deste estudo, foi possível conhecer o perfil medicamentoso de pacientes com hipertensão, o que contribui para o acompanhamento adequado de pacientes da rede básica de assistência à saúde.

Palavras-chave: Uso de medicamentos. Farmacoepidemiologia. Hipertensão. Doença Crônica. Estratégia saúde da família.

PERFIL MEDICAMENTOSO DE PERSONAS CON HIPERTENSIÓN ARTERIAL

RESUMEN

Objetivo: caracterizar el perfil medicamentoso de personas con hipertensión arterial acompañadas por la Estrategia Salud de la Familia (ESF). **Método:** estudio transversal realizado con 417 personas, en el municipio de Maringá, ubicado en el noroeste del estado de Paraná, Brasil. La recolección de datos fue realizada en el primer semestre de 2016. Fue utilizado un instrumento para evaluar la satisfacción de usuarios con hipertensión arterial con los servicios prestados por la Atención Primaria a la Salud (APS). Fueron utilizadas, en este estudio, solamente las cuestiones referentes al perfil sociodemográfico y medicamentoso. En el análisis de los datos, se aplicó estadística descriptiva. **Resultado:** hubo prevalencia de ancianos (62,3%), gran parte del sexo femenino (67,9%), con enseñanza cumplida hasta la primaria (78,4%), de la raza/color blanca (62,3%), jubilados/pensionistas (55,2%), predominio de individuos con cónyuje (58,3%) y nivel económico clase C (43,9%). Respecto a los medicamentos, 34,8% fueron clasificados en polifarmacia y 58,8% recibieron la medicación por el sistema público de salud. Los remedios más utilizados fueron los del grupo del sistema cardiovascular, nervioso, digestivo y metabólico. **Conclusión:** a través de este estudio, fue posible conocer el perfil medicamentoso de pacientes con hipertensión, lo que contribuye para el acompañamiento adecuado de pacientes de la red básica de atención a la salud.

Palabras clave: Utilización de medicamentos. Farmacoepidemiología. Hipertensión. Enfermedad crónica. Estrategia salud de la familia.

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Submitted: 06/02/2019
Accepted: 19/06/2019