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Lifestyle and quality of life of hypertensive patients attending a university clinic

Estilo e qualidade de vida de hipertensos frequentadores de uma policlínica universitária

Magali Miranda Barcelos[1], Alessandra Paula Ferreira Moreira Neumann[2], Natália Cristina de Oliveira[3], Thamires da Silva Ribeiro [4], Giovanna Narciso Pitlovanciv [5], Marcia Maria Hernandes de Abreu de Oliveira Salgueiro [6]*

[1]Nutritionist by the Adventist University Center of São Paulo, São Paulo (SP), Brazil; [2]PhD in Public Health by the Federal University of São Paulo, Professor at the Master's Program in Health Promotion at the Adventist University of São Paulo, São Paulo (SP), Brazil; [3]PhD in Medical Science from the School of Medicine of University of São Paulo, Professor at the Master's Program in Health Promotion at the Adventist University of São Paulo, São Paulo (SP), Brazil.; [4]Undergraduate student in Nutrition at the Adventist University of São Paulo, São Paulo (SP), Brazil; [5]Undergraduate student in Nutrition at the Adventist University of São Paulo, São Paulo (SP), Brazil.; [6]PhD in Public Health by the School of Public Health of the University of São Paulo, Professor at the Master's Program in Health Promotion at the Adventist University of São Paulo, São Paulo (SP), Brazil..

***Corresponding Author**: Marcia Maria Hernandes de Abreu de Oliveira Salgueiro - *Email*: marciasalgueironutricionista@yahoo.com.br

ABSTRACT:
Objective: to characterize the profile of hypertensive patients attending a university clinic in terms of anthropometric assessment, sociodemographic variables, blood pressure, lifestyle and quality of life. Method: This was a quantitative descriptive cross-sectional study involving patients aged twenty years or older from a university clinic. They were evaluated for sociodemographic aspects, quality of life, anthropometric data, blood pressure and lifestyle. Results: An association was observed between increasing age and weight reduction, as well as a more positive perception of quality of life among those who adopt a healthier lifestyle. Conclusion: The majority of the hypertensive patients attending the university clinic were elderly, female, of mixed race, living with a partner, with low level of education, belonging to socioeconomic class C, and with excessive body weight.

Keywords: Hypertension; Quality of life; Lifestyle; Health promotion.

RESUMO
Objetivo: caracterizar o perfil de frequentadores hipertensos de uma policlínica universitária quanto à avaliação antropométrica, variáveis sociodemográficas, pressão arterial, estilo e qualidade de vida. Método: Trata-se de um estudo transversal descritivo quantitativo com pacientes de uma policlínica universitária com idade igual ou superior a vinte anos, que avaliou aspectos sociodemográficos, qualidade de vida, dados antropométricos, aferição da pressão arterial e análise do estilo de vida. Resultados: Foram observadas uma correlação entre o aumento da idade e a redução do peso, bem como uma percepção mais positiva da qualidade de vida entre aqueles que adotam um estilo de vida mais saudável. Conclusão: Conclui-se que a maioria dos frequentadores hipertensos da Policlínica Universitária eram idosos, do sexo feminino, de cor parda, vivendo com companheiro, com baixo nível de escolaridade, pertencentes à classe socioeconômica C e com excesso de peso.

Palavras-chave: Hipertensão; Qualidade de vida; Estilo de Vida; Promoção da saúde.

INTRODUCTION

The prevalence of systemic arterial hypertension (SAH) has doubled worldwide between 1990 and 2019[1], especially in low- and middle-income countries, where awareness, treatment, and control of hypertension have low adherence rates. Multifaceted implementation strategies are necessary for the prevention and control of hypertension to address barriers at patient, caregiver, system, and community levels[2].

Data from Brazil indicate that 24.3% of the population is affected by this non-communicable chronic disease (NCCD), which has genetic, epigenetic, environmental, and social etiologies[3,4]. The process of diagnosing and determining the treatment for systemic arterial hypertension (SAH) involves various factors, including assessing blood pressure, reviewing the patient's medical history, conducting physical and clinical examinations, and confirming the diagnosis[5]. According to the 2023 Vigitel survey by the Ministry of Health, one-quarter of Brazilians (27.9%) have hypertension, and around 1 in every 5 adults aged 35 to 44 years (19%) live with the disease[6].

It is noteworthy that the treatment of SAH includes both pharmacological and non-pharmacological interventions[7,8]. Non-pharmacological therapy involves changes in eating habits and the promotion of physical activity, even for patients taking antihypertensive medications[9]. These practices are related to a healthy lifestyle and can improve the quality of life (QoL) of hypertensive patients[10].

It is believed that healthy lifestyle habits should be incorporated from childhood and adolescence through health promotion practices that encourage these behaviors, especially because Lifestyle (LS) changes promote blood pressure regulation and reduce the risk of cardiovascular mortality[11,12,13].

Weight gain can be associated with chronic conditions such as SAH and diabetes. The prevalence of overweight has increased dramatically, reaching 61.4% of the population, being higher among men (63.4%) than women (59.6%) in 2023[6]. It is evident that LS is an important factor in reducing the risks of NCCDs, highlighting the role of physical activity and a balanced diet in the search for a good quality of life.

NCCDs are associated with the impairment of individuals' functional capacity and consequently with the reduction of QoL[14]. A study conducted by Borges et al. (2019)[15] with hypertensive and/or diabetic elderly community members aged 70 ± 6 years, mostly from low socioeconomic status and with low educational level, found that the presence of NCCDs negatively impacted the QoL of the elderly in comparison to those without chronic diseases.

The Strategic Action Plan for Tackling Chronic Diseases and Non-Communicable Conditions in Brazil (2021-2030) highlights that the adoption of a healthy diet and engagement in physical activities are fundamental requirements for the prevention and treatment of hypertension, emphasizing actions directed at promoting the health of these individuals[16].

Understanding the lifestyle and quality of life of hypertensive individuals is important as it allows the development and implementation of a more effective action plan[17].Therefore, given the above, this study aimed to characterize the profile of hypertensive patients attending a university clinic and to search for associations with of anthropometric data, sociodemographic variables, blood pressure (BP), lifestyle, and quality of life.

METHOD

This was a quantitative descriptive cross-sectional study conducted at the university clinic of a private university in the southern zone of the city of São Paulo. This university clinic has served as a support for psychology, nutrition, and physiotherapy services for the public Primary Care Units (PCU) in the region. The convenience sample was composed by randomly selected hypertensive attendees who visited the facility from April to August, 2018. Participants were recruited through oral invitation by the researchers, by the professionals of the specialties they were visiting, and/or by the receptionists of the clinic.

The research enrolled individuals aged 20 years or older, literate, of both sexes, with a

medical diagnosis of primary hypertension. According to the World Health Organization (WHO)[18] classification, aged 10 to 20 years old are considered adolescents. Pregnant women, individuals not able to respond to the questionnaire (due to an inability to understand and communicate verbally), those with physical limitations preventing BP measurement, and those with secondary hypertension and comorbidities such as neoplasms and dialysis-dependent renal failure were excluded from the sample.

Upon agreeing to participate in the research, individuals were given the Informed Consent Form (ICF), which was read and signed in duplicate by the participants. The research protocol was approved by the local Research Ethics Committee under CAAE 80967817.2.0000.5377 and protocol number 2.451.649.

The instruments used for data collection were validated questionnaires, completed by the participants in an average time of 30 minutes, in a private location to ensure privacy.

The sociodemographic aspects included sex (female or male), age (years), race (white, mixed race, black, Asian, or Indigenous), marital status (single, married, widowed, common-law marriage, or divorced), and socioeconomic classification, which was assessed through the quantity of household items and level of education[19].

Quality of life was assessed using the mini-questionnaire of QoL in Arterial Hypertension (MINICHAL). This instrument consists of 17 questions, divided into two domains (mental state and somatic manifestations) with four possible responses according to a Likert-type frequency scale: zero (no, absolutely not), 1 (yes, a little), 2 (yes, quite a lot), and 3 (yes, very much). Participants answered the questions referring to the last seven days prior to the interview. The total score was obtained by summing the items, with results closer to zero indicating a better QoL level[20].

Anthropometric data on weight and height were self-reported by the participants. Body mass index (BMI) was obtained by calculating the ratio of weight (kg) to height squared (m^2), and the nutritional status of the individuals was classified according to the cut-off points proposed by the WHO[18]. BMI values for adults (20 to 59 years) were classified as follows: BMI $<$ 25 kg/m^2 (euthrophic), 25-29.9 kg/m^2 (overweight), and above 30 kg/m^2 (obesity)[21]. For the elderly (60 years or older), according to the Nutrition Screening Initiative (1994), they were classified as: BMI $<$ 22 kg/m^2 (underweight); BMI between 22 and 27 kg/m^2 (eutrophic); and BMI $\geq$27 kg/m^2 (overweight).

Blood pressure (BP) was measured at the beginning and end of the questionnaire application using calibrated digital sphygmomanometers from the brands Citizen CH-656C, Omron HEM-6124, and Tech Line BP-2208. The method used for BP measurement followed the VII Brazilian Guidelines on Hypertension of 2021[3] and the VII Joint National Committee[22]. The values were recorded in the form, and the average BP was used for the research analysis.

Lifestyle was evaluated using the "Fantastic Lifestyle" questionnaire, a generic instrument developed by the Department of Family Medicine at McMaster University, Canada, by Wilson and Ciliska in 1984. It is one of the most widely employed instruments for assessing lifestyle. This questionnaire was translated and validated for Brazilian Portuguese by Rodriguez-Añez, Reis, and Petroski (2008)[23] to assist professionals working in prevention to better understand and measure their patients' lifestyles. Its goal is to measure the main elements that characterize lifestyle. The questionnaire considers the behavior of the individuals over the past month and results allow for determining the association between lifestyle and health. It consists of 25 questions divided into nine domains: 1) family and friends; 2) physical activity; 3) nutrition; 4) smoking and drugs; 5) alcohol; 6) sleep, seatbelt use, stress, and safe sex; 7) type of behavior; 8) introspection; and 9) work[23].

The questions were coded from 0 to 4, with zero for the first column, 1 for the second column, 2 for the third column, 3 for the fourth column, and 4 for the fifth column. The total score classified individuals as follows: excellent (85 to 100 points), very good (70 to 84 points), good (55 to 69 points), fair (35 to 54 points), and

needs improvement (0 to 34 points). The lower the score, the greater the need for lifestyle changes.

The data were entered into Microsoft Excel 2013 spreadsheets. All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) software version 27 for Windows. The normality of the variables was tested by the D'Agostino and Pearson method. Associations between different variables were determined using Pearson's correlation coefficients. Comparisons between groups (normotensive and hypertensive) were made by Pearson's Chi-square test (categorical variables) and Student's t-test (continuous variables). Associations between the study variables were calculated using Pearson's or Spearman's correlation tests and were classified as follows: 0.0 to 0.19 - very weak association; 0.2 to 0.39 - weak association; 0.4 to 0.69 - moderate association; 0.7 to 0.89 - strong association; 0.9 to 1.0 - very strong association. In all cases, the significance level α was set at 5%.

RESULTS

Among the 164 hypertensive patients invited, 159 participated in the study, completing all the questionnaires. Only five withdrew during the research. Participants were predominantly females (68.6%), with mean age of 61.81 ± 10.97 years old. More than half (51.6%, n=82) reported living with a partner, while 48.4% (n=77) had no partner. A high proportion of the participants were elderly (60.4%), had a low level of education, and presented excessive body weight (overweight and obesity), with 79.7% among adults and 71.1% among the elderly (Table 1).

Table 1. Characteristics of hypertensive attendees at a university clinic, São Paulo, 2018.

Variable	Categories	n (%)	Mean ± SD
Age			61.81±10.97
Sex	Female	109 (68.6)	
	Male	50 (31.4)	
Marital status	With partner	82 (51.6)	
	Without partner	77 (48.4)	
Education level	Up to 8 years	87 (54.7)	
	More than 8 years	72 (45.3)	
Socioeconomic strata	Class A	2 (1.3)	
	Class B	29 (18.2)	
	Class C	99 (62.3)	
	Class D-E	29 (18.2)	
BMI classification	Euthrofic	12 (20.3)	
Adults (n=59)	Overweight	22 (37.3)	
	Obesity	25 (42.4)	
Elderly (n= 90)	Low body weight	6 (6.7)	
	Euthrofic	20 (22.2)	
	Excessive weight	64 (71.1)	
Blood pressure	Normotensive	74 (46.8)	
	Hypertensive	84 (53.2)	
Quality of life	Poor	54 (34.0)	
	Regular	56 (35.2)	
	Good	49 (30.8)	
Lifestyle	Regular	05 (3.1)	
	Good	40 (25.2)	
	Very good	86 (54.1)	
	Excelent	28 (17.6)	

Source: The authors (2018).
SD: standard deviation, BMI: body mass index

The comparison between normotensive and hypertensive individuals (Table 2) revealed that the groups were homogeneous regarding age, marital status, education level, and quality of life (QoL). However, the groups differed in terms of sex predominance (more men in the hypertensive group), socioeconomic status (more individuals from status C and D-E in the hypertensive group), BMI (more eutrophic individuals in the hypertensive group compared to the normotensive group), and lifestyle (more individuals with a "very good" lifestyle in the hypertensive group).

Table 2. Comparison of sociodemographic variables between normotensive and hypertensive individuals.

Variable		Normotensive	Hypertensive	p
Age		61.16±11.42	62.3±10.65	0.52*
Sex	Female	56	52	0.03**
	Male	18	32	
Marital status	With partner	35	47	0.27**
	Without partner	39	37	
Education level	Up to 8 years	45	41	0.82**
	More than 8 years	29	43	
Socioeconomic strata	Class A	0	2	<0.001**
	Class B	16	12	
	Class C	47	52	
	Class D-E	11	18	
BMI classification Adults (n=59)	Euthrofic	13	26	<0.001**
	Overweight	11	11	
	Obesity	45	42	
Elderly (n= 90)	Low body weight	26	28	0.27**
	Euthrofic	21	34	
	Excessive weight	27	22	
Blood pressure	Normotensive	3	2	<0.001**
	Hypertensive	19	21	
Quality of life	Poor	38	47	
	Regular	14	14	

Source: The authors (2018).
Data expressed as mean ± standard-deviation or n.
*Student's T test.
**Pearson's Chi-Square test.

A significant inverse correlation was found, as shown in Table 3, between age and weight (r=-0.267 and p=0.001) and between quality of life and lifestyle (r=-0.592 and p=0.000), indicating a reduction in weight with advancing age and a better perception of QoL with improved lifestyle. A positive and significant association was observed between age and lifestyle (r=0.232 and p=0.003), indicating that lifestyle improved with increasing age. When participants were divided into normotensive and hypertensive groups at the time of the interview to check for differences in the mean values of the study variables, it was found that the mean BMI of hypertensive individuals was lower than that of normotensive persons (p=0.04).

Table 3. Significant correlations between the study variables of hypertensive attendees at a university clinic, São Paulo, 2018.

Variable	r	p
Age x Weight	-0.267	0.001
Age x Lifestyle	0.232	0.003
Quality of life x Lifestyle	-0.592	0.000

Source: The authors (2018).
Pearson's correlation coefficient.

DISCUSSION

This research highlights the prevalence of hypertensive female participants, elderly individuals, those with excessive body weight, and those with low levels of education and income. These results are consistent with the findings of other studies[24,25,26,27].

It is noteworthy that female hypertension is also represented in national data. The 2023 Surveillance of Risk and Protection Factors for Chronic Diseases by Telephone Inquiry (Vigitel)[6] indicated that the frequency of medical diagnosis of hypertension was 27.9%, higher among women (29.3%) than in men (26.4%). The global prevalence of hypertension has shown an increasing trend over the decades, according to a global collaboration study that analyzed 1,479 population-based studies from 1975 to 2015, emphasizing the importance of governmental actions, treatment, and lifestyle changes[28].

This increasingly underscores the pursuit of quality of life (QoL) and actions that facilitate the adoption of a healthier lifestyle. In this regard, Borges et al. (2022)[29] observed an improvement in the QoL of hypertensive patients with the application of health promotion interventions. Cunha, Ferreira & Brito et al. (2017)[30], using the same instrument as the present study to assess QoL (MINICHAL), observed among 105 adults and elderly individuals with an average age of 62.7 years that QoL was better among participants with a better lifestyle. These findings align with the results of the present study, which demonstrated a significant association between individuals with better lifestyle and better perception of QoL.

It was observed that weight reduction is related to advancing age, which can be inferred from the changes in body composition that occur with aging, such as the loss of lean mass, increase in body fat, and decrease in bone mass[31].

In the present study, it was noted that women had a better perception of their own health condition and seek health services more often than men, representing 69% of the sample. These women had a mean age of 62 ± 11 years, similar to the findings of Cobo, Cruz, and Dick (2021)[32], where women were 12.7 percentage points more likely than men to seek consultations in Primary Health Care in 2019.

It is important to highlight that elderly individuals also seek health facilities more often than adults and are thus more exposed to health promotion actions. This can be attributed to the higher proportion of women in the elderly population and their specific health needs. In this context, women are diagnosed and treated earlier, which contributes to a higher life expectancy compared to men[33]. In line with this, data from this study show that the lifestyle of hypertensive individuals improved with increasing age.

A predominant characteristic in most of the sample was low education and socioeconomic status, as well as a regular quality of life. According to Ferreira et al. (2021)[26], there is a relationship between better quality of life and health conditions for those with higher income per capita and education levels. Similarly, Santos et al. (2023)[27] observed that the perception of the economic factor as an important element for achieving quality of life came from the group with lower purchasing power.

Regarding BMI, there was a predominance of obesity among adults (42.4%) and overweight among the elderly (71.7%). These findings are consistent with those of Loureiro et

al. (2020)[34], who demonstrated that 39.5% of adults were obese and 45.1% of the elderly were overweight, also indicating a higher prevalence of hypertension among obese men.

When evaluating the relationship between hypertension and nutritional status, it was observed that body weight of hypertensive patients was higher in the group under 60 years of age. The prevalence of hypertensive adults with excess weight was 79.7%, and for the elderly in the same condition, it was 71.7%. It is well known that excessive weight is a risk factor for chronic diseases such as SAH[35].

Non-pharmacological treatment for hypertension, focusing on healthy eating, physical activity, stress control, non-smoking, and controlled alcohol consumption, is well established as a positive practice for blood pressure control, whether associated with or independent from pharmacological treatment[36]. In the present study, there was a higher prevalence of a very good lifestyle among hypertensive individuals compared to their normotensive counterparts at the time of the interview. These health promotion measures are encouraged at this university clinic among professionals from various specialties who interact with both patients and frequent visitors, potentially influencing the adoption of a healthier lifestyle.

In this study, we found no correlation between QoL and BP. However, according to Lee et al. (2020)[37], the QoL of hypertensive individuals is strongly related to a controlled BP, as symptoms caused by uncontrolled BP can limit daily activities and lead to financial difficulties. Li et al. (2018)[24] report that besides age, education level and income can influence individuals' QoL.

There was no difference in education level and socioeconomic status among participants when analyzing the difference in mean BP during data collection between normotensive and hypertensive individuals. However, it is worth mentioning that low education may lead to diseases, infections, and other vulnerable situations[38]. A study conducted by Fiório et al. (2020)[25], which analyzed the evolution of hypertension prevalence between 2003 and 2015, found that the prevalence of hypertension increased with low educational levels, especially among individuals with no education and those with elementary education.

Thus, the hypertensive attendees in this study presented a lifestyle that can benefit their own health, as the majority of them had it classified as "very good" and "good". These findings highlight the importance of adopting and maintaining healthy habits for the management and prevention of hypertension, emphasizing the need to promote practices that benefit the overall health of individuals affected by this condition. It is believed that these results reflect the fact that these individuals regularly attend the health service at the clinic, which offers various multidisciplinary activities with physical therapists, nutritionists, psychologists, and nurses, as well as encourages treatment guided for a healthy and health-promoting lifestyle. Such actions are based on valuing the individual's participation in seeking knowledge and autonomy with the aim of promoting an effective change to improve patients' health and well-being, through raising awareness and commitment to positive changes in lifestyle[32].

Regarding antihypertensive medications and lifestyle modifications, it is suggested that these should be combined in the treatment of hypertension. Maintaining a recommended healthy habit generally consists of five components: healthy diet, increased physical activity, weight control, smoking cessation, and limited alcohol consumption[39].

To improve the lifestyle and quality of life of hypertensive attendees at a university clinic, several strategies are recommended: 1) Education on Hypertension: Regular educational sessions for patients about the condition, its risk factors, associated complications, and strategies for prevention and control. 2) Promotion of Healthy Living Habits: Encouragement for patients to adopt a balanced diet, rich in fruits, vegetables, whole grains, and low in saturated fat and sodium. 3) Promotion of Regular Physical Exercise: Promotion of regular physical exercise suitable for each patient's health conditions. 4) Regular Blood Pressure Monitoring: Regular BP checks for patients and guidance on how to monitor BP at home, encouraging them to register their own readings and share them with healthcare professionals. 5) Adequate Medical

Treatment: Strategies to ensure that patients are correctly following the treatment plan prescribed, including the regular use of antihypertensive medications, if necessary. 6) Multidisciplinary Follow-up: Promotion of a multidisciplinary approach involving doctors, nurses, nutritionists, physical educators, and other healthcare professionals to provide a broad range of services and support to hypertensive patients.

Among the limitations of the present study is the convenience sample, which does not allow for strict selection and representativeness of the population, as well as the absence of analysis on medication use and adherence. Longitudinal studies are needed to deepen the understanding of these aspects discussed.

CONCLUSION

Most of the hypertensive attendees at the university clinic were elderly, female, of mixed race, living with a partner, with low educational level, belonging to socioeconomic status C, and with excessive body weight. There was an association between increasing age and weight reduction among particpants, as well as a more positive QoL among those adopting a healthier LS.

These findings reinforce that health promotion actions must involve patients, their families, and healthcare professionals in a discussion that values the patient's pursuit for knowledge and autonomy in healthcare, focusing on lifestyle changes and adherence to antihypertensive medications to improve QoL.

By implementing these strategies, it is possible to help hypertensive attendees at a university clinic improve their LS and QoL, reducing the risks associated with hypertension and promoting overall well-being.

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