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Original Article

Hypertensive caregivers of elderly people, adherence to drug treatment, and health literacy

Cuidadores hipertensos de pessoas idosas, adesão ao tratamento medicamentoso e letramento em saúde

Cuidadores hipertensos de ancianos, adherencia al tratamiento farmacológico y alfabetización en salud

Luís Fernando Negrão de Souza[I], Carla Roberta Monteiro Miura[I], Karina Aparecida Lopes da Costa[I], Andréa Fachini da Costa[I], Angélica Gonçalves Silva Belasco[I], Meiry Fernanda Pinto Okuno[I]

[I] Universidade Federal de São Paulo, São Paulo, São Paulo, Brazil

Abstract

Objective: to analyze the prevalence of adherence to drug treatment among hypertensive caregivers of elderly people, its relationship with health literacy, demographic variables, and the caregivers' work and analytical variables. **Method:** a cross-sectional study with 68 caregivers of elderly hypertensive patients. Medication adherence and health literacy were assessed using the following scales: Morisky's Therapeutic Adherence and Health Literacy Scale. **Results:** The sample studied had low health literacy (34 points), and 36.8% showed low adherence to drug treatment. The greater the number of hours dedicated to care per day (p=0.0027) and the more overburdened the caregiver felt (p=0.0307) were associated with low adherence to drug treatment. **Conclusion:** This research contributes to a deeper understanding of the prevalence of adherence to drug treatment among hypertensive caregivers of elderly people and its relationship with health literacy, demographic, and work variables.

Descriptors: Aged; Hypertension; Caregivers; Health Literacy; Medication Adherence

Resumo

Objetivo: analisar a prevalência da adesão ao tratamento medicamentoso de cuidadores hipertensos de idosos, suas relações com o letramento em saúde (LS), variáveis demográficas e de trabalho dos cuidadores. **Método:** estudo transversal, com 68 cuidadores hipertensos de idosos. A adesão medicamentosa e o LS foram avaliados por meio das escalas: Adesão Terapêutica de *Morisky* e *Health Literacy Scale*. Realizaram-se análises descritivas e analíticas. **Resultados:** a amostra estudada apresentou baixo LS (34 pontos) e 36,8% demonstraram baixa adesão ao tratamento medicamentoso. O maior número de horas dedicadas ao cuidado por dia (p=0,0027) e quanto mais se sentia sobrecarregado sendo cuidador (p=0,0307) associaram-se à

baixa adesão ao tratamento medicamentoso. **Conclusão:** constatou-se baixa prevalência de adesão à terapêutica medicamentosa e baixo LS dos cuidadores hipertensos de idosos.
Descritores: Idoso; Hipertensão; Cuidadores; Letramento em Saúde; Adesão à Medicação

Resumen

Objetivo: Analizar la prevalencia de adherencia al tratamiento farmacológico entre cuidadores hipertensos de ancianos, su relación con la alfabetización en salud, variables demográficas, laborales de los cuidadores y analíticas. **Método:** Estudio transversal con 68 cuidadores hipertensos de ancianos. Se evaluaron la adherencia a la medicación y la alfabetización en salud mediante las siguientes escalas: Adherencia Terapéutica de Morisky y Escala de Alfabetización en Salud. **Resultados:** la muestra estudiada presentaba una baja alfabetización en salud (34 puntos) y el 36,8% mostraba una baja adherencia al tratamiento farmacológico. El mayor número de horas dedicadas al cuidado al día (p=0,0027) y la mayor sobrecarga de trabajo del cuidador (p=0,0307) se asociaron con una baja adherencia al tratamiento farmacológico **Conclusión:** esta investigación contribuye a profundizar en el conocimiento de la prevalencia de la adherencia al tratamiento farmacológico entre los cuidadores hipertensos de personas mayores, y su relación con variables de alfabetización en salud, demográficas y laborales**.**
Descriptores: Anciano; Hipertensión; Cuidadores; Alfabetización en Salud; Cumplimiento de la Medicación

Introduction

In 2022, Brazil's elderly population accounted for around 10.49% of the country's total population. It could reach 25% by 2060.[1] The aging process is accompanied by a higher prevalence of Noncommunicable Chronic Diseases (NCDs), which represent the leading cause of morbidity and mortality in the population.[2] As a result of the greater vulnerability and implications of NCDs for elderly people, the help of a caregiver is often necessary to ensure the safety and health of this population.[2]

Among the NCDs, arterial hypertension (AH) is common and increases the risk of cardiovascular and cerebrovascular diseases, accounting for around 9.4 million deaths worldwide. AH affects the health of 22% of the world's population aged ≥18 years.[3] In 2023, the frequency of adults who reported a medical diagnosis of AH in Brazil was 27.9%, and this frequency increased with age,[4] reaching around 65% of the elderly population.[5]

To maintain optimal blood pressure control, adherence to prescribed antihypertensive medication must be greater than or equal to 80%.[6] However, despite the importance of medication adherence, given that uncontrolled blood pressure leads to a greater risk of complications and mortality in hypertensive individuals,[1] this issue has been little explored concerning caregivers with AH.

It is known that adherence to AH treatment is affected by factors such as age, gender, level of education, symptoms such as depression and anxiety, sleep, and health literacy (HL).[7-8]

The caregiver is the person who provides care for elderly people who are sick or dependent in carrying out their daily activities.[9] The number of family members dedicated to caring for elderly people jumped from 3.7 million in 2016 to 5.1 million in 2019.[10] The literature shows that more than 50% of family caregivers report chronic health problems, such as AH.[11] HL refers to the individual's ability to obtain, understand and use information that promotes and maintains their health.[8] Identifying the difficulties related to medication adherence and HL is considered a determining factor in the health-disease process of individuals,[8] especially that of caregivers of elderly hypertensive patients since the literature has not clarified the relationship between medication adherence and HL in this population.

Therefore, this study's objective was to analyze the prevalence of adherence to drug treatment among hypertensive caregivers of elderly people and its relationship with health literacy, demographic, and work variables of caregivers.

Methods

This is a cross-sectional, analytical study. The Strengthening the Reporting of Observational Studies in Epidemiology statement (STROBE) recommendations were used.[12]

The research sample consisted of 68 informal caregivers with AH from all regions of Brazil who lived in the community and had been caring for elderly people for at least three months. Paid caregivers were excluded. The process used to select the caregivers included in the sample was by convenience during the data collection period from December 2021 to February 2022, thus composing the final sample of 68 hypertensive family caregivers.

The structured form with information on caregiver activity was constructed after surveying the literature as a theoretical basis for selecting the variables,[13] in addition to the researchers' experiences on the subject, followed by the organization of the instrument.

An undergraduate nursing student collected the data. The Google Forms® tool was used to create online instruments, which were distributed via a public invitation via a link on social media (WhatsApp®, Facebook®, and Instagram®) to reach caregivers of elderly people with SAH throughout Brazil.

The undergraduate nursing student disseminated the research online using a public invitation via a link on social media (WhatsApp®, Facebook®, and Instagram®) to reach caregivers of elderly people with hypertension throughout Brazil. When the caregiver accessed the link, they first had access to the Informed Consent Form (ICF), which, if accepted, directed them to answer the study instruments online without the need to identify themselves. The caregivers answered a structured form with information about their age, gender, education, marital status, occupation, individual income (minimum wage), medical conditions (comorbidities and medication), and caregiving activity (how long they had been a caregiver, degree of kinship concerning the person they were caring for, hours of daily care, whether they lived with the elderly person they were caring for, whether they shared care with another person and whether they felt overburdened by the care they provided).

The eight-item Morisky Therapeutic Adherence Scale was used to assess adherence to drug therapy. The degree of adherence was determined according to the score resulting from the sum of all the correct answers: high adherence (eight points), medium adherence (six to seven points), and low adherence (less than or equal to five points). Those with a score of eight were considered adherent.[14-15]

The Health Literacy Scale (HLS-14) was used to assess LH. This instrument contains 14 questions, ranging from 14 to 70 points. The scores of the items are added together so that the final score indicates the level of HL. The HLS-14 score was added, and the HL variable was dichotomized based on the median, which was 47, classified as high for those who scored 47 or more and low for up to 46 points.[16]

The data was analyzed using descriptive statistics, showing absolute and relative frequencies, means, standard deviation, medians, and variation (minimum and maximum). ANOVA was used to compare the continuous variables by adherence to drug treatment. If the assumptions for the test were not met, the Kruskal-Wallis test was applied.

The Chi-square test was used to compare categorical variables with treatment adherence. When necessary, the likelihood ratio test was used. ANOVA was used to compare LS scores with adherence to drug treatment. If the assumptions for the test were not met, the Kruskal-Wallis test was used. A significance level of 5% (p-value < 0.05) was adopted for all comparative analyses.

This research followed the ethical precepts of Resolutions 466/2012, 510/2016, and 580/2018 of the Ministry of Health. It began after approval of the ICF from the Federal University of São Paulo (UNIFESP), under opinion no. 4.600.957 and CAAE:40673020.8.0000.5505.

Results

Of the 68 caregivers, the age ranged from 25 to 79 years, and the time spent caring ranged from 4 to 24 hours a day. The majority were women (58; 85.3%), married (34; 50%), retired or on a pension (21; 30.9%). In terms of care, it was provided every day of the week (42; 61.8%).

This study found that caregivers had a prevalence of low adherence to drug treatment for AH (25, 36.8%) and low LS (34 points). (Table 1).

Table 1 - Rates of adherence to drug treatment and Health Literacy score in hypertensive caregivers of elderly people. São Paulo/SP 2022.

Scales	
Therapeutic Adherence	n (%)
High adherence	24 (35.3)
Medium adherence	19 (27.9)
Low adherence	25 (36.8)
Total score - median (SD)	5.5 (2.72)
Health Literacy	median (minimum-maximum)
Total score (Median, range)	34 (18-49)

Hypertensive caregivers who dedicated themselves to 24-hour care had a higher percentage of low therapeutic adherence (19, 54.3%) compared to those who worked for less time. Caregivers who reported not feeling overwhelmed (8, 61.5%) or a little and very little (5, 55.6%) had a higher percentage of high therapeutic adherence.

Caregivers with AH who cared for elderly people who did not have AH had a higher percentage of low adherence (Table 2).

Table 2 - Association between variables related to caregiver activity and adherence to drug therapy in hypertensive caregivers of elderly people. São Paulo/SP 2022

Variables	Therapeutic Adherence			p-value
	High adherence n(%)	Medium adherence n(%)	Low adherence n(%)	
Length of time in care average (mean SD)	4.6 (6.7)	5.4 (4.9)	4.4 (4.4)	0.6451*
Degree of relationship				
Child	15(35.7)	11(26.2)	16(38.1)	0.1934
Wife/grandchild/nephew	7(58.3)	2(16.7)	3(25)	
Son-in-law/Daughter-in-law	2(14.3)	6(42.9)	6(42.9)	
Lives with the person being cared for				
Yes	15(34.1)	11(25.0)	18(40.9)	0.6006†
No	9(37.5)	8(33.3)	7(29.2)	
Amount of time spent caring				
4	5 (55.6)	4(44.4)	-	0.0027‡
8	7(58.3)	1(8.3)	4(33.3)	
16	4(33.3)	6(50)	2(16.7)	
24	8(22.9)	8(22.9)	19(54.3)	
How do you feel being the caregiver?				
Very overloaded	9(31)	7(24.1)	13(44.8)	0.0307‡
Overloaded	2(11.8)	6(35.3)	9(52.9)	
I don't feel overloaded	8(61.5)	4(30.8)	1(7.7)	
Very little/Lowly overloaded	5(55.6)	2(22.2)	2(22.2)	
Hypertension in elderly people				
No	20(35.1)	12(21.1)	25(43.9)	0.0011†
Yes	4(36.4)	7(63.6)	-	

*Kruskal-Wallis test, † Chi-Square test, ‡ Likelihood Ratio test

There was no association between sociodemographic and economic variables and adherence to drug therapy in hypertensive caregivers of elderly people (Table 3).

Table 3 - Association between sociodemographic and economic variables and adherence to drug therapy in hypertensive caregivers of elderly people. São Paulo/SP 2022

	Therapeutic Adherence			p-value
	High adherence	Medium adherence	Low adherence	
Age - mean (SD)	55.17 (11.6)	54.74 (11.3)	48.84 (10.5)	0.0997*
Education - mean (SD)	13.17 (3.7)	13.74 (3.7)	15.36 (4.1)	0.1177†
Gender				
Male	3.0 (30.0%)	4.00 (40.0%)	3.00 (30.0%)	0.6697§
Female	21.0 36.2%)	15.00 (2.9%)	22.0 (37.9%)	
Marital status				
Married	13.0 (38.2%)	11.0 (32.4%)	10.0 (29.4%)	0.4404‡
Single/Widowed/Divorced/Separated	11.0 (32.4%)	8.0 (23.5%)	15.0 (44.1%)	
Income				
Less than 1	5.0 (25.0%)	5.0 (25.0%)	10.0 (50.0%)	
From 1 to 3	13.0 (44.8%)	7.0 (24.1%)	9.0 (31.0%)	
More than 3 to 5	3.0 (33.3%)	3.0 (33.3%)	3.0 (33.3%)	
More than 5	3.0n (30.0%)	4.0 (40.0%)	3.0 (30.0%)	

*ANOVA, †Kruskal-Wallis test, ‡Chi-square test, §Likelihood Ratio Test

Table 4 shows that there was no statistical difference between LS and adherence to drug therapy in hypertensive caregivers of elderly people.

Table 4 - Correlation analysis - mean health literacy and adherence to drug therapy in hypertensive caregivers of elderly people. São Paulo/SP 2022. N=68

	Therapeutic Adherence			p-value
	High adherence	Medium adherence	Low adherence	
Health Literacy - median (minimum-maximum)				
Total score	35 (24-49)	34 (25-44)	33 (18-44)	0.0856*

*ANOVA

Discussion

In this study, hypertensive caregivers had a low prevalence of adherence to drug therapy for AH and a low HL (34 points). It was also found that hypertensive caregivers were aged between 25 and 79. A cross-sectional study carried out with informal caregivers of dependent elderly people in the municipality of Caxias, Maranhão, showed that the average age of the caregivers was between 41 and 50 years, data which is in line with research carried out with caregivers in a municipality in the interior of Bahia.[17-18] Most of this sample comprised women with close emotional ties to the elderly person (spouse or children). In the global context, there is a feminization of care, indicating the persistence of the concept that health care and family protection are women's responsibilities.[19-21] As for marital status, half of the caregivers were married. In Brazil, it is common for the partner to take on the role of caregiver, which is considered a matter of solidarity, respect, and responsibility.[22]

This study showed a prevalence of low adherence to treatment for hypertension among hypertensive caregivers. These data align with research that evaluated self-care for hypertension in family caregivers and identified inadequate self-care in this sample.[23]

Among the factors analyzed, it was observed that hypertensive caregivers who dedicated more hours to care and who felt more overburdened had a higher percentage of low adherence to therapy. The activity of a caregiver requires continuous effort at the cognitive, emotional, and physical levels, which can impact the health and well-being of this individual. An increase in the number of hours of daily care can lead to a more significant burden on the caregiver and less time for personal care, which may explain the association between a more significant number of hours of care and low medication adherence.[24]

It was also found that hypertensive caregivers who cared for elderly people with AH had a higher percentage of average adherence to pharmacological treatment. In comparison, those who cared for elderly people who did not have AH had a higher percentage of low adherence. This finding may be related to living with and caring for elderly people with hypertension, as the caregiver with hypertension, when assisting the elderly person in taking antihypertensive medication, also remembers to take their medication. [25]

A study of 1,355 Hispanic and hypertensive adults showed a significant association between low HL and low medication adherence.[26] A cross-sectional study that analyzed the association between HL and adherence to pharmacological treatment in 234 Brazilians with AH showed average adherence to pharmacological therapy and adequate HL.[27]

It is necessary for hypertensive caregivers to understand the importance of drug treatment for AH and to improve their HL to make more assertive decisions about their health. To this end, health professionals should provide accessible information about the disease, its symptoms, treatment and prevention, and medication management techniques.[7]

The limitations of this study are that it is a cross-sectional study, which does not allow any discussion of causality, and that it was carried out with a small sample of hypertensive caregivers of elderly people, so it is impossible to generalize these findings. It should be noted that variables may influence this relationship and were not considered in this study. In addition, there may be other barriers besides low HL that can affect medication adherence, such as financial difficulties, medication side effects, and forgetfulness, among other factors. However, this study contributes to a better understanding of the variables related to caregiver activity that are associated with low medication adherence.

Given the aging Brazilian population, caregivers for elderly people will be increasingly necessary. Therefore, identifying the variables that interfere with adherence to drug treatment can help caregivers achieve greater self-management about their treatment and develop health strategies.

These results call attention to the urgent need for public policies to support hypertensive caregivers, such as psychological and social support for self-care, actions to improve the quality of life of caregivers, guidance and monitoring of caregivers with hypertension so that they can provide safe care, and community support so that caregivers can have periods of rest and fewer hours of work.

Conclusion

In this study, there was a low prevalence of adherence to drug therapy for hypertension and low AH. Characterizing caregivers of elderly hypertensive patients

allows us to dimension the multifactorial magnitude of medication adherence and HL in this population and how much progress is needed in strategies that value health promotion and disease prevention for caregivers. This research contributes to a deeper understanding of the prevalence of adherence to drug treatment among hypertensive caregivers of elderly people and its relationship with health literacy, demographics, and work variables.

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Authorship contribution

1 – Luís Fernando Negrão de Souza
Corresponding Author
Nurse – luis.negrao@unifesp.br
Conception and/or development of the research and/or writing of the manuscript; Review and approval of the final version

2 – Carla Roberta Monteiro Miura
Nurse, Professor – carla.monteiro@unifesp.br
Conception and/or development of the research and/or writing of the manuscript; Review and approval of the final version

3 – Karina Aparecida Lopes da Costa
Nurse, Master – karina.costa@unifesp.br
Conception and/or development of the research and/or writing of the manuscript; Review and approval of the final version

4 – Andréa Fachini da Costa
Nurse, Master – defacosta@hotmail.com
Conception and/or development of the research and/or writing of the manuscript; Review and approval of the final version

5 – Angélica Gonçalves Silva Belasco
Nurse, Professor – abelasco@unifesp.br
Conception and/or development of the research and/or writing of the manuscript; Review and approval of the final version

6 – Meiry Fernanda Pinto Okuno
Nurse, Professor – mf.pinto@unifesp.br
Conception and/or development of the research and/or writing of the manuscript; Review and approval of the final version

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