FREQUENCY OF LOW ADHERENCE AND RELATED FACTORS IN OLDER ADULTS TREATED IN PONTO DOS VOLANTES, IN THE JEQUITINHONHA VALLEY

Frequência de baixa adesão e fatores relacionados em idosos atendidos em Ponto dos Volantes, Vale do Jequitinhonha

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ABSTRACT

OBJECTIVE: To evaluate adherence to medication treatment and possible associated factors in elderly patients interviewed during medical appointments in primary care units. **METHOD:** This was a cross-sectional, population-based study of 57 older patients aged 60 to 99 years living in the municipality of Ponto dos Volantes, state of Minas Gerais, including rural and urban areas. Data were collected during medical appointments, using a structured electronic script. The association between the parameters and the level of adherence to treatment was assessed using the χ^2 test, with a 95% confidence interval. **RESULTS:** Among the elderly patients interviewed, 45 (78.9%) responded about adherence to treatment. Of these, 11 (24.4%) were included in the low adherence group. None of the parameters evaluated showed a statistically significant association with the classification of drug adherence. **CONCLUSION:** The present study identified that 1 in every 4 patients had low adherence to drug treatment. Among the variables studied, notably sex, age, schooling, number of comorbidities, number of medications, and income, no statistically significant relationship was observed.
KEYWORDS: aged; treatment adherence and compliance; disease; volunteers.

RESUMO

OBJETIVO: Avaliar a adesão ao tratamento medicamentoso e possíveis fatores associados em idosos entrevistados durante consultas realizadas em Unidades Básicas de Saúde. **MÉTODO:** Trata-se de um estudo transversal, de base populacional, com amostra de 57 pacientes com idade entre 60 e 99 anos, residentes do município de Ponto dos Volantes, Minas Gerais, incluindo as zonas rural e urbana. A coleta de dados se deu durante o ato da consulta médica, através de um roteiro eletrônico estruturado. A associação entre os parâmetros e o nível de adesão ao tratamento foi avaliada através do teste do χ^2, com intervalo de confiança de 95%. **RESULTADOS:** Dos idosos entrevistados, 45 (78,9%) responderam sobre adesão ao tratamento. Desses, 11 (24,4%) foram enquadrados no grupo de baixa aderência. Dentre os parâmetros avaliados, nenhum apresentou associação estatística relevante com a classificação da adesão medicamentosa. **CONCLUSÃO:** O presente estudo identificou que um em cada quatro pacientes apresentava baixa adesão aos tratamentos medicamentosos. Dentre as variáveis estudadas, notadamente sexo, idade, escolaridade, número de comorbidades, número de medicações em uso e renda, não se observou relação estatisticamente significante.
PALAVRAS-CHAVE: idosos; adesão ao tratamento; enfermidades; voluntariado.

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Received on: 12/11/2018. Accepted on: 02/05/2019
DOI: 10.5327/Z2447-211520191800064

INTRODUCTION

Prescription drug adherence is one of the pillars of primary health care, and it is therefore necessary to understand the factors that lead patients to adhere to treatment or not, so that physicians or health care professionals can address the issue strategically and effectively. According to the World Health Organization,[1] adherence is "the extent to which a person's behavior – taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider."

Approximately 80% of Brazilians aged 60 years or older take at least one medication a day, which points to the need to evaluate the determinants of this use, especially adherence to drug treatment.[2-4] Elderly patients who adhere poorly to pharmacological treatment tend to benefit less from it, visit the physician's office and hospitals more often, and imply higher costs for the public health system.

According to Frances Yap et al.,[5] it is possible to identify some reasons for lower adherence to treatment among geriatric patients and to classify them in factors related to the patient (mental health, physical health, executive functions, sex, age), to the medication (formulations, access, price, number of tablets, ease of taking), to the health professional (quality of the physician-patient relationship, involvement, effective communication), to the health system (difficult follow-up, access problems, medication availability), and to socioeconomic conditions (monthly income of the patient, need for a caregiver or not). Non-adherence to treatment in geriatric patients tends to lead to a number of problems, such as reduced benefits of therapy to the patient, frequent visits to physicians' offices and hospitals due to the acute and/or progressive deterioration of the clinical condition, increased spending on health care, and even excessive treatment of some diseases. Geriatric patients often have complex pharmacological therapies, which may lead to non-adherence to prescribed drugs, impairing the outcome of treatments.[6,7] For this reason, it is necessary that feasible and concrete parameters and practices be established, aiming at an optimized and effective prescription that actively includes the patient in the treatment process.

This study aimed to verify adherence to continuous drug therapy in geriatric patients treated in primary care units in the rural and urban areas of the municipality of Ponto dos Volantes, state of Minas Gerais, southeastern Brazil. We sought to understand the processes that determine good adherence, since such data based on population studies[8] are scarce in Brazil and considering that adherence is a determinant of the clinical outcome of patients.

METHODS

Study design

This was a cross-sectional, observational, population-based study linked to the Graduation Extension Project of the Universidade Federal de Minas Gerais (UFMG), titled 'Caring for Health in Ponto dos Volantes'. The project was approved by the Department of Clinical Medicine of UFMG School of Medicine.

The setting is the municipality of Ponto dos Volantes, located in the Jequitinhonha Valley, in the state of Minas Gerais. The municipality has an estimated population of 12 138 people, predominantly rural, and a low human development index (0.59), according to data from the Brazilian Institute of Geography and Statistics. Furthermore, there is a low education level among the youth, with a rate of only 26.25% of students aged 18-20 years with complete high school education and 40.44% of the population with a per capita income of less than $140 Brazilian Reais in 2010.[9]

Sample

A total of 87 patients participated in the study. Of these, 57 were older adults, with a mean age of 74.8 (SD, 7.9) years; 68.4% (n = 39) were women and 31.6% (n = 18) were men. Recruitment of patients was voluntary and by convenience, depending on the disclosure of the project by the city hall and local health professionals.

Data collection

Data were collected for 5 days (July 24, 2017 to July 28, 2017) in the urban and rural areas of Ponto dos Volantes, including Santana do Araçuaí, in the state of Minas Gerais.

The appointments were conducted by UFMG medical students, who were attending between the fifth and the eleventh semesters, all of them already experienced in the subject of Clinical Medicine, supervised by two Clinical Medicine professors of UFMG School of Medicine.

Using an electronic medical record, the following variables were collected: sex; age (years); marital status; level of education (completed years of schooling); economic classification according to the 2015 criteria of the Brazilian Market Research Association (ABEP); area of residence; occupation; number of previously diagnosed comorbidities; level of adherence to drug treatment according to the Morisky-Green Medication Adherence Scale,[10] consisting of 8 questions scored according to the patient's affirmative or negative response (classified as low, medium, and high adherence); and reason for non-adherence to pharmacological treatment when appropriate. Only the data referring to

the patients who agreed to participate in the study and provided written informed consent were used. The project was registered at Plataforma Brasil, under approval certificate number 76797317.8.0000.5149.

All data were tabulated, stored, and analyzed in SPSS software. The Shapiro-Wilk test was used to determine the normality of data distribution. Student's *t* test was used for parametric data, while the Mann-Whitney test was used for non-parametric data. The χ^2 test was used to examine the association between the events of interest and the Morisky-Green level of treatment adherence, with a 95% confidence interval (CI).

RESULTS

Participants included elderly adults aged 60-99 years. Most were retired (n = 53, 93.0%), predominantly women (n = 39, 68.4%), and evenly distributed across the rural (n = 32, 56.1%) and urban areas (n = 24; 42.1%). A total of 21 patients (36.8%) had high treatment adherence according to the Morisky-Green scale, 13 (22.8%) had medium adherence, and 11 (19.3%) had low adherence. The main reasons for low adherence reported by these patients were lack of understanding of their condition (n = 4, 7.0%), the belief that they did not require medication (n = 4, 7.0%), and forgetfulness (n = 4; 7.0%).

Table 1 describes the general characteristics of the study population and Table 2, the analysis of treatment adherence.

The association analyses between medication adherence and the various clinical and epidemiological parameters of interest are shown in Table 3; however, none of them showed statistical significance.

DISCUSSION

The present study, conducted in the municipality of Ponto dos Volantes, state of Minas Gerais, aimed to assess adherence to medication treatment and possible social and epidemiological factors that may influence adherence in 57 elderly patients aged 60–99 years treated in primary care units during the study period. There was no influence of sex or schooling on treatment adherence rates, with low adherence in only 19.6% (11 out of 57 patients) according to the Morisky-Green scale.

Some previous studies have reported high adherence rates, even with slight differences between the groups, especially between men and women. In the study conducted by Rolnick et al.,[12] when sex differences were found (hypertension, diabetes, and dyslipidemia), men had higher adherence rates than

Table 1 Sociodemographic characteristics of the participants, Ponto dos Volantes, Minas Gerais, Brazil (n = 57).

Variables	n	%
Sex	57	100.0
Female	39	68.4
Age, years (mean ± standard deviation)	74.8	± 7.9
Marital status	57	100.0
Married	20	35.1
Single	6	10.5
Separated	1	1.8
Divorced	2	3.5
Widow(er)	25	43.8
Missing data	3	5.3
Education	57	100.0
Illiterate	34	59.7
Incomplete elementary school	15	26.3
Complete elementary school	6	10.5
Missing data	2	3.5
Economic classification*	57	100.0
C1	1	1.8
C2	11	19.3
D/E	45	78.9
Residence	57	100.0
Rural area	32	56.1
Urban area	24	42.1
Missing data	1	1.8
Occupation	57	100.0
Retired	53	93.0
Non-retired	4	7.0
Number of comorbidities	57	100.0
0	3	5.2
1	26	45.6
2	18	31.6
3	9	15.8
4	1	1.8
Understand the disease?	57	100.0
Yes	20	35.1
No	30	52.6
Missing data	7	12.3
Understand medical prescription?	57	100.0
Yes	23	40.3
No	29	50.9
Missing data	5	8.8

*According to the 2015 economic classification criteria of the Brazilian Market Research Association (ABEP)[11]: C1: 23 to 28 points; C2: 17 to 22 points; D/E: 0 to 16 points.

women (70.5, 54.9, and 70.8% in men, respectively, *vs.* 68.8, 50.2, and 67.7% in women). In the study by Arruda et al.,[13] conducted in the state of Espírito Santo, the non-adherence rate was of 26.7%. Tavares et al.[14] showed a prevalence of low adherence to drug therapy of 30.8% in their study sample, with sex, age, and level of education as the main associated factors. Borba et al.[15] showed that, of 150 elderly patients with diabetes, only 9 (6.0%) did not adhere to the proposed drug therapy. When comparing this study to the publications cited, it is observed that the rates of non-adherence to treatment do not exceed one-third of all patients studied, leading to the conclusion that the low rate found in our study is consistent with that of previous studies.

Literature reviews have reported some key risk factors related to low adherence to drug therapy in elderly patients. Dias et al.,[16] in a study of hypertensive patients, showed time of exposure to the disease (the higher the exposure, the higher the adherence), sex (women are more compliant), and socioeconomic factors (such as family income, schooling, and professional activity) seem to influence treatment adherence. Gonçalves and Nogueira[17] investigated the reasons for non-adherence to influenza vaccination in the geriatric population, which included lack of knowledge of the effect and efficacy of the vaccine, difficult access to vaccination centers, concern about the occurrence of reactions, and forgetfulness. Sarquis et al.[18]

Table 2 Results of the evaluation of treatment adherence according to the Morisky-Green Scale, Ponto dos Volantes, Minas Gerais, Brazil (n = 45).

Variables	n	%
Adherence	45	100.0
High	21	46.7
Medium	13	28.9
Low	11	24.4
Reasons for non-adherence	45	100
Adhere	19	42.2
Do not understand treatment	4	8.9
Believe they do not need to take it	4	8.9
Forget to take it	4	8.9
Others	2	4.4
Missing data	12	26.7

Table 3 Associations between study variables and adherence to treatment.

Variables		Level of adherence n (%)			Total	p*
		Low	Medium	High		
Sex						
Female		8 (72.7)	9 (69.2)	12 (57.1)	29 (72.7)	0.100
Education						
Illiterate/incomplete elementary school		10 (90.9)	10 (76.9)	20 (95.2)	40 (88.9)	
Complete elementary school		1 (9.1)	3 (23.1)	1 (4.8)	5 (11.1)	0.178
Economic classification						
C1		0 (0)	1 (7.7)	0 (0)	1 (2.2)	0.067
C2		4 (36.4)	4 (30.8)	2 (9.5)	10 (22.2)	
D/E		7 (63.6)	8 (61.5)	19 (90.5)	34 (75.6)	
Comorbidities	Presence					
Depression	No	11 (100.0)	13 (100.0)	19 (90.5)	43 (95.6)	0.212
Hypertension	Yes	10 (90.9)	12 (92.3)	18 (90.0)	40 (90.9)	0.242
Diabetes mellitus	No	8 (72.7)	9 (69.2)	18 (85.7)	35 (77.8)	0.107
Chronic obstructive pulmonary disease	No	10 (90.9)	13 (100.0)	21 (100.0)	44 (97.8)	0.244
Understand medical prescription?						
No		8 (80.0)	6 (50.0)	10 (50.0)	24 (57.1)	0.057

*Data obtained by the χ^2 test.

described the main reasons for non-adherence in hypertensive patients, such as high cost and frequency of medication, lack of knowledge of the severity and complications of the disease, absence of symptoms, and poor physician-patient relationship, among others.

Given the data found in the literature and the difficulties experienced in primary care by the older population, how can we ensure satisfactory adherence to the established treatment? Scott et al.[19] proposed 10 sequential steps to minimize inappropriate medication use in the older population, which would increase adherence rates, as follows:

- ascertain all medications currently used by geriatric patients;
- identify patients at high risk of or experiencing adverse drug reactions;
- estimate life expectancy in high-risk patients;
- define overall care goals in the context to life expectancy, level of functional incapacity, quality of life, and patient/caregiver priorities;
- define and confirm current indications for ongoing treatment;
- determine the time until benefit for disease-modifying medications;
- estimate the magnitude of benefit vs harm in relation to each medication;
- review the relative utility of individual medications;
- identify medications that may be discontinued or have their dosing modified;
- implement and monitor a drug minimization plan with ongoing reappraisal of drug utility and patient adherence.

The present study has some limitations that may interfere with the results: the small sample size, with a total of 57 elderly patients; the short time for data collection (5 days); and the small socioeconomic and demographic differences among the patients living in the community treated in Ponto dos Volantes. Overall, access to economic production goods, health care system, and medications is precarious for the local population, resulting in small differences in the reports and experiences of the patients. Based on these results, we may think of options to improve data collection in future studies, whether conducted in Ponto dos Volantes or in other communities in the state of Minas Gerais that lack high-quality primary health care services.

CONCLUSION

This study on medication adherence, involving 57 geriatric patients treated in primary care units in the municipality of Ponto dos Volantes, state of Minas Gerais, identified that 1 in every 4 patients had low adherence to drug treatment. However, no statistically significant relationship was observed among the variables studied (sex, age, level of education, number of comorbidities, number of medications used, and income). Further studies are required to investigate possible factors that may reduce the rate of low adherence in the older population.

CONFLICT OF INTERESTS

The authors declare no conflicts of interest in the present study.

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