

Adherence to drug treatment in older adults with heart diseases

Adesão ao tratamento medicamentoso em idosos cardiopatas

Adhesión al tratamiento farmacológico en adultos mayores con cardiopatías

ABSTRACT

Purpose: To evaluate adherence to a drug treatment in elderly patients with heart diseases. **Method:** This is a descriptive, quantitative field research. Forty elderly people assisted in a Cardiogeriatrics Clinic consented to participate in the research. Data collection took place from August to November 2018 and comprised sociodemographic and clinical data, Multidimensional Assessment of the Elderly, and the assessment of adherence to treatment by the Brief Medication Questionnaire. **Results:** The mean age was 74 ± 9.9 years and 57.7% of the elderly were women. According to the BMQ, 90% of the elderly had some type of resistance to adhering to drug treatment; 66.7% were due to 'Regime', 10.2% due to 'Beliefs' and 89.5% due to 'Recollection'. **Conclusion:** In assessing adherence to treatment according to the BMQ, the most frequent reasons against adherence were 'Recollection', followed by 'Regime' and 'Beliefs'. The frequency of elderly people in the "Recollection" group was higher among those who took five or more medications per day.

Descriptors: Aged 80+; Nursing; Medication Adherence; Frail Elderly; Heart Diseases.

RESUMO

Objetivo: Avaliar a adesão ao tratamento medicamentoso em idosos cardiopatas. **Método:** Pesquisa de campo, descritiva e quantitativa. Consentiram em participar da pesquisa 40 idosos atendidos em um Ambulatório de Cardiogeriatrics. A coleta de dados ocorreu de agosto a novembro de 2018, com dados sociodemográficos e clínicos, Avaliação Multidimensional da Pessoa Idosa à avaliação da adesão ao tratamento pelo Brief Medication Questionnaire. **Resultados:** A idade média foi de $74 \pm 9,9$ anos do sexo feminino em 57,7% dos idosos. Segundo o BMQ, 90% dos idosos apresentaram algum tipo de barreira para a adesão ao tratamento medicamentoso; 66,7% apresentaram barreiras de 'Regime', 10,2% de 'Crenças' e 89,5% de 'Recordação'. **Conclusão:** Na avaliação da adesão ao tratamento, segundo o BMQ, as barreiras mais frequentes foram as de 'Recordação', seguidas de 'Regime' e de 'Crenças'. A frequência dos idosos com barreira de 'Recordação' foi maior entre os que utilizavam cinco ou mais medicamentos diários.

Descritores: Idoso de 80 anos ou mais; Enfermagem; Adesão à medicação; Idoso fragilizado; Cardiopatas.

RESUMEN

Objetivo: Evaluar la adherencia al tratamiento farmacológico en pacientes ancianos con cardiopatía. **Método:** Investigación de campo, descriptiva y cuantitativa. Cuarenta ancianos atendidos en una Clínica de Cardiogeriatrics dieron su consentimiento para participar en la investigación. La recolección de datos se realizó de agosto a noviembre de 2018, con datos sociodemográficos y clínicos, Evaluación Multidimensional del Anciano y la evaluación de la adherencia al tratamiento mediante el Cuestionario Breve de Medicación. **Resultados:** La edad media fue de $74 + 9,9$ años y el 57,7% de los ancianos eran mujeres. Según el BMQ, el 90% de los ancianos tenía algún tipo de barrera para la adherencia al tratamiento farmacológico; El 66,7% tenía barreras de "Régimen", el 10,2% de "Crecencias" y el 89,5% de "Recuerdo". **Conclusión:** Al evaluar la adherencia al tratamiento según BMQ, las barreras más frecuentes fueron las de 'Recuerdo', seguidas de 'Régimen' y 'Crecencias'. La frecuencia de las personas mayores con una barrera de "recuperación" fue mayor entre los que usaban cinco o más medicamentos al día.

Descriptores: Anciano de 80 o Más Años; Enfermería; Cumplimiento de la Medicación; Anciano Frágil; Cardiopatías.

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INTRODUCTION

For decades, Brazil has been going through a period of demographic transition, mainly marked by the acute reduction in the birth rate, associated with the decrease in mortality, and a progressive increase of older-aged individuals, intensifying the population aging process⁽¹⁾.

In Brazil, individuals aged sixty years old or more are considered older adults⁽²⁾. At the end of 2019, the number of older adults was 34 million people, corresponding to 16.2% of the country's population⁽³⁾.

Aging is a dynamic, progressive and irreversible process, which affects all individuals. However, it varies according to various factors and, among them, chronic diseases exert an important impact, making that the changes resulting from aging are more gradual for some individuals and faster for others, depending on associated factors such as lifestyle, culture, or socioeconomic conditions⁽⁴⁾.

Among the chronic diseases, the most frequent ones in older adults are heart diseases such as arterial hypertension, coronary artery disease, heart failure, and arrhythmias. Other diseases, such as diabetes mellitus, pulmonary diseases, peripheral vascular disease, and musculoskeletal, renal, hepatic, neoplastic, and neurological diseases are comorbidities in this population⁽⁵⁾.

With that, medication use becomes very common among older adults since, due to the characteristics of aging, they are more vulnerable to drug-related adverse effects, being necessary to use other drugs to control these reactions⁽⁶⁾.

In this way, the assessment of adherence to drug therapy has been the target of several national and international studies given the magnitude of the problem for older adults' health^(5,7-14). Adherence can be related to biological, psychological and social problems, such as the gradual decline of some cognitive and physical functions⁽⁴⁾, or even related to the understanding of values and beliefs regarding the disease and the treatment^(4,15-16).

Adherence to drug treatment can be considered as using at least 80% of the medications prescribed, including the schedule, dose, and length of the treatment. In this way, incorrect, irrational or non-use would represent non-adherence to drug treatment⁽¹²⁾. It can also be considered that the "patient's role would be that

of the active subject, who participates and takes responsibility for their treatment"⁽¹⁰⁾.

One of the causes of failures in the correct use of medications, characterizing non-adherence to drug treatment among older adults and described in the literature, is called polypharmacy, defined as the "use of five or more medications"⁽⁶⁾. It is common for older adults to have more than two medical prescriptions and also use other drugs as self-medication^(5-7,9-11,17-18).

In addition to that, demographic and socioeconomic data, functional capacity, the patient's clinical condition, occurrence of multiple comorbidities, and drug schemes proved to exert a major impact on adherence to treatment^(4,11,13,19).

In this regard, adherence to drug treatment is a complex issue and involves multiple factors; therefore, it is necessary to know the patients' cultural and social convictions regarding how to use the drug and ensure that the individuals have clear and enough information so that they want to adhere to the treatment, based on a decision supported and discussed with the professionals⁽¹⁰⁾.

On the other hand, it is also observed that non-adherence to treatment is one of the main causes of clinical deterioration, resulting in the increase in clinical and functional complications, as well as in the number of hospitalizations⁽⁸⁾.

Considering that the characteristics of aging and the frequent use of medications in older adults with heart disease can be risk factors for non-adherence to treatment^(10,14), it becomes relevant to verify which aspects exert an influence on such adherence in this population, so that specific strategic actions are developed to improve the control of chronic diseases among older adults.

Consequently, the objective of this paper was to assess adherence to drug treatment in older adults with heart diseases.

METHODS

A field research study, descriptive and with a quantitative data approach, approved by the Research Ethics Committee (CAAE: 87690918.8.0000.5479). The sample was selected for convenience. The participants included were 40 older adults, aged 60 years old or more, oriented in time and space, and who answered correctly questions about age, date of birth and place of residence, assisted in a Geriatric Cardiology Outpatient Clinic, which receives people with any heart and cardiovascular disease in need for monitoring by a cardiologist. Data

collection was carried out from August to November 2018 by Nursing female students trained to approach the older adult and to apply the collection instruments selected for this study. The older adults who attended the outpatient clinic for medical appointments were approached in the waiting room and invited to participate in the study by means of the Free and informed Consent Form (FICF) Three forms were applied by means of interviews. The first one, with sociodemographic and clinical information, prepared by the authors, included age, gender, marital status, schooling, occupation, presence of caregiver, and comorbidities. The second instrument applied was the Multidimensional Assessment of the Older Adult (*Avaliação Multidimensional da Pessoa Idosa*, AMPI)⁽²⁰⁾: an instrument from the Municipal Health Secretariat of São Paulo, including 17 domains (age, self-perception of health, family arrangement, chronic conditions, medications, hospitalizations, falls, sight, hearing, physical limitation, cognition, humor, basic activities of daily living, instrumental activities of daily living, incontinence, unintentional weight loss, and oral conditions). These domains address aspects for the assessment of the health conditions in order to identify health needs in the older adults. Its score can vary from zero to 21 points. From zero to five points, healthy older adult; from six to 10 points, pre-frail older adult; and higher than or equal to 11 points, frail older adult. For the assessment of adherence to drug treatment, a third instrument was used, the Brief Medication Questionnaire (BMQ)⁽²¹⁾, which included questions about medications used in the last week and problems reported about the medication use. The score is calculated according to the problems reported and classified into three aspects. 'Regime': failure in listing the medications prescribed, therapy interruption, failure in days or doses, reduction or omission of medications, extra dose or medication in addition to those prescribed, not knowing how to answer some question, refusing to answer some question, 'Beliefs': reporting if the medication works well and naming the medications that make them uncomfortable; and 'Recall': multiple-dose scheme and great difficulty or some difficulty opening or closing the packaging, reading what is written on the packaging, remembering to take the medications, getting the medication, and taking a lot of pills at the same time. For the older adults with no medical prescription, data on Regime were not collected; however, data on answers about the Beliefs and

Recall barriers were indeed collected because, as the instrument can be interpreted as a barrier, it was considered relevant to maintain the others. For the assessment of adherence to treatment, scores higher than or equal to one, in each of these aspects, identify barriers related to drug treatment. After the forms were filled out, the information was inserted in an Excel database and analyzed by means of descriptive statistics. For the quantitative variables, variation and median, mean, and standard deviation were presented. Relative frequency (%) was presented for the qualitative variables.

RESULTS

The sample consisted of 40 patients. Their age varied from 61 to 94 years old, with a median of 75, and a mean of 74±9.9.

Table 1 presents the sociodemographic and clinical profile of the older adults.

Table 1 - Relative frequency according to sociodemographic and clinical variables. São Paulo, 2018

| Variables | % |
|----------------------|------|
| Female Gender | 57.5 |
| Marital status | |
| Married | 55.0 |
| Widowed | 35.0 |
| Single/Divorced | 10.0 |
| Schooling | |
| Illiterate | 20.0 |
| Elementary Education | 43.3 |
| Higher Education | 36.7 |
| Occupation | |
| Retired | 67.5 |
| Housewife | 17.5 |
| Paid work | 15.0 |
| Caregiver | 15.0 |
| Hypertension | 95.0 |
| Diabetes | 30.0 |
| Previous infarction | 22.5 |
| Pacemaker | 10.0 |

Source: created by the authors.

The AMPI score varied from 2 to 16 points, with a median of 9, and a mean of 8.6±3.9. 30.0% of the older adults obtained scores of up to five points, being categorized as healthy; 32.5%, with scores between 6 and 10 points, were considered as pre-frail; and 37.5%, with 11 points or more, as frail.

In AMPI, it was observed that the domain with the highest frequency was using five or more

medications daily. Other domains with frequency values equal to or greater than 50% were the following: Three or more chronic diseases (57.5%); Regular, bad, or very bad self-perception of health (52.5%); Age between 75 and 89 years old, difficulties to hear, poorly adapted prosthesis or difficulties to chew or swallow (50.0%).

Table 2 shows the distribution of the older adults according to the categorization of each domain assessed.

Table 2 - Frequency of the older adults in categories of the 17 domains of AMPI. São Paulo, 2018. N=40.

| Domains | Categories | % |
|---|--|------|
| Medications (daily) | Uses five or more medications daily | 75.0 |
| Chronic conditions | Has three or more chronic conditions | 57.5 |
| Self-perception of health | Self-perception of health is regular/bad/very bad | 52.5 |
| Age | Is 75-89 years old | 50.0 |
| Hearing | Reports difficulties to hear | 50.0 |
| Oral conditions | The prosthesis is poorly adapted or the person has difficulties chewing or swallowing food | 50.0 |
| Cognition | Reports forgetting | 47.5 |
| Falls | Had one or more falls in the last year | 45.0 |
| Incontinence | Reports urinary loss | 40.0 |
| Sight | Reports difficulties to see | 37.5 |
| Mood | Reports discouragement and sadness in the last month | 37.5 |
| Family arrangement | Lives alone | 32.5 |
| Instrumental Activities of Daily Living | Needs help to go out of the house and to handle money | 32.5 |
| Unintentional weight loss | Unintentional weight loss | 32.5 |
| Hospitalizations in the last year | Reports one or more hospitalizations in the last year | 30.0 |
| Physical limitations | Reports physical limitations | 27.5 |
| Basic Activities of Daily Living | Needs help to get out of the bed, to have a bath, to get dressed or to eat | 12.5 |

Source: created by the authors.

As for adherence to drug treatment assessed by BMQ, 12 older adults answered the questions regarding the 'Regime' barrier; 39, the questions regarding the 'Beliefs' barrier; and 38, those related to the 'Recall' barriers. It was observed that 90% of the older adults obtained scores higher than or equal to one, that is, they presented some type of barrier for adherence to the drug treatment.

In the 'Regime' barrier, the scores ranged from zero to seven points, with a median of 1 and a mean of 1.6 ± 1.3 points. 66.7% presented scores higher than or equal to one, therefore pointing out a barrier for adherence to treatment in this regard.

For the 'Beliefs' barrier, the scores ranged from zero to one point, with a median of 0 and a mean of 0.1 ± 0.2 points. 10.2% presented scores equal to one, pointing out a barrier for adherence to treatment in this regard.

As for the 'Recall' barriers, the scores ranged from zero to two points, with a median of 1 and a mean of 1.3 ± 0.6 points. 89.5% presented scores higher than or equal to one, showing a barrier for adherence to treatment in this regard.

The frequency of the problems reported in each aspect in the Regime, Beliefs, and Recall barriers are presented in Table 3.

Table 3 - Frequency of older adults with Regime, Beliefs, and Recall barriers, according to the Brief Medication Questionnaire. São Paulo, 2018

| Barriers | % |
|--|------|
| REGIME | |
| Failed in listing (spontaneously) the medications prescribed in the initial report | 41.7 |
| Answered "I don't know" to some of the questions | 41.7 |
| Reported some failure related to days or doses | 25.0 |
| Reduced or omitted doses of some medication | 25.0 |
| Interrupted the therapy due to delay in the dispensation of medications or to another reason | 16.7 |
| Took some extra dose or medication than prescribed | 8.3 |
| Refused to answer some of the questions | 8.3 |

Table 3 - Frequency of older adults with Regime, Beliefs, and Recall barriers, according to the Brief Medication Questionnaire. São Paulo, 2018

| Barriers | % |
|---|------|
| BELIEF | |
| Names the medications that makes them uncomfortable | 7.7 |
| Reported that some medication “doesn't work well” or “I don't know” | 2.6 |
| RECALL | |
| Is under a multiple-dose scheme of medications (2 or more times/day)? | 80.0 |
| Reports “great difficulty” or “some difficulty” in medication use | 42.5 |
| Difficulties reported | |
| Reading what is written on the packaging | 44.7 |
| Getting the medication | 13.2 |
| Opening or closing the packaging | 10.5 |
| Remembering to take every medication | 8.1 |
| Taking so many pills at the same time | 8.1 |

Source: created by the authors.

To verify the frequency values of the older adults who had barriers for adherence to treatment according to the type of barrier and considering the number of medications used daily, according to the AMPI categorization, in Table 4 it is observed that the ‘Regime’ and ‘Beliefs’ barriers have the same frequency of older adults who use from one to four medications daily as of those who use five or more medications. However, in the ‘Recall’ barrier, the frequency of older adults who use five or more medications daily is higher than that of those who use from one to four medications.

Table 4 - Relative frequency of older adults according to the number of medications used daily and type of barrier for adherence to drug treatment. São Paulo, 2018

| Number of medications/day | Barriers (%) | | |
|---------------------------|--------------|--------|--------|
| | Regime | Belief | Recall |
| 1-4 | 50.0 | 50.0 | 35.3 |
| 5+ | 50.0 | 50.0 | 64.7 |

Source: created by the authors.

DISCUSSION

The study proposal was to assess adherence to drug treatment in older adults treated in the service. The research participants were 40 patients, aged 74±9.9 years old.

There was predominance of the female gender, single individuals, retirees and with arterial hypertension. Most of the older adults had three or more chronic conditions. These data corroborate the current literature by evidencing the prevalence of Systemic Arterial Hypertension (SAH) as the main cardiovascular disease in older adults, frequently associated with other chronic diseases^(11,14,16,19).

In addition to that, similar studies with a higher number of older adults corroborate these findings, in which most of the population was also female, with a similar mean age, three or more comorbidities, and using polypharmacy^(5,6,10,22).

The AMPI domains with the highest frequency values were as follows: use of multiple medications, three or more chronic conditions, and regular/bad/very bad self-perception of health. Other relevant domains were age between 75 and 89 years old, difficulties to hear, and oral conditions with poorly adapted prosthesis or dysphagia. Such results were similar to those obtained in other population studies⁽²²⁻²³⁾.

In this regard, the multifunctional assessment allows knowing the reality of these older adults with multiple comorbidities, complex therapeutic schemes and functional and social decline, in order to guide and intervene adequately⁽²³⁾. The essential educational role of nurses is emphasized, providing accurate guidelines to ensure adherence to the pharmacological and non-pharmacological treatment.

A number of studies correlate a negative assessment of health with higher mortality rates in older adults. The Health, Well-Being and Aging (*Saúde, Bem-estar e Envelhecimento*, SABE) project assessed a large number of older adults and obtained similar results, in which 67.8% of the older adults had a negative assessment of their health (regular, bad, or very bad) and identified that older adults with a negative self-perception of health presented greater functional decline and higher risk of mortality⁽²⁴⁾.

In addition to that, it points out that functional and cognitive decline exerts a negative influence on adherence to the therapy in older adults⁽⁴⁻⁵⁾.

As for the nutritional condition, in this research, an expressive percentage of

patients (32.5%) reported unintentional weight loss. In patients with heart diseases, this is a factor that should draw the attention, considering that weight loss can be related to advanced conditions of heart failure^(5,14).

The World Health Organization (WHO) recommends that the older adults' health should not be based only on the absence of diseases, but that it must be considered from a functional perspective⁽²⁵⁾. Nevertheless, the older adults in this research were assessed according to the AMPI criteria, which makes it possible to analyze the functional, cognitive, affective, communication, mobility and balance, elimination and nutrition abilities, as well as the social and environmental resources in which they are inserted⁽²⁶⁾.

Daily use of five or more medications was a result compatible with the fact that most of the older adults had three or more chronic diseases, characterizing polypharmacy. For this reason, it is one of the main factors that compromise therapeutic adherence, especially in older adults. In addition to that, the study identified that Recall barriers were potential factors to non-adherence to drug treatment. Such findings were similar to those of other research studies^(6,17) and allowed planning strategies aimed at improving therapeutic adherence, since polypharmacy is a typical reality in this age group⁽⁶⁾.

The results indicated little influence of the Beliefs barrier on adherence; 10.2% of the older adults reported discomfort or improper effects of the medication.

Although almost all the patients acknowledged the benefits of the medication, reporting that it 'works well', most of them presented 'Regime' and 'Recall' barriers.

In the 'Recall' barriers, the most frequent difficulty was that of reading what is written on the packaging. This data can be correlated to the patients' demographic conditions, in which a percentage was composed of illiterate people, others had difficulty to see, and others lived alone. A number of studies concluded that family and social support contribute to treatment maintenance, accompanying them to the health service, and helping them to take the medications⁽²⁷⁾.

Table 4 also shows that the frequency of older adults with Recall barriers was higher among those who use five or more medications daily. It is verified that the use of polypharmacy, generally associated with the presence of multiple comorbidities, impairs adherence since it

corroborates the difficulty to follow the therapeutic regime and forgetting to take the medication, as shown in other research studies^(11-12,14).

Other difficulties in the use of medications were as follows: getting the medication, opening or closing the packaging, remembering to take or get the medication, and taking a large number of pills at the same time. These data are compatible with those obtained in other studies about adherence barriers in older adults with heart diseases^(5,13-14).

A number of studies showed that knowing the main difficulties experienced by the older adults allows recognizing barriers that hinder adherence to treatment in order to establish strategies that mitigate the difficulties, improving adherence and, consequently, their health condition^(12,27).

The importance of assistance being provided in a comprehensive and, at the same time, individualized manner to know the specific needs of this population is pointed out, aiming at strategies that consider and mitigate the difficulties that were most frequently observed among the older adults⁽⁵⁾.

CONCLUSION

In the assessment of adherence to drug treatment, according to BMQ, the most frequent barriers were as follows: 'Recall', followed by 'Regime', and 'Beliefs'. In the 'Regime' barriers, the most frequent answers were as follows: Failed in listing the medications prescribed and answered "I don't know" to some of the questions. In the 'Beliefs' barriers, the most frequent answer was the following: Naming the medications that make them uncomfortable; and, in the 'Recall' barriers: Is under a multiple-dose regime. The greatest difficulty reported was that of reading what is written on the packaging. The frequency of older adults with 'Recall' barriers was higher among those who used five or more medications daily. The study limitations were the reduced sample and the impossibility to identify Regime barriers in most of the older adults, due to lack of medical prescriptions to check the medications prescribed. The difficulties related to adherence to drug treatment in older adults are a well-known fact. Identifying the types of barriers to such adherence contributes for Nursing assistance to be planned and implemented based on the most common needs. It is recommended to develop new studies with larger samples, with the possibility of

analytical statistics to identify factors that exert an influence on non-adherence to drug treatment in older adults with hearth diseases.

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