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FATORES ASSOCIADOS A ADESÃO E BARREIRAS A TERAPÊUTICA MEDICAMENTOSA: RELAÇÃO COM O APOIO SOCIAL EM IDOSOS

Factors associated with medication adherence and therapeutic barriers: relationship with social support in the elderly

Factores asociados a la adherencia a la medicación y barreras terapéuticas: relación con el apoyo social en ancianos

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ABSTRACT

Objective: to associate adherence and barriers to medication therapy with social support in the elderly. **Method:** cross-sectional and analytical study, carried out in an outpatient clinic in the city of São Paulo – SP, with 117 elderly people, from March to November 2019. The Morisky Green test (TMG) and the Brief scale were used to collect data Medical Questionnaire, and the Medical Outcomes Study. The correlation between variables was performed using the Kruskal-Wallis test and the Mann-Whitney test. In all comparative analyzes a significance level of 5% and a confidence interval of 95% were used. **Results:** elderly people who have social support in the emotional and informational dimensions presented lower barriers to medication adherence (p=0.0216). **Conclusions:** these results have important implications for clinical practice, as the most vulnerable elderly people with low social support have greater barriers to using medication.

DESCRIPTORS: Adherence to medications; Barriers to accessing health care; Social support; Older adult; Aging;

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RESUMO

Objetivo: associar a adesão e as barreiras da terapêutica medicamentosa com o apoio social em idosos. **Método:** estudo transversal e analítico, realizado em um ambulatório na cidade de São Paulo – SP, com 117 idosos, no período de março a novembro de 2019. Para coleta de dados foram utilizados o teste de Morisky Green (TMG) e a escala Brief Medical Questionnaire, e a Medical Outcomes Study. A correlação entre as variáveis foi realizada pelo teste de Kruskal-Wallis e o teste de Mann-Whitney. Em todas as análises comparativas foi utilizado um nível de significância de 5% e intervalo de confiança de 95%. **Resultados:** idosos que possuem apoio social na dimensão emocional e de informações apresentaram menores barreiras na adesão dos medicamentos (p=0,0216). **Conclusões:** esses resultados têm implicações importantes para a prática clínica, pois, os idosos mais vulneráveis com baixo apoio social possuem maiores barreiras ao uso da medicação.

DESCRITORES: Adesão à medicação; Barreiras ao acesso aos cuidados de saúde; Apoio social; Idoso; Envelhecimento;

RESUMEN

Objetivos: asociar la adherencia y barreras a la terapia con medicamentos con el apoyo social en ancianos. **Método:** estudio transversal y analítico, realizado en un ambulatorio de la ciudad de São Paulo – SP, con 117 ancianos, de marzo a noviembre de 2019. Se utilizó la prueba de Morisky Green (TMG) y la escala Brief para recolectar datos del Cuestionario Médico y el Estudio de Resultados Médicos. La correlación entre variables se realizó mediante la prueba de Kruskal-Wallis y la prueba de Mann-Whitney. En todos los análisis comparativos se utilizó un nivel de significancia del 5% y un intervalo de confianza del 95%. **Resultados:** los ancianos que cuentan con apoyo social en las dimensiones emocional e informacional presentaron menores barreras para la adherencia a la medicación (p=0,0216). **Conclusiones:** estos resultados tienen implicaciones importantes para la práctica clínica, ya que las personas mayores más vulnerables y con bajo apoyo social tienen mayores barreras para el uso de medicamentos.

DESCRIPTORES: Cumplimiento de la medicación; Barreras de acceso a los servicios de salud; Apoyo social; Anciano; Envejecimiento.

INTRODUCTION

In recent decades, Brazil has experienced an accelerated demographic transition, resulting from a sudden drop in fertility rates and an increase in population aging. However, the observed epidemiological transition is demonstrated, among other aspects, by the challenges of Chronic Non-Communicable Diseases (CNCD) and the care arising from their risk factors and complications in the course of the disease, mainly related to complications of non--adherence and barriers to the use of medication, as well as the identification of social support to improve the use of pharmacological therapy.[1-3]

In the context of NCDs, there is a need to know the behavior of the elderly population, which can have an impact on health in terms of adherence and social support in the dimensions of medication use, since the conditions in which people live influence their quality of life and health. Therefore, adherence is defined by the World Health Organization (WHO) as "the extent to which a person's behavior, such as taking medication, following a diet and/ or making lifestyle changes, corresponds to the recommendations agreed with a health professional".[2,3]

The literature shows that non-adherence refers to deviations from what was planned between the patient and the health professional in order to carry out the treatment, and includes the underuse, overuse and incorrect use of medication, since there are two general types of non-adherence: unintentional non-adherence, associated with factors such as forgetfulness, lack of understanding or the complexity of the regimen, and intentional non-adherence, which occurs when a person decides not to use the medication as instructed. However, research into medication adherence is

a way of tracking strategies for dealing effectively with chronic health conditions, since the consequences of non-adherence on the ability to take medication can include sub-optimal responses, disease recurrence, adverse events, increased use of health services, unplanned hospitalizations, increased morbidity and mortality, and increased health care costs.[4-10]

The ability to consume medication and adherence are influenced by factors related to consumers, their therapies, their medical conditions, social factors, healthcare providers and factors related to the healthcare system, and can therefore be interrelated, since non-adherence can result from a patient being unable to follow instructions or the difficulty of removing medication from the packaging, these are factors, among others, that can be identified as barriers to adherence to treatment, thus, the inappropriate use of medication has stimulated research to verify the factors related to barriers. In addition, many adverse health outcomes may be avoidable if appropriate measures are taken to identify these risk factors and optimize the ability to adhere to and use drugs.[4-10]

Social support associated with medication adherence and the identification of barriers to adherence requires an understanding of factors related to the patient's understanding, beliefs or abilities; socioeconomic factors; factors related to the health condition of the elderly, such as the presence of comorbidities; factors related to therapy, such as the complexity of the medication regimen; and factors related to the health system or health team, such as communication with health professionals.[11-15]

Social support is characterized by the perception or lived experience of the care, recognition and stigma that other people have of this support, which can be identified as something that refers to the resources made available in situations of need by other

people or institutions. The assessment of social support measures the degree to which interpersonal relationships represent certain functions and provide support for the elderly in times of crisis or readaptation.[11-15]

Social support usually has four dimensions: instrumental support, identified as the provision of tangible help and services; informational support, demonstrated by providing useful information, advice or suggestions to solve problems; evaluative support, inferred by the delivery of information to the other that is useful for self-assessment; and emotional support, which involves the expression of empathy, love, trust and concern.[11-15]

With regard to social support, as one of its critical functions of social relationships, it has health benefits at different levels of care, being offered by an institution or person, and when perceived by the recipient in a positive way, it has been considered a protective factor to assist in the treatment of diseases and has a favorable relationship with health effects, that is, it is not enough to offer support to a person, but it must also be experienced as important and necessary by the recipient so that it can be related to positive effects.[11-15]

As far as this study is concerned, investigating the association between social support variables in the area of ageing and adherence and barriers to the use of medication probably implies a representative factor in the daily lives of the elderly, since the difficulties identified in adherence and the barriers arising from non-adherence to therapy, especially those related to social support, can compromise functional capacity and the imbalance in the treatment of CNCDs. Therefore, the aim of this study was to associate adherence and barriers to adherence to drug treatment with the social support perceived by elderly people attending a specialty outpatient clinic.

METHODS

Cross-sectional and analytical study, carried out in accordance with the recommendations of the STROBE Statement.[16] Research carried out in the city of São Paulo - SP, at the Medical Ambulatory of Specialties (AME) for the Elderly in the Southeast region. The data collection period was from March to November 2019.

The average number of patients seen at the AME is 288 per month. The sample was non-probabilistic for convenience, using a formula of $N = [(z\alpha + z\beta) \div C]^2 + 3$, where R = correlation coefficient, $C = 0.5 \times \ln[(1+r)/(1-r)]$, N = total sample, α = significance level (two-sided) and β = 1-power test. The values adopted were Zα = 95%, Zβ = 80%, R = -0.248.

A pilot sample of 20 patients was carried out and calculated using Pearson's correlation coefficient, which was included in the study. The sample was obtained by correlating the Morisky Green test (TMG)[17] and the Brief Medication Questionnaire (BMQ)[18] to assess medication adherence and barriers to adherence, and the Medical Outcomes Study Social Support Scale (MOS-SSS),[19] to assess social support. Thus, by replacing the values in the formula, 117 elderly people would need to be included. The sample was re-

presentative of the place where the research was carried out, but it is not representative of the Southeast region of the city of São Paulo.

The inclusion criteria were elderly people aged 60 or over, assisted at the AME Idoso Sudeste, able to understand and answer the study questionnaires, with a Mini-Mental State Examination (MMSE) score of more than 13 points for illiterate people and 18 points for those with more than 1 year of schooling and with therapeutic regimens starting with two drugs. All the elderly people included were kept until the end of the study.

The data collection period was from March to November 2019. Sociodemographic and clinical data were collected through an individual interview between the elderly person and the researcher, which were recorded on a structured form with information on age, gender, schooling, marital status, occupation, family income, morbidities and medications in continuous use. All the instruments used in this study were translated into Portuguese and validated. Authorization or a request for an institutional license to use the instruments was also requested.

To assess patient adherence to drug treatment, the TMG was used, an instrument made up of four questions: Do you sometimes have problems remembering to take your medication? Do you sometimes neglect to take your medication? When you are feeling better, do you sometimes stop taking your medication? and Sometimes, if you feel worse when taking your medication, do you stop taking it? The test has a score for high, medium and low adherence to drug treatment. Thus, answering four negative questions means high adherence; when one or two answers are positive, the patient is classified as medium adherence and if three or four answers are positive, the elderly person is in the low adherence group.[17]

The BMQ instrument was used to identify barriers to adherence to treatment from the patient's perspective. It is an instrument divided into three domains: the first checks the patient's behavior in relation to adherence to the prescribed treatment; the second assesses the elderly person's belief in the efficacy of the therapy and reports of unwanted side effects; and the third domain is related to the recall of medication use. Affirmative answers in each of the domains identify barriers to the prescribed treatment regimen, beliefs in the treatment and/or recall in relation to taking the medication.[18]

The social support perceived by the elderly was assessed using the MOS-SSS scale, which was validated, translated into Portuguese and cross-culturally adapted for Brazil,[19] and the variation of the scale scores from low, medium and high was validated in 2018.[12] The instrument has four dimensions of social support, which are: material dimension (four questions) - provision of practical resources and material help, with a score ranging from 4 to 20 and the level of perception ranging from low (score 0 to 6), medium (score 7 to 13) and high (score equal to or higher than 14); affective dimension (three questions) - physical demonstrations of love and affection, with a score ranging from 3 to 15 and the level of perception ranging from low (score 0 to 4), medium (score 5 to 10) and high (score equal to or higher than 11); emotional and information dimension (eight questions) - the ability of the

social network to satisfy individual needs in relation to emotional problems, for example, situations that require secrecy and encouragement at difficult times in life, having people to advise, inform and guide, with a score ranging from 8 to 40 and the level of perception ranging from low (score 0 to 12), medium (score 13 to 28) and high (score 29 or higher); and the positive social interaction dimension (four questions) - having people to relax and have fun with, with a score ranging from 4 to 20 and the level of perception ranging from low (score 0 to 6), medium (score 7 to 13) and high (score 14 or higher). For all the questions, five response options were presented: 1 ("never"); 2 ("rarely"); 3 ("sometimes"); 4 ("almost always") and 5 ("always"). The total MOS scale with the four dimensions ranges from 19 to 95 points and the higher the score, the greater the perception of social support.[12,19]

The variables gender, age, schooling, marital status, employment, individual and family income, number of drugs used daily, drug classes and comorbidities were analyzed using descriptive statistics, showing frequencies, means, standard deviation and medians and variation (minimum and maximum). The data collected was stored in an electronic spreadsheet using Microsoft Office 2016 Excel® and analyzed using descriptive statistics using the Statistical Package for the Social Sciences (SPSS), version 19.

The Kruskal-Wallis test was used to correlate the MOS-SSS with the TMG and the Mann-Whitney test was used to compare the barriers with the BMQ and the MOS-SSS. All comparative analyses used a significance level of 5% (p≤0.05) and a 95% confidence interval.

The study was carried out after analysis and approval by the Research Ethics Committee of the Federal University of São Paulo (UNIFESP) under CAAE: 03691418.3.0000.5505, opinion number 3.165.580 in 2019, after the agreement of the outpatient clinic and in accordance with resolution 466/12 for research with human beings of the National Health Council (CNS).[20] The elderly were previously informed about the research and voluntarily consented to participate by signing an Informed Consent Form (ICF). The secrecy and confidentiality of the information collected was guaranteed.

RESULTADOS

The total number of elderly people interviewed was 117, their average age was 71.5 years, 108 were female, 44 were widowed, with an average of 6.5 years of schooling, 94 were retired or pensioners and had a family income of 1.85 minimum wages. The average number of medications in use was 5.8, the most commonly used being antihypertensives (72.6%), statins (56.4%), oral antidiabetics and insulins (40.6%) and painkillers (45.3%).

With regard to adherence to treatment, 44.4% of the participants had low and medium adherence to the use of drugs, respectively, and 11.1% had high adherence to medication. Regarding barriers to medication adherence, 72.6% in the behavior domain and 65% in the beliefs category did not present barriers to medication adherence, but in the recall domain, 91.5% presented barriers to the use of pharmacotherapy.

In relation to the scale of social support perceived by the elderly, the total score was 70.87 and in the emotional and information dimensions they had an average score of 29.61, so it can be seen that the higher the score on the scale, the greater the perception of social support. The elderly had a high level of perceived social support in the affective dimensions, 55.6% of the sample, and in the material dimension, 64.1% of those interviewed.

Adherence to medication, as measured by the TMG, showed no significant relationship between the social support perceived by the elderly in the material (p=0.9816), affective (p=0.1762), emotional and informational (p=0.2645) and positive social interaction (p=0.1559) dimensions, i.e. in this study adherence to medication was not influenced by the social support perceived by the elderly (p=0.2625). (Table 1)

Table 2 shows a statistically significant relationship between the behavioral barriers to medication use in relation to the emotional/informational domain of social support perceived by the elderly (p=0.0216), i.e. those who have social support in the emotional and information dimensions will have lower barriers to adherence to medication use.

Table 1 – Correlation between adherence to drug treatment and perceived social support by elderly people treated at a Specialty Medical Outpatient Clinic. São Paulo, SP, Brazil, 2019. n=117.

	TMG			Total	p-value
	Low adherence	Average membership	High adhesion		
MOS-SSS					
Mean (SD)	68,46 (18,48)	71,63 (15,93)	77,46 (19,08)	70,87 (17,52)	0,2625
Minimum-Maximum	38-95	31-95	45-95	31-95	

Material					
Mean (SD)	14,9 (4,97)	14,96 (4,68)	15,08 (5,2)	14,95 (4,82)	0,9816
Minimum-Maximum	8-20	4-20	8-20	4-20	
Affective					
Mean (SD)	11,48 (3,5)	12,17 (3,73)	13,15 (3,58)	11,97 (3,62)	0,1762
Minimum-Maximum	3-15	3-15	6-15	3-15	
Emotional/Information					
Mean (SD)	28,31 (9,03)	30,15 (9,19)	32,62 (9,5)	29,61 (9,17)	0,2645
Minimum-Maximum	16-40	16-40	16-40	16-40	
Positive social interaction					
Mean (SD)	13,77 (4,97)	14,25 (4,55)	16,62 (3,95)	14,3 (4,73)	0,1559
Minimum-Maximum	4-20	4-20	8-20	4-20	

Table 2 – Correlation between barriers to adherence to drug treatment and perceived social support by elderly people attending a Specialty Medical Outpatient Clinic. São Paulo, SP, Brazil, 2019. n=117.

	MOS-SSS Mean (Standard Deviation MOS-SSS Mean (Standard Deviation)			
BMQ	**Material**	**Affective**	**Emotional/ Information**	**Positive social interaction**
Behavior				
No barrier	14,4 (4,6)	12,4 (3,4)	32,7 (8,4)	14,4 (4,6)
There's a barrier	15,1 (4,9)	11,9 (3,6)	28,4 (9,2)	14,3 (4,8)

p-value*	0,3910	0,4404	0,0216*	0,8570
Beliefs				
No barrier	14,5 (4,9)	12 (3,7)	29,8 (9,2)	14 (4,7)
It has a barrier	15,8 (4,4)	11,9 (3,5)	29,2 (9,2)	14,8 (4,7)
p-value*	0,1902	0,7278	0,7604	0,3739
Recordação				
No barrier	14,4 (5,0)	13,2 (3,7)	32 (10,6)	16,4 (3,5)
It has a barrier	15 (4,8)	11,86 (3,6)	29,3 (9,1)	14,1 (4,7)
p-value*	0,6534	0,1781	0,3746	0,1466

Note: correlation test: *Mann-Whitney =p≤0.05.

DISCUSSION

The main findings of this study were that the elderly had low and medium adherence to medication, but there was no association between adherence to medication and the social support perceived by the elderly. Barriers to medication adherence were prevalent in the recall domain, however, in the behavioral and belief categories, participants had no barriers to adherence. In addition, the study identified a relationship with lower barriers to medication adherence in the behavioral domain, between perceived social support in the emotional and information dimensions. Thus, it can be seen that the population's care strategies in the area of aging, when evaluating the improvement of adherence and identifying the barriers to medication use, in the behavioral and recall categories, are directed towards social support with a focus on actions in the affective dimensions, positive social interactions and those related to the emotional and informational area.

Elderly people with a high perception of social support in the emotional/informational dimension had lower barriers to adherence to medication use. The use of multiple medicines makes it difficult for elderly people to adhere to their medication, and the rates of low adherence to medication are worse in the geriatric population than in the general population. Forgetfulness can occur as a result, among other factors, of polypharmacy, mental disorders and cognitive impairment, which makes recognition and memorization difficult.[21-23]

Barriers to medication adherence were higher in the recall domain than in the behavioral and belief domains for those elderly people who did not present barriers. Therefore, having greater knowledge about the prescribed medications, as well as the behaviors required to follow the treatment, can enable greater adherence to medication, and the belief that medications are important for maintaining health can favor adherence. Positive beliefs about medication may also be related to the perception of their benefits, as the elderly use them and experience improvements in their health.[21-23]

Thus, a cross-sectional study carried out at a Center for Elderly Care at the Federal University of Pernambuco (UFPE) interviewed 150 elderly people with DM2, of whom 78.7% reported using medication regularly and the main variables related to better medication adherence were self-perception of health (p=0.038), beliefs related to the use of medication to control DM2 (p=0.001), understanding the explanations for the pathology (p=0.005) and the professional responsible for providing guidance (p=0.028). Beliefs related to the use of DM2 medication were statistically significant in relation to full adherence and non-adherence or partial adherence, i.e. elderly people who believed it was important

to use medication properly to control DM2 were around nine times more likely to adhere fully and around 18 times more likely to adhere partially to treatment.[24]

Similarly, a cross-sectional study carried out in the city of Riyadh, Saudi Arabia, with 422 elderly people from the community, found that 64.9% of them had high adherence to medication, while 21.3% had good adherence to the use of drugs and 13.3% were partially adherent. In addition, the results showed statistical differences in medication adherence between retired and employed patients (p=0.05), women and men (p=0.035) and between family help in administering medication and the level of adherence (P=0.001).[5] This demonstrates the importance of sociodemographic factors, such as occupation and gender, and the dimension of social support, such as family, in relation to medication adherence. This reinforces the hypothesis that the lower the drug adherence rates, the lower the social support and the greater the barriers, especially at the behavioral level.

Among the facilitators of medication adherence, the literature has identified scheduling the intake of medication, family support, having the support of a health professional, in the event of forgetfulness, having someone to refer to as a reminder, observing a family member with complications from the disease due to not adhering to medication, having confidence in the health service and adequate follow-up, having access to medication without a prescription, perceiving an improvement in quality of life and a reduction in complications from the disease after starting treatment, having an awareness of the importance of using medication, expecting better results, demonstrating experiences with positive emotions, such as having one day a week to eat sweets, taking part in social groups, and going to monthly appointments as closer support for the health professional.[25,26]

The barriers to adherence identified were: the negative experience of hypoglycemia symptoms, comments from the family about the disease, the lack of a bond with the health professional, the failure to provide family members with knowledge, especially about side effects, mechanisms of action and interactions with other drugs, health education about adherence, especially those related to management when there are changes in the daily routine, stress, managing multiple medications, the pharmacy service, medication side effects, memory, cognition and forgetfulness.[25]

The affective bond is positively associated with adherence to drug treatment, so family, friends and health professionals are transforming agents of care by developing actions that guide and strengthen adherence to self-care, including drug treatment. Access to information has a positive impact on adherence to treatment, but putting health professionals' recommendations into practice is still a problem.[21-23]

The elderly had a good perception of social support, and a high level of perceived support was identified in all five dimensions of the scale, especially in the affective and material dimensions. Social support is associated with better health, health-promoting behaviors, functional capacity, better treatment management through its influence on treatment decisions and reduced emotional stress.[21-23]

Therapeutic adherence and social support are related to the importance people attach to the perceived social support they receive and when they receive it, since the association between social support and adherence to medication depends on the individual's perception of the environment in which they live and their health-related quality of life. Both urban vulnerability and health-related quality of life are complex and multidimensional concepts conditioned by the subjective perception of the person, reflecting aspects linked to the physical and social environment and individual experiences of life and health. It is therefore essential to integrate aspects related to social support into clinical practice in order to improve the care of elderly people with multimorbidities, while also making it possible to individualize their treatments and increase their involvement in self-care.[27-28]

In this sense, adherence to medication and the barriers to non-adherence are a major health concern, and it is important to articulate actions to track the problem and suggest improvements, since the lack of adherence continues to represent a problem for health professionals who need better information to understand the reasons that cause adherence and non-adherence to medication, the barriers to therapy and social support, in the social, affective, emotional/informational dimensions and positive social interactions, with the aim of improving the use of medication among elderly patients.[4]

Due to the heterogeneous nature of interventions related to medication adherence, the literature has categorized them into three main groups: educational interventions, behavioral interventions and educational and behavioral interventions. A variety of simple to complex behavioral and educational strategies, provided alone or in combination, have been tested to improve consumers' medication-taking ability and adherence: the use of alarms, beepers, calendars, diaries, reminder charts, medication lists, large print labels, packaging changes, pill boxes, verbal or written agreements, adherence monitoring with or without feedback, reminders by mail, telephone or e-mail, medication self-administration programs, simplification of medication regimens, skills development, supervised or group, and follow-up by home visit, scheduled clinic visit or video/teleconference.[4]

CONCLUSIONS

The results of this study have important implications for clinical practice, since elderly people with a low perception of social support were more vulnerable to presenting barriers to medication adherence. Identifying this population enables nurses to train the support network to promote care and well-being for the elderly. Comprehensive care for the elderly encompasses the social support they receive, so including an assessment of perceived social support when caring for the elderly can help track down those who need to be prioritized and targeted for guidance on medication adherence, since this study found that lower social support was associated with lower medication adherence.

Therefore, this study identified that social support should be assessed and considered by health professionals when caring for

the elderly, since it was associated with barriers to medication adherence. Furthermore, it can be an ally in caring for the elderly, such as adherence to medication treatment, avoiding disease complications, hospitalizations and improving the quality of life of this population.

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