

Behavior of elderly in use of drug therapy

Ana Paula Correia Marques¹, Rosemeire Dos Santos Vieira², Geraldo Mota de Carvalho^{3*}, Vanessa Vieira Hornink⁴, Ana Júlia Aguilera Lacerda e Silva⁵, Gislaïne Eiko Kuahara Camiá⁶, Maria do Carmo Querido Avelar⁷

^{1,2,3,4,5,6,7}School of Nursing of the Santa Casa de Sao Paulo School of Medical Sciences, Work developed in Santa Casa de Sao Paulo School of Medical Sciences. Rua Dr Cesário Motta Jr 61 – São Paulo/SP, Brazil.

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ABSTRACT

Objectives: To identify which drugs are used by older adults, how these are taken and the treatment course, and to relate drugs used with medical prescription.

Method: An exploratory, descriptive field study with a quantitative approach was conducted. A total of 25 elderly (aged > 60 years) residents of a Shelter Center who were users of medications with or without medical prescriptions were assessed. Research ethics guidelines were observed and the study approved under CEP/CAAE permit no. 99054818.0.0000.5479.

Results and Discussion: The sample comprised 25 respondents, 80% males, 56% aged 60-69 years, and 52% with incomplete 1st grade education. Most participants (88%) had an income of one minimum salary and 20% were engaged in paid work. Overall, 100% of interviewees took anti-hypertensive agents and 80% used diuretics concomitantly; under half took medications at the prescribed times. Regarding expenditure on medications, 84% spent R\$ 1.00-50.00, 68% had prescriptions for all medications, while only 52% took the correct dose. All cases of wrong drug dosages involved doses that were too high. For dispensing, 68% acquired medications from government-funded pharmacies. Drugs were taken appropriately by 76% of the elderly, while the remainder took drugs together with fluids or foods, potentially change their desired pharmacological action.

Conclusions: The main drug groups taken were anti-hypertensives, diuretics, hypoglycemics and unprescribed analgesics. Drugs were taken improperly, favoring interactions and alteration in drug actions. Many participants took medications without medical prescription. With regard to course of treatment, there were cases of early treatment discontinuation (antibiotics).

Key words: Drug Therapy–Aged–Primary Health Care.

1 INTRODUCTION

The steady growth in the elderly population is occurring worldwide, including in Brazil. The Brazilian census of 1872 estimated the general population at 9,930,478 people. In 1970, the census results showed this population had grown to 93,139,037, while figures for 2010 revealed a population of 190,755,799 (Simões, 2016).

According to Simões (2016), life expectancy at birth in Brazil's major regions rose sharply between 1930 and 2010. In the southeast of the country, life expectancy at birth in 1930-1940 stood at 43.5 years, increasing to 75.6 years in 2010.

The Brazilian Institute of Geography and Statistics (IBGE) estimates that the number of people aged ≥ 60 years is set to rise from 19.6 million to 66.6 million between 2010 and 2050, representing an increase of 239% (Simões, 2016).

The growth in the Brazilian elderly population will be accompanied by an increased prevalence of degenerative chronic diseases caused, among other factors, by a lack of health infrastructure and policies to promote successful aging with quality of life, and also by unhealthy habits, lifestyles and working conditions (Mendes, 2010).

Population aging is a global reality, despite significant disparities across different regions as a result of differences in general living and working conditions, besides factors such as improved health and hygiene, decrease in mortality rates for all age groups, low fertility, and improvement in the health status of the population, among others. The process can also differ between one person and another (Simões, 2016).

According to Simões, physiological, socioeconomic, lifestyle, sedentarism, education and planning contribute to speeding up or delaying aging and chronic diseases in this age group.

Aging is defined by the Ministry of Health as “a sequential, individual, cumulative, irreversible, universal, non-pathological process of deterioration of a mature organism, inherent to all members of a species, such that time renders it less able to resist stress from the environment which, in turn, increases likelihood of death” (Brasil, 2006).

According to Birren and Schroots (1996), aging can be divided into primary, secondary and tertiary. Primary aging affects all post-reproductive human since this a genetic characteristic typical of the species. The individual in this state is subject to various factors mediating the aging process, such as exercises, diet, lifestyle, event exposure, education and social position. Secondary or pathological aging denotes diseases that are not part of the normal aging process. These illnesses range from cardiovascular or brain lesions to some types of cancer.

According to Papaléo Netto (2002), secondary aging is derived from cultural, geographic and chronologic factors.

Further, Birren and Schroots (1996) define tertiary or terminal aging as the period characterized by major physical and cognitive decline, caused by the cumulated effects of aging, and also by diseases promoted by lifestyle during the process.

This increase in life expectancy and prevalence of chronic degenerative disease, a consequence of an aging process with numerous deleterious habits, creates the need for increased production, availability and use of drugs to treat or attenuate diseases.

In Brazil, an estimated 23% of the elderly population use around 60% of all medications produced in the country (Bermudez, 1995). The elderly population typically takes several medications concomitantly, characterizing “polypharmacy” and, when administered incorrectly, can lead to more serious problems (iatrogenic) in elderly individuals (Brasil, 2006).

The term “polypharmacy” is used to describe the situation in which several medications are prescribed at the same time, and is common clinical practice in treatment of older adults (Brasil, 2006).

Clinical practice centered on disease and prescription of multiple medications, together with the practice of self-medication, can place the elderly population at unnecessary risk. This problem is compounded by other factors, such as scant or no information on drug effects, drug interactions, the need for strict adherence to the treatment regimen (dosages, times/frequency, treatment course), or the wrong combination of drugs which can cause a series of undesirable effects for elderly patients (Brasil, 2006).

The Ministry of Health alert that additional problems exist, including the challenges of low treatment adherence, toxicity of a number of drugs, risk of falls associated with the use of medications, among others (Brasil, 2006).

Aging is also associated with an increased risk of adverse reactions to specific drugs that are independent of polypharmacy or differences in pharmacokinetics, such as in the case of renal failure (Johnson, 1998).

Adverse reactions can be regarded as any response to an active principle that is harmful and unintentional that occurs at dosages normally used in humans for prophylaxis,

diagnosis and treatment of diseases, or for modifying a physiological function (Anvisa, 1999).

It is estimated that adverse drug reactions are the fourth leading cause of death, where approximately 5-10% of hospital admissions are related to the management of patients suffering from drug-related toxicity, thus constituting an increasing risk for the elderly population (Lazarou et al., 1998; Einarson 1993, Atkin e Shenfield; 1995, Mannesse et al., 2000; Mjorndal et al., 2002).

This situation points to the need to study the behaviors of elderly with respect to the drug therapy required. Thus, this research aims to identify the drugs used by older adults, how these are used and treatment course, and to relate drugs used with medical prescriptions.

2 METHOD

An exploratory descriptive field study with a quantitative approach was conducted at the Special Shelter Centers for the Elderly located in the central region of São Paulo city, run by the care organization “Serviços Assistenciais Senhor Bom Jesus dos Passos”, a philanthropic institution situated at Rua Fernando Caldas, 149 - São Paulo, Brazil.

The study population comprised older adults aged >60 years, users of the Shelter Centers run by the Senhor Bom Jesus dos Passos Care Services, who were in use of one or more drugs with or without medical prescriptions.

The sample consisted of 25 older adults who expressed an interest in taking part voluntarily in the study and signed the Free and Informed Consent Form, in compliance with the ethical standards provided for by resolution CNS 466/2012 stipulating the guidelines and standards governing research involving humans in Brazil (Brasil, 2012).

Inclusion criteria were individuals aged > 60 years in use of drugs or self-medicating, with or without medical prescriptions. Subjects aged <60 years; elderly not in use of drug treatment or not self-medicating, those unable to report the name of the drugs or who refused to take part in the study were excluded.

All of the subjects were approached and invited to take part, informed about the study theme, objectives and data handling. Individuals who agreed to participate in the study were assured anonymity regarding any information they provide and signed the Free and Informed Consent Form in accordance with Law nº 466/2012 (Brasil, 2012). Study participants were given a copy of the form containing this same information. It was made clear to participants that they could withdraw their consent at any time during the course of the study without repercussion.

After the ethical procedure outlined above, the study author applied a 3-part questionnaire: the 1st part collected data on the sociodemographic characteristics of the subjects, including sex and age, besides times they frequented the Shelter Centers; the 2nd part gathered information on use of drugs, how these are used, treatment course, at what times and action in the event of forgetting to take them; while the 3rd part contained information obtained from

medical records and listed drugs prescribed and patient diagnosis in medical records.

Data collection was performed after project approval by the Research Ethics Committee of the Hospital da Irmandade de Misericórdia da Santa Casa São Paulo, under CEP/CAAE permit no. 99054818.0.0000.5479.

The data obtained during data collection were presented and analyzed as relative values and expressed in absolute numbers and percentages in the form of tables and a chart.

3 RESULTS

A total of 25 elderly users of a Special Shelter Center for Homeless Elderly located in the downtown region of São Paulo city were interviewed. The data collected at interview were analyzed quantitatively with a focus on addressing the study objectives.

Describing the characteristics of the study subjects is crucial to elucidate their behavior regarding drugs use, helping to guide more effective and efficient interventions.

Respondents were predominantly (80%) males (Table 1). Among participants, 56% were aged 60-69 years, 48% were born in States of the Northeastern region and 40% in the Southeastern region.

Regarding education, 52% of the study participants had not concluded 1st grade and 56% were single. These results elucidate the profile of the elderly users of the Special Shelter Center for Homeless Elderly.

Most respondents (88%) lived on one minimum wage, but this income was derived from a pension in only 28% of the elderly (Table 2). Only 20% of the participants were engaged in paid work.

With regard to time spent at the shelter, 32% stated they stayed all day, but most (68%) did not stay at the shelter, despite not being employed in paid work.

The occupations of users included baker, cook (2), audiovisual technician, necropsy technician, film maker, plumber (2), engineer, sugarcane harvester, tailor, building laborer (2), electrician (2), driver (2), dispatch checker, plastic artist, building foreman, domestic, secretary, assistant, crane operator, doorman, and nursing assistant.

Mapping the behavior of elderly regarding drug use allows strategies to be devised for improving treatment adherence (Chart 1).

The drug groups used by the elderly reflect the medications taken for the most prevalent conditions. An alarming finding was that 100% of respondents took anti-hypertensive agents and 80% used diuretics concomitantly (Table 3).

With regard to taking drugs at the times prescribed, less than half of the elderly interviewed took medications at the right times.

Concerning prescriptions, 68% of the participants had a prescription for all drugs being taken, whereas 24% had some prescribed medications plus others which they took by recommendation of laypersons or via self-medication.

In terms of expenditure on medications, 84% of interviewees spent 1.00-50.00 Brazilian reais (R\$), and 12% spent

R\$ 51.00-100.00. This amount may indicate the use of other unprescribed drugs, given that most of the prescribed medications can be acquired free of charge from government-funded pharmacies at Primary Health Units (UBS).

Adequate course of medications was defined when drugs, such as anti-inflammatories and analgesics, were taken according to the therapeutic regimen prescribed or recommended in the posology section of package inserts.

Some other drugs were cited, albeit at a low frequency, including antibiotics, hormones, creams and topical antifungal medications.

With regard to dosages of drugs used by the elderly, 52% used the correct dose stated in prescriptions or the posology of the drug. All cases of wrong drug dosages taken involved doses that were too high.

Results showed that 68% of the elderly collected their medication from the government-funded pharmacies of Primary Health Units, whereas 28% collected the medications prescribed and also purchased drugs from private pharmacies.

Drugs were taken appropriately by 76% of the elderly, but many users took drugs together with fluids or foods, potentially changing their desired pharmacological action.

Table 1. Distribution of study sample according to sex, age, birthplace (by region), education and marital status. São Paulo, Brazil, 2018

Demographic Characteristics	%	
Gender		
Female	5	20
Male	20	80
Total	25	100
Age		
60 – 69 years	14	56
70 – 79 years	9	36
≥ 80 years	2	8
Total	25	100
Birthplace		
North	–	–
Northeast	12	48
Central	–	–
Southeast	10	40
South	3	12
Total	25	100
Education		
Illiterate	2	8
1st Grade Complete	1	4
1st Grade Incomplete	13	52
2nd Grade Complete	3	12
2nd Grade Incomplete	1	4
3rd Grade Complete	2	8
3rd Grade Incomplete	3	12
Total	25	100
Marital Status		
Single	14	56
Married	2	8
Divorced	3	12
Widowed	4	16
Separated	2	8
Total	25	100

Table 2. Distribution of study sample according to income, current paid work and pension. São Paulo, Brazil, 2018

Demographic Characteristics	%	
Income		
1 Minimum Wage	22	88
2 Minimum Wages	1	4
No income	2	8
Total	25	100
Current Paid Work		
Yes	5	20
No	20	80
Total	25	100
Pension		
Yes	7	28
No	18	72
Total	25	100

Table 3. Distribution of participants according to drugs use. São Paulo, Brazil, 2018.

Aspects of drugs use	%	
Drug taking times		
Adequate	11	44
Partially adequate	8	32
Inadequate	6	24
Total	25	100
Presence of medical prescription		
Adequate	17	68
Partially adequate	6	24
Inadequate	2	8
Total	25	100
Expenditure on medications		
R\$ 1.00-50.00	21	84
R\$ 51.00-100.00	3	12
≥ R\$ 101.00	1	4
Total	25	100
Treatment course		
Adequate	18	72
Inadequate	7	28
Total	25	100
Medication dosage		
Adequate	13	52
Inadequate	12	48
Total	25	100
Place of drug dispensing		
Primary Health Unit	17	68
Primary Health Unit + Private Pharmacies	7	28
Private Pharmacies	1	4
Total	25	100
Drug taking regimen		
Adequate	19	76
Inadequate	6	24
Total	25	100

4 DISCUSSION

The fact that most of the respondents were male is directly related to behaviors typically seen in men, namely: substance dependence (alcohol and other drugs), unemployment, immigration/migration, domestic violence and family breakdown, among others (Natalino, 2016).

This profile is also related to the birthplace of the population studied: 48% of the elderly were from the States of the Northeast.

Table 4. Drug groups most used by elderly users of Special Shelter Center for Homeless Elderly. São Paulo, Brazil, 2018.

Medications by pharmacological action	No. of elderly
Antiaggregants	14
Anti-hypertensives	25
Bronchodilators	7
Oral Hypoglycemics	7
Diuretics	20
Analgesics	14
Corticosteroids	6
Anticonvulsants	5
Anti-depressants	3
Antipsychotics	4
Antisecretory	5

The low educational level of the participants constitutes a further vulnerability component. Low education has always been associated with worse status in the job market and lower income, and also with difficulty accessing information and reassigning meaning and comprehension.

These factors create a vicious circle, since poor position in the labor market during adult life means the individual has lower economic productivity or depends on Social Welfare Benefits provided for by the Welfare System Act (LOAS, 1993). This is corroborated by the fact that only 28% of the elderly were retired.

Although only a low number of the elderly were engaged in paid work, 68% reported not staying at the shelter during the day.

These behaviors also influence the improper taking of medications, because being outside the shelter for most of the day leads to nonadherence to prescribed times and doses of medications, negatively impacting the efficacy of the drug treatment.

Physiological changes associated with the aging process may hamper diagnosis, but the study results indicate the adoption of a disease-centered health care model and the use of drugs as a definitive solution for good health. This health care philosophy leads the population to seeking care only when health has declined.

This also promotes an even more common behavior, in the form of treatment discontinuation upon resolution of symptoms, where medication taking times are no longer observed when symptoms cease.

Another behavior identified in the population study was self-medicating, visits to many different doctors, and similar prescriptions. One of the respondents was in daily use of 31 drugs, with some containing the same active principle.

There is a dearth of information on medications among both health professionals and users, where these are not explained clearly or impartially. Effective drugs promotion, accompanied by the necessary information for users, avoids selection of the wrong medications, preventing adverse reaction, bacterial resistance, unnecessary costs and self-medication.

With regard to the medication treatment course and doses used, the data is alarming, showing continuous and improper use of some drugs that can be more harmful to

the organism of elderly than non-treatment.

The majority of the respondents relied on the National Health System (SUS) for treatment and therefore drugs were dispensed by the Primary Care Units (UBS).

The study results revealed a total lack of knowledge held by the elderly on possible interactions between the medications and foods consumed.

5 CONCLUSIONS

The results showed the prevalence of a care model centered on treating disease and drug therapy.

The importance of the role of health professional in monitoring drug therapy in elderly patients is clear, helping to reduce inappropriate medication use and improve treatment adherence.

Monitoring drug therapy in elderly is fundamental to promote rational drugs use, contributing to the process of educating users about their drugs therapy.

The role of nurses should focus on promoting the health of elderly, recognizing their behaviors, providing advice, guidance and continuous education on healthy life habits, including the rational use of drugs. This measure can better prepare elderly to deal with possible collateral effects and drug interactions, while enhancing treatment adherence.

Health services have few Geriatric and Gerontology specialists available. Consequently, elderly seek more accessible professionals from many different specialisms that are not always aware of the drug therapy characteristics specific to elderly patients. There is a lack of information and knowledge on elderly healthcare, where this precludes integrated treatment of this group and leads to irrational use of drugs. [1–16]

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