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## THE COMPREHENSION OF MEDICINAL THERAPY BY ELDERLY IN THE POLYPHARMACY SITUATION IN TWO COMMUNITIES OF RECIFE - PERNAMBUCO

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### ABSTRACT

**Introduction:** The elderly, because they are more susceptible to develop chronic diseases, seek health services and medications more often, which predisposes this population to the problems related to them. Add to this the possibility of illiteracy, which may compromise understanding and lead to incorrect use of the drug. **Objective:** To evaluate the understanding of drug therapy by the elderly who are in a situation of polypharmacy. **Methods:** A quantitative, cross-sectional and descriptive study was carried out with individuals  $\geq 60$  years old who used 2 or more drugs in two communities in Recife-PE, from August to October 2016. The method used followed the principle of analysis, which verifies the agreement between the respondent's response and the information contained in the medical prescription, and classifies the users through scores: less than six points - level of insufficient understanding; from six to eight – regular; above eight points, good level. **Results:** The elderly had low levels of schooling, 28% were illiterate. The two communities are made up of 72% and 48% of the elderly with insufficient understanding. **Conclusion:** The importance of the pharmacist as a member of the multidisciplinary team, who should guide and ensure that information is passed on to the user in a safe and efficient manner, through educational actions that promote knowledge about the use of medicines.

**Keywords:** polypharmacy, illiteracy, family health

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## INTRODUCTION

The aging process leads to changes in physiological conditions, which causes the elderly to seek more for health services, to be more exposed to hospital admissions and to use multiple medications.<sup>[1]</sup> Usually, they use two to five medications prescribed by doctors, but it is common in the literature to find studies that report prescriptions of inadequate doses, with no therapeutic value and still the practice of self-medication without accompaniment of a qualified professional.<sup>[2]</sup>

This practice may increase the risk of adverse reactions, drug interactions, greater probability of errors in medication use, and difficulty in adhering to treatment.<sup>[3]</sup> Polypharmacotherapy is a common habit among the elderly, where the complexities of drug regimens increase the difficulties for self-administration of prescribed drugs. Added to this is the lack of understanding, forgetfulness, decreased visual acuity and manual dexterity that occur in the elderly, this event can cause side effects and non adherence to drug therapy.<sup>[4]</sup>

Polypharmacy is defined as the concomitant use of two or more drugs, the unnecessary use of at least one drug, or the time of excessive consumption.<sup>[5]</sup> It can be classified as mild, moderate and severe. It is considered mild when two to three drugs are used, moderate from four to five and severe over five medicines.<sup>[6]</sup>

According to the National Household Sample Survey (PNAD), published by IBGE in 2009, Brazilian elders still maintained high rates of illiteracy, since 32.2% could not read and write, and the functional illiteracy rate was represented by (51, 7%).<sup>[7]</sup> In this sense, illiteracy can induce the misuse of drugs, especially in the elderly, as they make constant use of various medications. Thus, for lack of understanding, they generally cannot decode and interpret the linguistic signs contained in medical prescriptions and drug labels.<sup>[8]</sup>

Knowledge about the drug is extremely important for adherence to the treatment,

because when it is understood the information related to the dose, indication, duration of treatment among others, it is probable that the results for which it was indicated are reached. The treatment will only be effective when the patient has the necessary information and follow the guidelines recommended in the professional prescription.<sup>[9,10]</sup> The elderly should know the dosage, frequency and medications they are using, at a minimum.<sup>[11]</sup>

Since the use of multiple medications is a current and relevant phenomenon, especially in elderly populations, this study aims to analyze the level of understanding of elderly residents in two communities with social, economic and housing differences, and who are in a situation of polypharmacy regarding drug treatment.

## METHODOLOGY

This is a quantitative cross-sectional study with a descriptive character, carried out using a questionnaire structured for this purpose, carried out with individuals  $\geq 60$  years old who use 2 or more drugs, living in two communities in the city of Recife, Pernambuco, from August to October 2016.

The study was carried out in the Housing Complex of Cordeiro (CHC) and Vila União (VU) specifically in the community of Vila União. They are places of different realities, in VU we found higher values of family income, houses are more structured, and people are more educated. In CHC the reality is of contrast, there is urban violence, discrimination, abandonment, drug trafficking and prostitution.

Considering that in the two units there are 340 elderly people (160 in VU and 180 in CHC), projecting 10% as a sample calculation, the final sample consisted of 100 individuals (53 individuals in VU and 47 in CHC).

The following inclusion criteria were used: age  $\geq 60$  years, belong/reside in the community, use  $\geq 2$  medications and agree to participate in the study, with the signing of the Informed Consent Term (TCLE). Those aged  $<60$  years old, living

outside the assigned area, not agreeing to participate in the study, being bedridden and after three attempts were not found at home.

Data collection was done after identifying the elderly through medical records and information provided by the Community Health Agents of the Family Health Unit (FHU) of the communities for each population studied. After that, a visit was made to the elderly person's home and the questionnaire adapted to the needs of the current research was started, consisting of two blocks of questions: socioeconomic profile and understanding of drug therapy.

The method used to analyze the level of understanding of the elderly on drug therapy followed the principle proposed by Silva et al.,<sup>[10]</sup> and Ceccato et al.,<sup>[12]</sup> in which the items considered were: drug name, dose, frequency of administration, indication, adverse drug effects and duration of treatment.

The correct answers were considered when the elderly reproduced the information of the medical prescription. The following punctuation was adopted for each correct item: (a) "name of the medicinal product", "dose" and "frequency of use" equal to two points each; (b) "indication of the medicinal product", "duration of treatment" and "adverse effects" was assigned one. Zero was assigned when respondents were unsuccessful in responding to a particular item or responding in the wrong way.

Finally, the classification obeyed the following scores: more than 8 - good level (user is able to use the medication safely in any situation); 6 to 8 - regular level (the user must use the medication safely and in ideal conditions, without any type of intercurrent during the treatment); less than 6 - insufficient level (user cannot use medication safely). The classification of the level of understanding in "insufficient", "regular" and "good" proposed works as an indicative to evaluate the conditions of use of prescription drugs safely.

Data were typed in double-entry and verified using the Validate program of Epi-Info software

version 7.0 to check consistency and validation of information. The analysis was performed with the aid of SPSS software version 13.0, considering as significant associations  $p$  value  $<0.05$ . The chi-square test was used.

The Ethics Committee approved the work for Research (CEP / CCS / UFPE) CAAE: 55813916.1.0000.5208, obeying the CNS Resolution 466/2012 of the Ministry of Health.

## RESULTS AND DISCUSSION

Regarding drug use (Table I), 55% of participants reported daily between 1 and 4 drugs (mean  $4.62 \pm 2.11$ ), 68% know what medicines are for, 52% do not know the names of medicines. It was also observed that 59% of the elderly follow the prescribed prescription time, 66% know the amount they have to take, 70% keep the medication even though they feel better and 80% of the elderly are not aware of the adverse effects of the medication.

The level of knowledge about drug therapy when associated with the geographical area (Table III) revealed that 72% and 48% of CHC and VU, respectively, presented an insufficient understanding level, 26% and 46% (CHC and VU respectively) regular level and only 2% and 6% good level, and this association was statistically significant ( $p=0.04$ ). Regarding schooling, it was observed that the elderly with less years of study had the worst levels of comprehension and less than 20% presented good comprehension level, being statistically significant.

The sociodemographic characteristics of the study participants are shown in Table II. Regarding schooling, 28% referred to illiterates.

It was found that 55% of the elderly used between 1-4 medications, which characterizes moderate polypharmacy, values are lower than the study of Bezerra et al.,<sup>[13]</sup> who obtained 67.8% used between 1-4 medications. The average found in our study was 4.62, slightly beyond the data of Gautério et al.,<sup>[16]</sup> out of 3.7 drugs. It was observed that some of the interviewees did not know the name of the drug

and the adverse effects, this can be explained as a result of the low level of education presented by the group studied. Another reason would be the nomenclature of drugs / trade names for the same drug which makes it difficult to memorize and pronounce. From the moment the user can not identify the drug by name, when asked by a professional about which medicaments have already been used and which ones are used, may interfere with the treatment.

Early discontinuation or prolongation of treatment makes it possible to develop problems related to the effectiveness or safety of drugs, respectively. [14] About 70% of the elderly have information about the duration of treatment, since when asked if they ever stopped the medication after feeling better, most said they did not. Data of the duration of treatment are found in the literature and similarly to our study, it was found that users do not stop taking their medication after feeling better. [9,15,17]

**Table I.** Distribution of the elderly according to drug use, Recife-PE, 2016 (n = 100).

SPECIFICATION	%	
How many medications do you take?	1-4	55
	≥ 5	45
Do you know what the drug is for?	Yes	68
	No	32
Do you know the name of the drug?	Yes	48
	No	52
Do you follow the recommended schedule on the prescription?	Yes	59
	No	41
Do you know the recommended dose to take the drug?	Yes	66
	No	34
Do you have stopped taking the medicine after feeling better?	Yes	30
	No	70
Do you have knowledge of the adverse effects of medication?	Yes	20
	No	80

**Table II.** Sociodemographic characteristics of the elderly according to geographical area, Recife - PE, 2016.

SPECIFICATION	Geographical area				TOTAL	
	CHC <sup>1</sup>		VU <sup>2</sup>			
	n	%	n	%	n	%
Education						
Illiterates	18	64,3	10	35,7	28	28,0
Fundamental incomplete	13	54,2	11	45,8	24	24,0
Fundamental complete	7	35,0	13	65,0	20	20,0
Midle + Higher	12	46,2	16	53,8	28	28,0

<sup>1</sup>(CHC) Housing Complex Cordeiro, <sup>2</sup> (VU) Vila União

**Table III.** Distribution of the elderly by geographical area and level of education according to level of understanding of drug therapy, Recife - PE, 2016.

SPECIFICATION	LEVEL OF UNDERSTANDING						<i>p</i>
	< 6 INSUFFICIENT		6 – 8 REGULAR		>8 GOOD		
<b>GEOGRAPHICAL AREA</b>	n	%	n	%	n	%	<i>0,045</i>
Cordeiro	36	72,0	13	26,0	1	2,0	
Vila União	24	48,0	23	46,0	3	6,0	
<b>SCHOLARITY</b>							<i>0.010</i>
Illiterates	21	75,0	7	25	-	-	
Fundamental incomplete	17	70,8	7	29,2	-	-	
Fundamental complete	11	55,0	6	30	3	15,0	
Midlle + Higher	11	39,3	16	57,1	1	3,6	

The professional conceals the adverse effects caused by the drugs in many cases, so that there is no interference in adherence to the treatment. [18] In the present study only 20% of users reported that they knew of the unpleasant effects that the drug could cause. This result suggests that patients have little information about adverse drug reactions. Other studies [9,19] corroborate this information, since a minority of participants correctly cited an adverse reaction caused by the drug. Regarding drug dosage, 66% of the elderly were aware of the information prescribed in the prescription, but 34% did not know which dose to use. A cross-sectional study carried out with 98 elderly people in the city of Diadema, Brazil, showed that 84.64% of the elderly knew the recommended dose in the month. [15] It should be noted that the lack of knowledge about the dose of the drug can cause harm to the drug therapy, for example toxicity from overdose or underdosing.

Regarding the time indicated on the prescription, 59% of the participants know the schedule of administration of the medicines. Work done at the ESF in Teresina-PI, with 80 elderly people, also showed a good compliance with the schedule, 78% of the elderly follow the schedule. [20] When the user understands and follows the time to administer the drug, the chance of success and adherence to treatment becomes greater, each drug has a half-life that must be followed to have an effect in the body, especially

in the elderly who have the altered pathophysiological system.

One way of knowing the reason for the use of the medicine is through its therapeutic indication, since each class of medicine is used with a purpose and function. Normally it serves to improve the supposed problem that bothers and disables it in the day to day, thus it contributes in the understanding of the obligations and limitations that must have in the adhesion to the treatment. In this study, 68% of the elderly knew what medicines were for. The research on evaluation of the profile of the elderly dependent on aid, carried out in the city of Diadema-SP, had a result equal to 52% of the elderly knew the indication of the medicine. [15]

In the present study, the elderly of the FHU-CHC, analyzing the level of understanding of the drug therapy, presented a higher frequency of insufficient level when compared to the FHU-VU (72% and 48%, respectively), which can be translated, in both populations, conditions the use of medicines safely. The result demonstrates the difficulty of the elderly in following the information regarding the compliance with the established medical regimen.

A statistically significant association between schooling and understanding of drug therapy was found, and it can be clarified since users with lower levels of schooling present difficulties in comprehension and reading, besides having

greater difficulty in understanding the information provided by health professionals, similar to other studies.<sup>[9,17]</sup>

Although the study concerning the verification of the level of understanding of drug therapy, especially among the elderly in Brazil, has been very limited, there have been some studies on the understanding of drug therapy.<sup>[17,19,21]</sup> The association of schooling with the understanding of pharmacotherapy has been demonstrated in previous studies with adults<sup>[17,22]</sup> and elderly.<sup>[18]</sup> It is important to note that although the method is not validated, there are several studies in the literature that have evaluated the understanding of drug therapy using such a method.<sup>[19,21]</sup> Validation would be important for what method is relevant to primary health care research, since it would allow more reproducible and uniform results, contributing to the expansion of knowledge.

## CONCLUSION

In view of the results obtained, it is concluded that the majority of respondents presented low level of schooling and insufficient information for the administration of medication in a safe way. In view of the issues raised, it is necessary to raise the awareness of the whole society about the risks arising from the abusive use of medicines and the lack of understanding, which can and should be countered by stimulating practices that lead to their rational use, achievement of desired therapeutic success with a view to improving the quality of life.

In this way, it is necessary to improve the means of providing the information to the user. This involves the training of professionals and the participation of the multiprofessional team, the dedication to the user orientation and the performance of the pharmaceutical professional in the attention and assistance to the individuals, besides the organization of the services so that this information can be properly transferred.

It is also necessary to promote educational actions that stimulate knowledge about the use of medicines as a way of stimulating self-care,

adherence to the therapeutic scheme and, consequently, improving the quality of life of the elderly. The families of the elderly, when participating in the activities developed by the pharmacist/health team, may be reviewing and inserting the knowledge of pharmacotherapy to the elderly, since it is known that in a few years the elderly in this study will be no longer in the age range 60-69 but in a higher range, where it is more noticeable the decrease of visual acuity, cognitive impairment and use of more drugs, consequently it can make treatment adherence even more difficult and control of the diseases that afflict them.

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