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Research Article

PREVALENCE AND POLYPHARMACEUTICAL CONSUMPTION IN OLDER ADULTS USING A HEALTH CENTER IN CHILPANCINGO, GUERRERO

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ABSTRACT

Introduction: Polypharmacy is defined as the consumption of 5 or more medications simultaneously in a day, including over-the-counter medications, therefore, it is considered a constant concern in the elderly due to the health problems it triggers.⁸ In Mexico, 65% to 94% of the elderly consume some type of drug, and 25% of older adults between 65 and 70 years of age have side reactions.²³ It has also been reported that 50% of drugs are responsible for hospital admissions.¹² As life expectancy increases in Mexico to 78 years for women and 73 years for men (INEGI, 2018)^{27,18} the prevalence of polypharmacy increases. Recent studies have indicated that, globally, the prevalence of polypharmacy will increase as the population ages and more people suffer from multiple chronic diseases.^{21,24} Hence the importance of prioritizing awareness of the problems associated with inappropriate polypharmacy. In the state of Guerrero, heart diseases such as arterial hypertension (HTN) and diabetes mellitus (DM) are among the five main causes of mortality in older adults, leading to a gradual deterioration of all biological functions, to which are added other characteristics of age and the need for excessive consumption of drugs. Polypharmacy can be prevented using pharmacovigilance, as well as the Official Mexican Standard 220 SSA1 2002. Installation and operation of pharmacovigilance, which aims to contribute to the rational use of medicines. Therefore, our **Objective:** To determine the prevalence and polypharmaceutical consumption, as well as the classification of the most used medications and to identify the rational use by older adults attending a health center in Chilpancingo, Guerrero. **Material and methods:** A cross-sectional, descriptive, qualitative, and observational study was conducted with a sample of 66 older adults, conducted from February to July 2022, in the city of Chilpancingo, Guerrero. **Results:** The prevalence of polypharmaceutical consumption is 54.5%, it occurred more frequently in the age range of 60-74 years; female sex and primary educational level predominated, the most used medications were analgesics with 71.2%, antihypertensives with 62.1% as well as antihypoglycemic drugs with 63.6%, 59.1% consumed gastric mucosal protector. 51.5% laxatives, 53% antibiotics and 31.8% diuretics. The diseases most related to polypharmacy were chronic degenerative diseases such as hypertension and diabetes mellitus. Most patients with polypharmacy showed limitation in the sense of sight with 41%.

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INTRODUCTION

In 1997, minor polypharmacy was defined as the use of 2 to 4 drugs and more than 5 as major polypharmacy, this definition was later modified, until it was defined between zero and 5 drugs as non-polypharmacy, between 5 and 10 as polypharmacy and more than 10 as excessive polypharmacy.^{22, 15}

As people age, they face more health problems, mainly due to chronic diseases such as hypertension, diabetes, cancer, among others that require continuous treatment, generating an increase in the number of drugs and the risk of adverse effects and drug interactions.^{1, 5}

A problem related to the prescription of medications in the elderly is the cascade effect, where one drug produces an unrecognized side effect that is treated with another drug.²⁰ In

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the elderly, it may be more common, because drug-induced symptoms in older people can easily be misinterpreted as indicators of a new disease or attributed to the aging process.³

In Mexico, polypharmacy has had an alarming increase, in 2005 the population consumed approximately 30% of prescription drugs and about 50% of over-the-counter medications.²³

In 2012, the National Institute for the Elderly (INAPAM) warned that between 65% and 90% of people over 60 years of age take medications, reporting cases in which up to 15 medications are ingested a day, which deteriorates health alarmingly. Reiterating that 50% receive repeat prescriptions; 28% are unjustified and 10% are unnecessary.^{7,9}

The adverse drug reaction increases exponentially with the number of drugs, i.e. it is 4% for 5 drugs, 10% for 6 to 10 and 28% for the intake of 15 drugs, as well as age, prolonged treatments, nutritional status, poor therapeutic compliance and self-medication.^{2, 11, 17}

As already mentioned, the prescription of drugs in elderly patients is and has been complex due to the influence of physiological changes of age on metabolism, selection biases of various clinical trials that exclude geriatric patients, the greater number of comorbidities, and the increased risk of toxicity and drug interactions.^{4, 10}

In this way, geriatric patients have been the target of polypharmacy and inappropriate prescription of medications and, as a consequence, poor adherence to therapeutic schemes, deterioration in quality of life, prescription cascades and in general greater morbidity and mortality.^{19, 25}

Polypharmacy is a major and growing public health problem that occurs worldwide, but there is still no global prevalence estimate.¹³ The WHO reports in its technical report on drug safety and polypharmacy in some prevalence studies, most in hospitals and very few in primary care.¹⁴

In the latter, prevalences ranging from 11.5% in China to 43.3% in Australia are reported.¹⁶ No population-based studies are reported at the national level. In Mexico there are few studies and those that exist are limited to specific regions or institutions, so they do not analyze polypharmacy at the population level.^{6, 26}

The above indicates the magnitude of these diseases and their impact on society, hence the importance of carrying out this study where the main objective is to determine the prevalence and polypharmaceutical consumption by older adults users of a health center in Chilpancingo, Guerrero. As well as the classification of the most commonly used drugs and identifying their rational use.

MATERIAL AND METHODS

The cross-sectional study was conducted in a health center in Chilpancingo, Guerrero, Mexico. A total of 66 older adults who attended consultations between February and July 2022 were interviewed.

For this study, validated surveys with Cronbach's alpha coefficient were used, obtaining a value of 0.73, revealing a strong reliability among the 33 questions that are part of the measurement instrument. The questionnaire was divided into 4 sections, which make it possible to determine the prevalence and polypharmaceutical consumption, as well as the

classification of the most commonly used drugs and to identify rational use.

Each older adult was invited to participate personally or their companion who in some cases served as a substitute informant, previously signed the informed consent and began the application of the questionnaire at the health center, in order to know some sociodemographic data, evaluation of medications, most commonly used drugs and presence of pathologies.

Descriptive statistics were used for data analysis using the social science software SPSS version 21.

RESULTS

According to the surveys applied to the 66 older adults, as a result it was obtained in the section of sociodemographic factors (Table 1) that the female sex predominated with 53%, while the male sex is 47%, with respect to the age range, most of the sampled population is between 60 and 64 years old with 33%. 24.2% have primary education, while 22.7% of them have a bachelor's degree, 21.1% have no schooling, 16.7% have a baccalaureate and 15.2% have secondary education.

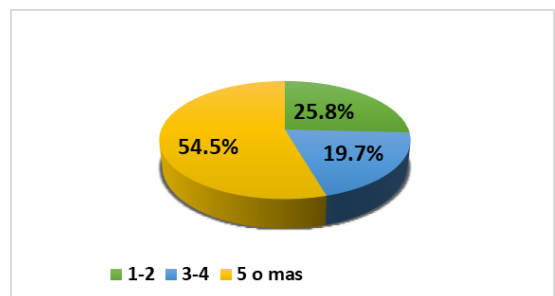
Table 1 Sex, age, and education level of the older adults surveyed.

	Frequency	Percentage
Sex		
Female	35	53%
Male	31	47%
Age		
From 60 to 64 yearsold	22	33.3 %
Ages 65 to 69	12	18.2 %
From 70 to 74 yearsold	16	24.2 %
From 75 to 79 yearsold	9	13.6 %
From 80 to 84 yearsold	6	9.1 %
85 and above.	1	1.5 %
Schooling		
No schooling	14	21.1 %
Primary	16	24.2 %
Middleschool	10	15.2 %
High school	11	16.7 %
Degree	15	22.7 %
Total	66	100%

Source Authors' own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 20

54.5% consume 5 or more medications, i.e., polypharmacy, while another part of the surveyed population is vulnerable to polypharmacy with 19.7% consuming 3 to 4 and 25.8% taking between 1 and 2 medications. (Figure 1)

Figure 1 Prevalence of polypharmacy consumption by the number of prescription drugs consumed by the elderly



Source: Authors, own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 2022

Regarding the total number of pills, 65.2% consume more than 5 pills, which increases the risk of overdose, drug interactions and increased risk of adverse effects, while 28.8% consume 3 to 4 pills and 6.1% consume 1 to 2.

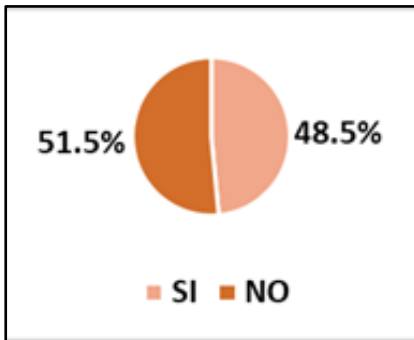
Table 2 Total number of pills you take

Number of Pills	Frequency	Percentage
1-2	4	6.1
3-4	19	28.8
5 or more	43	65.2
Total	66	100.0%

Source: Authors' own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 2022

51.5% of the older adults surveyed do not understand the indication for the consumption of each medication (graph 2), therefore they administer it incorrectly, while 48.5% do remember the indication.

Figure 2 Indication of the consumption of the medicinal product

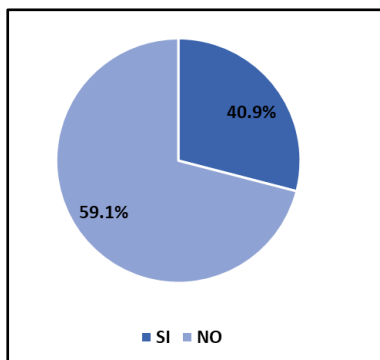


Source: Authors' own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 2022

59.1% do not remember to take the indicated dose (graph 3), they report that the attending physician explains it to them in the consultation and then at home they have doubts, they were confused because there are several medications, in addition to the fact that most of them attend their medical check-ups alone.

The aforementioned result is related to the same cases and percentage (59.1%) who reported having discomfort due to the consumption of medications, among which gastritis stood out with 46.4%. This puts the health of older adults at risk, since if they are not administered correctly, they can increase discomfort and even adverse effects that require hospitalization.

Figure 3 Remember the recommended dose



Source: Authors' own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 2022

According to the classification of the most commonly used medications (**Table 3**), they are analgesics with 71.2%, antihypoglycemic drugs with 63.6% and antihypertensives with 62.1%.

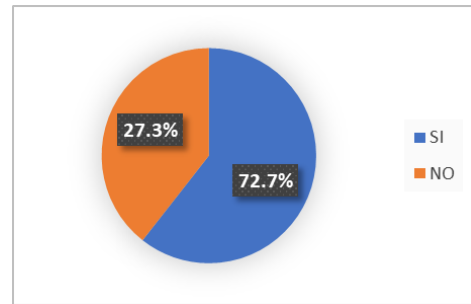
Table 3 Most commonly used drugs

Most Commonly Used Medications	Frequency	Percentage
Antibiotic	35	53
Painkiller	47	71.2
Antihypertensive	41	62.1
Antihypoglycemic	42	63.6
Protector of the gastric mucosa	39	59.1
Laxative	34	51.5
Diuretic	21	31.8

Source: Authors' own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 2022

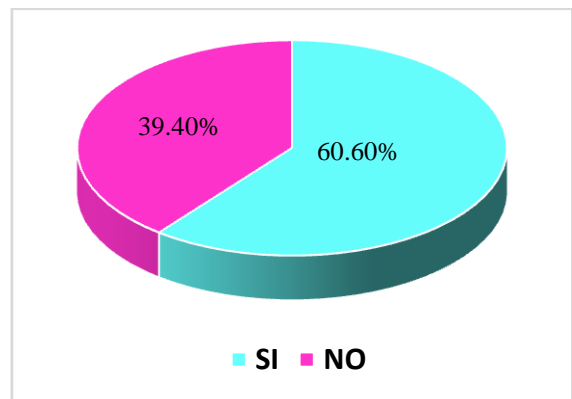
Chronic degenerative diseases such as hypertension (72.7%) (graph 4) and diabetes mellitus (60.6%) (graph 5) were among the diseases most related to polypharmacy.

Figure 4 Prevalence of Hypertension in Older Adults Surveyed



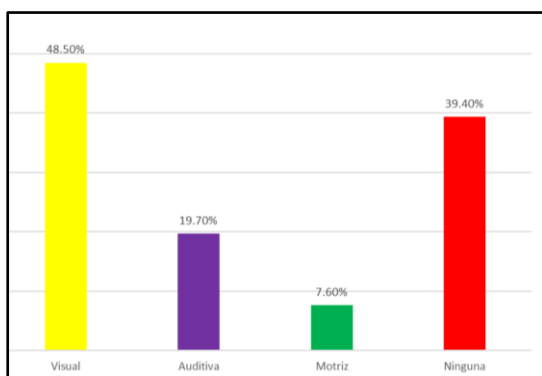
Source: Authors' own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 2022

Figure 5 Prevalence of Diabetes Mellitus in Older Adults Surveyed



Source: Authors' own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 2022

Of the various limitations presented by the elderly (graph 6), 48.5% reported having visual limitations, followed by auditory with 19.7% and to a lesser mention with 7.6% motor limitations. Vision problems may be a factor in overtaking medicines.

Figure 6 Limitations of the Older Adults Surveyed

Source: Authors' own elaboration based on the survey to determine the prevalence of polypharmaceutical consumption in older adults at a health center in Chilpancingo, Gro. February-July 2022

CONCLUSIONS

In the present research, it was determined that polypharmaceutical consumption is 54.5%.

The most commonly used medications were classified as antihypertensives (62.1%) and antihypoglycemic drugs (63.6%), and 71.2% consumed analgesics.

The most recurrent chronic pathologies were identified as diabetes mellitus (60.6%) and hypertension (72.2%).

With respect to evaluating the patient's ability to perform the treatment correctly, 54.5% together with their caregivers do not remember the name of the medications, 51.5% of older adults do not understand the indication of each drug, 59.1% do not remember the dose, 50% of older adults do not remember the route of administration and 51.5% do not remember the frequency of administration. The prevalence of complications and adverse effects is 40.9%, which is why adults are not receiving treatment correctly.

It was found that the patient consumes more than 5 medications, in addition to the fact that the caregivers and the patient himself do not understand the medical indications, administering the medication incorrectly, identifying that there is no rational use of the medications consumed by the elderly users of the Guerrero 200 health center in Chilpancingo, Guerrero.

Suggestions

The results of this research show that there is an urgent need to put into practice the Official Mexican Standard 220 SSA1 2002. and with its application and monitoring, the risk of adverse effects due to poor prescribing practices can be avoided.

Health professionals should be aware of the risks and evaluate all medications used by the older adult at each visit to prevent polypharmacy from occurring.

It is recommended to use only the drugs that benefit the patient, to assess the risk of use of each drug, its possible interactions and adverse effects, to monitor treatment adherence and to repeat the drug as soon as the therapeutic stage has been completed.

As well as promoting non-pharmacological treatment in various pathologies presented by the elderly.

Therefore, it is evident that there is a need to propose interdisciplinary community intervention programs to dose the consumption of medications in the elderly population.

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