Jornal de Assistência Farmacêutica e Farmacoeconomia
v.10, n.1, 2025.
Original Article

Pharmacoepidemiological profile of medicines used to control pain in elderly patients in Campo Grande/ms

Perfil farmacoepidemiológico de medicamentos utilizados no controle da dor em pacientes idosos em Campo Grande/MS

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How to cite:
Silva Dias M, Schiaveto de Souza A, Gomes Guerrero Moureau AT. Pharmacoepidemiological Profile of Medicines Used to Control Pain in Elderly Patients in Campo Grande/MS. JAFF [Internet]. January 31, 2025 [cited October 8, 2025];10(1). Available from: https://ojs.jaff.org.br/ojs/index.php/jaff/article/view/830

Received on: 03/03/2024

Accepted for publication on: 11/05/2024

doi: 10.22563/2525-7323.2025.v10.e00160e

ABSTRACT

Objectives: The objective is to carry out a situational diagnosis regarding the pharmacoepidemiological profile of medications used in the management and control of pain in elderly patients treated in Primary Health Care (PHC) in Campo Grande/MS. **Methods:** It is a cross-sectional descriptive work, with secondary data, carried out at PHC in Campo Grande/MS. 839 pharmaceutical consultation forms were analyzed and after applying the inclusion and exclusion criteria, 112 patients were selected. **Results:** It found that 87.5% are female and 12.5% are male, 62.5% have up to elementary school, 58.18% are housewives and that 14.41% of elderly people frequently drink alcohol. In the pharmacotherapeutic characterization, 58.04% use homemade medicines as an alternative therapy and 59.46% forget to take their medication. **Conclusions:** Data analysis allowed the elaboration of the pharmacotherapeutic profile of elderly patients, providing a reliable source of information. We conclude that through this work we can help in the treatment and management of pain in elderly patients treated in PHC.

Keywords: Family Health; Elderly; Medications; Pain; Primary Care.

RESUMO

Objetivos: Realizar um diagnóstico situacional referente ao perfil farmacoepidemiológico de medicamentos utilizados no manejo e controle da dor em pacientes idosos atendidos na Atenção Primária de Saúde (APS) de Campo Grande/MS. É um trabalho descritivo do tipo transversal, com dados secundários, realizado na APS de Campo Grande/MS. **Métodos:** Foram analisados 839 formulários de consultas farmacêuticas e após a aplicação dos critérios de inclusão e exclusão, foram selecionadas 112 pacientes. **Resultados:** Encontrou que 87,5% são do sexo feminino e 12,5% do masculino, 62,5% tem até Ensino Fundamental, 58,18% são do lar e que 14,41% dos idosos ingerem bebida alcóolica frequentemente. Na caracterização farmacoterapêutica temos que 58,04% utilizam medicamentos caseiros como terapia alternativa e 59,46% esquece de tomar a medicação. **Conclusões:** A análise dos dados permitiu a elaboração do perfil farmacoterapêutico dos pacientes idosos, sendo uma fonte segura de informações. Concluímos que através deste trabalho podemos auxiliar no tratamento e manejo da dor dos pacientes idosos atendidos na APS.

Palavras-chave: Saúde da Família; Idoso; Medicamentos; Dor; Atenção Primária.

Introduction

Brazil, like most Latin American countries, has been undergoing a process of population aging. This demographic transition is characterized by increased life expectancy and reduced birth rates. Between 2012 and 2017, the states with the highest proportion of older adults were Rio de Janeiro and Rio Grande do Sul, both with 18.6% of their populations aged 60 years or older.[1]

In Mato Grosso do Sul, the elderly population aged 65 years or older represents 9.19% of the total population.[5] New challenges arise, demanding differentiated attention and care, as well as increasing the burden on both private and public health systems. Aging affects organs and tissues, raising the prevalence of noncommunicable chronic diseases (NCDs) such as systemic arterial hypertension, diabetes mellitus, among others. The increase in medicine use results from the prevalence of chronic conditions, the physiology of aging, the influence of the pharmaceutical industry on prescribing practices, and the phenomenon of medicalization.[2]

Polypharmacy is directly related to the use of anti-inflammatory drugs and analgesics. With polypharmacy, the incidence of adverse drug reactions (ADRs) increases.[3] The risk of ADRs is 13% when an individual takes two medicines, 58% when using five medicines, and rises to 82% in cases where seven or more medicines are consumed.[2] This highlights the vulnerability of older adults, as in addition to polypharmacy, self-medication often emerges as a therapeutic alternative, making them more susceptible to adverse events, placing their health at risk, and worsening their quality of life.

Pain is one of the main factors that limits older adults from maintaining a normal daily routine, negatively impacting their quality of life by hindering the performance of daily activities, restricting social interaction, and often leading to social isolation.[4]

This article is justified by the high prevalence of pain among older patients, the lack of standardization in care, and the occurrence of inadequate treatment, which includes contraindicated medicines, underdosing, poor treatment adherence, and lack of awareness of both pharmacological and non-pharmacological treatments available in Primary Health Care (PHC) within the Brazilian Unified Health System (SUS).

Objectives

The objective of this article is to conduct a situational diagnosis of the pharmacoepidemiological profile of medicines used in the management and control of pain in elderly patients treated in Primary Health Care (PHC) in Campo Grande, state of Mato Grosso do Sul (MS), and to support health professionals in the appropriate management of these patients within PHC in Campo Grande/MS.

Methodology

This was a descriptive cross-sectional study, based on secondary data from the medical records of patients who underwent pharmaceutical consultations between April 2016 and August 2019, totaling 839 consultations during this period in Primary Health Care (PHC) in Campo Grande/MS. From the collected data, an analysis of the epidemiological profile and an evaluation of the management strategies adopted in medical and dental prescriptions for the control and management of pain in elderly patients were performed.

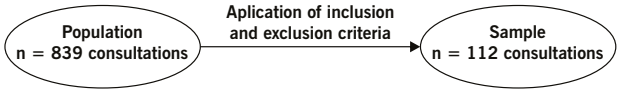
To ensure compliance with ethical aspects, the project was submitted to the Research Ethics Committee on Human Subjects of the Federal University of Mato Grosso do Sul and was approved under decision number 3.854.423.

This study investigates both pharmacological and complementary interventions used in PHC, with results that may guide the reorganization of public health policies related to health promotion, by informing professionals about the available pharmacological and non-pharmacological treatments, encouraging the inclusion of new therapeutic approaches, reducing costs, and decreasing the number of hospitalizations among elderly patients.

Inclusion criteria consisted of pharmaceutical consultations with elderly patients (aged 60 years or older), polymedicated (using more than one continuous medication), and with complaints of pain, treated in PHC in Campo Grande/MS. All consultations that did not meet these inclusion criteria were excluded.

The information recorded in the patient database was analyzed, allowing for the creation of a pharmacotherapeutic profile, in addition to the evaluation of prescriptions, clinical conditions, adherence, potential for drug interactions, dosage, sex, and social status.

Figure 1. Sample size



Source: Author's elaboration.

For data collection, a data collection instrument was developed (Figure 2), considering the following information: drug interactions, autonomy, dosage, inappropriately prescribed medicines, self-medication, alternative therapies, multiprofessional care, presence of comorbidities, adverse events, and the main pain complaints.

The Anatomical Therapeutic Chemical (ATC) Classification System was adopted as the standard for medicines. This is an international classification system used by the World Health Organization (WHO) in studies involving medicines. In this classification, drugs are separated into groups and levels according to organ or system, chemical properties, and pharmacotherapeutic characteristics.[6]

The Beers Criteria of the American Geriatrics Society (AGS) were used to assess the risks of medicines for the elderly. These criteria consist of a list of medicines considered potentially inappropriate for older adults.7

The Beers Criteria were first created in 1991 to list medicines posing significant risks for elderly patients in long-term care institutions. They undergo periodic updates, the latest of which was in 2015, revised by the AGS based on the most current international literature available. According to these criteria, the prolonged use of non-selective NSAIDs is considered inappropriate for older adults and should be prescribed only under close monitoring by healthcare professionals. Risks include gastrointestinal bleeding, and in patients with hypertension and/or cardiovascular disease, potential drug interactions may occur.[8]

The association between the variables sex, age group, and education level with other variables related to medicine use and self-medication was assessed using the chi-square test, with Bonferroni correction applied when necessary. Other results of the variables assessed in this study were presented using descriptive statistics and tables. Statistical analysis was performed with the SPSS software, version 24.0, adopting a 5% significance level.

Figure 2. Data collection instrument

1 SUS Card _____
2 Prescription:
( ) Medical ( ) Dental ( ) Pharmaceutical ( ) Other
Which? _____
3 Sex:
( ) Male ( ) Female
4 Age: _____
5 Ethnicity: _____
6 Complaint of pain?
( ) Yes ( ) No
7 If yes, for how long?
8 Location of pain and type of pain _____
9 Trauma?
( ) Yes. Type of trauma? _____ ( ) No
10 Any falls?
( ) Yes. Any fracture? _____ Where? _____ ( ) No
11 Patient with a history of Mental Illness?
( ) Yes ( ) No
12 Has autonomy to take medication?
( ) Yes ( ) No. If no, whats is the reason? _____
13 Has access to all medications provided by SUS?
( ) Yes ( ) No. If no, what is the reason and how did you obtain them? _____
14 Has financial conditions to by medications not available in SUS?
( ) Yes. ( ) No. If no, what is the reason and how did you obtain them? _____
15 Practices self-medication?
( ) Yes. Which medication(s)? _____ ( ) No
16 Who indicated the medication: _____
17 Prescribed medications and dosage: _____
18 Problems encountered in the prescription? _____
19 Smokes:
( ) Yes. Frequency: _____ ( ) No
20 Consumes alcoholic beverages?
( ) Yes. Frequency: _____ ( ) No
21 Pharmaceutical consultation:
( ) Yes ( ) No
22 Use of alternative medicinal therapies:
( ) Yes ( ) No
23 Which?
( ) Teas ( ) Hermal remedies ( ) Homemade remedies
( ) Simpatias (folk remedies) ( ) Other.
24 Uses any alternative non-medicinal treatment:
( ) Yes. Which? _____ ( ) No
25 Consults professionales in NASF (Family, Health Support Center):
( ) Yes. Which?_ _____ ( ) No
26 Use of controlled medications:
( ) Yes. Which? _____ ( ) No
27 Frequently uses dental service at tje Family Health Unit (UJSF)?
( ) Yes. Which? _____ ( ) No
28 Participates in any offered by the Family Health Unit UBSF?
( ) Yes. Which? _____ ( ) No

Source: Authors' elaboration.

Results

A total of 112 consultations were selected from 839 pharmaceutical consultation records between 04/2016 and 08/2019, corresponding to 13.35% of the total population, in which the variables were evaluated. There were 98 consultations with female patients (87.5%) and 14 consultations with male patients (12.5%).

Table 1. Characterization of elderly patients with pain treated in Primary Health Care (PHC) in Campo Grande/MS from 04/2016 to 08/2019

Variable	GENDER		TOTAL SAMPLE n (%) 112 (100%)	p
	Male n (%) 14 (12.5%)	Female n (%) 98 (87.5%)		
EDUCATION				
No schooling	6 (42.9)	25 (25.5)	31 (27.7)	0.015
Incomplete/Complete Elementary School	4 (28.6)	66 (67.3)	70 (62.5)	
Incomplete/Complete High School	3 (21.4)	6 (6.1)	9 (8.0)	
Incomplete/Complete Higher Education	1 (7.1)	1 (1.0)	2 (1.8)	
PROFESSION/ OCCUPATION				
Homemaker	0 (0.0)	32 (65.31)	32 (58.18)	0.008
Retired	4 (66.67)	10 (20.41)	14 (25.45)	
Other	2 (33.33)	7 (14.29)	9 (16.36)	
# Not reported	8	49	57	
ALCOHOL CONSUMPTION HISTORY				
Used to drink, but quit	3 (21.43)	9 (9.28)	12 (10.81)	0.01
Never drank	8 (57.14)	75 (77.32)	83 (74.77)	
Drinks socially	0 (0.0)	10 (10.31)	10 (9.01)	
Drinks frequently	3 (21.43)	3 (3.09)	6 (5.41)	
# Not reported	0	1	1	
BODY MASS INDEX (BMI)				
<18.5 Underweight	0 (0.0)	2 (2.08)	2 (1.82)	0.047
18.5-24.99 Normal weight	7 (50.0)	19 (19.79)	26 (23.64)	
25-29.99 Overweight	5 (35.71)	31 (32.29)	36 (32.73)	
≥30 Obesity	2 (14.29)	44 (45.83)	46 (41.82)	
≥30 Obesity	0	2	2	
BLOOD PRESSURE (HYPERTENSION)				
Normal ≤120/80	7 (50.0)	26 (29.55)	33 (32.35)	0.072
Pre-hypertension 121/81-139/89	3 (21.43)	24 (27.27)	27 (26.47)	
Hypertension Stage 1 140/90-159/99	1 (7.14)	25 (28.41)	26 (25.49)	
Hypertension Stage 2 160/100-179/109	1 (7.14)	11 (12.50)	12 (11.76)	
Hypertension Stage 3 ≥180/110	2 (14.29)	2 (2.27)	4 (3.92)	
# Not reported	0	10	10	

$p < 0.05$ Significant / $p > 0.05$ Not significant / # - Data did not show statistical results.

Table 2. Pharmacotherapeutic characterization by sex in Primary Health Care (PHC) in Campo Grande/MS from 04/2016 to 08/2019

VARIABLE		GENDER Male n (%)	GENDER Female n (%)	TOTAL SAMPLE n (%)		p
ALTERNATIVE THERAPY						
Yes - Homemade medicines		6 (42.86)	59 (60.20)	65 (58.04)		0.031
Yes - Acupuncture		0 (0.0)	1 (1.02)	1 (0.89)		
Yes - Herbal concoction ("Garrafada")		2 (14.29)	1 (1.02)	3 (2.68)		
No		6 (42.86)	37 (37.76)	43 (38.39)		
ATC CLASSIFICATION (LEVEL 1 AND 2)						
M	Anti-inflammatory and antirheumatic products (M01)	1 (1.43)a	28 (4.40)a	29	39 (5.52%)	<0.001
	Muscle relaxants (M03)	0 (0.0)a	6 (0.94)a	6		
	Antigout preparations (M04)	2 (2.86)a	0 (0.0)b	2		
	Treatment of bone diseases (M05)	0 (0.0)a	2 (0.31)a	2		
N	Analgesics (N02)	4 (5.71)a	28 (4.40)a	32	119 (16.83%)	0.025
	Antiepileptics (N03)	1 (1.43)a	8 (1.26)a	9		
	Antiparkinson drugs (N04)	1 (1.43)a	0 (0.0)a	1		
	Antipsychotics, anxiolytics, hypnotics and sedatives (N05)	0 (0.0)a	4 (0.63)a	4		
	Antidepressants, psychostimulants, psychoanaleptics, Alzheimer's and dementia treatments (N06)	3 (4.29)a	58 (9.11)a	61		
N	Other nervous system drugs (N07)	2 (2.86)a	10 (1.57)a	12		

$p < 0.05$ Significant / $p > 0.05$ Not significant. Different letters in the row indicate differences between sexes, and in the overall test there was a significant association, but when comparing sexes within each row it was not possible to identify differences (equal letters).

The variable of alternative therapy showed statistical significance, with the finding of homemade medicines for the majority in both sexes (58.04%). In the ATC classification levels 1 and 2, there were also statistically significant findings, with classification M (5.52%) and N (16.83%), respectively, showing statistical significance.

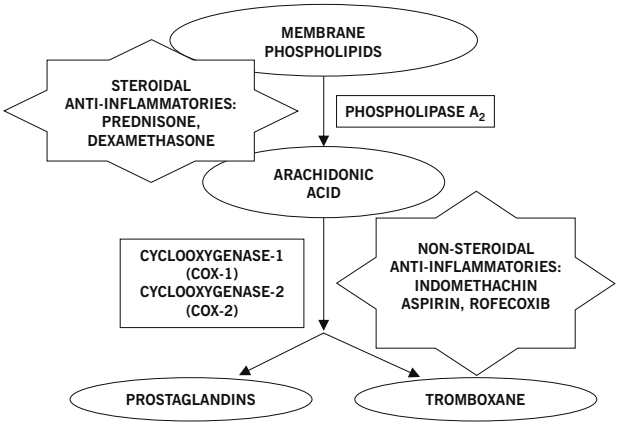
In order to support the best and safest clinical decisions in the treatment of pain in elderly patients treated in Primary Health Care (PHC) in Campo Grande/MS, some treatment suggestions are presented for use by health professionals.

Some criteria were applied for the development of these suggestions, namely: the Beers Criteria and the stepwise analgesic scale for the treatment of nociceptive and mixed pain.

NSAIDs should be used with caution due to the risk of adverse events, especially in elderly patients. The combination of analgesic + (NSAID or corticosteroid anti-inflammatory drug - AIES) may be considered for complete pain relief, while always remembering not to use these medicines for prolonged periods. It should also be noted that doses should not exceed the maximum recommended, as this does not improve efficacy and increases the risk of adverse reactions.[16]

The combination of NSAIDs and corticosteroid anti-inflammatory drugs (AIES) should be avoided, as these medicines are contraindicated. They increase the risk of adverse effects and do not present any synergistic effect.[16]

Figure 3. Site of action of hormonal anti-inflammatory drugs and NSAIDs



Source: Sereniki A, Vital M. 2008.

It can be observed in the figure that corticosteroid anti-inflammatory drugs (AIEs) act by inhibiting phospholipase, preventing the formation of arachidonic acid, and consequently blocking the formation of COX enzymes. Since COX is not formed, NSAIDs have no site of action. Therefore, the simultaneous use of both classes is unnecessary, and one or the other should be chosen.

There are selective COX-2 NSAIDs and non-selective COX-1 and COX-2 NSAIDs. Selective COX-2 NSAIDs are associated with fewer gastrointestinal adverse effects; however, they carry a higher cardiovascular risk compared to non-selective ones. NSAIDs also differ slightly among themselves in terms of adverse events and potency.[18]

Meloxicam is an NSAID with higher selectivity for COX-2, which results in fewer gastrointestinal effects. Its dosage also facilitates adherence to treatment, as it is taken once daily and does not require prolonged therapy. Its potency is greater when compared with conventional NSAIDs. However, its side effects are associated with prolonged treatment duration.[19]

Table 1. Suggested inclusion of NSAIDs in the treatment of elderly patients in Primary Health Care (PHC) in Campo Grande/MS

Treatment	Presentation	Dosage	Precautions	Observação
Meloxicam	7.5 mg - 15 mg - tablet	7.5 - 15 mg (daily dose)	Same as conventional NSAIDs. Lower gastrointestinal risk.	Non-selective NSAID - with higher preference for COX-2. Maximum daily dose = 15 mg. #Reduced risk of gastrointestinal bleeding, should not be used chronically, maximum of 10 days.

Beers Criteria (ISMP, 2017)

Table 2. Suggested inclusion of opioid drugs in pharmacological treatment in Primary Health Care (PHC) in Campo Grande/MS

Tratamento	Apresentação	Posologia	Cuidados	Observação
Morphine	10 mg - 30 mg - tablet / 10 mg/ml - injectable	5 to 200 mg Every 4 hours	Common side effects: nausea, vomiting, pruritus, dizziness, dry mouth, urinary retention, drowsiness, mental confusion, euphoria.	Strong opioid. Always start with the lowest dose to minimize side effects. Should not be used chronically, maximum of 10 days.
Tramadol	50 mg - 100 mg - tablet / 50 mg/ml - injectable	50 a 100 mg Every 4-8 hours	Common side effects: nausea, vomiting, pruritus, dizziness, dry mouth, urinary retention, drowsiness, mental confusion, euphoria.	Weak opioid. Most recommended drug, as it acts both on pain modulation and through opioid receptor-mediated analgesic action. Should not be used chronically, maximum of 10 days.

Source: Adapted from Pain: The Fifth Vital Sign in Practical Management in the Elderly. Barcellos DK, Thé KB, 2018.

Despite professional concerns regarding cardiovascular risks and the potential for physical and chemical dependence, opioids are safe and reliable drugs, provided that rational prescribing is followed and each patient's condition is carefully assessed.[16]

Adjuvant drugs are originally developed for other therapeutic purposes but were later found to have additional functions, such as analgesic effects. These drugs are used in combination with other drug classes to assist in the relief of neuropathic pain.[20]

Adjuvant drugs can be used at all levels of the analgesic pain ladder and help prevent disorders that exacerbate pain, such as depression, anxiety, and sleep disturbances.[16]

The combination of pharmacological and non-pharmacological treatment in the long term is highly beneficial for patients, yielding positive outcomes. Non-pharmacological treatment has the advantages of being low-cost, non-invasive, and virtually free of side effects and contraindications. It can be combined with pharmacological treatment to help reduce pain and consequently lower the need for medicines.[16]

Examples of suggested adjuvant drugs include: amitriptyline (antidepressant), gabapentin (anticonvulsant), and cyclobenzaprine (muscle relaxant), among others.

Within the Brazilian Unified Health System (SUS), up until 2018, 29 Integrative and Complementary Practices (PICs) were available nationwide. However, in the capital city's PHC network, only three PICs had been implemented. These policies may be incorporated into local practice according to the needs of the population. Importantly, PICs receive federal government funding.[21]

In Campo Grande/MS, the following non-pharmacological treatments are available: homeopathy, auriculotherapy, and acupuncture. In addition to these, physiotherapy services are also offered. Although physiotherapy is not classified as an Integrative and Complementary Practice (PIC), it plays an important role in the pain management of elderly patients.

Discussion

This study was able to outline the pharmacoepidemiological profile of elderly patients with pain treated in Primary Health Care (PHC) in Campo Grande/MS, which may serve as a reference for future manuals, guidelines, therapeutic protocols, and other instruments.

Table 3. Integrative and Complementary Practices (PICs) available in Brazil / SUS

Until 2006 (05 ICPs)	Until 2017 (+14 ICPs)	Until 2018 (+10 ICPs)
Acupuncture	Art Therapy,	Apitherapy
Homeopathy	Ayurveda,	Aromatherapy
Phytotherapy	Biodance,	Bioenergetics
Anthroposophy	Circular Dance,	Family Constellation
Thermalism	Meditação,	Chromotherapy
	Music Therapy,	Geotherapy
	Naturopathy,	Hypnotherapy
	Osteopathy,	Hand Imposition
	Chiropractic,	Ozone Therapy
	Reflexology,	Flower Essence Therapy
	Reiki,	
	Shantala,	
	Integrative Community Therapy	
	Yoga	

Source: Brazil, 2018. Available from: http://portalarquivos2.saude.gov.br/images/pdf/2018/marco/12/Praticas-Integrativas.pdf

Cardiovascular disease and diabetes are closely associated with BMI. The literature highlights that both pharmacological and non-pharmacological measures are essential in prevention and health promotion. It also emphasizes that the involvement of a multidisciplinary team is beneficial, assisting in the control of blood pressure and glycemia, as well as improving physical condition, increasing muscle mass, reducing body fat, and decreasing the incidence of more severe cardiovascular problems.[11]

Given that many patients were diabetic, with uncontrolled BMI and HTN, it can be suggested that neuropathic pain, circulatory problems, headaches, chest pain, and pain in the lower limbs may be consequences of NCDs themselves. Hypertension and diabetes are among the most common diseases affecting the elderly, reducing quality of life, life expectancy, and increasing mortality and morbidity rates, as well as the risks of kidney disease, heart disease, stroke, and heart failure.[11]

The elderly population with chronic pain in this study was composed mostly of women, with sedentary lifestyles and higher association with chronic diseases.[12]

Regarding drug interactions, 32.99% involved medicines used continuously for pain, with 21.13% classified as dangerous associations, requiring careful monitoring by professionals, and 26.80% of patients used gastric protectors continuously. Dangerous associations included the concomitant use of insulin secretagogues with exogenous insulin.

Medication adherence was also concerning: 76.58% of patients did not follow correct medication schedules, 59.46% forgot to take doses, 15.63% reported lack of access to medicines, and 91.96% had some type of problem related to the prescription. These results are alarming, as the proportion of error-free prescriptions was very low, potentially leading to fatal consequences for patients. Stefano reported that over 50% of medicines are prescribed and/or dispensed incorrectly to elderly patients, and that 50% of elderly patients use their medicines incorrectly.[13]

This patient behavior regarding treatment adherence may be a key factor leading to self-medication, polypharmacy, and uncontrolled biochemical and physical parameters. In this study, 78% of patients were careless with medication schedules, 92.1% had problems related to prescriptions, and 60% forgot to take their medicines. Most of these patients had only primary education. However, 78% reported no difficulty in taking their medicines and 73% did not self-medicate.

For the variable self-medication, 53.2% were careless with medication schedules, 92% had prescription-related problems, 59.5% forgot to take medicines, while 73% did not self-medicate and 78% did not report difficulty in taking prescribed medicines. Schmitt Junior, in his study on therapeutic adherence in elderly patients treated in PHC, found a non-adherence rate of 35.4%, associated with inadequate prescriptions and shortages of medicines in PHC.[14] According to Manso, non-adherence in the elderly is related to polypharmacy, with non-adherence rates ranging from 25% to 75%, worsening patient health and increasing hospitalizations and health costs.[15]

It is therefore suggested that most prescribed pharmacological treatments were not being followed by patients, due to multiple issues such as prescribing errors, lack of adherence, lack of patient commitment, medicine unavailability, low education levels, and prescription errors.

Some limitations of the study included the low number of pharmaceutical consultation records, low adherence of pharmacists in clinical patient care, and the COVID-19 pandemic, which hindered data collection due to social isolation measures. Despite these limitations, the results and proposals for treatment improvement are highly valuable for public health.

Finally, the pharmacological and non-pharmacological treatments available for elderly patients in PHC require greater dissemination, as most prescribers are unaware of them. Greater involvement of pharmacists in multidisciplinary teams could change this reality and increase contributions to population well-being. The lack of knowledge about available treatments compromises care and often leads to drug interactions, inappropriate continuous use, and patient suffering. The pharmacological therapy available in PHC in Campo Grande/MS is listed in the Municipal List of Essential Medicines (REMUME, 2022).

Conclusion

The epidemiological profile of elderly patients treated in Primary Health Care (PHC) with pain complaints indicates that most are female, with low education, homemakers or retired, autonomous in taking medicines, overweight or obese, with uncontrolled diabetes and hypertension, and self-reported headaches and musculoskeletal pain.

Regarding pharmacological treatment, the majority of patients reported no allergies, and when present, they were related to analgesics, anti-inflammatory drugs, and corticosteroids. With respect to alternative treatments, many patients relied on homemade remedies, and only two reported the use of non-pharmacological therapies (acupuncture).

Prescription analysis revealed multiple drug interactions, particularly between pain medicines and continuously used gastric protectors. Patients were frequently careless with medication schedules, often forgot to take medicines, and most prescriptions presented problems. This reflects both low adherence and a high prevalence of prescription errors, which together represent a public health concern by increasing the risk of hospitalizations and complications.

In conclusion, the pharmacotherapeutic profile of elderly patients with pain treated in PHC in Campo Grande/MS is characterized by low education, self-medication, poor adherence to treatment, and frequent problems with prescription quality. Key findings included prescription errors, drug interactions, and continuous use of pain medicines and gastric protectors. Moreover, the lack of prescriber knowledge regarding treatments available in the municipal health network of Campo Grande/MS was also a critical factor contributing to low adherence to pharmacological treatment.

Author Contributions
MSD: research, data collection, and writing.
ASS: statistical analysis of the study.
ATGG: supervision and writing of the study.

Conflicts of Interest
The authors declare no conflicts of interest.

Funding
This article did not receive any funding.

Data Availability Statement
The data will be made available upon request. The data generated in the current study are available upon request to the corresponding author.

Responsible Editor
Lindemberg Assunção Costa

References

1. Instituto Brasileiro de Geografia e Estatística - IBGE. Censo 2017; 2017 [cited 2019 Apr 16]. Available from: https://agenciadenoticias.ibge.gov.br/agencia-noticias/2012-agencia-de-noticias/noticias/20980-numero-de-idosos-cresce-18-em-5-anos-e-ultrapassa-30-milhoes-em-2017
2. Lima TAM, Furini AAC, Atique TSC, Done PD, Machado RLD, Godoy MF. Análise de potenciais interações medicamentosas e reações adversas a anti-inflamatórios não esteroides em idosos. Rev Bras Geriatr Gerontol [Internet]. 2016;19(3):533-44. Available from: https://doi.org/10.1590/1809-98232016019.150062 doi: 10.1590/1809-98232016019.150062
3. Ely LS, et al. Uso de anti-inflamatórios e analgésicos por uma população de idosos atendida na Estratégia Saúde da Família. Rev Bras Geriatr Gerontol [Internet]. 2015;18(3):475-85 [cited 2019 Apr 23]. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1809-98232015000300475&lng=pt&nrm=iso doi: 10.1590/1809-9823.2015.14141
4. Vilela PA, et al. Percepção da saúde e dor em idosos em unidades de saúde/ Perception of health and pain in elderly health units. Rev Port Cienc Desporto [Internet]. 2017;1(5):54-64 [cited 2019 Apr 23]. Available from: http://search-ebscohost-com.ez51.periodicos.capes.gov.br/login.aspx?direct=true&db=s3h&AN=128596674&lang=pt-br&site=ehost-live doi: 10.5628/rpcd.17.S2A.54
5. Instituto Brasileiro de Geografia e Estatística - IBGE. Projeção da população do Brasil e das Unidades da Federação; 2021 [cited 2021 May 4]. Available from: https://www.ibge.gov.br/apps/populacao/projecao/index.html?utm_source=-portal&utm_medium=popclock

6. Secretaria de Estado de Planejamento e Gestão de Minas Gerais. Minas Gerais. Catálogo de Materiais e Serviços - CATMAS, Manual do grupo de medicamentos [Internet]. Available from: https://www.gov.br/saude/pt-br/composicao/sectics/desid/catmat
7. American Geriatrics Society. American geriatrics society 2019 updated AGS beers criteria for potentially inappropriate medication use in older adults. J Am Geriatr Soc [Internet]. 2019 Jan 29;67(4):674-94. Available from: https://pubmed.ncbi.nlm.nih.gov/30693946/
doi: 10.1111/jgs.15767
8. ISMP Brasil. Conheça e fique por dentro: Medicamentos Potencialmente Inadequados Para Idosos. ISMP - Instituto Para Práticas Seguras No Uso De Medicamentos [Internet]. 2017;7(3):1-6 [cited 2021 Jun 7]. Available from: https://www.ismp-brasil.org/site/wp-content/uploads/2017/09/is_0006_17a_boletim_agosto_ismp_210x276mm_v2.pdf
9. Guibu IA, et al. Características principais dos usuários dos serviços de Atenção Primária à Saúde no Brasil. Rev Saude Publica [Internet]. 2017;51(2):17 [cited 2020 Dec 8]. Available from: https://doi.org/10.11606/S1518-8787.2017051007070
doi: 10.11606/S1518-8787.2017051007070
10. Guidolin BL, et al. Padrões de uso de álcool em uma amostra de idosos cadastrados no programa de Estratégia Saúde da Família de Porto Alegre, Brasil. Cienc Saude Colet [Internet]. 2016;21(1):27-35 [cited 2020 Dec 8]. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232016000100027&lng=en&nrm=iso
doi: 10.1590/1413-81232015211.10032015
11. Francisco PMSB, et al. Prevalência simultânea de hipertensão e diabetes em idosos brasileiros: desigualdades individuais e contextuais. Cienc Saude Colet [Internet]. 2018;23(11):3829-40 [cited 2021 May 17]. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232018001103829&lng=pt&nrm=iso
doi: 10.1590/1413-812320182311.29662016
12. Ferreti F, et al. Dor crônica em idosos, fatores associados e relação com o nível e volume de atividade física. BrJP [Internet]. 2019;2(1):3-7 [cited 2021 May 24]. Available from: https://doi.org/10.5935/2595-0118.20190002
doi: 10.5935/2595-0118.20190002
13. Stefano ICA, et al. Uso de medicamentos por idosos: análise da prescrição, dispensação e utilização num município de porte médio do estado de São Paulo. Rev Bras Geriatr Gerontol [Internet]. 2017;20(5):681-92 [cited 2021 May 24]. Available from: https://doi.org/10.1590/1981-22562017020.170062
doi: 10.1590/1981-22562017020.170062
14. Schmitt Junior AA, Lindner S, Helena ET de S. Avaliação da adesão terapêutica em idosos atendidos na atenção primária. Rev Assoc Med Bras [Internet]. 2013;59(6):614-21 [cited 2020 Dec 10]. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-42302013000600017&lng=en&nrm=iso
doi: 10.1016/j.ramb.2013.06.016
15. Manso MEG, et al. Adesão de idosos ao tratamento medicamentoso em diferentes níveis de Atenção à Saúde no município de São Paulo, Brasil. Rev Kairos [Internet]. 2018;21(3):347-58 [cited 2021 May 24]. Available from: https://doi.org/10.23925/2176-901X.2018v21i3p347-358
doi: 10.23925/2176-901X.2018v21i3p347-358
16. Barcello SDK, Thé KB. Dor: O quinto sinal vital - abordagem prática no idoso. Comissão de Dor. SBGG [Internet]. 2018 [cited 2019 May 4]. Available from: https://sbgg.org.br/wp-content/uploads/2018/08/SBGG_-_Guia_de_Dor_-_final_site.pdf
17. Sereniki A, Vital MABFA. Doença de Alzheimer: aspectos fisiopatológicos e farmacológicos. Rev Psiquiatr Rio Gd Sul [Internet]. 2008;30(1) [cited 2019 Jun 3]. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0101-81082008000200002&lng=en&nrm=iso
doi: 10.1590/S0101-81082008000200002
18. Batlouni M. Anti-inflamatórios não esteroides: efeitos cardiovasculares, cérebro-vasculares e renais. Arq Bras Cardiol [Internet]. 2010;94(4):556-63 [cited 2021 Feb 4]. Available from: http://

www.scielo.br/scielo.php?script=sci_arttext&pid=S0066-782X2010000400019&lng=pt&nrm=iso
doi: 10.1590/S0066-782X2010000400019

19. Meloxicam [Internet]. São Paulo: EMS S-A. Package insert. MS 103700530. Available from: https://consultaremedios.com.br/meloxicam/bula
20. Olivência SA, et al. Tratamento farmacológico da dor crônica não oncológica em idosos: Revisão integrativa. Rev Bras Geriatr Gerontol [Internet]. 2018;21(3):383-93 [cited 2019 May 4]. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1809-98232018000300372&lng=en&tlng=en
doi: 10.1590/1981-22562018021.170179
21. Ministério da Saúde. Saúde consolida 29 modalidades de práticas integrativas no SUS [Internet]. Brasil; 2018 [cited 2021 Feb 8]. Available from: http://portalarquivos2.saude.gov.br/images/pdf/2018/marco/12/Praticas-Integrativas.pdf