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# Pharmacotherapeutic, clinical and sociodemographic profile of adults and elderly outpatients in a psychiatric hospital in Rio de Janeiro

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## Abstract

**Objective:** Analyze dispensing profile of psychotropic medicines and clinical and sociodemographic characteristics of adults and elderly outpatients treated at a public university psychiatric hospital in the city of Rio de Janeiro. **Methods:** Descriptive cross-sectional study, with analysis of psychotropic drug dispensing data carried out in September 2018 and analysis of medical records from these prescriptions. **Result:** Average number of psychotropic prescriptions per patient in general ambulatory was 2.63, and 1.84 in geriatric one. The most prescribed pharmacological subgroups in the two ambulatory outpatient clinics were antipsychotics, antiepileptics and antidepressants, represented, respectively, by risperidone, clonazepam and fluoxetine in general ambulatory, and risperidone, clonazepam, and citalopram in geriatric one. The main profile of patients seen at the general ambulatory was female (60.97%), single (60.32%), without occupation (55.48%) and with a mean age of 48.9 years. The main diagnoses identified among the population of general ambulatory were mood disorder (35.57%), schizophrenia (18.94%) and personality disorders (18.24%). In the geriatric outpatient clinic, the predominant profile was female (69.49%), married (45.76%), without occupation (81.36%) and with a mean age of 73.5 years. The most prevalent diagnoses were mood disorders (27.27%), other degenerative diseases of the nervous system (24.24%) and organic mental disorders (21.21%). **Conclusion:** Identifying the profile of the users attended by these two outpatient clinics belonging to this psychiatric hospital may contribute to a greater efficiency in the prescription, dispensing and use of psychotropic medications through the establishment of institutional policies that ensure a proper medications use, an optimization of pharmaceutical assistance activities carried out in this unit, and in the elaboration of support strategies and social reintegration of these individuals.

**Keywords:** Mental Health; Psychotropic Drugs; Drug Utilization; Ambulatory Care; Geriatrics.

## Perfil farmacoterapêutico, clínico e sociodemográfico de adultos e idosos atendidos ambulatorialmente em um hospital psiquiátrico no Rio de Janeiro

## Resumo

**Objetivo:** Examinar o perfil de dispensação de medicamentos psicotrópicos e características clínicas e sociodemográficas de adultos e idosos atendidos em um hospital psiquiátrico universitário público no município do Rio de Janeiro. **Métodos:** Estudo transversal descritivo, com análise de dados de dispensação de psicotrópicos realizada em setembro de 2018 e análise de prontuários a partir dessas receitas. **Resultados:** A média de prescrições de psicotrópicos por paciente no ambulatório geral foi de 2,63, e 1,84 no geriátrico. Os subgrupos farmacológicos mais prescritos nos dois ambulatórios foram de antipsicóticos, antiepilépticos e antidepressivos, representados, respectivamente, pela risperidona, clonazepam e fluoxetina no ambulatório geral, e pela risperidona, clonazepam e citalopram no geriátrico. O principal perfil dos pacientes atendidos pelo ambulatório geral foi de pessoas do sexo feminino (60,97%), solteiras (60,32%), sem ocupação (55,48%) e com idade média de 48,9 anos. Os principais diagnósticos identificados no ambulatório geral foram transtorno de humor (35,57%), esquizofrenia (18,94%) e transtornos de personalidade (18,24%). No ambulatório geriátrico, o perfil predominante foi de pessoas do sexo feminino (69,49%), casadas (45,76%), sem ocupação (81,36%) e com idade média de 73,5 anos. Os diagnósticos mais prevalentes foram transtorno de humor (27,27%), outras doenças degenerativas do sistema nervoso (24,24%) e transtornos mentais orgânicos (21,21%). **Conclusão:** A identificação do perfil de usuários atendidos nos dois ambulatórios do hospital avaliado pode contribuir para maior eficiência na prescrição, dispensação e uso de psicofármacos através do estabelecimento de políticas institucionais que assegurem o uso adequado de medicamentos, da otimização das atividades de assistência farmacêutica realizadas na unidade, e da elaboração de estratégias de apoio e reintegração social desses indivíduos.

**Palavras-chave:** Saúde Mental; Psicofármacos; Uso Racional de Medicamentos; Ambulatório Hospitalar; Geriatria.



## Introduction

Mental, neurodegenerative and substance abuse disorders are growing every year in the world, accounting for one in five years of life with disability from 2011 to 2017.<sup>1</sup> In Brazil, mental and behavioral disorders represented the third leading cause of incapacity for work in 2015, accounting for 9% of sickness benefits and disability pensions.<sup>2</sup>

Some of these disorders include depression, bipolar disorders, dementia, anxiety, schizophrenia, and other psychoses. They are characterized by clinically significant disturbances in cognition and in the regulation of thoughts and emotions, with alterations in behavior and relationships.<sup>3</sup> Depression and anxiety are identified as the most prevalent disorders, with a global cost to the economy of US\$1 trillion per year.<sup>1</sup>

The mental health ambulatory represents a powerful device in the psychosocial care network by promoting care for people in psychological distress, no longer based on pharmacotherapy alone.<sup>4</sup>

However, adequate consumption of medication is still a major challenge. Everyday situations such as sadness, loneliness and insecurity have come to be perceived as pathologies that require pharmacological treatment, which is often prolonged. Consequently, psychotropic drugs have become the most widely used therapeutic resource for treating related symptoms.<sup>4,5</sup>

In addition, non-communicable chronic diseases are highly prevalent in the elderly population as a result of significant physiological and biochemical changes. Gradual cognitive impairment, changes in the sleep-wake cycle and the presence of comorbidities such as depression and anxiety are common with ageing and, in view of this, polypharmacy may be necessary. With the greater susceptibility of the elderly to the effects of medication, the risk of medication-related adverse events becomes high.<sup>6</sup>

The analysis of the medications dispensing, especially medications subject to special control, helps to outline the needs of health services and identify factors associated with their consumption, contributing to the use qualification and health resources rationalization.<sup>7</sup>

The aim of this study was to evaluate the dispensing profile of psychotropic medications to patients treated at a general ambulatory and a geriatric ambulatory at a public teaching psychiatric hospital, to examine the prevalence of mental and neurodegenerative disorders, and their sociodemographic aspects.

## Methods

This is a descriptive, cross-sectional study, with retrospective data collection from prescriptions and medical records of patients treated at a general outpatient clinic and a geriatric outpatient clinic of a public teaching psychiatric hospital in the municipality of Rio de Janeiro, RJ.

All legible prescriptions containing the fields patient name, drug name, dose, pharmaceutical form, route of administration, dosage, signature, and medical stamp dispensed by the pharmacy to patients at the general outpatient clinic and the geriatric outpatient clinic between September 1 and 30, 2018 were

included. Readability was assessed by two researchers.

The 28 medicines that could be prescribed were part of the institution's standardized list and were categorized by pharmacological subgroups, according to the Anatomical Therapeutic Chemical (ATC) system of the World Health Organization (WHO).<sup>8</sup> The classes prescribed were: antiepileptics (N03A), Anti-Parkinson drugs (N04A), antipsychotics (N05A), anxiolytics (N05B), hypnotics/sedatives (N05C), antidepressants (N06A) and antihistamines (R06A). All the medications, except promethazine, belonged to the B1 or C1 list of substances subject to special control in Ordinance No. 344/1998.<sup>9</sup>

From the prescriptions, the physical records of the users followed up in both outpatient clinics were selected. Considering the higher volume of consultations, the medical records from the general ambulatory were selected by random sampling, calculated using the EpiInfo program version 7.2.2.16, with a 95% confidence level and a frequency of 50% (the minimum size accepted for the sample to be representative of the population). A 10% rate of unavailability of medical records was taken into account when adjusting the sample size. All the records from the geriatric ambulatory were analyzed.

The information extracted during the medical records analysis was: (a) clinical: main psychiatric and neurological diagnoses, stratified by groups of codes described in the 10th revision of the International Classification of Diseases (ICD-10)<sup>10</sup>; and (b) sociodemographic: gender (male, female and not informed), age (age groups in years: 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, 80 or over, and not informed), mean age per outpatient clinic, marital status (single, married, widowed, divorced and not informed) and occupation (yes, no and not informed).

The data collected was tabulated in Microsoft Excel® 2016 spreadsheets. Student's t-test was used to compare the average of prescriptions/patient, and the chi-squared test, with a significance level of 5%, to compare the frequencies of prescriptions and diagnoses between the outpatient clinics, using the IBM SPSS Statistics program, version 21. The study was approved by the Research Ethics Committee of the Fluminense Federal University (Report No. 17561219.2.0000.5243) and the Institute of Psychiatry of the Federal University of Rio de Janeiro (Report No. 17561219.2.3002.5263).

## Results

During the period analyzed, 3982 prescriptions were filled by the institution's pharmacy. Of these, 78 (1.96%) were excluded from the study due to illegibility in some field. Another 1137 (28.56%) prescriptions were excluded because they originated from other sectors. In the end, 2767 (69.49%) recipes were included in the study. Of these, 1783 (64.42%) came from the general outpatient clinic and 140 (5.07%) from the geriatric outpatient clinic.

In the prescriptions analyzed, 4072 medications were prescribed, 3827 from the general outpatient clinic and 245 from the geriatric outpatient clinic. A total of 1,589 patients came from the outpatient clinics of interest, 1,456 from the general outpatient clinic (91.63%) and 133 from the geriatric outpatient clinic (8.37%). The mean number of prescriptions per patient was significantly higher in the general outpatient clinic ( $p < 0.001$ ) (Table 1).

**Table 1.** Number of prescriptions, patients and average number of prescriptions/patient in the general and geriatric ambulatories of a psychiatric hospital in the city of Rio de Janeiro/RJ, 2018

Service sector	Prescription number (%)	Patient numbers (%)	Average number of prescriptions/patient	p-value
General ambulatory	3827 (93.98)	1456 (91.63)	2.63	<0.001
Geriatric ambulatory	245 (6.02)	133 (8.37)	1.84	
<b>Total</b>	<b>4072 (100.00)</b>	<b>1589 (100.00)</b>	<b>2.56</b>	

The most prescribed pharmacological subgroups in the general outpatient clinic were antipsychotics (37.37%), antiepileptics (25.09%) and antidepressants (20.38%), represented predominantly by the medications risperidone, clonazepam and fluoxetine, in that order. In the geriatric outpatient clinic, the most prescribed pharmacological subgroups were antidepressants (40.00%), antiepileptics (25.31%) and antipsychotics (24.90%), with citalopram, clonazepam and risperidone predominating, respectively. There was a significant difference in the use of drugs belonging to the Anti-Parkinson, antipsychotic and antidepressant subgroups between the two ambulatories (Table 2).

We analyzed 310 records from the general outpatient clinic and 118 from the geriatric outpatient clinic. The records from the general outpatient clinic revealed a total of 433 diagnostic

hypotheses according to ICD-10, with the most frequent diagnoses being affective mood disorders (F30-F39; 35.57%), schizophrenic disorders (F20-F29; 18.94%) and adult personality and behavior disorders (F60-F69; 18.24%), with  $p \leq 0.05$  between the outpatient clinics. The most frequent diagnoses among the 198 hypotheses found in the geriatric outpatient records were affective mood disorders (F30-F39; 27.27%), other degenerative diseases of the nervous system (G30-G32; 24.24%) and organic mental disorders (F00-F09; 21.21%), with  $p \leq 0.05$  between the ambulatories (Table 3). The occurrence of more than one diagnostic hypothesis per patient was seen in 32.90% of the cases seen at the general outpatient clinic, and in 54.24% of the cases at the geriatric outpatient clinic.

**Table 2.** Prescription frequency by pharmacological subgroup, Medicines and ambulatory clinic of a psychiatric hospital in the city of Rio de Janeiro/RJ, 2018

ATC Code	Pharmacological subgroup	General ambulatory (%)	Geriatric ambulatory (%)	Total (%)	p-value
<b>N06A</b>	<b>Antidepressants</b>	<b>780 (20.38)</b>	<b>98 (40.00)</b>	<b>878 (21.56)</b>	<b>&lt;0.001</b>
	Amitriptyline	94 (2.46)	6 (2.45)	100 (2.46)	0.994
	Citalopram	279 (7.29)	58 (23.67)	337 (8.28)	<0.001
	Fluoxetine	320 (8.36)	30 (12.24)	350 (8.60)	0.036
	Imipramine	87 (2.27)	4 (1.63)	91 (2.23)	0.511
<b>N03A</b>	<b>Antiepileptics</b>	<b>960 (25.09)</b>	<b>62 (25.31)</b>	<b>1022 (25.10)</b>	<b>0.938</b>
	Valproic acid	256 (6.69)	9 (3.67)	265 (6.51)	0.064
	Carbamazepine	155 (4.05)	11 (4.49)	166 (4.08)	0.736
	Clonazepam	529 (13.82)	37 (15.10)	566 (13.90)	0.575
	Phenytoin	6 (0.16)	1 (0.41)	7 (0.17)	0.357
	Phenobarbital	14 (0.37)	4 (1.63)	18 (0.44)	0.004
<b>R06A</b>	<b>Antihistamines</b>	<b>240 (6.27)</b>	<b>12 (4.90)</b>	<b>252 (6.19)</b>	<b>0.387</b>
	Promethazine	240 (6.27)	12 (4.90)	252 (6.19)	0.387
<b>N05B</b>	<b>Anxiolytics</b>	<b>234 (6.11)</b>	<b>11 (4.49)</b>	<b>245 (6.02)</b>	<b>0.300</b>
	Diazepam	224 (5.85)	9 (3.67)	233 (5.72)	0.154
	Lorazepam	10 (0.26)	2 (0.82)	12 (0.29)	0.120
<b>N05A</b>	<b>Antipsychotics</b>	<b>1430 (37.37)</b>	<b>61 (24.90)</b>	<b>1491 (36.62)</b>	<b>&lt;0.001</b>
	Chlorpromazine	334 (8.73)	10 (4.08)	344 (8.45)	0.011
	Fluphenazine	33 (0.86)	2 (0.82)	35 (0.86)	0.940
	Haloperidol	332 (8.68)	7 (2.86)	339 (8.33)	0.001
	Levomepromazine	35 (0.91)	1 (0.41)	36 (0.88)	0.412
	Lithium	292 (7.63)	19 (7.76)	311 (7.64)	0.943
	Periciazine	1 (0.03)	0 (0.00)	1 (0.02)	0.800
	Risperidone	399 (10.43)	22 (8.98)	421 (10.34)	0.471
	Thioridazine	4 (0.10)	0 (0.00)	4 (0.10)	0.613
<b>N04A</b>	<b>Anti-Parkinson drugs</b>	<b>180 (4.70)</b>	<b>1 (0.41)</b>	<b>181 (4.44)</b>	<b>0.002</b>
	Biperiden	180 (4.70)	1 (0.41)	181 (4.44)	0.002
<b>N05C</b>	<b>Hypnotics/sedatives</b>	<b>3 (0.08)</b>	<b>0 (0.00)</b>	<b>3 (0.07)</b>	<b>0.661</b>
	Nitrazepam	3 (0.08)	0 (0.00)	3 (0.07)	0.661
	<b>Total</b>	<b>3827 (100.00)</b>	<b>245 (100.00)</b>	<b>4072 (100.00)</b>	

**Table 3.** Distribution of diagnostic hypotheses by ambulatory, according to ICD-10, of a psychiatric hospital in the city of Rio de Janeiro/RJ, 2018

Diagnosics	General ambulatory (%)	Geriatric ambulatory (%)	Total (%)	p-value
F00-F09 Organic mental disorders	9 (2.08)	42 (21.21)	51 (8.08)	<0.001
F10-F19 Mental disorders due to psychoactive substance use	10 (2.31)	1 (0.51)	11 (1.74)	0.108
F20-F29 Schizophrenic disorders	82 (18.94)	11 (5.56)	93 (14.74)	<0.001
F30-F39 Affective mood disorders	154 (35.57)	54 (27.27)	208 (32.96)	0.040
F40-F48 Neurotic and stress-related disorders	64 (14.78)	25 (12.63)	89 (14.10)	0.471
F50-F59 Behavioral syndromes associated with physiological dysfunctions	3 (0.69)	0	3 (0.48)	0.240
F60-F69 Adult personality and behavior disorders	79 (18.24)	7 (3.54)	86 (13.63)	<0.001
F70-F79 Mental retardation	16 (3.70)	0	16 (2.54)	0.006
F80-F89 Disorders of psychological development	4 (0.92)	0	4 (0.63)	0.175
F90-F98 Behavioral and emotional disorders with onset in childhood	1 (0.23)	0	1 (0.16)	0.499
G20-G26 Extrapyrimalid diseases and movement disorders	0	4 (2.02)	4 (0.63)	0.003
G30-G32 Other degenerative diseases of the nervous system	2 (0.46)	48 (24.24)	50 (7.92)	<0.001
G40-G47 Episodic and paroxysmal disorders	8 (1.85)	5 (2.53)	13 (2.06)	0.578
G50-G59 Disorders of nerves. nerve roots and nerve plexuses	1 (0.23)	0	1 (0.16)	0.499
G90-G99 Other nervous system disorders	0	1 (0.51)	1 (0.16)	0.139
<b>Total</b>	<b>433 (100.00)</b>	<b>198 (100.00)</b>	<b>631 100.00)</b>	

Legend: ICD-10 – International Classification of Diseases 10th revision

The sociodemographic profile of the patient's sample seen at the general outpatient clinic was characterized by a higher prevalence of females (60.97%), aged 40-49 (22.26%) and 50-59 (28.06%), with a mean age of 48.9 years, single (60.32%) and with no occupation (55.48%). The profile of the patients seen at the geriatric clinic was female (69.49%), aged 60-69 (36.44%) and 70-79 (29.66%), with a mean age of 73.5 years, married (45.76%) and with no occupation (81.36%) (Table 4).

**Table 4.** Sociodemographic variables by ambulatory of a psychiatric hospital in the municipality of Rio de Janeiro/RJ, 2018

Variables	General ambulatory (%)	Geriatric ambulatory (%)	Total (%)
<b>Gender</b>			
Male	121 (39.03)	36 (30.51)	157 (36.68)
Female	189 (60.97)	82 (69.49)	271 (63.62)
Do Not Informed	0 (0.00)	0 (0.00)	0 (0.00)
<b>Age group</b>			
10 a 19	3 (0.97)	0 (0.00)	3 (0.70)
20 a 29	28 (9.03)	0 (0.00)	28 (6.54)
30 a 39	48 (15.48)	0 (0.00)	48 (11.21)
40 a 49	69 (22.26)	1 (0.85)	70 (16.36)
50 a 59	87 (28.06)	5 (4.24)	92 (21.50)
60 a 69	49 (15.81)	43 (36.44)	92 (21.50)
70 a 79	16 (5.16)	35 (29.66)	51 (11.91)
80 80 or more	4 (1.29)	34 (28.81)	38 (8.88)
not informed	6 (1.94)	0 (0.00)	6 (1.40)
<b>Mean age</b>			
Years of life	48.9	73.5	61.2
<b>Marital status</b>			
Single	187 (60.32)	19 (16.10)	206 (48.13)
Married	79 (25.48)	54 (45.76)	133 (31.08)
Widowed	15 (4.84)	30 (25.42)	45 (10.51)
Divorced	23 (7.42)	15 (12.71)	38 (8.88)
not informed	6 (1.94)	0 (0.00)	6 (1.40)
<b>Occupation</b>			
Yes	132 (42.58)	22 (18.64)	154 (35.98)
No	172 (55.48)	96 (81.36)	268 (62.62)
not informed	6 (1.94)	0 (0.00)	6 (1.40)
<b>Total</b>	<b>310 (100.00)</b>	<b>118 (100.00)</b>	<b>428 (100.00)</b>

## Discussion

The prescriptions legibility rule has been in place since 1973<sup>11</sup> and aims to prevent medication errors during dispensing and/or administration. In addition, the National Patient Safety Program<sup>12,13</sup> establishes the legibility of prescriptions as an essential item for safety, both in prescribing and in the medications use and administration. Problems with prescriptions legibility can impair communication between the prescriber and the patient or health professionals, which tends to lead to major medication errors, such as the exchange of medicines with similar names, with possibly fatal consequences in cases of prescriptions for highly monitored medicines.<sup>13</sup>

This study identified almost 2% of prescriptions with some illegible field, which led to their exclusion. The problem of illegibility could be reduced with the implementation of computerized systems in health units, although this is still a distant reality throughout the country.

The greater number of visits to the general ambulatory (1456) compared to the geriatric one (133) naturally results in a significantly higher volume of prescriptions and medical records coming from this facility. The general outpatient clinic treats adults with various types of disorders, such as depression, bipolar disorder, schizophrenia, and anxiety. The geriatric outpatient clinic is aimed at elderly people with cognitive or psychiatric complaints, such as dementia and Alzheimer's disease.

The average number of psychotropic medicines prescriptions for general ambulatory was 2.63, and 1.84 for geriatric ambulatory. A Brazilian multicenter study conducted by Costa et al.<sup>7</sup> in psychiatric institutions revealed a mean prescription of 2.98 psychotropic drugs per patient, with a preponderance of antipsychotic combinations. Psychotropic polypharmacy (use of two or more psychotropic drugs) was found in 85.3% of patients<sup>7</sup>. The mean number of prescriptions found in specialized mental health care units in this study is similar to that found in general outpatient clinics.

The lower mean number of psychotropic drug prescriptions filled at the geriatric outpatient clinic from prescriptions presented at the institution's pharmacy may be related to the fact that the

Specialized Component of Pharmaceutical Services (Componente Especializado da Assistência Farmacêutica, CEAF) dispenses most of the medicines for the treatment of mental and neurological disorders in these patients.

The mean number of prescriptions per patient is a prescribing indicator recommended by the WHO that helps to investigate polymedication, a factor related to medication interactions and adverse reactions. The WHO recommends prescribing up to two medicines per patient.<sup>14</sup> The polypharmacy occurs frequently among elderly due to non-communicable chronic diseases, including degenerative diseases related to ageing, further increasing the vulnerability of this population to the medicines use.<sup>6,15,16</sup>

The predominant prescription pattern for antipsychotics, anxiolytics and antidepressants observed in the general and geriatric outpatient clinics has also been identified in other studies carried out in the country.<sup>7,17,18</sup> The most prescribed antipsychotic at both clinics was risperidone, the only atypical antipsychotic standardized at the institution and widely used due to its lower potential for adverse reactions compared to typical antipsychotics. This profile of atypical antipsychotics contributes to greater adherence to medication treatment, especially among patients with schizophrenia.<sup>19</sup> Its indications include the schizophrenia treatment, manic or mixed episodes associated with bipolar disorder and dementia related to moderate to severe Alzheimer's disease.<sup>20</sup>

The most prescribed antidepressants for patients in the general and geriatric outpatient clinics were the selective Serotonin Reuptake Inhibitors (SSRIs) fluoxetine and citalopram, respectively. Fluoxetine is the antidepressant of choice in the treatment of Bipolar Disorder (BD), in combination with mood stabilizers or antipsychotics<sup>21</sup>. In the case of depression, fluoxetine is less effective than citalopram and has a greater potential for adverse reactions and medication interactions<sup>22</sup>. Among the medications belonging to the SSRI class, citalopram is considered the first choice for use in elderly and is widely used in adults to treat depression, in association with psychotherapy. It does not have a significant anticholinergic effect, orthostatic hypotension and sedation compared to tricyclic antidepressants.<sup>16,22</sup>

The antiepileptic therapeutic subgroup accounted for more than a quarter of prescriptions in each clinic. High prescribing of clonazepam boosted this subgroup. The ATC system classifies this benzodiazepine as an antiepileptic, the main indication in European countries. In Brazil, the pharmaceutical specialties available contain between 0.25 and 2.5 mg of clonazepam, doses indicated for the treatment of anxiety disorders and insomnia.<sup>23</sup> In the institution studied, this medication is used in particular to treat these disorders, with standardized 2mg tablets and a 2.5mg/mL oral solution. Therefore, anxiolytics would appear as one of the subgroups with the highest prescription frequency if this medication were classified as such.

Benzodiazepines have anxiolytic, hypnotic, anticonvulsant, and muscle relaxant properties.<sup>23,24</sup> A study carried out at a mental health clinic in Sorocaba in 2013<sup>24</sup> showed that only 5.8% of benzodiazepine prescriptions for elderly and 1.9% for adults were appropriate. Chronic use was observed among the adults and elderly with depressive and anxiety disorders assessed in this study, which contributes to their dependence.

Benzodiazepines are considered potentially inappropriate medications for elderly when prescribed inappropriately. In general, all medications in this class increase the risk of cognitive impairment, delirium, postural hypotension, falls and fractures

in this age group, with a greater risk for long-acting medicines (such as diazepam) due to reduced metabolism.<sup>23,24,25</sup> For all these reasons, the high benzodiazepine prescriptions rate found in this study requires attention, especially for patients seen at the geriatric outpatient clinic (19.59%). In each case, the time of use, indication and interaction with other prescribed medications should be assessed.

The antiparkinsonian biperiden can be used as an adjuvant to antipsychotic treatment. It has anticholinergic activity which is useful in controlling extrapyramidal effects resulting from the use of neuroleptics, especially typical ones such as haloperidol and chlorpromazine used in adults.<sup>26</sup> The antihistamine promethazine can also be useful in the management of extrapyramidal effects, with an additional sedative effect indicated for patients with psychomotor agitation. Its use is not recommended in elderly due to the risk of mental confusion, dry mouth, constipation and other anticholinergic effects, or even toxicity due to the reduced clearance of this medicines in this population.<sup>25,27</sup>

The pharmacological subgroups identified in this study are associated with the most prevalent diagnoses in the general and geriatric outpatient clinics, such as affective mood disorders (F30-F39) and neurotic and stress-related disorders (F40-F48). The first group of disorders includes bipolar affective disorder (F31), depressive episodes (F32) and recurrent depressive disorder (F33). The second includes phobic-anxious disorders (F40) and severe stress reactions and adaptation disorders (F43). Bipolar disorder is characterized by manic and depressive episodes alternating with normal mood. Multiprofessional support and mood-stabilizing medications are effective in treating the acute phase and preventing relapses.<sup>3</sup>

The most common diagnoses in the general outpatient clinic were disorders in the F20 to F29 category, represented mainly by schizophrenia (F20). Schizophrenic disorders are a group of mental disorders characterized by distortions of thought and perception, with affective alterations. Schizophrenia is a severe mental disorder that appears between adolescence and early adulthood.<sup>26</sup> The literature shows that schizophrenic disorders mainly affect males, with an earlier onset of the disease and a worse prognosis than women in terms of psychiatric readmissions.<sup>28</sup>

Psychosocial support and appropriate medication treatment help individuals with this disorder to lead productive lives and integrate into society.<sup>3</sup> According to a study carried out in the state of São Paulo,<sup>29</sup> the expansion of psychosocial community services helped reduce the number of psychiatric hospitalizations due to schizophrenia, schizotypal and delusional disorders (F20 to F29) by 46.19%, when comparing the years 2014 and 2019, equivalent to a reduction in spending of 57.46%.

The greater occurrence of more than one diagnostic hypothesis per patient in the geriatric outpatient clinic can be explained by the wider range of clinical and psychiatric comorbidities that affect the older adults population.<sup>6,15</sup> In addition to mood disorders, the geriatric outpatient clinic's most prevalent diagnoses were organic mental disorders (F00-F09), which include dementia in Alzheimer's disease (F00), degenerative diseases of the nervous system (G30-G32), represented by Alzheimer's disease (G30), and extrapyramidal diseases and movement disorders (G20-G26), the main one being Parkinson's disease (G20). Dementia is caused by various pathologies and lesions that affect the brain, the increased incidence of which accompanies ageing. It is progressive in nature, with early deterioration of cognitive function, decline in emotional control, social behavior and motivation.<sup>3</sup>



The sociodemographic profile of the users seen at the general outpatient clinic revealed a predominance of female patients, with a mean age of 48.9 years, single and unemployed. The high unemployment rate among users of the general outpatient clinic can be explained by the related mental disorders, which can lead to significant productive incapacity and even social stigma. Diagnoses of mood disorders, such as depression and anxiety, observed more frequently in this study, are more associated with females.<sup>3,7</sup> On the other hand, the literature indicates that males are the predominant users of outpatient or inpatient psychiatric services, especially as a result of schizophrenia.<sup>28,30</sup> In this case, factors such as single marital status, lack of social and family support, unemployment and frequent readmissions are strongly associated with the risk of relapse, non-adherence to medication treatment and other negative outcomes.<sup>19,28</sup>

The sociodemographic characteristics of the patients seen at the geriatric clinic also indicate a higher female rate, with a mean age of 73.5 years, who are married and have no occupation. Neurodegenerative diseases such as Alzheimer's are more common in the pre-senile and senile age groups and increase with age. Individuals with these diseases generally lead a normal life and, with senility, begin to show memory deficits insidiously and with progressive deterioration.<sup>31</sup>

In relation to depression and anxiety, the proportion of the global population affected in 2015 was estimated at 4.4% and 3.6% respectively, affecting more females.<sup>32</sup> In Brazil, it is estimated that in 2014 the prevalence of self-reported depression was 6.1% of the population, affecting mainly women and elderly.<sup>33</sup> The prevalence of depression varies with age, reaching a threshold in older adults. Depression is associated with an increased suicide risk, which requires an effective response from health services to prevent it.<sup>32</sup> Changes in lifestyle, chronic medication use, a high prevalence of comorbidities and physical and cognitive limitations are factors inherent to ageing that can contribute to the incidence of depressive and anxiety disorders in older adults.<sup>22</sup>

Among the limitations of this study were the short analysis time, which made it impossible to examine a larger number of prescriptions and the seasonality of the service, the losses and incomplete information found in the medical records, as well as the restricted prescription indicator for psychotropic drugs, which did not allow all the medicines used by the patients to be identified. The lack of more detailed data to correlate gender, occupation and marital status with medicines use can also be pointed to as another limiting factor in the study.

## Conclusion

The health impacts and the relevant social, economic and human rights consequences of the global mental disorders burden have expanded in recent decades.<sup>1,2,3</sup> This study has enabled us to learn more about the sociodemographic characteristics and the psychotropic drugs use by different populations suffering from mental disorders, which contributes to the institutional programs development that ensure the proper medication use, optimize the pharmaceutical care activities carried out in the unit, and help develop strategies to support and reintegrate these individuals into society.

In this respect, the medication dispensation in public mental health outpatient clinics is fundamental in promoting access to

psychotropic drugs selected according to government guidelines and in their rational use, playing an essential role in the network of services that replace psychiatric hospitals.

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## Collaborations

CST contributed to designing the study, analyzing and interpreting the data, and drafting and revising the final version of the manuscript. RMDs and VS contributed to designing the study, analyzing and interpreting the data, and revising the final version of the manuscript. All authors have approved the final version and are responsible for all aspects of the work, including ensuring its accuracy and integrity.

## Conflict of interest declaration

The authors declare no conflicts of interest.

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