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Use of medication in patients with mental disorders treated at a hospital in Roraima: a cross-sectional study

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Abstract

Objectives: To analyze the profile of medications prescribed for patients with mental disorders treated at a hospital in Roraima. **Methods:** This is a descriptive, cross-sectional and quantitative study, collecting retrospective data from prescriptions and medical records of patients treated in the psychiatry unit of a hospital in Roraima from February 2018 to February 2020. The study was developed in accordance with with the recommendations of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement for observational studies. For data analysis, it was the IBM Statistical Package for the Social Sciences 23.0 was used. The research was approved by the Research Ethics Committee under opinion 4,614,305. **Results:** A total of 156 patients were included in the research and the analysis of their medical records and prescriptions revealed that the majority of these patients were male (n = 88, 56.4%), aged between 30 and 39 years (n = 51, 32.7%), mixed ethnicity (n = 136, 87.2%), single marital status (n = 76, 48.7%), diagnosed with 1 mental disorder (n = 119, 76.3%), classified within the Spectrum of Schizophrenia and Other Psychotic Disorders (n = 80, 51.3%). The prescriptions contained a total of 5 or more medications (n = 105, 67.3%), with 2 or more antipsychotics (n = 116, 74.4%), hospital stay length of 6 to 16 days (n = 61, 39.1%). With regard to prescribed drugs, the main classes were antipsychotics, anxiolytics and antiepileptics. The most frequent drugs were haloperidol (n = 110, 70.5%), promethazine (n = 97, 62.2%), levomepromazine (n = 85, 54.5%), diazepam (n = 83, 53.2%), clonazepam (n = 79, 50.6%), biperiden (n = 52, 33.3%), midazolam (n = 41, 26.3%), risperidone (n = 39, 25.0%), and lithium carbonate (n = 37, 23.7%). **Conclusion:** The presence of polypharmacy, the high frequency of drugs with the potential to produce adverse effects, highlights the need for greater care with the pharmacotherapy of patients with mental disorders, whether in acute or thermal treatment, increasing patient adherence, improving their quality of life.

Keywords: Psychotropic Drugs, Drug Therapy, Adverse Drug Reactions; Mental Health, Pharmacovigilance, Rational Drug Use.

Uso de medicamentos em pacientes com transtornos mentais atendidos em um hospital de Roraima: um estudo transversal

Resumo

Objetivos: Analisar o perfil de medicamentos prescritos a pacientes com transtornos mentais atendidos em um hospital de Roraima. **Métodos:** Trata-se de um estudo descritivo, transversal e quantitativo, com coleta de dados retrospectivos de prescrições e prontuários de pacientes atendidos na unidade de psiquiatria de um hospital de Roraima no período de fevereiro de 2018 a fevereiro de 2020. Para análise dos dados, foi utilizado o IBM *Statistical Package for the Social Sciences* 23.0. A pesquisa foi aprovada pelo Comitê de Ética em Pesquisa sob o parecer 4.614.305. **Resultados:** Um total de 156 pacientes foram incluídos na pesquisa e a análise dos seus prontuários e prescrições permitiu verificar que a maioria desses pacientes era do sexo masculino (n = 88, 56,4%), na faixa etária de 30 a 39 anos (n = 51, 32,7%), cor parda (n = 136, 87,2%), estado civil solteiro (n = 76, 48,7%), com diagnóstico de 1 transtorno mental (n = 119, 76,3%), classificados dentro do espectro da esquizofrenia e outros transtornos psicóticos (n = 80, 51,3%). As prescrições continham um total de 5 ou mais fármacos (n = 105, 67,3%), com 2 ou mais antipsicóticos (n =116, 74,4%), tempo de permanência no hospital de 6 a 16 dias (n = 61, 39,1%). No que diz respeito aos fármacos prescritos, as principais classes foram antipsicóticos, ansiolíticos e antiepiléticos. Os fármacos mais frequentes foram haloperidol (n = 110, 70,5%), prometazina (n = 97, 62,2%), levomepromazina (n = 85, 54,5%), diazepam (n = 83, 53,2%), clonazepam (n = 79, 50,6%), biperideno (n = 52, 33,3%), midazolam (n = 41, 26,3%), risperidona (n = 39, 25,0%) e carbonato de lítio (n= 23, 7%). **Conclusão:** A presença de polifarmácia, a alta frequência de fármacos com potencial para produzir efeitos adversos, evidenciam a necessidade de maiores cuidados com a farmacoterapia de pacientes com transtornos mentais, seja no tratamento agudo ou crônico, visando aumentar a adesão do paciente, melhorando a sua qualidade de vida.

Palavras-chave: Psicotrópicos, Farmacoterapia, Reações Adversas a Medicamentos, Saúde Mental, Farmacovigilância, Uso Racional de Medicamentos.

Introduction

Medications are the most widely used treatments, applied to various conditions with the aim of clinical improvement and maintenance of patient well-being. For effective pharmacotherapy, it is essential to ensure proper adherence to the stages of medication use[1]. According to the literature, the greater the number of medications used concurrently, the higher the risk of drug interactions[1,4] and consequently, adverse events.

In mental health, treatment is complex and involves many variables, with psychopharmacotherapy being the most commonly used approach. These medications work by reducing symptoms that cause psychological distress, shortening the course of the illness, reducing disability resulting from the mental disorder, preventing relapses, and improving the individual's adaptation to reality[3,5]. They should be used through evidence-based safe practices, with comprehensive information disseminated to healthcare professionals to ensure both safe treatment and rehabilitation[3,6].

Studies on drug utilization are important for understanding the profile of medication use in different contexts, enabling the development of interventions to promote rational use.[7] This type of study allows for the understanding of medication use and its effects on populations[8]. Despite their importance, few such studies are found in the country. This number is even smaller when the target population is people with mental and behavioral disorders (MBD). Between 2013 and 2023, some authors published studies on this population, presenting different methodological designs and objectives[9-25]. Moreover, most of them focused on the sociodemographic and clinical profile of patients.
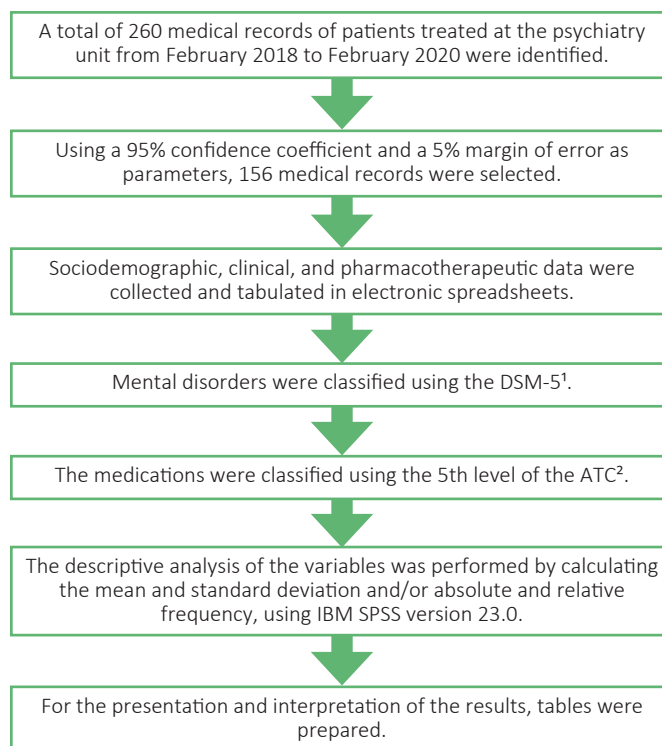
Given the relevance of pharmacoepidemiological studies and the impact that irrational use of medications has on people with MBD, this research aimed to analyze the profile of medications prescribed to patients with MBD treated at a psychiatric unit of a hospital in the municipality of Boa Vista-RR.

Methods

This is a descriptive, cross-sectional, and quantitative study with retrospective data collection from prescriptions and medical records of patients treated at the psychiatry unit of a hospital in Boa Vista-RR, during the period from February 2018 to February 2020. The study was developed in accordance with the recommendations of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement for observational[26] studies. The study was conducted following the guidelines and regulatory standards for research involving human subjects and was approved by the local Research Ethics Committee under opinion number 4,614,305. The methodological flow of the study is outlined in Figure 1.

The hospital in the study provides high-complexity healthcare services and is considered the main hospital referral center in Roraima. The unit serves users from different services within the healthcare network who require clinical and/or surgical emergency care. The hospital performs laboratory tests, radiological exams, ultrasounds, electrocardiograms, among others. It also has various medical specialties, including psychiatry[27].

Figure 1. Methodological Flow of the Study Conducted with Patients with Mental and Behavioral Disorders Attended at the Psychiatry Unit of a Hospital in Boa Vista-RR from 2018 to 2020 (n = 156).

A total of 260 medical records of patients treated at the psychiatry unit from February 2018 to February 2020 were identified.

Using a 95% confidence coefficient and a 5% margin of error as parameters, 156 medical records were selected.

Sociodemographic, clinical, and pharmacotherapeutic data were collected and tabulated in electronic spreadsheets.

Mental disorders were classified using the DSM-5[1].

The medications were classified using the 5th level of the ATC[2].

The descriptive analysis of the variables was performed by calculating the mean and standard deviation and/or absolute and relative frequency, using IBM SPSS version 23.0.

For the presentation and interpretation of the results, tables were prepared.

[1]Diagnostic and Statistical Manual of Mental Disorders (DSM-5); [2]Anatomical Therapeutic Chemical Classification (ATC), with the 5th level of this classification referring to the identification of the chemical substance.

Data were collected from medical records and prescriptions archived in the hospital's Medical Records and Statistics Service (SAME) and recorded in a specific form. Inclusion criteria included medical records of patients treated at the hospital's psychiatry unit from February 1, 2018, to February 1, 2020, with psychotropic prescriptions and aged over 18 years. A total of 260 medical records were identified in SAME. Medical records of patients without a diagnosis of MBD were excluded from the study population.

A sample of the referred population was used for this research, calculated based on the following statistical parameters: a 95.0% confidence level and a 5.0% sampling error, resulting in a total of 156 medical records. The sample calculation, using the described parameters, was performed using the online "sample size calculator" tool from SurveyMonkey[28]. All data were collected from August 26, 2021, to February 7, 2022, and then tabulated in spreadsheets using Microsoft Excel® software (version 2010).

Quantitative analysis of numerical variables was performed by calculating the mean and standard deviation, and for qualitative or nominal categorical variables, by simple and relative frequencies. The analyses were carried out using the IBM Statistical Package for the Social Sciences (IBM SPSS) software (version 23.0).

To classify mental disorders, the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) classification was used. The DSM-5, in Section II of the Manual, provides chapters that present diagnostic criteria for different mental disorders[29]. Based on the mental disorder described in the patient's medical record, classification was performed using the DSM-5.

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Medications were classified according to the Anatomical Therapeutic Chemical (ATC) Classification System. The ATC/DDD Index database, from the Norwegian Institute of Public Health, was used to identify drug classifications[30]. The search was conducted individually, using the generic name of the drug in English. In this study, the 5th level of the ATC Classification, corresponding to the chemical substance, was used.

Results

A total of 156 medical records of patients with mental and behavioral disorders (MBD) were analyzed in this study. These patients were predominantly male (n = 88, 56.4%), aged 30 to 39 years (n = 51, 32.7%), of mixed race (n = 136, 87.2%), and single (n = 76, 48.7%), as shown in Table 1.

Table 1. Sociodemographic Data of Patients with Mental and Behavioral Disorders Treated at the Psychiatry Unit of a Hospital in Boa Vista-RR from 2018 to 2020 (n = 156).

Variables	M ± SD	n	%
Sex			
Male		88	56.4
Female		68	43.6
Age (years)	34.1 ± 11.1		
Age range (years)			
18 a 19		9	5.8
20 a 29		49	31.4
30 a 39		51	32.7
40 a 49		28	17.9
50 a 59		19	12.2
Nationality			
Brazilian		139	81.1
Venezuelan		14	9.0
Haitian		1	0.6
Belgian		1	0.6
Not recorded*		1	0.6
Residence Municipality			
Boa Vista		141	90.4
Canta		5	3.2
Caracaraí		2	1.3
Normandia		2	1.3
Rorainópolis		1	0.6
Others		5	3.2
Race/Color/Ethnicity			
Brown		136	87.2
White		4	2.6
Indigenous		3	1.9
Black		2	1.3
Not recorded*		11	7.1
Marital Status			
Single		76	48.7
Common-law marriage		9	5.8
Married		7	4.5
Widowed		1	0.6
Not recorded*		63	40.4

*Information not available in the medical record. M: mean. SD: standard deviation.

Regarding clinical characteristics, it was found that the majority had a diagnosis of one mental disorder (n = 119, 76.2%), were prescribed five or more medications (n = 105, 67.3%), including two or more antipsychotics (n = 116, 74.4%), had no comorbidities (n = 53, 34.0%) or the comorbidity was not recorded in the medical record (n = 89, 57.0%), were hospitalized (n = 134, 85.9%), and the length of stay ranged from 6 to 16 days (n = 61, 37.2%). Among those who used chemical substances (n = 32, 20.5%), 18 used illicit drugs (56.3%) (Table 2).

Table 2. Clinical Data of Patients with Mental and Behavioral Disorders Treated at the Psychiatry Unit of a Hospital in Boa Vista-RR from 2018 to 2020 (n = 156).

Clinical Variables	M ± SD	n	%
Number of mental disorders			
1		119	76.2
2		31	19.9
3 or more		6	3.8
Number of prescribed medications	5.8 ± 2.2		
1 a 4		51	32.7
≥ 5		105	67.3
Number of antipsychotics prescribed to the same patient	2.3 ± 1.1		
0 a 1		40	25.6
≥ 2		116	74.4
Comorbidities			
Yes		14	9.0
No		53	34.0
Not recorded*		89	57.0
Use of chemical substance(s)			
Yes		32	20.5
No		124	79.5
Type of reported chemical substance(s)**			
Legal drugs		18	56.3
Blood alcohol		5	15.6
Overdosed medications		4	12.5
Blood alcohol + Illegal drugs		3	9.4
Blood alcohol + Overdosed medications		1	3.1
Illegal drugs + Overdosed medications		1	3.1
Treatment regimen			
Hospitalized		134	85.9
Medicated and released		22	14.1
Duration of hospitalization (days)			
1 a 5		48	29.5
6 a 16		61	37.2
17 a 32		23	14.7
33 a 52		1	0.6
≥ 53		1	0.6
Not recorded*		6	3.8
No hospitalization		21	13.5

*The information is not recorded in the medical record. ** Relative frequency was calculated based on the 32 patients with recorded use of chemical substances. M: mean. SD: standard deviation.

It was observed that 51.3% (n = 80) of the patients had MBD within the schizophrenia spectrum and other psychotic disorders, followed by anxiety disorders (n = 19, 12.2%) and bipolar disorder and related disorders (n = 16, 10.3%), according to the DSM-5 classification. Additionally, 23.7% (n = 37) of the patients had two or more mental disorder diagnoses (Table 3).

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Table 3. Characterization of Mental Disorders in Patients with Mental and Behavioral Disorders Treated at the Psychiatry Unit of a Hospital in Boa Vista-RR from 2018 to 2020 (n = 156), According to DSM-5 Classification (Diagnostic and Statistical Manual of Mental Disorders).

Classes of Mental Disorders Identified per Patient	n	%
Schizophrenia Spectrum and Other Psychotic Disorders	80	51.3
Anxiety Disorders	19	12.2
Bipolar and Related Disorders	16	10.3
Schizophrenia Spectrum and Other Psychotic Disorders + Bipolar and Related Disorders	12	7.7
Depressive Disorders + Bipolar and Related Disorders	8	5.1
Schizophrenia Spectrum and Other Psychotic Disorders + Depressive Disorders	4	2.6
Schizophrenia Spectrum and Other Psychotic Disorders + Substance-Related and Addictive Disorders	4	2.6
Substance-Related and Addictive Disorders	2	1.3
Intellectual Developmental Disorders	2	1.3
Schizophrenia Spectrum and Other Psychotic Disorders + Bipolar and Related Disorders + Substance-Related and Addictive Disorders	2	1.3
Depressive Disorders + Substance-Related and Addictive Disorders	1	0.6
Bipolar and Related Disorders + Substance-Related and Addictive Disorders	1	0.6
Schizophrenia Spectrum and Other Psychotic Disorders + Anxiety Disorders	1	0.6
Schizophrenia Spectrum and Other Psychotic Disorders + Depressive Disorders + Bipolar and Related Disorders	1	0.6
Schizophrenia Spectrum and Other Psychotic Disorders + Substance-Related and Addictive Disorders + Intellectual Developmental Disorders	1	0.6
Substance-Related and Addictive Disorders + Intellectual Developmental Disorders + Personality Disorders	1	0.6
Schizophrenia Spectrum and Other Psychotic Disorders + Anxiety Disorders + Personality Disorders	1	0.6

+: indica que o paciente apresenta diagnóstico de transtorno mental em mais de uma classe (2 ou 3).

Table 4. Characterization of Psychotropic Medications Prescribed to Patients with Mental and Behavioral Disorders Treated at the Psychiatry Unit of a Hospital in Boa Vista-RR from 2018 to 2020 (n = 156), According to the 5th Level of the Anatomical Therapeutic Chemical (ATC) Classification.

ATC Classification		n	%
N05AD01	Haloperidol	110	70.5
N05AA02	Levomepromazine	85	54.5
N05BA01	Diazepam	83	53.2
N03AE01	Clonazepam	79	50.6
N04AA02	Biperiden	52	33.3
N05CD08	Midazolam	41	26.3
N05AX08	Risperidone	39	25.0
N05AN01	Lithium Carbonate	37	23.7
N05AD01	Haloperidol Decanoate	30	19.2
N03AF01	Carbamazepine	21	13.5
N05AH04	Quetiapine	12	7.7
N05AA01	Chlorpromazine	8	5.1
N06AA09	Amitriptyline	7	4.5
N03AG01	Valproic Acid	7	4.5
N06AB10	Escitalopram	6	3.8
N05BA08	Bromazepam	6	3.8
N05AH03	Olanzapine	5	3.2
N06AX16	Venlafaxine	4	2.6
N06AB05	Paroxetine	4	2.6
N06AB03	Fluoxetine	3	1.9
N03AA02	Phenobarbital	3	1.9
N06AB06	Sertraline	2	1.3
N06AX11	Mirtazapine	2	1.3
N06AX21	Duloxetine	2	1.3
N03AB02	Phenytoin	2	1.3
N03AX11	Topiramate	2	1.3
N05BA12	Alprazolam	1	0.6
N06AX23	Desvenlafaxine	1	0.6
N05CF02	Zolpidem	1	0.6

A total of 57 different drugs were identified, of which 29 were psychotropic medications, with the most frequent being haloperidol (n = 110, 70.5%), levomepromazine (n = 85, 54.5%), diazepam (n = 83, 53.2%), clonazepam (n = 79, 50.6%), biperiden (n = 52, 33.3%), and lithium carbonate (n = 37, 23.7%) (Table 4).

In addition to psychotropic medications, drugs from different therapeutic classes (n = 28) were also identified, with promethazine being the most prominent (n = 97, 62.2%) (Table 5).

Discussion

No studies on medication use in people with mental and behavioral disorders (MBD) were found in the state of Roraima. Additionally, it is important to highlight that the study site is a reference center for hospital care, including emergency and urgent care for individuals with MBD, allowing for the profiling of this population. The results showed that males were the most likely to require hospital care due to urgent or emergency situations caused by MBD. Therefore, this study provides insights into the profile of the

evaluated population, which can be used to develop healthcare strategies for this population at different levels of care within the Brazilian Unified Health System (SUS) in Roraima.

In this study, men represented the majority of patients treated in the psychiatry unit (56.4%), a percentage similar to that found in two other studies[14,18]; however, it is lower than what was observed by other authors[10,11,16,21,23,25], where the relative frequencies for males exceeded sixty percent. However, in two studies[15,19] conducted in psychiatric units, the most frequent population was female. In contrast, studies conducted on patients with MBD treated in non-psychiatric units showed a higher frequency of females[9,12,17,20,22,24]. These data suggest a higher prevalence of males in psychiatric unit hospitalizations compared to hospitalizations in other medical specialties, which may indicate a greater severity of health conditions among men, delayed seeking of treatment, or higher prevalence of psychiatric emergencies.

Regarding the age of the patients, this study observed that most were in the 30 to 39-year age group, similar to other studies[11,13,14,16,18,21,23]; however, a slightly older age group, 40 to 50 years, was also found[10,15]. For patients treated in non-

psychiatric units, the age group was even older, between 50 and 59 years[9,12,17,20,22,24]. These findings indicate that individuals with MBD treated in psychiatric units tend to be younger compared to those treated in non-psychiatric units, suggesting that younger populations are more vulnerable to psychiatric emergencies.

Table 5. Characterization of Medications Prescribed to Patients with Mental and Behavioral Disorders Treated at the Psychiatry Unit of a Hospital in Boa Vista-RR from 2018 to 2020 (n = 156), According to the 5th Level of the Anatomical Therapeutic Chemical (ATC) Classification.

ATC Classification		n	%
R06AD02	Haloperidol	97	62.2
N02BB02	Levomepromazine	17	10.9
C09AA01	Diazepam	9	5.8
N02BE01	Clonazepam	5	3.2
J01CR02	Biperiden	4	2.6
A10BA02	Midazolam	4	2.6
J01MA02	Risperidone	3	1.9
C03AA03	Lithium Carbonate	3	1.9
M01AE01	Haloperidol Decanoate	3	1.9
J01DB01	Carbamazepine	2	1.3
J01XD01	Quetiapine	2	1.3
J01CA04	Chlorpromazine	2	1.3
C07AB03	Amitriptyline	2	1.3
C08CA01	Valproic Acid	2	1.3
M01AC02	Escitalopram	2	1.3
J01MA12	Bromazepam	1	0.6
J01DB03	Olanzapine	1	0.6
C08CA05	Venlafaxine	1	0.6
C09AA02	Paroxetine	1	0.6
C03CA01	Fluoxetine	1	0.6
C10AA01	Phenobarbital	1	0.6
N02AX02	Sertraline	1	0.6
A10BB01	Mirtazapine	1	0.6
A10BB12	Duloxetine	1	0.6
H03AA01	Phenytoin	1	0.6

Regarding marital status, the majority of the evaluated patients were single, both in this research (48.7%) and in other studies[10,11,14,18]. Among patients treated in non-psychiatric units, with a higher prevalence of females, most of these individuals were in a marital relationship[12,17,20], but there were also studies where the majority were single[9,22]. The prevalence of single individuals with MBD suggests a possible relationship between mental disorders and marital status.

Regarding race/ethnicity, this study found that the majority of patients were of mixed race (87.2%), similar to findings in other studies[14,16,25], all of which were conducted in northeastern states of Brazil. In a study conducted in Paraná[11], most patients treated in the psychiatric unit were white. A similar racial profile was observed among patients treated in non-psychiatric units, with the majority being white in studies conducted in the southern region of Brazil[12,17] and mixed race in a study conducted in the central-west region[22]. These findings are consistent with the racial/ethnic distribution of the population in each of these regions[31], indicating that there does not seem to be a direct relationship between race and the type of hospital unit but rather with the geographical region of the country.

Regarding the diagnosis of mental disorders in the evaluated patients, the majority had disorders within the schizophrenia spectrum and other psychotic disorders (51.3%). Similar results were observed in other studies, with a prevalence of this diagnosis among males[10,11,14,16,21]. In contrast, among patients hospitalized in non-psychiatric units, the majority were diagnosed with anxiety disorders or depressive disorders, with a higher prevalence among females[12,17,20,22,25].

The use of chemical substances, such as alcohol and/or illicit drugs, was identified in 20.5% of the evaluated patients. This practice is extremely dangerous, as it increases the risks of adverse effects and the development of physical and/or psychological dependence. Some authors associate male gender with a higher abuse of psychoactive substances and alcohol. According to these studies, men use these substances to relieve the suffering and distress caused by mental disorders and tend to abandon treatment, worsening their clinical condition[11,19,32]. Despite this, studies report substance use among patients with MBD[21,22,25]. These data highlight the need for public policies targeted at this population.

The high prevalence of schizophrenia spectrum disorders and other psychotic disorders is directly associated with the high need for psychiatric hospitalization due to their severe symptoms and the risk the patient may pose to themselves and society in general[19]. Psychiatric hospitalization cases for men are reported to be twice as high as for women. These cases may be related to the lack of seeking or discontinuing treatment, leading to ineffective disease control in males[32]. When evaluating the number of hospitalizations for MBD patients in Brazil from June 2014 to June 2024, a total of 2,273,311 hospitalizations were recorded in the Hospitalization System (SIH-SUS) of the Ministry of Health, with 60.5% in males. Additionally, 31.5% of MBD diagnoses were classified as schizophrenia, schizotypal, and delusional disorders, and 23.4% as mood (affective) disorders[33]. These data corroborate the findings of this research as well as the studies mentioned regarding gender and diagnosis.

Psychiatric hospitalization remains frequent due to the complexity of mental disorders and the discontinuity of treatment. Many patients arrive at healthcare facilities in a state of psychosis or following a suicide attempt, situations that require clinical stabilization before outpatient follow-up[17,19,32]. Individuals with psychotic symptoms (hallucinations, delusions, disturbances in consciousness of activity, and self-boundaries) — defined as severe distortions in the perception of reality that prevent appropriate interaction with the external environment[34] — are administered antipsychotic medications, either acutely or chronically. According to Ferreira and Torres (2016)[13], as stated in the clinical and therapeutic protocol for schizophrenia published in 2013 by the Ministry of Health, all antipsychotics, except clozapine, can be used in the treatment without preference order for patients diagnosed with schizophrenia who meet the inclusion criteria. Treatments should be conducted with one medication at a time (monotherapy), according to the patient's safety profile and tolerance.

In this study, antipsychotics were the most prescribed psychotropic drugs, followed by anxiolytics and antiepileptics. Among the psychotropic drugs, the most common were haloperidol, levomepromazine, diazepam, clonazepam, biperiden, midazolam, risperidone, and lithium carbonate. Various authors mention that the prevalence of certain drugs is directly proportional to the presented psychiatric diagnoses[35,36], indicating a direct relationship

between diagnosis and pharmacotherapy. Besides psychotropic drugs, the antihistamine promethazine was also one of the main prescribed medications. It is widely used in psychiatry due to its sedative and anticholinergic effects, and to enhance sedation[37].

Regarding the length of stay in the evaluated unit, most patients stayed between 6 to 16 days (37.2%). Costa et al. (2023)[38], in a study on the length of stay in psychiatric beds at a hospital in Guarulhos-SP, found an average duration of 19 days. Few authors describe the length of hospitalization. In the studies found, the evaluated aspect was the number of hospitalizations per patient[13,15,18]. According to Article 4 of Law No. 10.216, of April 2001, which addresses the protection and rights of people with mental disorders and redirects the mental health care model, "Hospitalization, in any of its forms, will only be indicated when extra-hospital resources are insufficient."[39]. It can be concluded that hospital admission for individuals with severe mental disorders (SMD) should occur in more severe situations. Moreover, the necessary conditions for the comprehensive care of the person with SMD must be provided, allowing their full recovery and/or psychosocial rehabilitation.

Despite federal law, it is necessary to reflect on significant associated barriers, still present today, which include sociocultural inequality in access to treatment, the insufficiency of mental health care policies, and the invisibility of the contexts and/or conditions that cause illness[40]. These obstacles, anticipated since the early days of the Psychiatric Reform, have become concerning again in light of the setbacks in the mental health care model, systematically implemented by the counter-reform psychiatric movement in recent years, leading to significant regressions in the adoption of inclusive psychosocial care models[40,41]. This scenario negatively impacts the health of the population, resulting in excessive medicalization and a decline in quality of life. Therefore, conducting studies that highlight the health, sociodemographic, economic, and psychosocial aspects of people with SMD can improve the quality of healthcare services for this population.

In psychiatric emergencies, pharmacological approaches are often necessary. In agitated patients, for instance, haloperidol is highly recommended and safe, with faster onset when combined with promethazine, midazolam, or lorazepam, and thus, its use in monotherapy for agitation is not recommended[42]. Additionally, for agitated patients with mental disorders, the following antipsychotics are recommended: risperidone; olanzapine; haloperidol + promethazine or haloperidol + midazolam; or droperidol. As alternative drugs in these patients, benzodiazepines such as midazolam, lorazepam, or clonazepam can be used[43]. In a meta-analysis, the authors found that the use of haloperidol + promethazine is stronger in reducing agitation[4]. According to these authors, haloperidol monotherapy presented a risk of QT interval prolongation in up to 6.0% of cases, while the haloperidol + promethazine combination presented a slightly higher risk (10.0%)[44]. Nevertheless, this combination still has a high recommendation due to lower risks to the patient compared to other drugs. Thus, drug combinations in psychiatry can be both beneficial and harmful, requiring close monitoring for possible adverse effects whenever any combination of medications is employed[42,44].

It is also noteworthy that haloperidol and promethazine are low-cost and both are part of the National List of Essential Medicines[45]. In terms of effectiveness and safety, the haloperidol + promethazine combination offers advantages over the isolated use of haloperidol or the haloperidol + midazolam combination, as benzodiazepines have the potential to cause respiratory depression[46]. The isolated use of haloperidol in agitated patients carries the risk of prolonged aggression periods and significant adverse effects. However, the addition of promethazine reduces the risk of acute dystonia. The use of haloperidol and promethazine has also been observed in other studies[12,13].

In this study, most evaluated patients did not have records in their medical charts regarding the presence of comorbidities. The absence of this information is also common in previously published studies. When reported, it was observed that more than half of the patients had associated comorbidities, such as diabetes and hypertension[11,20,24]. These two diseases are highly prevalent worldwide, affecting millions of people and becoming increasingly common in the population[47-49]. Data from the Ministry of Health in 2020 reported that 7.4% of the Brazilian population has diabetes mellitus, and 24.5% has hypertension, with their prevalence increasing each year[47]. It is noteworthy that the use of second-generation antipsychotics predisposes to the development of metabolic diseases[50,51], increasing the risk of these syndromes in this population; hence the importance of accurately recording patient information and reconciling it across different levels of healthcare.

Regarding pharmacotherapy, most evaluated patients used 5 or more medications, increasing the risk of adverse effects, as also observed by other authors[13,15]. Polypharmacy is commonly defined as the use of 5 or more medications by a single person, which may be indicated to enhance treatment or treat different diseases in the same individual[52,53]. The possibility of interaction is proportional to the number of medications in prescriptions. According to these authors, the evaluated psychiatric patients used between 2 to 11 medications, with the possibility of multiple drug interactions, often involving the benzodiazepine class[54].

Benzodiazepines are the most commonly used class in treating anxiety disorders and sleep disturbances, as well as agitation/aggression, which justifies their high prescription prevalence in various mental disorders. Despite being widely used and effective, they present several adverse effects and should be used rationally to minimize such events[50,51]. Benzodiazepines can interact with antipsychotics, with co-administration leading to the potentiation of their depressant effects. Furthermore, in long-term treatments, attention should be given to increased sedation, ataxia, dysarthria, enhanced reflex suppression, increased depression, and, in high doses, cognitive impairment[55].

Regarding the use of antipsychotics observed in this study, most had prescriptions for 2 or more (74.4%). The fact that the majority of drugs belonged to the same pharmacological class, in this case, antipsychotics, raises concerns about the practice of antipsychotic polypharmacy (APP), where a single patient uses 1 or more antipsychotics[56], which can also be referred to as therapeutic duplication. This practice has also been observed by other authors[57,58]. Nobutaka et al. (2021) further warn about the possible adverse drug events and associate them with the high rate of identified APP. Moreover, it was demonstrated that APP was frequent in hospitalized patients with schizophrenia[57]. Typical antipsychotics are associated with higher probabilities of undesirable effects, such as extrapyramidal symptoms[50]. These movement disorders generally depend on the duration of treatment and the dosage of the antipsychotic and include acute dystonias and tardive dyskinesia[51,59]. There is also the risk of endocrine disorders, sedation, and hypotension and, in rarer cases, neuroleptic malignant syndrome[51].

Therefore, typical antipsychotics and benzodiazepines are drugs that, even when used alone, present a high risk of interaction and/or occurrence of adverse effects, requiring careful use. The most frequent drug interactions are those between benzodiazepines and antipsychotics, benzodiazepines and antihistamines, and antihistamines and antipsychotics[60]. Combinations should only be made when there is a need for the use of multiple drugs, and professionals should be mindful of possible adverse effects[54,57,61] as highly complex pharmacotherapies make patient adherence difficult, interfering with treatment[62].

In addition to polypharmacy in psychiatry, issues related to the management, prescription, and analysis of drug interactions are also observed. These events can be preventable or not. To reduce preventable events, the active participation of the healthcare team constitutes a barrier to increasing patient safety in the use of medications[63]. From this perspective, deprescription has the potential to improve various aspects of patient safety and quality of care, including reducing the medication burden, adverse drug events, and morbidity. However, there are many barriers to implementing deprescription interventions[64-67]. Possible deprescription interventions include medication reviews by clinical pharmacists, identification of medications based on established criteria or lists, clinical decision support at the point of prescription, and educational materials[67,68].

The limiting factors of this research include the methodological design (cross-sectional study), data source (medical records), and the use of a specific form. Additionally, few studies with the same population were found in the literature, making it difficult to draw inferences. Despite this, the observed results allowed the identification of important characteristics of the study population, as well as the need for complementary studies.

Conclusion

This research revealed that the evaluated population showed a higher prevalence of prescriptions for antipsychotics, such as haloperidol and levomepromazine. These drugs are highly sedative and are commonly used to control agitation, aggressiveness, and delirium, especially in acute situations. In addition to these medications, the benzodiazepines diazepam and clonazepam, as well as the antihistamine promethazine, were among the most prescribed. Overall, it appears that the primary goal of these prescriptions was sedation and agitation control. The use of five or more medications and antipsychotic polypharmacy was also observed. These results highlight the importance of the pharmacist's role in this type of scenario, aiming to ensure effective and safe pharmacotherapy, as well as to reduce costs for the institution by avoiding the use of medications with the same mechanism of action, antagonistic mechanisms, or those without an indication for the patient's clinical condition, among many other factors.

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Contributors

SKV and JCM conceived, designed, and supervised the study. SKV collected the data. SKV and JCM reviewed the collected data and wrote the article. SKV, DCR, CABT, LSA, and JCM critically reviewed the article. All authors approved the final version to be published and are responsible for all information in the work, ensuring the accuracy and integrity of any part of the manuscript.

Conflict of Interest Statement

The authors declare no conflict of interest concerning this article.

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