

Research Article

## Overview of Antipsychotic Use in Schizophrenia Patients at the East City Health Center in 2024

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### ABSTRACT

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Schizophrenia is a severe mental disorder that affects individuals and greatly impacts their families and society, with symptoms like hallucinations, delusions, and emotional or thought disturbances that disrupt daily life and well-being. Treatment for schizophrenia usually involves a combination of antipsychotic drug therapy, psychotherapy, and social support. This study aims to determine the description of antipsychotic use, including the type of drug, rules of use, drug dosage, and duration of use in schizophrenia patients at the Kota Timur Health Center. This study used a descriptive observational research design with data collection using a retrospective method. The research data were obtained from secondary data in the form of medical record data from as many as 25 patients with mental illness. The data were processed with Excel and analyzed using SPSS version 26. The results showed that schizophrenia was predominantly suffered by male patients (56%), and more were in the age range of 34-46 years (as many as 48%). The most widely used antipsychotic drugs were a combination of typical and atypical, as many as 92%. The most frequently used type of drug is clozapine with a dose of 25 mg, and the rules of use are 2 x 1/2 as much as 46%. The longest duration of treatment is already in the maintenance phase, which is 96%. Additional drug trihexyphenidyl 2 mg (2 x 1) is used as much as 92%. The most widely used type of therapy is 3-combination therapy, namely Risperidone + THP + Clozapine, as much as 56%. This study was conducted at the East City Health Center, Gorontalo, which is one of the largest primary healthcare facilities in the region and manages a considerable number of schizophrenia patients with limited psychiatric resources. Therefore, the study setting provides important insights into the real-world use of antipsychotic medications in a community-based healthcare center.

**Keywords:** schizophrenia; antipsychotic; health center; drug therapy

## INTRODUCTION

Health is a fundamental aspect of human life, enabling individuals to perform daily activities effectively. Conversely, poor health can significantly disrupt a person's productivity and quality of life. A particularly serious threat to health is schizophrenia, a severe mental disorder that affects the brain and causes significant disturbances in a person's assessment of reality, including their thoughts, perceptions, emotions, and behavior. This disorder can have long-term consequences, leading to a decline in productivity and placing a significant financial burden on both patients and their families. Schizophrenia typically manifests in early adulthood, between the ages of 20 and 40. Symptoms are broadly categorized into positive symptoms (e.g., hallucinations and delusions), negative symptoms (e.g., social withdrawal and strange behavior), and cognitive symptoms (e.g., impaired thought processes) (Allredge et al. 2013).

The World Health Organization (WHO) reported in 2016 that schizophrenia affects over 21 million people worldwide (World Health Organization 2016). It is more common in men (12 million) than in women (9 million) and often begins earlier in men. In Indonesia, the 2013 Basic Health Research (RISKESDAS) found the incidence of schizophrenia to be approximately 1.7 cases per 1,000 people. Despite its prevalence, individuals with schizophrenia often face significant stigma and discrimination from society, leading to violence, isolation, and neglect (Kementerian Kesehatan Republik Indonesia 2013). A 2011 survey by the Ministry of Social Affairs revealed that 80% of individuals with schizophrenia in Indonesia do not receive proper care from their families and are often left to wander the streets, with some even being physically restrained. This neglect is often linked to a lack of family and public understanding about the disease, low socioeconomic status, and inadequate access to healthcare services (Amelia and Anwar 2013; Noviria, Triyoso, and Yanti 2015).

According to data from the Gorontalo Provincial Health Office 2017, the number of people with mental disorders in Gorontalo Province in 2017 was 1,015. With the number of old patients from previous years at 940 people and new patients in 2017 totaling 75 people. From Gorontalo City, totaling 232 people; Gorontalo Regency, 329 people; Bone Bolango Regency, totaling 169 people; North Gorontalo Regency, 92 people; Boalemo Regency, 84 people; and finally Pohuwato Regency, totaling 109 people.

The primary treatment for schizophrenia involves antipsychotic drugs, which are effective in managing its symptoms. These medications are classified into two groups: typical (first-generation) antipsychotics (e.g., Haloperidol, Pimozide) and atypical (second-generation) antipsychotics (e.g., Risperidone, Clozapine). While atypical antipsychotics can be more expensive, typical antipsychotics are more widely used. The most common single-agent treatment is risperidone, which is effective for both positive and negative symptoms, while the

most common combination treatment is haloperidol-chlorpromazine. Patients with mental disorders can lead normal lives if they diligently take their medication, attend therapy, have regular check-ups, and, importantly, receive support from family.

This study focuses on the East City Health Center, which serves a large area and recorded 25 active schizophrenia patients between April and September 2024. The center utilizes clinical guidelines for drug administration, but dose adjustments are based on the patient's individual response. This facility was chosen for the study because it faces significant challenges, including the absence of a resident psychiatrist and limited mental health facilities. These conditions make it an important location to evaluate the patterns of antipsychotic use and understand how treatment is managed in a resource-limited setting. This research aims to provide a descriptive analysis of antipsychotic drug use in schizophrenia patients at the East City Health Center. The findings will offer valuable insights into the types of medications, dosages, and treatment durations for this long-term condition.

## **MATERIALS AND METHODS**

### **Materials**

This study utilized secondary data from the medical records of patients with schizophrenia at the East City Health Center. The research instruments included a medical record data collection sheet. Patient diagnoses were confirmed using the International Classification of Diseases, 10th Revision (ICD-10) and the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Prescribed antipsychotic drugs were classified using the Anatomical Therapeutic Chemical (ATC) system. Additionally, Dipro's Pharmacotherapy was used as a reference for therapeutic guidelines.

### **Methods**

This was a descriptive observational study using a retrospective design. The study population and sample consisted of all 25 patients diagnosed with schizophrenia who received antipsychotic medication at the East City Health Center between April and September 2024. A total sampling technique was employed, as the population size was small ( $n=25$ ), consistent with the recommendation that populations of under 100 should be sampled in their entirety.

Patients were included if they met the following criteria: they were diagnosed with schizophrenia based on ICD-10 or DSM-5 criteria, received antipsychotic treatment at the health center during the specified period, and had complete medical records. Patients were excluded if their medical records were incomplete or missing, if they were diagnosed with other psychiatric disorders

without a concurrent schizophrenia diagnosis, or if their treatment data were not fully available due to referral to other facilities.

Data were collected by summarizing information from medical records into a table, which included patient demographics, diagnosis, drug type, dosage, administration rules, and treatment duration. The data were then analyzed descriptively, focusing on the evaluation of drug types, dosages, usage rules, and duration of treatment. The use of different antipsychotic drug types will be presented in tables and percentages.

## RESULTS

Based on a review of medical records for 25 schizophrenia patients at the East City Health Center from April to September 2024, this study gathered data on demographics, diagnosis, drug type, dosage, administration rules, and treatment duration. Antipsychotic use was then evaluated for adherence to the therapeutic guidelines outlined in the Pharmacotherapy Handbook Ninth Edition 2020 and the National Formulary 2023.

**Table 1.** Characteristics and Antipsychotic Use of Schizophrenia Patients at the East City Health Center

Category	Amount	Percentage (%)
<b>Gender</b>		
Man	14	56
Woman	11	44
<b>Age</b>		
20-33	5	20
34-46	12	48
47-58	8	32
<b>Antipsychotic Class</b>		
Typical	1	4
Atypical	1	4
Combination	23	92
<b>Total</b>	<b>25</b>	<b>100</b>

Source: secondary data, 2024

Based on a review of medical records for 25 schizophrenia patients at the East City Health Center from April to September 2024, the study gathered data on patient demographics and antipsychotic drug use. The patient population was predominantly male, with men accounting for 14 patients (56%), which was a larger number than the 11 female patients (44%).

Regarding age, the majority of patients were in the 34-46 age group, which comprised 12 patients (48%). The next most common group was the 47-58 age group with 8 patients (32%), followed by the 20-33 age group with 5 patients (20%). In terms of treatment, the most common class of antipsychotics prescribed was a combination of drugs, used by 23 patients (92%). In contrast, only one patient (4%)

received a typical antipsychotic, and one patient (4%) received an atypical antipsychotic.

**Table 2.** Distribution of Types of Drugs and Doses of Drugs Prescribed to Patients Schizophrenia at East City Health Center

Types of Drugs	Drug Dosage	Amount of Giving	Percentage (%)
Typical			
Haloperidol	5 mg	2	5
Chlorpromazine	100 mg	2	5
Atypical			
Clozapine	25 mg	19	46
Risperidone	2 mg	18	44
<b>Total</b>		<b>41</b>	<b>100</b>

Source: secondary data, 2024

Based on drug type and dosage data for antipsychotics in table 2, the results were that for the drug type haloperidol at a dose of 5 mg, it was as much as 5%; for chlorpromazine at a dose of 100 mg, it was 5%; for clozapine at a dose of 25 mg, it was as much as 46%; and for the risperidone drug at a dose of 2 mg, it was as much as 44%.

**Table 3.** Distribution of Types of Drugs and Rules for Use of Drugs Prescribed to Patients Schizophrenia at East City Health Center

Types of Drugs	How to use	Amount of Giving	Percentage (%)
Typical			
Haloperidol	2 x 1/2	2	5
Chlorpromazine	2 x 1/4	2	5
Atypical			
Clozapine	2 x 1/2	19	46
Risperidone	2 x 1	18	44
<b>Total</b>		<b>41</b>	<b>100</b>

Source: secondary data, 2024

Based on drug type data and regulations, using antipsychotics in table 3 obtained the results: the haloperidol drug rule uses 2 x 1/2 as much as 5%; the chlorpromazine rule uses 2 x 1/4 as much as 5%; the clozapine rule uses as much as 46%; and in the drug risperidone, the rules use as much as 44%.

**Table 4.** Distribution of Length of Treatment for Schizophrenia Patients at the East City Health Center

Duration of Treatment	Frequency	Percentage (%)
Stability Phase	1	4
Maintenance Phase	24	96
<b>Total</b>	<b>25</b>	<b>100</b>

Source: secondary data, 2024

Based on table 4 on the duration of treatment, the results obtained were that in the stability phase therapy it was 4% and in the maintenance phase it was 96%.

**Table 5.** Distribution of Additional Drugs Prescribed to Patients Schizophrenia at East City Health Center

Group	Types of Drugs	Dose	How to use	Amount of Giving	Percentage (%)
Anticholinergic	Trihexyphenidyl	2 mg	2x1	23	92
Benzodiazepines	Diazepam	2 mg	1x1	2	8
<b>Total</b>				<b>25</b>	<b>100</b>

Source: secondary data, 2024

Based on the data in table 5, it can be seen that there are 2 additional drug classes that are often prescribed. The anticholinergic drug class represented by the drug trihexyphenidyl 2 mg (2 x 1) is given as many as 23 (92%). The benzodiazepine drug group with the type of drug diazepam 2 mg (1 x 1) was given 2 times (8%).

**Table 6.** Distribution of Types of Therapy Prescribed to Patients Schizophrenia at East City Health Center

Types of Drugs	Amount	Percentage (%)
Monotherapy		
Risperidone	1	4
Haloperidol	1	4
2 Combinations		
THP + Clozapine	4	16
THP + Chlorpromazine	1	4
3 Combinations		
Risperidone + THP + Clozapine	14	56
Risperidone + THP + Diazepam	2	8
Risperidone+THP+Chlorpromazine	1	4
Haloperidol + THP + Clozapine	1	4
<b>Total</b>	<b>25</b>	<b>100</b>

Source: secondary data, 2024

Based on table 6, the result is the type of Risperidone monotherapy for 1 patient (4%) and Haloperidol for 1 patient (4%). For 2 combinations, the most is the combination of trihexyphenidyl + clozapine, amounting to as many as 4 patients (16%), and trihexyphenidyl + chlorpromazine, 1 patient (4%). For 3 combinations, the combination of Risperidone + Trihexyphenidyl + Clozapine was the most common, with 14 patients (56%); Risperidone + Trihexyphenidyl + Diazepam totaled 2 patients (8%); Risperidone + Trihexyphenidyl + Chlorpromazine totaled 1 patient (4%); and Haloperidol + Trihexyphenidyl + Clozapine totaled 1 patient (4%).

## DISCUSSION

### Characteristics of Schizophrenia Patients Based on Gender and Age

The study's findings indicate that the population of schizophrenia patients at the East City Health Center in 2024 was predominantly male, with a total of 14

patients (56%), and most were between 34 and 46 years old (48%). This gender distribution may be attributed to the traditional role of men as primary breadwinners, which could expose them to higher levels of stress. Conversely, women may demonstrate greater resilience to mental disorders due to a higher tendency to accept life situations (Zahnia and Sumekar 2016). The age range of 34-46 years falls within the adult period, where individuals often face greater life burdens, including more complex problems with family, partners, and coworkers, as well as excessive workloads and a modern, individualistic lifestyle, which can all contribute to stress (Rahaya and Cahaya 2016).

Beyond pharmacological considerations, family support plays a crucial role in schizophrenia treatment. As noted in the background, many patients face stigma and neglect from their families, which can negatively affect treatment outcomes. Although quantitative data on family involvement were not collected in this study, clinical observations suggested that patients with consistent encouragement and supervision from family members were more likely to adhere to medication schedules and attend routine follow-up visits. This aligns with previous studies that report strong family support improves treatment adherence and reduces relapse rates. Conversely, patients with limited family support often showed irregular adherence, which may necessitate the use of combination therapy or longer maintenance phases (Noviria, Triyoso, and Yanti 2015; Amelia and Anwar 2013). Therefore, integrating psychosocial interventions that involve families is crucial to complement pharmacological management in primary healthcare settings.

### **Distribution of Classes, Types, Doses, and Duration of Treatment**

The study's results showed that most patients were prescribed combination antipsychotics, with 92% (23 patients) receiving this type of therapy. Only one patient (4%) received a typical antipsychotic, and another patient (4%) received an atypical antipsychotic. The use of combination therapy is believed to effectively reduce both positive and negative symptoms. The administration of a combination of antipsychotics can significantly reduce positive symptoms compared to monotherapy (Fleischhacker and Uchida 2014).

The most commonly prescribed drug in this study was clozapine at a 25 mg dose, with many patients already in the maintenance phase. Clozapine is a second-generation (atypical) antipsychotic that is highly effective and associated with minimal extrapyramidal side effects. It works by occupying D2 receptors at a low affinity, even at high doses, and also acts as an antagonist at alpha-adrenoceptors, 5-HT2A receptors, muscarinic receptors, and histamine H1 receptors. Atypical antipsychotics, including clozapine, have a greater ability to increase anti-inflammatory cytokines compared to typical antipsychotics (Wells et al. 2015). Long-term drug use and psychosocial support are critical for the maintenance

phase, which can last for years or a lifetime, to prevent symptom recurrence (Ikawati 2014).

The observed prescribing patterns, particularly the frequent use of combination therapy, should be considered in light of current clinical guidelines. International guidelines from the World Health Organization (2019), and the American Psychiatric Association (2020), generally recommend monotherapy with an atypical antipsychotic as the first-line treatment. Combination therapy is typically reserved for cases of treatment resistance or poor response to monotherapy. In Indonesia, the National Formulary Kementerian Kesehatan Republik Indonesia (2023), also recommends risperidone and clozapine as standard treatment options. In the context of the East City Health Center, where psychiatric specialists are not available and treatment is managed by general practitioners, the reliance on combination regimens may reflect a pragmatic approach to ensure effective symptom control. While this practice may not fully align with first-line recommendations, it demonstrates an adaptation to real-world clinical challenges in primary care. To optimize care in such settings, strengthening referral systems and providing additional training for healthcare providers are essential.

### **Distribution of Additional Drugs and Therapy Types**

The study found that the most common additional drug used was trihexyphenidyl. This drug, classified as an anticholinergic and a piperidine compound, is primarily used to manage extrapyramidal side effects caused by typical antipsychotics. It works by inhibiting muscarinic receptors on dopamine neurons (Swayami 2014). For adults, the dosage typically starts at 1 mg per day, increasing to 5-15 mg in increments of 2 mg every 3 to 5 days (Indonesian Pharmacists Association 2019).

### **Distribution of Antipsychotic Drug Use Based on Therapy Type**

The study's results demonstrated that combination therapy, specifically the risperidone, trihexyphenidyl, and clozapine regimen, was a frequently administered treatment, accounting for 56% of cases. According to Dania et al. (2019), risperidone and clozapine are antipsychotic drugs that act by interfering with dopaminergic transmission in the brain through the inhibition of dopamine D2 receptors, which can lead to increased extrapyramidal effects. Additionally, antipsychotic drugs can influence cholinergic, alpha-adrenergic, histaminergic, and serotonergic receptors.

The predominance of combination therapy in this study highlights the need for a careful evaluation of its rationality. From a community pharmacy perspective, polypharmacy elevates the risk of adverse drug reactions, drug-drug interactions, and the necessity for additional medications, such as trihexyphenidyl,

to mitigate extrapyramidal side effects. This is consistent with previous reports that an excessive reliance on multiple antipsychotics can complicate pharmacological management and increase the burden on pharmacists in ensuring appropriate dispensing and monitoring (Fleischhacker and Uchida 2014).

From a public health perspective, the use of multiple antipsychotics raises concerns regarding medication adherence and financial implications. Patients may find it more difficult to comply with complex regimens, which can lead to irregular medication use and relapse. In resource-limited settings such as the East City Health Center, the financial burden of combination therapy may also strain both families and the healthcare system, especially since atypical antipsychotics are more expensive than typical ones (Wells et al. 2015).

Nevertheless, the adoption of combination therapy in this setting may reflect pragmatic choices by healthcare providers aiming to optimize symptom control in the absence of psychiatric specialists. Therefore, while the regimen provides short-term clinical benefits, it underscores the importance of developing strategies to promote rational prescribing, enhance patient education on adherence, and explore cost-effective alternatives in primary care.

## CONCLUSIONS

This study demonstrated that the majority of schizophrenia patients treated at the East City Health Center in 2024 were male (56%) and aged 34–46 years (48%). Combination therapy was predominant (92%), with clozapine (25 mg) being the most frequently prescribed single agent (46%). Most patients (96%) were in the maintenance phase, and trihexyphenidyl (2 mg) was co-administered in 92% of cases. The risperidone–trihexyphenidyl–clozapine regimen was the most common therapeutic approach, used in 56% of patients. These findings provide a real-world overview of antipsychotic prescribing in a primary care setting with limited resources. Nevertheless, the small sample size ( $n = 25$ ), retrospective design, and absence of an on-site psychiatrist limit generalizability and alignment with current clinical guidelines. Future research with larger cohorts and outcome-based assessments is warranted to optimize schizophrenia management in similar contexts.

## REFERENCES

- Allredge, Brian K, Robin L Corelli, Michael E Ernst, B Joseph Guglielmo, Pamala A Jacobson, Wayne A Kradjan, and Bradley R Williams. 2013. *Koda- Kimble and Young's Applied Therapeutics: The Clinical Use of Drugs*. Wolters Kluwer Health Adis (ESP).
- Amelia, Diny Rezki, and Zainul Anwar. 2013. "Relapse in Patients with Schizophrenia." *Jurnal Ilmiah Psikologi Terapan* 1 (1): 53–65.

<https://doi.org/10.22219/jipt.v1i1.1357>.

American Psychiatric Association. 2020. *The American Psychiatric Association Practice Guideline for the Treatment of Patients With Schizophrenia*. Washington, DC: American Psychiatric Association Publishing. <https://doi.org/10.1176/appi.books.9780890424841>.

Dania, Haafizah, Imaniar N. Faridah, Khansa F. Rahmah, Rizky Abdulah, Melisa I. Barliana, and Dyah A. Perwitasari. 2019. "Hubungan Pemberian Terapi Antipsikotik terhadap Kejadian Efek Samping Sindrom Ekstrapiramidal pada Pasien Rawat Jalan di Salah Satu Rumah Sakit di Bantul, Yogyakarta." *Indonesian Journal of Clinical Pharmacy* 8 (1). <https://doi.org/10.15416/ijcp.2019.8.1.19>.

Fleischhacker, W. Wolfgang, and Hiroyuki Uchida. 2014. "Critical Review of Antipsychotic Polypharmacy in the Treatment of Schizophrenia." *International Journal of Neuropsychopharmacology* 17 (7): 1083–93. <https://doi.org/10.1017/S1461145712000399>.

Ikawati, Zullies. 2014. *Pharmacotherapy of Central Nervous System Diseases*. Yogyakarta: Bursa Ilmu.

Indonesian Pharmacists Association. 2019. *ISO Indonesian Drug Specialist Information, Volume 52*. Jakarta: PT. ISFI Publishing.

Kementerian Kesehatan Republik Indonesia. 2013. *Hasil Riset Kesehatan Dasar (Riskesdas) 2013*. Jakarta: Badan Penelitian dan Pengembangan Kesehatan, Kementerian Kesehatan RI.

— — —. 2023. *Formularium Nasional 2023*. Jakarta: Kementerian Kesehatan Republik Indonesia. <https://fornas.kemkes.go.id/>.

Noviria, M, Triyoso, and L Yanti. 2015. "The Relationship between Family Support and Control Visits of Outpatients with Schizophrenia at Mental Hospital in Lampung Province 2013." *Jurnal Kesehatan* 8 (2): 76–81. <https://doi.org/10.26630/jk.v8i2.200>.

Rahaya, Anggie, and Noor Cahaya. 2016. "Studi Retrospektif Penggunaan Trihexyfenidil pada Pasien Skizofrenia Rawat Inap yang Mendapat Terapi Antipsikotik di Rumah Sakit Jiwa Sambang Lihum." *Jurnal Farmasi Galenika (Galenika Journal of Pharmacy) (e-Journal)* 2 (2): 124–31. <https://doi.org/10.22487/j24428744.2016.v2.i2.5986>.

Swayami, I. G. A. V. 2014. "Aspek Biologi Triheksifenidil di Bidang Psikiatri." Universitas Udayana.

Wells, Barbara G, Joseph T Dipiro, Terry L Schwinghammer, and Cecily V Dipiro. 2015. *Pharmacotherapy Handbook: Ninth Edition*. New York: McGraw-Hill Education.

World Health Organization. 2016. "Schizophrenia." Geneva: World Health Organization. <https://www.who.int/news-room/fact->

[sheets/detail/schizophrenia.](#)

— — —. 2019. *Schizophrenia: Fact Sheet*. Geneva: World Health Organization.  
<https://www.who.int/news-room/fact-sheets/detail/schizophrenia>.

Zahnia, Siti, and Dyah Wulan Sumekar. 2016. "Kajian Epidemiologis Skizofrenia."  
*Majority (Medical Journal of Lampung University)* 5 (4): 160–66.  
<https://doi.org/10.20884/1.jks.2021.16.3.1374>.