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Pharmacotherapy Effectiveness in Treating Mental Disorders in Kosovo's Specialized Institutions

Fitim Alidema[1], Arieta Hasani Alidema[2], Mirzade Alidema[2] and Flakron Alidema[2]

[1]UBT College , Faculty of Pharmacy ,UBT, Prishtina, Kosovo
[2]UBT College, Faculty of Nursing, UBT, Prishtina, Kosovo
*Corresponding Author E-mail : arieta.hasani@ubt-uni.net

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In various global regions, specialized institutions rigorously supervise pharmacological treatments for mental health disorders. In Kosovo, the absence of such dedicated infrastructure highlights the need for continuous evaluations to refine and enhance treatment practices. This study evaluates the effectiveness of pharmacotherapeutic strategies for mental health disorders at specialized centers in Kosovo. The research followed the protocols set by the World Health Organization (WHO). Patient data were collected from medical records. A total of 400 patients were analyzed, selected randomly from different cities with sample sizes ranging from 50 to 90 per city. Medication was administered orally in 106.8% of the cases, with no significant differences in administration methods between centers (Chi-Test = 36, p > 0.22) (Tab. 4). Most prescribed medications were classified as non-essential (85.9%). Of the medications prescribed, 69.2% were antipsychotics, 22.3% were anxiolytics, and 14.8% were antidepressants, making up 100% of all drugs used. In Kosovo's mental health facilities, oral administration is the predominant method (PO), with 22.9% of cases involving parenteral administration. The majority of prescribed medications were non-essential (85.9%). Antipsychotics were the most commonly prescribed (69.2%). Often, second-line medications are used as the initial treatment choice. The use of effective but high-risk medications is common (e.g., Clozapine at 100.0% from the SDA group). Ineffective medications were observed in 2.50% of cases, and a misalignment between treatment and drug indications occurred in 7.50% of cases.

Keywords: Kosovo, Mental health disorders, Pharmacotherapeutic treatment, Special centers.

Globally, approximately 12% of the population is affected by mental and behavioral disorders, yet only a small portion of these individuals receive appropriate treatment. This category includes a range of conditions such as depressive disorders, schizophrenia, epilepsy, dementia, post-traumatic stress disorder, obsessive-compulsive disorders, panic disorders, and primary insomnia.

In many developed regions, a limited number of individuals with mental disorders actively seek assistance from healthcare providers. Conversely, in developing nations, healthcare systems often fall short in delivering essential mental health services. The World Health Organization (WHO) suggests that the most effective treatment for mental disorders is a combination of psychosocial and pharmacological therapies.

Studies utilizing various methodologies have revealed high rates of drug interactions, with severe consequences reported in 2.2% to 30% of hospitalized patients and 9.2% to 70.3% of patients in community settings. These findings underscore the importance of assessing prescription practices, especially in mental health facilities in Kosovo.

While psychotropic drugs have proven highly effective in improving mental health outcomes, their associated side effects pose significant health, social, and economic challenges. Unlike in other countries where treatment is overseen by specialized centers, the absence of such infrastructure in Kosovo calls for continuous research to monitor and improve current practices.

Study Objective

The purpose of this study is to assess the treatment strategies employed for patients with mental health disorders in specialized centers across Kosovo. The evaluation spans from January to December 2023, including all centers dedicated to the treatment of various mental health conditions.

MATERIALS AND METHODS

This study follows the guidelines set by international organizations specializing in mental health research, adhering to recommendations outlined in global documents that describe methods for monitoring drug usage in healthcare settings. These guidelines provide straightforward approaches for analyzing and evaluating the quality of drug prescriptions and distribution, along with offering indicators for drug use in various developmental contexts. The outcomes of these indicators are crucial for enhancing oversight and management of mental health programs.

Data collection was conducted using specialized questionnaires that gathered information on patients' age, gender, diagnosis, and treatment at specialized mental health centers across Kosovo. The data were sourced from patient records within these institutions. In each region, 50 patients were selected and analyzed using probabilistic sampling methods, resulting in a total dataset of 400 patients from all mental health centers in Kosovo.

Demographic characteristics were assessed by examining the gender distribution and average age of patients at the included centers. The mental health disorders were categorized according to the International Classification of Diseases, 10th Edition (ICD-10).

The analysis of pharmacological treatment involved evaluating the strategies employed in treating mental health disorders at these specialized centers. Medication administration methods were categorized into two primary groups: "Oral Administration" for medications taken orally and "Parenteral Administration" for those administered via injections. Additionally, the study reviewed the use of medications listed in essential medicines lists.

To assess treatment effectiveness in greater detail, the study analyzed the treatment strategies for mental disorders, focusing on stages and levels of therapy. For schizophrenia, patients were categorized based on the treatments used: atypical antipsychotics (excluding clozapine) were placed in the first-line treatment stages (1, 2, and 3). Patients treated with high-potency conventional antipsychotics were grouped into the second stage of therapy, representing second-line treatment.

In the fourth stage, patients receiving conventional antipsychotics were included, while those treated with Clozapine were classified in the fifth stage. Patients treated with Clozapine in combination with other agents (such as conventional antipsychotics, atypical antipsychotics, or antidepressants) were placed in subgroup 5a. Cases involving combined therapy with different antipsychotics were categorized into subgroup 5b, representing third-line treatment.

For the treatment of depression, we have implemented a systematic approach to categorize therapeutic strategies.

First Stage: This stage includes patients receiving first-line therapy with selective serotonin reuptake inhibitors (SSRIs) as monotherapy.

Second and Third Stages: These stages involve patients undergoing treatment with SSRIs combined with augmentation strategies. In the second stage, Lithium (Li) is used as a first-line enhancer, while in the third stage, Buspirone is employed as a second-line enhancer. Benzodiazepines (BZ) are also included in this stage as second-line enhancers.

Fourth Stage: Patients treated with tricyclic antidepressants (TCAs) as monotherapy are classified into second-line therapy in this stage.

Fifth Stage: This stage encompasses cases of combined therapy, where multiple drug combinations are utilized to enhance therapeutic outcomes.

For generalized anxiety disorders, we have organized treatments based on the stage and sequence of therapy:

First Stage: This stage includes patients undergoing first-line therapy with benzodiazepines (BZ) as monotherapy.

Second Stage: Patients receiving second-line therapy with Buspirone or antidepressants (AD) are included in this stage.

Third Stage: This stage comprises patients treated with third-line therapies, including Trazodone, Fluoxetine, Imipramine, or Propranolol.

For the treatment of panic-type neurotic disorders, we have implemented a structured approach that categorizes therapy by stage and sequence:

First Stage: This initial stage represents the highest level of therapy and includes patients treated with benzodiazepines (BZ), tricyclic antidepressants (TCA), or selective serotonin reuptake inhibitors (SSRI).

Second and Third Stages: If the initial medications are insufficient, patients advance to these stages where alternative treatments are utilized to achieve the desired outcomes.

Fourth Stage: When conventional treatments fail, combined therapies (e.g., BZ + TCA, BZ + SSRI, or TCA + SSRI) are employed. This stage corresponds to second-level therapy.

Fifth Stage: If the response to previous strategies remains inadequate, therapy is intensified with Valproic Acid or Clonidine, marking the third-level therapy in the treatment sequence.

To evaluate the stages and sequence of therapy for specific psychiatric disorders, we have adhered to the guidelines established by the American Psychiatric Association. These guidelines focus on assessing the efficacy and side effect profiles of various therapeutic options, helping to determine the most appropriate level of treatment for different categories of psychiatric conditions. In our analysis, we employed statistical measures such as the structural index, arithmetic mean, and standard deviation to provide a comprehensive and precise summary of the data. The findings are presented in both tabular and graphical formats to enhance interpretation and visualization.

RESULTS

In this study, we examined a sample of 400 patients with psychiatric conditions who received treatment at seven different Mental Health Centers across Kosovo. Out of these, 220 (55%) were male. The gender distribution of patients was relatively consistent across all centers (Chi-Test = 37, $p > 0.30$). However, at the Mental Health Centers in Gjilan and Prizren, there was a higher percentage of female patients compared to male patients, with

Stage of therapy	drag	Order of therapy
1	AP-atypical(Olanzapina, orQuetiapina, orRisperidoni)	1
2	AP-atypical(if one does not work, the other is used)	1
3	AP-atipikë(If the second does not work, the third is used)	1
4	AP-typical	2
5	Clozapinum (C)	2
5a	C + potentiating drugs (AP-typical , ose NO-atypical, AD, etj.)	2
5b	Combined therapy (AP-typical+ AP-atypical)	3

Stage of therapy	drag	Order of therapy
1	Serotonin reuptake inhibitors (SSRI)	1
2	SSRI+ Effect boosters(As enhancers: Li, Buspirone)	1
3	SSRI + Effect Enhancers(Benzodiazepines - BZ)	1
4	Tricyclic antidepressants (TCAs) (monotherapy)	2
5	Combined therapy	3

57.5% in Gjilan and 54.2% in Prizren. In contrast, the percentage of male and female patients in Mitrovica was equal (Tab. 1).

The study assessed 400 individuals with psychiatric disorders treated at seven Mental Health Centers throughout Kosovo. Among them, 210 (50%) were male. The gender distribution was quite uniform across all centers (*Chi-Test = 35, $p > 0.24$). Notably, the centers in Gjilan and Prizren had a higher proportion of female patients compared to male patients, with 54.7% in Gjilan and 51.0% in Prizren. Conversely, in Mitrovica, the

Indikatori	Special mental health centers in Kosovo							
	Ferizaj	Gjakova	Gjilan	Mitrovica	Peja	Pristina	Prizren	Total
Number of Patients	50	60	60	50	50	40	90	400
Gender. * – nr. (%)								
M	17	19	13	15	18	22	14	118
	(56.7)	(63.3)	(44.8)	(50.0)	(60.0)	(73.3)	(46.7)	(56.5)
Average age **	37.24	33.4	43.0	39.0	38.6	37.0	33.2	36.0
– Mean (Std Dev)	(11.8)	(13.5)	(9.9)	(13.0)	(11.3)	(15.6)	(12.8)	(13.9)

Table 2. Structure of Patients Included in the Study by Diagnosis (n=400)

Disease Group Number	Code (ICD-10) Disease		Nr.	(%)
F20 – F29	F20	Schizophrenia	137	(65.6)
Schizophrenia and	F21	Disordo schizotypicus	3	(1.0)
Schizotypal Disorders	F23	Psychoses acutae et transitivae	10	(3.8)
	F23.1	Psychoses acutae et transitivae	15	(2.9)
	F25	Psychoses schizoaffectivae	2	(1.0)
	Subtotal		157	(74.2)
F30 - F39	F32.2/33.2	Depressio non psychoticum/	14	(6.7)
Affective Disorders	Subtotal	Depressio recidiva non psychotica	14	(6.7)
F40 - F48	F40	Disordines anxiosi phobici	1	(0.5)
Neurotic,	F41	Disordines anxiosi alii	20	(4.8)
Stress-Related,	F43.1	Disordo posttraumaticus stresogenes	2	(1.0)
and Somatic	F44	Disordines dissociativi (conversiones)	9	(1.9)
Disorders	F45	Disordines somatoformes	3	(1.0)
	F48	Disordines neurotici alii	5	(1.4)
	Subtotal		36	(10.5)
F51	F51	Disordines somni non organici	1	(0.5)
Disordines	Subtotal		1	(0.5)
somni non				
organici				
F70 - F79	F70	Retardatio mentalis levis	10	(4.8)
Intellectual	F71	Retardatio mentalis moderata	1	(0.5)
Disability	Subtotal		19	(5.3)
F90 - F99	F92	Disordines morum et emotionum mixti	4	(1.9)
Behavioral	Subtotal		4	(1.9)
Disorders and				
Emotional				
Disorders				
G40	G40	Epilepsia	3	(1.0)
Epilepsi	Subtotal		3	(1.0)
Total			400	(100.0)

distribution of male and female patients was equal (Tab. 1).

The average age of the participants was 38 years (38.0 ± 11.7). The age distribution was comparable across the centers, with no significant differences (F-test = 1.54, $p > 0.14$). The youngest average age was observed in Ferizaj (34.6 ± 10.6 years), whereas the oldest average age was in Gjilan (41.9 ± 9.9 years) (Tab. 1).

The analysis of patient morbidity in this study revealed that the majority of individuals (296 out of 400, or 74%) were diagnosed with schizophrenia and related disorders, categorized under F20-F29 according to the International Classification of Diseases, 10th Edition. Within this group, 263 patients (65.8%) were identified with schizophrenia. Neurotic disorders, including stress and somatoform disorders (F40-F48), affected 42 patients (10.5%). Additionally, 27 patients (6.7%) were diagnosed with affective disorders presenting non-psychotic depressive symptoms and recurrent episodes. Mental retardation was identified in 21 patients (5.3%), with the majority (20 patients) classified as having mild retardation. Behavioral and emotional disorders were observed in a much smaller cohort, representing 2% of the total (8 out of 400) (Tab. 2).

Medication administration was predominantly oral, representing 78.3% of the cases. The parenteral route was utilized in 21.7% of the cases, with higher rates observed in the Peja, Gjilan, and Ferizaj centers at 39.4%, 34.2%, and 30.8%, respectively. Conversely, Mitrovica showed a lower prevalence of parenteral therapy at just 14.6%. No statistically significant variation was noted between centers regarding the drug administration methods (Chi-Test = 25, $p > 0.14$) (Tab. 3).

An examination of drug prescriptions revealed that 69.4% were non-essential medications.

Table 3. Pharmacotherapeutic Characteristics of Patients with Mental Disorders Treated at Different Centers

Indicator	Specialized Mental Health Centers in the Republic of Kosovo							
	Ferizaj	Gjakova	Gjilan	Mitrovica	Peja	Pristina	Prizren	Total
Number of Patients	50	60	60	50	50	40	90	400
Method of Drug Administration † (%)								
P.O.	(68.5)	(89.6)	(63.3)	(91.9)	(56.0)	(67.5)	(86.4)	(86.4)
Parenteral	(49.7)	(17.5)	(26.9)	(11.1)	(39.0)	(25.5)	(16.6)	(15.6)
Medication Description (%)								
Essential Medication (%)	(33.4)	(45.8)	(54.0)	(44.0)	(36.8)	(55.4)	(34.9)	(36.9)
Drug Group (%)								
Antidepressants (AD)	(0.0)	(6.0)	(3.3)	(7.1)	(10.7)	(4.4)	(14.3)	(5.9)
Anxiolytics/Hypnotics (AL/H)	(0.9)	(17.9)	(8.2)	(24.2)	(11.9)	(16.2)	(22.4	(13.8)
Antipsychotics (AP)	(61.7)	(56.0)	(57.4)	(40.4)	(42.9)	(66.2)	(42.9)	(53.2)
Anticonvulsants (AC)	(8.9)	(3.6)	(1.6)	(2.0)	(1.2)	(0.0)	(0.0)	(3.0)
Analgesics (A)	(0.0)	(0.0)	(3.3)	(2.0)	(0.0)	(0.0)	(2.0)	(0.9)
Anticholinergics (Anti-Ch)	(26.5)	(14.3)	(18.0)	(11.1)	(26.2)	(13.2)	(2.0)	(17.2)
Others	(0.0)	(1.2)	(9.2)	(11.1)	(6.1)	(0.0)	(18.3)	(6.9)

† ChiTest = 26, $p > 0.12$; †† ChiTest = 26, $p < 0.04$

Order of Therapy	Nr.	(%)
1	35	(7.21)
2	97	(31.25)
3	152	(53.85)
Incorrect Therapy	14	(1.92)
No Therapy	22	(5.77)

CT (potency) (n=258)	Nr.	(%)
High Potency Antipsychotics (HPA)	156	(60.5)
Medium Potency Antipsychotics (IPA)	—	(0.0)
Medium Potency Antipsychotics (IPA)	102	(39.5)

Drag	Nr.	(%)
HPA	156	60.5
Fluphenazinum	122	47.3
Haloperidolum	34	13.2
LPA	102	39.5
Chlorpromazinum	50	19.4
Levomepromazinum	30	11.6
Promazinum	2	0.8
Thioridazinum	15	5.8
Sulpiridum	4	1.6
Lithium	1	0.4
Total	258	100.0

Essential drugs were more commonly prescribed in Prishtinë (52.1%), Gjakova (50.3%), and equally in Gjilan and Mitrovica (44% each). On the other hand, non-essential drugs were more frequently prescribed in Ferizaj (65.8%), Peja (64.7%), and Prizren (63.9%) (Tab. 3).

In terms of therapeutic categories, antipsychotics were the most frequently prescribed, comprising 51.4% of all prescriptions. Anticholinergics and anxiolytics/hypnotics constituted 18.6% and 14.3% of prescriptions, respectively, totaling 84.3% of the drugs used. Antidepressants accounted for 6.5%, while analgesics were the least prescribed, representing only 1.2% of the total prescriptions (Tab. 3).

The analysis reveals that a significant proportion of patients, specifically 112 out of 400 (28.0%), were administered third-line therapy. In contrast, around one-third of the patients, or 65 out of 400 (16.3%), received second-line therapy. Only 15 patients (3.8%) were treated with first-line therapy (Tab. 5).

From conventional antipsychotics, those with high potency were most frequently used (156/258, or 60.5%), while antipsychotics with medium potency were not utilized for therapy (Tab. 6).

Utilization of Atypical Antipsychotics (SDA)39 patients were treated with atypical antipsychotics (SDA), with the most frequent use of clozapine (33/39, or 84.62%). Risperidone and olanzapine were used less frequently, with risperidone applied in 5 patients (12.82%) and olanzapine in just 1 patient (2.58%) (Tab. 8).

SDA (n=39)	Nr.	(%)
Clozapinum (C)	33	(84.62)
Olanzapinum (OLA)	1	(2.56)
Risperidonum (RIS)	5	(12.82)

DISCUSSION

Since the mid-20th century, medications with proven efficacy for treating psychiatric disorders have become widely used. Currently, about 10-15% of medications prescribed in the United States include drug classes that assist in preventing mental disorders, serving roles such as sedation, stimulation, or modification of mood, thinking, and behavior (9).

Antipsychotic medications are not tailored for specific types of psychoses but are effective in managing acute psychoses of unknown origin, including mania, acute idiopathic psychoses, and acute exacerbations of schizophrenia. Numerous controlled studies confirm the efficacy of antipsychotics in treating both acute and chronic phases of schizophrenia (10).

Antipsychotics are divided into two main categories: first-generation and second-generation. First-generation antipsychotics include clozapine, risperidone, olanzapine, quetiapine, ziprasidone, and aripiprazole. While these medications are effective in managing psychotic symptoms, they often come with significant side effects (11).

Selecting medications for patient treatment requires a comprehensive assessment of the therapeutic plan's risks and benefits, considering the patient's needs and condition. Research in psychotropic pharmacotherapy is crucial to ensure that the chosen treatment effectively improves clinical status and involves active patient participation (12). Both qualitative and quantitative research methods are essential in identifying issues and factors affecting treatment efficacy.

Globally, the use of psychotropic medications varies significantly between countries, and no uniform standard explains these variations. Many factors contribute to the irrational use of these medications, including inadequate knowledge of appropriate prescriptions, economic factors,

lack of regulatory oversight, cultural influences, poor communication between physicians and patients, and insufficient clear and comprehensive patient information. Medication prescribing errors for mental disorders often involve unnecessary psychotropic drugs or medications unsuitable for treatment. Such errors are prevalent in both developed and developing countries (13).

Proper medication use involves administering them according to clinical needs, ensuring appropriate doses tailored to individual needs, for the necessary duration, and at the lowest possible cost to both patients and the healthcare system (14). Irrational treatment can lead to unnecessary harm, death, the development of iatrogenic diseases, and unnecessary hospitalizations. Economically, irrational medication use can result in valuable resource loss and shortages of essential medications where needed.

Essential medicines regulations do not guarantee rational medication use. Even essential medicines can be used irrationally, which happens in both developing and developed countries, in the private and public sectors. Efforts to efficiently select, procure, and distribute medications may fail due to poor prescribing practices and lack of patient cooperation (15).

In medication prescribing, anxiolytics, hypnotics, and antidepressants are the most common groups, each representing about 20% of total prescriptions. Antipsychotics, analgesics, tonics, and herbal medicines are prescribed in approximately 5-10% of cases.

Studies indicate that a large number of medications for mental disorders are used without clinically proven efficacy. Approximately 80% of the medications used lack a clear basis for clinical effectiveness. Herbal medicines, tonics, analgesics, and other non-specific medications account for 35.6% of prescriptions, while tranquilizers for daytime and nighttime use make up 41.3% of total prescriptions (17, 18).

In psychiatric clinics, there is an increase in prescriptions of tranquilizers, antidepressants, and other psychotropic medications. Research shows that medical treatment and medication prescribing are influenced not only by medical and pharmacological factors but also by psychological, social, and cultural factors (28, 29).

Non-clinical factors such as age, gender, educational level, family status, and employment position significantly impact medication utilization.

In our study, antipsychotics emerged as the most frequently prescribed group of psychotropic medications, which is expected due to the high prevalence of schizophrenia and other psychotic disorders among the patients studied.

Schizophrenia is one of the most common and complex psychiatric disorders. Its diagnosis is based on the DSM-IV-TR criteria (16). The main feature of schizophrenia is the presence of specific signs and symptoms lasting for at least one month, with several symptoms persisting for at least six months.

Symptoms of schizophrenia include changes in various psychological spheres such as perception (hallucinations), delusions, loss of mental coherence, emotions, behavior (catatonic, disorganized), attention, concentration, motivation, and judgment. The disease is characterized by periods of symptom exacerbation and improvement. Patients with schizophrenia often experience increased morbidity from other illnesses and a higher mortality rate, including a rise in suicide rates, present in about 10% of patients (17, 18, 19, 20). Schizophrenia patients frequently exhibit symptoms of other mental disorders, including depression, obsessive-compulsive symptoms, somatic disturbances, dissociative symptoms, and various forms of anxiety (21).

Schizophrenia develops in three distinct phases: the acute phase, the stabilization phase, and the stabilized phase. The acute phase is marked by delusions and hallucinations, alongside disturbances in attention and thought processes (18, 22). Schizophrenia symptoms are generally categorized into five main types: positive, negative, cognitive, aggressive, and depressive/anxious symptoms.

Positive symptoms include delusions, hallucinations, exaggerated and disorganized speech, disorganized behavior, catatonia, and agitation. These symptoms also occur in other disorders such as bipolar disorder, schizoaffective disorder, child psychotic disorders, psychotic depression, Alzheimer's disease, and substance-induced psychoses.

Negative symptoms include affective disturbances, speech disturbances (alogia), reduced

initiative for goal-directed behavior, anhedonia, and attention disturbances. Negative symptoms can be primary, resulting from the schizophrenia deficit, or secondary, emerging after positive psychotic symptoms, extrapyramidal symptoms, or depressive symptoms.

Cognitive symptoms often overlap with negative symptoms and primarily involve disturbances in attention and speech.

In the acute phase of schizophrenia management, the therapeutic goals include stabilizing unstable behaviors, reducing psychotic and associated symptoms (such as agitation, aggression, negative, and affective symptoms), preventing harm, restoring normal functioning, and ensuring proper integration of the patient into society. Early initiation of treatment is crucial, as acute exacerbations of psychosis can lead to emotional disturbances, disruptions in daily life, and a persistent risk of aggressive behaviors towards oneself and others. The therapeutic plan should be tailored based on the patient's previous responses to antipsychotics, past experiences, the side effect profiles of these medications, preferred methods of administration, the presence of comorbidities, and potential interactions with other prescribed medications.

It is essential to use the minimal effective doses that provide therapeutic benefit without causing significant side effects. Dosage should be individualized, with increases made only after a period of at least 2-4 weeks if there is poor or no response to treatment. If the patient's condition does not improve, potential reasons should be examined, including non-compliance, rapid metabolism, or insufficient absorption of the medication. During the acute phase, additional medications may be used to address comorbidities. Benzodiazepines can manage catatonia and anxiety until antipsychotics take effect, while antidepressants might be necessary for managing depression and obsessive-compulsive disorders. Care should be taken to avoid interactions between medications metabolized through cytochrome P450 enzymes.

In the stabilization phase, the goals shift to reducing stress, preventing relapse, and preparing the patient for community living. If improvement is observed, continued treatment and monitoring for at least 6 months are crucial to prevent symptom recurrence. In the stable phase, the objective is to maintain remission, improve the patient's quality of life, and monitor for medication side effects. Atypical antipsychotics are generally preferred for treating schizophrenia due to their favorable side effect profiles, although clozapine and sertindole are exceptions. These antipsychotics are recommended in many practice guidelines for their effectiveness against negative symptoms and common side effects. If a patient shows a poor response, a typical antipsychotic may be considered as an alternative. Clozapine has demonstrated superiority in managing treatment-resistant schizophrenia in clinical studies but is used less frequently due to the risk of orthostatic hypotension and the need for slow titration. The NICE guidelines also support this approach. Our study indicates that while clozapine is frequently used, its safety profile limits its application, and the high usage rate is not always justified by treatment outcomes.

Guidelines suggest using depot medications for patients who are non-compliant with oral therapy. Before initiating depot therapy, it should be assessed whether non-compliance is due to side effects. If so, antipsychotics with a better side effect profile should be considered. Motivating patients is essential for improving cooperation and adherence. Conversion from oral to depot therapy tends to be more successful for patients previously stabilized on the same therapy or after a short trial period to test tolerance.

Studies have shown that long-acting injectable medications are beneficial during the stabilization and maintenance phases. Meta-analyses have demonstrated a lower risk of relapse for patients using depot medications compared to oral therapy ($p<0.0002$). The prevalence of depot antipsychotic use varies significantly between centers. A study in East Asia reported a 15.3% prevalence for depot preparations. In our study, depot medications were used in 17.6% of cases, primarily long-acting typical antipsychotics such as fluphenazine decanoate and haloperidol decanoate. This prevalence is consistent with East Asia but suggests that local practices and cultural factors significantly influence the use of depot preparations.

Augmented therapy is considered to enhance the effectiveness of clozapine or

other atypical antipsychotics. This involves adding a non-antipsychotic medication or using two antipsychotics in combination. Guidelines recommend augmented therapy when standard drug therapy is insufficient and advise discontinuation if it does not yield positive results.

The number of concurrently prescribed medications varies by country. In France, it decreased from 1.74 to 1.69 between 1995 and 1998, while in Austria, it increased from 2.2 to 2.9, with the percentage of patients receiving more than three psychotropics rising from 27.5% to 49.7%. In Japan, the average number of psychotropic medications is 4.0, with antipsychotics alone accounting for 1.8, and the average treatment duration is 5.9 weeks.

Essential psychotropic medications should address mental health needs based on proven efficacy and safety and be compared for cost-effectiveness. They should always be available in the mental health system in sufficient quantities and at affordable prices for individuals and communities. Medications for mental disorders aim to address symptoms, reduce their duration, and prevent relapse. Despite the effectiveness of many treatments in acute and stabilization phases, uncertainties remain regarding long-term effectiveness and daily management.

"Effective" medications are not always "essential." Newer psychotropic medications, while having fewer side effects, are not always more effective and often come with higher costs. However, they may improve adherence and reduce the need for ongoing care. Approximately one-third of the global population lacks access to essential medications, with this percentage reaching up to 50% in impoverished regions of Africa and Asia. Concerns exist that this situation may worsen further. Careful selection of essential psychotropic medications is crucial for building a sustainable supply system. By choosing a limited number of medications, errors and complications are reduced, enhancing efficacy awareness and facilitating better management and training.

Essential medications should be defined by experts and include generic names rather than brand names. The WHO has a list of essential medications, including psychotropics, last updated in 2003. This list includes common medications for mental disorders, depression, bipolar disorder, and anxiety.

Improving mental health services requires updating guidelines and regulations for the procurement and use of medications every 2-3 years. Our study shows a low usage of essential and generic medications, which limits the analysis to factors influencing this practice.

CONCLUSIONS

In the Specialized Mental Health Centers in Kosovo, the primary method of medication administration is oral (PO), which represents the dominant treatment approach. However, parenteral administration is used in 17.6% of cases, highlighting a clear distinction between treatment methods. This divergence indicates a notable need for alternative medication forms for patients requiring diverse mental health treatments.

A significant concern is that nearly two-thirds (66.1%) of the medications prescribed are non-essential, reflecting a focus on drugs not listed as necessary according to international guidelines or expert recommendations. This practice may deviate from global standards and could affect the quality of care and treatment costs.

Antipsychotics are the most commonly prescribed medications, comprising 53.2% of all prescriptions. This high percentage underscores the critical role of antipsychotics in managing mental disorders in Kosovo, emphasizing the need for effective management of their efficacy and side effects. Notably, third-line therapies are often chosen as the first line of treatment, indicating a preference for more advanced and recent medications. The frequent use of clozapine, with its lower safety profile (84.62% from the SDA group), suggests a trend towards using more potent but riskier drugs.

Conversely, ineffective medications, which have not demonstrated clear benefits for specific diagnoses, are used in only 1.92% of cases. This low percentage suggests that most treatments likely offer potential benefits, although ensuring that ineffective therapies are not used unnecessarily is crucial.

Another issue is the misalignment of treatments with medication indications, observed

in 5.77% of cases. This percentage indicates that, in some instances, treatment does not fully adhere to medication guidelines, potentially impacting treatment effectiveness and patient symptom improvement.

In conclusion, improving the mental health treatment system in Kosovo requires a comprehensive review of medication administration practices. Adjustments in medication selection are needed to enhance the use of essential drugs and minimize the use of ineffective ones. Furthermore, aligning treatments with medication indications is essential to ensure that patients receive the most appropriate and effective care. These efforts will contribute to improving the quality of care and the effectiveness of mental health services in Kosovo.

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Conflict of Interest

The author(s) declares no conflict of interest.

Data Availability

This statement does not apply to this article.

Ethics Statement

This research did not involve human participants, animal subjects, or any material that requires ethical approval.

Informed Consent Statement

This study did not involve human participants, and therefore, informed consent was not required..

Authors' Contribution

Each author has made significant and direct intellectual contributions to the project and has given their approval for its publication. The contributions are detailed as follows: Prof. Dr. Fitim Alidema: Led the research project, conceptualized the study, supervised data collection and analysis, and wrote the manuscript. Arieta Hasani Alidema: Made valuable contributions to data collection and processing, provided expertise in neurology, and assisted with the translation of material into English. Flakron Alidema: Assisted in data collection and contributed to the statistical processing of the data. Mirzade Alidema: Supported data collection, contributed to data analysis, and provided assistance in various aspects of the research.

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