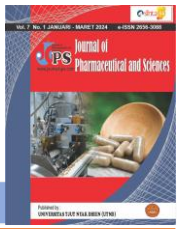
Journal of Pharmaceutical and Sciences
Electronic ISSN: 2656-3088 DOI: https://doi.org/10.36490/journal-jps.com
Homepage: https://journal-jps.com



ORIGINAL ARTICLE JPS. 2026, 9(3), 2601-2608

Drug Use Evaluation of Mood Stabilisers in Outpatients with Bipolar Disorder at a Psychiatric Hospital in Padang City

Evaluasi Penggunaan Obat Mood Stabilizer pada Pasien Bipolar Rawat Jalan di Rumah Sakit Jiwa di Kota Padang

Dian Ayu Juwita [a]*, Fatma Sri Wahyuni [a], Fatiyah Nurazizah [a]

[a] *Department of Pharmacology and Clinical Pharmacy, Faculty of Pharmacy, Universitas Andalas, Padang, West Sumatera. 25163, Indonesia.*

Corresponding Author: dianayujuwita@phar.unand.ac.id

Abstract

Bipolar disorder is a chronic psychiatric condition that requires long-term pharmacotherapy to control symptoms and prevent relapse. Mood stabilisers play a central role in its management; however, inappropriate use may reduce treatment effectiveness and increase the risk of adverse outcomes. This study aimed to evaluate the appropriateness of mood stabiliser use among outpatients with bipolar disorder at a psychiatric hospital in Padang City. This retrospective descriptive study used medical record data from January to December 2023. A total of 28 patients who met the inclusion criteria were included, with 220 outpatient visits analysed. Data collected included sociodemographic characteristics, clinical conditions, and medication use. The appropriateness of therapy was assessed based on four criteria: indication, patient suitability, drug selection, and dosage, using established pharmacotherapy guidelines as the reference standard. The results showed that most patients were female (78.57%) and aged 18–59 years (75%). The evaluation of drug use demonstrated that the appropriateness of indication, patient suitability, and drug selection each reached 83.18%. However, dosage appropriateness was considerably lower at 54.55%, indicating that nearly half of the prescriptions involved suboptimal dosing. While most aspects of mood stabiliser use were generally appropriate, dosing remains a critical issue that may affect treatment effectiveness and patient safety. These findings highlight the importance of improving adherence to clinical guidelines and conducting regular evaluations of pharmacotherapy to optimise outcomes in patients with bipolar disorder.

***Keywords*: Bipolar disorder; Mood stabilisers; Drug use evaluation; Outpatients; Appropriateness of therapy**

Abstrak

Gangguan bipolar merupakan gangguan psikiatri kronis yang memerlukan terapi farmakologis jangka panjang untuk mengendalikan gejala dan menurunkan risiko kekambuhan. Mood stabilizer memiliki peran penting dalam penatalaksanaan penyakit ini, namun penggunaan yang tidak tepat dapat menurunkan efektivitas terapi dan meningkatkan risiko terjadinya efek samping. Penelitian ini bertujuan untuk mengevaluasi ketepatan penggunaan mood stabilizer pada pasien gangguan bipolar rawat jalan di sebuah rumah sakit jiwa di Kota Padang. Penelitian ini menggunakan desain deskriptif retrospektif dengan memanfaatkan data rekam medis pasien selama periode Januari hingga Desember 2023. Sebanyak 28 pasien yang memenuhi kriteria inklusi dianalisis, dengan total 220 kunjungan rawat jalan. Data yang dikumpulkan meliputi karakteristik sosiodemografi, kondisi klinis, dan penggunaan obat. Evaluasi dilakukan berdasarkan empat parameter, yaitu ketepatan indikasi, ketepatan pasien, ketepatan pemilihan obat, dan ketepatan dosis dengan mengacu pada pedoman farmakoterapi. Hasil penelitian menunjukkan bahwa sebagian besar pasien berjenis kelamin perempuan (78,57%) dan berada pada kelompok usia 18–59 tahun (75%). Ketepatan indikasi, pasien, dan pemilihan obat masing-masing mencapai 83,18%, menunjukkan bahwa praktik peresepan secara umum sudah rasional. Namun, ketepatan dosis hanya mencapai 54,55%, yang menunjukkan bahwa masih terdapat penggunaan dosis yang kurang optimal pada sebagian besar kunjungan. Meskipun sebagian besar aspek penggunaan mood stabilizer sudah tepat, ketepatan dosis masih menjadi permasalahan utama yang dapat memengaruhi keberhasilan terapi dan keselamatan pasien. Oleh karena itu, diperlukan peningkatan kepatuhan terhadap pedoman klinis serta evaluasi terapi secara berkala untuk mengoptimalkan hasil pengobatan pada pasien dengan gangguan bipolar.

Kata Kunci: Gangguan bipolar; Mood stabilizer; Evaluasi penggunaan obat; Pasien rawat jalan; Ketepatan terapi.

https://doi.org/10.36490/journal-jps.com.v9i3.1540

Article History:
Received: 28/04/2026
Revised: 05/08/2026,
Accepted: 05/08/2026
Available Online: 15/08/2026.

QR access to this Article

Introduction

Bipolar disorder is a chronic mental health condition characterised by recurrent alterations in mood that include episodes of mania, hypomania, and depression. These mood fluctuations can significantly affect emotional regulation, cognitive performance, interpersonal relationships, and occupational functioning [1]. Because of its recurrent nature and long-term course, bipolar disorder represents an important contributor to the global burden of psychiatric illness. Individuals living with this disorder often experience substantial impairment in daily functioning, decreased quality of life, and an increased risk of suicide compared with the general population. Consequently, effective long-term management strategies are essential to stabilise mood symptoms and reduce the likelihood of relapse [2,3]. From an epidemiological perspective, bipolar disorder affects millions of individuals worldwide. Reports from the World Health Organisation indicate that approximately 37 million people globally were living with bipolar disorder in recent years, representing roughly 0.5% of the world's population. Other epidemiological investigations have suggested that the lifetime prevalence of bipolar disorder may range between 1% and 2% in the general population. These figures highlight the disorder's substantial public health impact, particularly because it often develops in early adulthood and may persist throughout the patient's lifetime [4,5].

In Indonesia, bipolar disorder is also recognised as a growing mental health concern. Available epidemiological estimates suggest that the prevalence of bipolar disorder in the Indonesian population ranges from approximately 0.3% to 1.5% [6]. However, the actual number of affected individuals may be higher due to underreporting, limited mental health screening, and barriers to accessing psychiatric services. Increasing awareness of mental health issues in recent years has led to greater demand for appropriate psychiatric care and long-term pharmacological treatment, particularly in specialised facilities such as psychiatric hospitals [7].

Pharmacotherapy remains the cornerstone of bipolar disorder management. Among the available treatment options, mood stabilisers play a central role in controlling acute mood episodes and preventing relapse during long-term maintenance therapy. Conventional mood stabilisers, including lithium, valproate, and carbamazepine, have been widely used for decades and remain recommended in international clinical practice guidelines. These agents are effective in controlling manic symptoms, reducing the recurrence of mood episodes, and improving long-term clinical outcomes. In addition, atypical antipsychotics may be prescribed either as adjunctive therapy or as alternative treatment options depending on the patient's clinical presentation [8,9].

Despite their well-established therapeutic benefits, mood stabilisers require careful clinical management because of their complex pharmacological profiles and potential safety concerns. Several agents have narrow therapeutic ranges and therefore require close monitoring to maintain optimal efficacy while minimising toxicity. For example, lithium treatment requires regular monitoring of serum drug concentrations to prevent toxic effects [9,10]. Likewise, valproate and carbamazepine are associated with potential hepatic toxicity, haematological abnormalities, and clinically significant drug–drug interactions. Inappropriate prescribing practices, including unsuitable drug selection, incorrect dosage, and irrational combination therapy, may compromise treatment effectiveness and increase the risk of adverse drug reactions [11,12].

Electronic ISSN : 2656-3088
Homepage: https://www.journal-jps.com

Given these challenges, systematic evaluation of prescribing practices is essential to ensure that pharmacotherapy remains safe, effective, and consistent with evidence-based recommendations. In clinical pharmacy practice, Drug Use Evaluation (DUE) is widely applied as a structured approach to assess the appropriateness of medication use according to established therapeutic standards. This process includes evaluating several aspects of pharmacotherapy, such as appropriate indications, drug selection, dosage, treatment duration, and potential drug interactions. By implementing DUE, healthcare professionals can identify drug-related problems and determine whether prescribing practices are aligned with current evidence-based recommendations. Such evaluations contribute to optimising medication use, improving patient safety, and enhancing the overall quality of healthcare services [13,14].

This evaluation is particularly important in outpatient settings, where successful long-term management of bipolar disorder depends largely on patients' adherence to prescribed treatment. However, maintaining adherence to mood stabilisers remains challenging because of adverse drug effects, prolonged treatment duration, and the financial burden associated with long-term pharmacotherapy. Poor adherence may reduce treatment effectiveness, increase the likelihood of relapse, and result in repeated hospital visits, highlighting the importance of ensuring that prescribed therapies are appropriate, effective, and consistent with current clinical recommendations [2, 5,7].

Despite the clinical importance of evaluating medication use in outpatient practice, studies investigating the appropriateness of mood stabiliser therapy among patients with bipolar disorder in Indonesia remain limited, particularly in specialised psychiatric hospitals. These institutions provide comprehensive mental healthcare and frequently manage patients who require long-term pharmacological treatment. In outpatient psychiatric services, mood stabilisers are commonly prescribed as maintenance therapy to prevent relapse and maintain mood stability [8,9]. Therefore, this study aimed to evaluate the appropriateness of mood stabiliser use among outpatients with bipolar disorder at a psychiatric hospital in Padang City.

Methods

Study Design and Setting

This study employed a retrospective descriptive design to evaluate the use of mood stabilisers among outpatients diagnosed with bipolar disorder. The research was conducted in the medical records department of a psychiatric hospital in Padang, Indonesia. Data were collected from the medical records of patients who received treatment between January and December 2023.

Study Population and Sample

The study population consisted of all outpatients diagnosed with bipolar disorder who received treatment at the Psychiatric Hospital during the study period (January–December 2023). We selected samples using a purposive sampling technique. Patients were included if they met the following criteria: (1) outpatients diagnosed with bipolar disorder, (2) received treatment with mood stabiliser medications during the study period, and (3) had complete and clearly documented medical records. Patients were excluded if their medical records were incomplete, unclear, missing, or if the patient had died during the study period. All eligible medical records that met the inclusion criteria were included in the analysis.

Data Collection

Data were collected retrospectively from patients' medical records using a structured data collection form prepared for this study. Relevant information regarding patient characteristics, clinical conditions, and pharmacotherapy was extracted and recorded systematically for further analysis.

Criteria for Drug Use Evaluation

The appropriateness of pharmacological treatment with mood stabilisers was assessed by comparing the prescribed regimens against current evidence-based recommendations and internationally accepted clinical guidelines for the management of bipolar disorder. The evaluation focused on four key components of rational prescribing: appropriateness of indication, patient suitability, drug selection, and dosage. Appropriateness of indication referred to the consistency between the prescribed medication and the patient's

Electronic ISSN : 2656-3088
Homepage: https://www.journal-jps.com

confirmed diagnosis, ensuring that treatment corresponded to the documented clinical phase of bipolar disorder, including manic, depressive, mixed, or maintenance (euthymic) episodes.

Patient suitability was evaluated by determining whether the prescribed medication was appropriate for the individual patient's clinical condition. This assessment considered contraindications, relevant physiological or pathological conditions, documented drug hypersensitivity, pregnancy status, significant hepatic or renal dysfunction, and other clinically important factors recorded in the medical records. Appropriateness of drug selection was determined by assessing whether the selected medication was consistent with recommended pharmacological therapy for the patient's specific bipolar disorder phase, while taking into account the individual's clinical presentation and therapeutic needs.

Dosage appropriateness was assessed by comparing the prescribed daily dose with the therapeutic dose range recommended in evidence-based references. Dose appropriateness was evaluated according to the patient's diagnosis, phase of illness, and safety considerations. Prescriptions that exceeded or fell below the recommended therapeutic range were categorised as inappropriate. The assessment criteria were developed using internationally recognised clinical practice guidelines and authoritative pharmacotherapy references for bipolar disorder.

Data Analysis

Data were analysed using descriptive methods. Patient characteristics were summarised using frequencies and percentages. Therapy appropriateness was calculated based on the proportion of prescriptions that met each evaluation criterion, including appropriate indication, appropriate drug selection, appropriate patient, and appropriate dosage. The results were presented in tabular form to illustrate the distribution and percentage of appropriate mood stabiliser use among outpatients with bipolar disorder.

Ethical Consideration

This study received ethical approval from the Faculty of Pharmacy, Universitas Andalas, under Approval No. 87/UN16.10.D.KEPK-FF/2025.

Results and Discussion

Table 1. Sociodemographic Characteristics of Patients (n=28)

Category	Number of Patients	%
Gender		
Male	6	21.43
Female	22	78.57
Age Group		
10–18 years	6	21.42
18–59 years	21	75.00
≥ 60 years	1	3.57
Education Level		
No formal education	6	21.42
Primary school	1	3.57
Junior high school	3	10.71
Senior high school	16	57.14
Bachelor's degree	2	7.14
Occupation		
Student	13	46.42
Farmer	1	3.57
Housewife	4	14.28
Unemployed	10	35.71

A total of 28 patients met the inclusion criteria in this study, with a cumulative 220 outpatient visits recorded during the study period. Table 1 presents the patients' sociodemographic characteristics. The results showed that most patients were female, accounting for 78.57% of the total sample. This finding is consistent with previous studies reporting a higher proportion of female patients diagnosed with bipolar disorder. One possible explanation is that women are generally more likely to seek professional help for

Electronic ISSN : 2656-3088
Homepage: https://www.journal-jps.com

psychological problems compared to men, leading to higher detection rates in clinical settings. Biological factors may also contribute to this difference. Hormonal fluctuations, particularly those related to estrogen, have been suggested to increase vulnerability to mood instability in women, potentially influencing both the occurrence and clinical presentation of bipolar disorder [15,16].

In terms of age distribution, most patients were within the 18–59 years age group, representing 75% of the study population. This finding aligns with previous research indicating that bipolar disorder commonly manifests during early adulthood and persists throughout the productive years of life. Several studies have reported the highest prevalence among individuals aged 26–35 years. Epidemiological evidence also suggests that the cumulative incidence of bipolar disorder increases significantly during early and middle adulthood. This period is often characterised by major life transitions, including educational, occupational, and social challenges, which may increase psychological stress and potentially trigger mood disturbances in susceptible individuals [17,18].

Regarding educational background, most patients in this study had completed senior high school. Similar patterns have been observed in previous studies involving outpatient populations with bipolar disorder. Although there is no conclusive evidence that educational level directly affects the risk of developing bipolar disorder, this stage of education typically coincides with late adolescence and early adulthood, a critical period for the onset of mood disorders. Various factors, including social environment, substance use, and levels of social support, may contribute to the development and progression of the condition during this period [19].

In terms of occupational status, most patients were students, followed by unemployed individuals. This finding is closely associated with the age distribution observed in this study, where most patients were young adults. Previous research has shown that the onset of bipolar disorder frequently occurs during late adolescence or early adulthood, a period when individuals are still engaged in education or transitioning into the workforce. The high proportion of unemployed patients further reflects the functional impairment associated with bipolar disorder, as recurrent mood episodes can negatively affect academic performance, productivity, and the ability to maintain stable employment [19,20].

Table 2. Evaluation of Mood Stabiliser Use in Patients with Bipolar Disorder (n=220)

Category	Total Visits	%
Appropriate indication	183	83.18
Appropriate patient	183	83.18
Appropriate drug selection	183	83.18
Appropriate dosage	120	54.55

As shown in Table 2, the appropriateness of indication, patient suitability, and drug selection all reached the same percentage (83.18%), indicating that most prescribed therapies were generally consistent with clinical guidelines. Most patients received combination therapy deemed appropriate for their clinical condition. For instance, patients in the manic phase were treated with a combination of valproate (Depakote®) 250 mg twice daily and risperidone 1 mg twice daily, which is consistent with first-line treatment recommendations for acute mania. Similarly, the combination of valproate, aripiprazole, and fluoxetine used in patients with mixed episodes was considered appropriate, as it addresses both manic and depressive symptoms concurrently [9,21].

These findings are in line with previous drug utilisation studies, which have reported that most prescribing practices in psychiatric settings are generally consistent with guideline recommendations, particularly in terms of indication and drug selection. However, similar to this study, deviations are still commonly observed in specific clinical scenarios, especially related to phase-specific treatment and dose optimisation [22,23].

Despite the overall high level of appropriateness, several clinically relevant issues were identified. In terms of indication, some inappropriate use of medications was observed. For example, atypical antipsychotics such as risperidone and aripiprazole were prescribed for patients in the depressive phase, whereas these agents are more commonly recommended for manic or mixed episodes. In addition, clobazam, a benzodiazepine, was prescribed in depressive episodes, despite its primary role in managing agitation associated with manic states. These findings suggest that, in some cases, prescribing practices were not fully aligned with phase-specific treatment recommendations [9,21,24].

Electronic ISSN : 2656-3088
Homepage: https://www.journal-jps.com

Patient-related appropriateness was also affected by contraindications and incomplete clinical information. The evaluation of this criterion considered factors such as physiological characteristics, comorbidities, age, and previous treatment response. However, the absence of documented treatment history and patient response in several medical records may have contributed to repetitive prescribing patterns without adequate consideration of prior effectiveness or potential treatment resistance, particularly in patients with recurrent relapse. Clinical guidelines, such as those from the Canadian Network for Mood and Anxiety Treatments (CANMAT) and the National Institute for Health and Care Excellence (NICE), emphasise the importance of periodically evaluating treatment response and tolerability, as well as timely modification of therapy when previous regimens are ineffective [9,21,25].

Furthermore, several instances of inappropriate drug selection were identified. For example, aripiprazole and olanzapine were used in depressive phases, despite being more strongly indicated for manic or mixed episodes [9,21]. Another example includes the use of clozapine without clear evidence of treatment resistance. According to clinical guidelines, clozapine is generally reserved for patients who do not respond to standard treatment options. These findings highlight that although most prescriptions were appropriate, drug selection should be more carefully tailored to the patient's clinical phase and specific indication to minimise the risk of suboptimal therapeutic outcomes or adverse effects [9,26].

Notably, the lowest level of appropriateness was observed in the dosage category, with only 54.55% of prescriptions meeting guideline recommendations. This indicates that nearly half of the total visits involved suboptimal dosing. Similar findings have been reported in other studies, where dosing-related problems were identified as one of the most common issues in the pharmacological management of bipolar disorder. For example, fluoxetine was prescribed at 10 mg/day in several cases, whereas guideline recommendations suggest an initial dose of 20 mg/day. Similarly, aripiprazole was frequently prescribed at 5 mg/day, which is below the recommended dose range of 10–15 mg/day. Suboptimal dosing may lead to inadequate symptom control, increased relapse risk, and may contribute to treatment resistance over time [9,21,26]. From a clinical perspective, these findings highlight the need for stricter adherence to evidence-based guidelines, particularly in dose optimisation and phase-specific drug selection. Regular, individualised evaluation of pharmacotherapy is essential to ensure treatment effectiveness and patient safety. Healthcare providers should also improve documentation of treatment history and patient response to support more rational, personalised prescribing decisions [21,25,27].

This study has several limitations that should be acknowledged. Although 28 patients met the inclusion criteria, the analysis used data from 220 outpatient visits rather than individual patient records. As a result, multiple visits by the same patient may have disproportionately influenced the observed prescribing patterns and the estimated appropriateness of medication use, thereby reducing the generalizability of the findings to the broader bipolar patient population. Future research involving larger sample sizes and patient-level analyses is warranted to provide a more robust assessment of the appropriateness of mood stabiliser prescribing.

Conclusions

Most mood stabiliser prescriptions were appropriate with respect to indication, patient suitability, and drug selection, each achieving an appropriateness rate of 83.18%. Nevertheless, the remaining 16.82% of prescriptions that did not meet these criteria represent clinically important prescribing issues, particularly involving inappropriate indications and drug selection, which may compromise treatment effectiveness and patient safety. Dosage appropriateness was substantially lower, with only 54.55% of prescriptions meeting guideline recommendations, identifying dose optimisation as the primary area requiring improvement.

Conflict of Interest

The authors confirm that no personal, financial, or professional relationships exist that could be considered to have influenced the conduct or outcomes of this study.

Electronic ISSN : 2656-3088
Homepage: https://www.journal-jps.com

Acknowledgment

The authors express sincere gratitude to the management and staff of the psychiatric hospital in Padang City for their support and permission to conduct this study. Their assistance in providing access to medical records and facilitating data collection was greatly appreciated.

References

[1] Voelker R. (2024). What Is Bipolar Disorder?. *JAMA*, *331*(10), 894. https://doi.org/10.1001/jama.2023.24844

[2] Ferrari, A. J., Stockings, E., Khoo, J. P., Erskine, H. E., Degenhardt, L., Vos, T., & Whiteford, H. A. (2016). The prevalence and burden of bipolar disorder: findings from the Global Burden of Disease Study 2013. *Bipolar Disorders*, *18*(5), 440–450. https://doi.org/10.1111/bdi.12423

[3] Beyer, J. L., & Weisler, R. H. (2016). Suicide Behaviours in Bipolar Disorder: A Review and Update for the Clinician. *The Psychiatric Clinics of North America*, *39*(1), 111–123. https://doi.org/10.1016/j.psc.2015.09.002

[4] World Health Organisation. (2023). *Bipolar disorder. https://www.who.int/news-room/fact-sheets/detail/bipolar-disorder*

[5] Rowland, T. A., & Marwaha, S. (2018). Epidemiology and risk factors for bipolar disorder. *Therapeutic advances in psychopharmacology*, *8*(9), 251–269. https://doi.org/10.1177/2045125318769235

[6] Ministry of Health of the Republic of Indonesia. (2018). *Basic Health Research (Riskesdas) 2018*. Jakarta: Ministry of Health of the Republic of Indonesia

[7] Munira, L., Liamputtong, P., & Viwattanakulvanid, P. (2023). Barriers and facilitators to access mental health services among people with mental disorders in Indonesia: A qualitative study. *Belitung Nursing Journal*, *9*(2), 110–117. https://doi.org/10.33546/bnj.2521

[8] Geddes, J. R., & Miklowitz, D. J. (2013). Treatment of bipolar disorder. *Lancet (London, England)*, *381*(9878), 1672–1682. https://doi.org/10.1016/S0140-6736(13)60857-0

[9] Yatham, L. N., Kennedy, S. H., Parikh, S. V., Schaffer, A., Bond, D. J., Frey, B. N., Sharma, V., Goldstein, B. I., Rej, S., Beaulieu, S., Alda, M., MacQueen, G., Milev, R. V., Ravindran, A., O'Donovan, C., McIntosh, D., Lam, R. W., Vazquez, G., Kapczinski, F., McIntyre, R. S., … Berk, M. (2018). Canadian Network for Mood and Anxiety Treatments (CANMAT) and International Society for Bipolar Disorders (ISBD) 2018 guidelines for the management of patients with bipolar disorder. *Bipolar Disorders*, *20*(2), 97–170. https://doi.org/10.1111/bdi.12609

[10] Gitlin M. (2016). Lithium side effects and toxicity: prevalence and management strategies. *International journal of bipolar disorders*, *4*(1), 27. https://doi.org/10.1186/s40345-016-0068-y

[11] Perucca E. (2002). Pharmacological and therapeutic properties of valproate: a summary after 35 years of clinical experience. *CNS Drugs*, *16*(10), 695–714. https://doi.org/10.2165/00023210-200216100-00004

[12] Spina, E., Pisani, F., & Perucca, E. (1996). Clinically significant pharmacokinetic drug interactions with carbamazepine. An update. *Clinical Pharmacokinetics*, *31*(3), 198–214. https://doi.org/10.2165/00003088-199631030-00004

[13] American Society of Health-System Pharmacists. (2021). *ASHP guidelines on medication-use evaluation. American Journal of Health-System Pharmacy, 78*(4), 341–352

[14] World Health Organisation. (2019). *Promoting rational use of medicines: Core components*. Geneva: World Health Organisation.

[15] Diflorio, A., & Jones, I. (2010). Is sex important? Gender differences in bipolar disorder. *International review of psychiatry (Abingdon, England)*, *22*(5), 437–452. https://doi.org/10.3109/09540261.2010.514601

[16] Albert P. R. (2015). Why is depression more prevalent in women?. *Journal of psychiatry & neuroscience: JPN*, *40*(4), 219–221. https://doi.org/10.1503/jpn.150205

[17] Rifaya A, Agustina R, Rusli R. Pola Penggunaan Obat Mood Stabilizer Pada Pasien Bipolar di Rumah Sakit Jiwa Daerah Atma Husada Mahakam. Proc Mul Pharm Conf. 2019;10:86–93

[18] Anggraeni MD, Agustina R, Indriyanti N. Pola Penggunaan Obat Antikonvulsan pada Pasien Gangguan Kejiwaan di Rumah Sakit Jiwa Daerah Atma Husada Mahakam Samarinda. Proc Mul Pharm Conf. 2019;10:48–51

Electronic ISSN : 2656-3088
Homepage: https://www.journal-jps.com

[19] Solmi, M., Radua, J., Olivola, M., Croce, E., Soardo, L., Salazar de Pablo, G., Il Shin, J., Kirkbride, J. B., Jones, P., Kim, J. H., Kim, J. Y., Carvalho, A. F., Seeman, M. V., Correll, C. U., & Fusar-Poli, P. (2022). Age at onset of mental disorders worldwide: large-scale meta-analysis of 192 epidemiological studies. *Molecular Psychiatry*, *27*(1), 281–295. https://doi.org/10.1038/s41380-021-01161-7

[20] Marwaha, S., Durrani, A., & Singh, S. (2013). Employment outcomes in people with bipolar disorder: a systematic review. *Acta Psychiatrica Scandinavica*, *128*(3), 179–193. https://doi.org/10.1111/acps.12087

[21] Malhi, G. S., Bell, E., Bassett, D., Boyce, P., Bryant, R., Hazell, P., Hopwood, M., Lyndon, B., Mulder, R., Porter, R., Singh, A. B., & Murray, G. (2021). The 2020 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. *The Australian and New Zealand journal of psychiatry*, *55*(1), 7–117. https://doi.org/10.1177/0004867420979353

[22] Grover, S., Avasthi, A., Sinha, V., Lakdawala, B., Bathla, M., Sethi, S., Mathur, D. M., Kathuria, P., Shah, S., Baalasubramanian, D. S., Agarwal, V., & Deka, K. (2014). Indian Psychiatric Society multicentric study: Prescription patterns of psychotropics in India. *Indian journal of psychiatry*, *56*(3), 253–264. https://doi.org/10.4103/0019-5545.140632

[23] Kadra, G., Stewart, R., Shetty, H., MacCabe, J. H., Chang, C. K., Kesserwani, J., Taylor, D., & Hayes, R. D. (2018). Antipsychotic polypharmacy prescribing and risk of hospital readmission. *Psychopharmacology*, *235*(1), 281–289. https://doi.org/10.1007/s00213-017-4767-6

[24] Goodwin, G. M., Haddad, P. M., Ferrier, I. N., Aronson, J. K., Barnes, T., Cipriani, A., Coghill, D. R., Fazel, S., Geddes, J. R., Grunze, H., Holmes, E. A., Howes, O., Hudson, S., Hunt, N., Jones, I., Macmillan, I. C., McAllister-Williams, H., Miklowitz, D. R., Morriss, R., Munafò, M., … Young, A. H. (2016). Evidence-based guidelines for treating bipolar disorder: Revised third edition recommendations from the British Association for Psychopharmacology. *Journal of Psychopharmacology (Oxford, England)*, *30*(6), 495–553. https://doi.org/10.1177/0269881116636545

[25] National Institute for Health and Care Excellence. (2020). *Bipolar disorder: Assessment and management (NICE guideline CG185)*. London: NICE

[26] McIntyre, R. S., Berk, M., Brietzke, E., Goldstein, B. I., López-Jaramillo, C., Kessing, L. V., Malhi, G. S., Nierenberg, A. A., Rosenblat, J. D., Majeed, A., Vieta, E., Vinberg, M., Young, A. H., & Mansur, R. B. (2020). Bipolar disorders. *Lancet (London, England)*, *396*(10265), 1841–1856. https://doi.org/10.1016/S0140-6736(20)31544-0

[27] American Society of Health-System Pharmacists. (2021). ASHP guidelines on medication-use evaluation. *American Journal of Health-System Pharmacy*, *78*(4), 341–352

Electronic ISSN : 2656-3088
Homepage: https://www.journal-jps.com