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Original Research Article

Prescribing Pattern of Antidepressant Drugs in Psychiatry Outpatient Department

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Abstract

Background: Major Depressive Disorder (MDD) and related psychiatric conditions are major public health concerns globally. Antidepressant drugs play a crucial role in treatment, but their prescribing patterns and associated adverse drug reactions (ADRs) require continuous evaluation to ensure rational and effective use.

Aim: This study aimed to evaluate the prescribing patterns and ADR profiles of antidepressant drugs in a psychiatry outpatient setting.

Material and Methods: A cross-sectional study was conducted with 150 participants meeting the inclusion criteria. Prescriptions were analysed using WHO Core Drug Prescribing Indicators. ADR causality was assessed with the WHO-UMC Causality Assessment System and Naranjo's scale. ADR severity and preventability were evaluated using Hartwig & Siegel's and Schmuck & Thornton's criteria respectively.

Results: The mean participant age was 33.2±11.5 years, with 41.3% aged between18-30 years. Females accounted for 58.7% of participants. Monotherapy was observed in 84.7% of cases, with fluoxetine being the most prescribed antidepressant (35.3%), followed by sertraline (17.3%) and escitalopram (14.7%). The average number of drugs per prescription was 3.38, with 32.5% prescribed with generic name. In our study, ADR incidence was found to be 20%, with insomnia (25.8%) being the most common ADR. The Causality assessment of ADR revealed that 83.8 % of ADRs were possible followed by 16.2% probable. About 54.6% ADR were found to be non preventable.

Conclusion: Fluoxetine was the most commonly prescribed antidepressant, with SSRIs being the most preferred class. Polypharmacy was infrequent, and clonazepam was the most common concomitant medication. Prescriptions often lacked generic names, highlighting the need for promoting rational prescribing practices.

Keywords Antidepressants, prescribing patterns, adverse drug reactions, fluoxetine, SSRIs, psychiatry outpatient department, rational prescribing etc.

Introduction

Depression is a significant global public health concern due to its high lifetime prevalence and substantial disability burden. The global pooled period prevalence of mood disorders is 5.4%, with WHO-World Mental Health Survey estimates ranging from 0.8% to 9.6% across countries [1]. Ranked as the third leading cause of the global disease burden in 2008, depression is projected to become the leading cause by 2030 [2]. It is characterized by a lack of interest or pleasure in previously enjoyable activities, with symptoms including guilt, worthlessness, fatigue, poor concentration, appetite changes, psychomotor disturbances, sleep issues, or suicidal thoughts [3].

Pharmacological treatments for depression include Tricyclic Antidepressants (TCAs), Selective Serotonin Reuptake Inhibitors (SSRIs), Serotonin–Norepinephrine Reuptake Inhibitors (SNRIs), and Monoamine Oxidase Inhibitors (MAOs), all targeting serotonergic or noradrenergic neurotransmitter systems [4]. The discovery of newer antidepressants with improved tolerability and broader indications highlights the importance of selecting appropriate medications based on symptoms, patient characteristics, dose, and therapy duration to enhance treatment success [5]. Factors such as side effect profiles, costs, safety, and prior treatment history also influence the selection of antidepressants [6].

Prescribing patterns vary across geographical regions, influenced by patient demographics, disease prevalence, cultural factors, socioeconomic

conditions, drug availability, and physician habits. Drug utilization studies aim to monitor and optimize prescribing practices for rational and cost-effective care [7]. Inappropriate drug use poses risks to patient safety and incurs unnecessary expenses, necessitating periodic reviews to ensure safe, effective treatments [8]. WHO and the International Network for Rational Use of Drugs (INRUD) recommend standard drug use indicators to address deficiencies in prescribing practices [9]. These studies are particularly crucial in developing countries like India, where patients bear 72% of healthcare costs [10].

In India, inadequate reporting of medication errors and irrational drug use contributes significantly to adverse drug reactions and interactions. As drugs play a vital role in maintaining health, understanding prescribing patterns has become increasingly important with the introduction of newer medications and awareness of delayed adverse effects. The past two decades have seen a rise in antidepressant use due to the growing prevalence of depression and the introduction of new drugs. Antidepressants are now often prescribed for conditions beyond depression, emphasizing the need to assess real-world prescribing practices to ensure patient safety and achieve optimal therapeutic outcomes.

Given the evolving prescribing patterns, it is essential to evaluate their rationality and associated adverse drug reactions. This study aims to analyze the prescribing patterns of antidepressants and their adverse effects in the psychiatric outpatient department of Safdarjung Hospital. Understanding these patterns will help improve patient safety, optimize therapeutic outcomes, and contribute to rational drug use.

Material and Methods

This cross-sectional study was conducted in the Department of Pharmacology in collaboration with the Department of Psychiatry at VMMC and Safdarjung Hospital (SJH), New Delhi, after obtaining approval from IEC, VMMC& SJH (S. No. - IEC/VMMC/SJH/Thesis/2020-11/CC-258).

The study population comprised all patients prescribed antidepressants and attending the Psychiatry OPD. Inclusion criteria included patients of both sexes above 18 years of age diagnosed with depression or any other condition requiring antidepressants, while patients with psychotic disorders were excluded. The study duration was 18 months, with a sample size of 150 patients, determined using the WHO's document "How to Investigate Drug Use in Health Facilities"[6]. The diagnosis of depression was confirmed by the Psychiatry Department at SJH using the DSM-V criteria for major depressive disorder [11]. Data were collected through a pre-designed pro forma, capturing patient demographic and socioeconomic details, drug history, laboratory investigations, and general information. Prescribed medication details, including drug name (generic or branded), dose, frequency, and duration, were recorded. Adverse drug reactions (ADRs) were documented using the Adverse Drug Event Reporting Form provided by the Central Drugs Standard Control Organization (CDSCO), Government of India.

Assessment Tools

(a) WHO's Drug Prescribing Indicators [7]: The indicators measure the performance of healthcare providers in appropriate drug use. Observations are based on clinical encounters in outpatient facilities treating acute and chronic illnesses. The key prescribing indicators include:

1. **Average number of drugs per encounter (C):** C=B/A, where B is the total number of drugs prescribed, and A is the number of encounters observed.
2. **Percentage of drugs prescribed by generic name (E):** E=(D/B)×100% , where D is the total number of generic drugs prescribed.
3. **Percentage of encounters with an antidepressant prescribed (G):** G=(F/A)×100%, where F is the number of patients receiving one or more antidepressants.
4. **Percentage of encounters with an injection prescribed (I):** I=(H/A)×100%, where H is the number of patients receiving one or more injections.
5. **Percentage of drugs prescribed from the essential drug list or formulary (K):** K=(J/B)×100%, where J is the total number of drugs from the essential drug list.

(b) Naranjo's Adverse Drug Reaction Probability Scale [12]: This tool assesses the likelihood of an ADR being attributed to a specific drug. It includes 10 questions with assigned point values (-1, 0, +1, or +2). Total scores classify ADRs as definite (≥9), probable (5–8), possible (1–4), or doubtful (≤0).

(c) **The WHO-UMC Causality Assessment System** [13]: This system evaluates ADRs by combining clinical-pharmacological aspects of the case history with the quality of observation documentation, providing a comprehensive assessment.

(d) Hartwig & Siegel's Scale for Severity Assessment [14]: This scale categorizes ADR severity into mild (levels 1–2), moderate (levels 3–4), and severe (levels 5–7) based on increasing levels of severity.

(e) Schmuck and Thornton Criteria for Preventability Assessment [15]: This tool classifies ADRs into three categories: definitely preventable, probably preventable, and non-preventable. It consists of three sections with structured questions. ADRs are classified as definitely or probably preventable based on responses, while the absence of affirmative answers classifies ADRs as non-preventable.

These tools provided a structured approach to assess prescribing patterns, ADR causality, severity, and preventability, ensuring a comprehensive evaluation of antidepressant use and associated outcomes.

Statistical analysis: All data entry was done on MS Excel and a master chart was prepared. The data was analyzed using licensed version of SPSS-23. The results were expressed as numbers and percentage .

Results

Table 1 provides an overview of the socio-demographic profile of the 150 participants. The mean age was 33.2 years, with the majority (41.3%) aged 18-30 years. Females constituted 58.7% of the participants. Most participants had completed higher secondary school (45.3%) or were graduates and above (26%). In terms of occupation, 54.7% were unemployed, and 65.3% were married. Nuclear families were predominant (80%), and only 4% reported a history of drug allergy.

In our study, depression was the most common condition (68%) for which antidepressants were prescribed, followed by anxiety disorders (18%). Bipolar disorder (6.7%), OCD (4%), and migraine (3.3%), highlighting the predominance of mood and anxiety disorders in this cohort.(Table2)

Fluoxetine was the most commonly prescribed antidepressant (35.3%), followed by Sertraline (17.3%) and Escitalopram (14.7%), while other drugs such as Paroxetine and Desvenlafaxine were less frequently prescribed. The most common combinations prescribed was Escitalopram with Amitriptyline (6%), followed by Sertraline with Amitriptyline (4.7%) (Table 3)

The prescribing indicators reflect the overall drug utilization practices. The average number of drugs per prescription was 3.38, while antidepressants accounted for 1.14 per prescription. Only 32.5% of drugs were prescribed generically, with 54.8% sourced from the essential drug list. No antibiotics or injections were prescribed during the study. (Table 4)

Among the 31 reported ADRs, insomnia (25.8%), dry mouth (16.1%), and drowsiness (12.9%) were the most common. Most ADRs were classified as "possible" (83.8%) under the WHO-UMC causality system, while 80.6% were of mild intensity as per Hartwig's scale. Preventability assessment revealed that 35.6% of ADRs were "definitely preventable," 9.8% were "probably preventable," and 54.6% were "non-preventable." (Table 5)

Table 1: Socio-demographic characteristic of study population (N=150)

S. No.	Socio-demographic profile of study participants	Number (%)
I	**Age groups (in completed years)**	
1	18 - 30 years	62 (41.3)
2	31 - 40 years	40 (26.7)
3	41-50 years	41 (27.3)
4	>50 years	7 (4.7)
Mean ±SD		33.2±11.5
Median		36
Range		18-53
II	**Sex**	
1	Male	62 (41.3)
2	Female	88 (58.7)
III	**Educational Status**	
1	Illiterate	16 (10.7)
2	Middle Class	19 (12.7)
3	High School	8 (5.3)
4	Higher secondary school	68 (45.3)
5	Graduate & Above	39 (26.0)
IV	**Occupation**	
1	Employed	68(45.3)
2	Unemployed	82 (54.7)
V	**Marital Status**	
1	Married	98(65.3)
2	Unmarried/Divorced/Widowed	52(34.7)
VI	**Type of Family**	

1	Nuclear	120(80)
2	Joint	30(20)
VII	**History of Drug Allergy**	
1	Present	6(4)
2	Absent	144(96)

Table 2: Clinical Profile of Study Population (N=150)

Diagnosis	Number (n)	% (Percentage)
Depression	102	68.0
Anxiety disorders	27	18.0
Bipolar	10	6.7
OCD (Obsessive-Compulsive Disorder)	6	4.0
Migraine	5	3.3
Total	**150**	**100.0**

Table 3: Prescribing Pattern of Antidepressant Drugs (N=150)

Antidepressant Drugs	Number (n)	% (Percentage)
Fluoxetine	53	35.3
Sertraline	26	17.3
Escitalopram	22	14.7
Amitriptyline	16	10.7
Paroxetine	6	4.0
Desvenlafaxine	4	2.7
Escitalopram + Amitriptyline	9	6.0
Sertraline + Amitriptyline	7	4.7
Escitalopram + Mirtazapine	4	2.7
Fluoxetine + Amitriptyline	3	2.7

Table 4: WHO Prescribing Indicators

Indicator	Result
Average number of drugs per prescription	3.38
Average number of antidepressants per prescription	1.14
Percentage of drugs prescribed by generic name	32.5%
Percentage of encounters with an antibiotic prescribed	0
Percentage of encounters with an injection prescribed	0
Percentage of drugs from the essential drug list	54.8%

Table 5: Adverse Drug Reactions (ADRs) and Assessments (N=31)

ADR Characteristic	Category	Number (n)	% (Percentage)
Type of ADR	Insomnia	8	25.8
	Dry mouth	5	16.1
	Drowsiness	4	12.9
	Nausea	3	9.8
	Gastritis	3	9.8
	Others (e.g., Tremor)	8	25.6
Causality (WHO-UMC)	Probable	5	16.2
	Possible	26	83.8
Severity (Hartwig Scale)	Mild	25	80.6
	Moderate	6	19.4
Preventability (Schmuck & Thornton)	Definitely Preventable	11	35.6
	Probably Preventable	3	9.8
	Non-Preventable	17	54.6

Discussion

Major Depressive Disorder (MDD) is a significant public health issue characterized by its prevalence, morbidity, and associated disability. Despite advances, current treatments for MDD are suboptimal, with many patients requiring weeks or months for therapeutic effects and some showing inadequate improvement even after prolonged therapy [6]. Antidepressant medications, while beneficial in managing psychiatric disorders, are associated with a range of potential adverse drug reactions (ADRs), necessitating careful monitoring [16]. Over the years, prescribing patterns have

shifted from older drugs like Tricyclic Antidepressants (TCAs) and Monoamine Oxidase Inhibitors (MAOIs) to newer classes such as Selective Serotonin Reuptake Inhibitors (SSRIs) and Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs), due to their improved tolerability and safety profiles [17].

In this study, conducted on 150 participants from the psychiatry outpatient department of Safdarjung Hospital, Delhi, WHO Core Drug Prescribing Indicators were used to analyze prescriptions. ADR causality was assessed using the WHO-UMC and Naranjo's scales, while severity and preventability were evaluated with Hartwig & Siegel's and Schmuck & Thornton's criteria. The most affected age group was 18-30 years (41.3%), likely due to psychological pressures such as educational stress, job-related challenges, and family issues. This aligns with studies reporting higher depression rates in adolescence and early adulthood [18-19]. The prevalence of depression in females (58.7%) was consistent with other studies, reflecting higher susceptibility due to hormonal changes, societal roles, and psychological factors [20-21].

Most participants in this study were married (65.3%), contrasting with findings from a Canadian study that reported lower depression rates in married individuals [22]. This could be due to stress associated with married life or the age group distribution of the participants. Unemployment (54.7%) emerged as a significant risk factor for depression, consistent with findings from similar studies [23]. Depression (68%) and anxiety disorders (18%) were the most common diagnoses in this cohort, mirroring global trends [24].

Monotherapy was predominant (84.7%), with polytherapy practiced in only 15.3% of cases. This aligns with studies suggesting that monotherapy improves patient compliance and reduces the risk of drug interactions [25]. SSRIs were the most frequently prescribed class of antidepressants due to their better tolerability and lower side effects compared to TCAs. Fluoxetine was the most commonly prescribed SSRI (35.3%), followed by Sertraline (17.3%) and Escitalopram (14.7%) [24,26]. Variations in prescribing patterns between studies likely reflect differences in regional practices, availability of drugs, and evolving treatment guidelines [27-28].

The average number of drugs per prescription was 3.38, exceeding the WHO standard of 1.6-1.8. Only 32.5% of drugs were prescribed generically, highlighting the need for improved prescribing practices to reduce errors and costs. Approximately 54.8% of drugs were from the WHO Essential Drug List, consistent with findings from other studies [29-30].

ADRs were reported in 20% of participants, with insomnia (25.8%), dry mouth (16.1%), and drowsiness (12.9%) being the most common. Most ADRs were of mild (80.6%) or moderate (19.4%), without any severe ADR. The majority of ADRs were classified as "possible" (83.8%) or "probable" (16.2%) based on causality assessments [16,31]. Preventability assessments revealed that 35.6% of ADRs were "definitely preventable," 9.8% were "probably preventable," and 54.6% were "non-preventable," indicating areas for improvement in ADR management [32].

The study highlights the need for rational prescribing practices, particularly the use of generic drugs and adherence to the essential drug list. While the findings provide valuable insights into antidepressant use and associated ADRs, limitations include the small sample size and single-center design. Future studies should involve larger, multicenter cohorts and include diverse patient populations to better understand prescribing patterns at a national level.

Conclusion

Therefore, from the result of present study, this can be concluded that fluoxetine was the most commonly prescribed antidepressant and SSRIs were the most commonly prescribed class of antidepressants considering their better clinical profile. Polypharmacy in the form of concomitant use of two antidepressants is practiced infrequently. Clonazepam is used quite frequently as the concomitant medication along with antidepressants. Only one third of the drugs were prescribed by generic name, so physicians need to be encouraged to write prescription with generic names in order to promote rational prescribing.

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