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ORIGINAL ARTICLE

PRESCRIPTION PATTERNS OF ANTIDEPRESSANTS IN TWO TERTIARY CARE HOSPITALS IN BANGLADESH

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Abstract:

Background: *Antidepressants are frequently used in outpatient department in psychiatric hospitals, but prescription patterns may not be according to international guidelines in low-and middle-income countries (LMICs). There is a paucity of data regarding the results of Bangladesh data, especially in the tertiary care hospitals. The aim of the study is to observe the prescription pattern of antidepressants in the outpatient department of psychiatry in two tertiary care hospitals in Bangladesh .* ***Methods:*** *This was a cross-sectional descriptive study conducted in Dhaka Medical College Hospital (DMCH) and the National Institute of Mental Health (NIMH). We collected a total of 760 prescriptions (380/ prescription per hospital) using the systematic consecutive sampling technique. Analysis is based on descriptive statistics and Chi-Square tests.* ***Results:*** *Of the 760 respondents, 55.9% were male and 44.1% were female; 63.5% were 16–35 years of age. The most frequent were schizophrenia (16.4%), anxiety disorders (15.9%) and bipolar disorder (9.3%), but no diagnosis was recorded for 28.2% of the prescription antidepressants. Overall, 47.8% received an antidepressant. The Class of selective serotonin reuptake inhibitors (SSRIs) was the most common (62.7%), and sertraline (33.0%) and escitalopram (29.7%) were the most common agents. Both tricyclic antidepressants (5.8%) and other newer agents (5.9%) were less commonly used. Polypharmacy was detected in 21.2% of antidepressant users, the combination of sertraline and clomipramine being the most frequent two-drug combination (5.8%). The prescription practice of SSRI monotherapy varied significantly between hospitals, with higher rates at DMCH (21.3% vs 8.8%, p<0.001) and lower rates at NIMH for TCAs (2.1% vs 0.8%).* ***Conclusion:*** *High polypharmacy, irrational use of generics, and lack of record keeping suggest the necessity of prescriber education, drug utilisation review, and enforcement of regulatory policies to ensure rational prescribing.*

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Introduction:

Major depressive disorder (MDD) and anxiety disorders are among the leading contributors to global disability, placing a significant burden on psychiatric outpatient services.[1] Antidepressant prescribing has evolved worldwide, with a shift toward safer, more tolerable options. Selective serotonin reuptake inhibitors (SSRIs) are now the most widely used class in both inpatient and outpatient care.[2]

Despite guideline recommendations favoring monotherapy, real-world practice often diverges. Studies from India and other South Asian countries report frequent adjunctive use of benzodiazepines and antipsychotics, high rates of polypharmacy, and limited adherence to essential drug lists.[3-10] While some centers demonstrate good adherence to monotherapy[6], others document extensive polypharmacy, raising concerns about rational prescribing.[5–7,9,10]

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In Bangladesh, existing reports identify sertraline as the most commonly prescribed antidepressant, but also highlight poor compliance with the WHO essential medicines list and low rates of generic prescribing, with an average of 2.2 drugs per prescription.[11] However, most prior studies were limited by small samples, single-center focus, or assessment of isolated drug classes, offering only a partial view of prescribing behavior.

To date, no large-scale comparative study has systematically analyzed antidepressant utilization across major tertiary psychiatric hospitals in Bangladesh. Addressing this gap, the present study evaluates prescribing patterns in two leading tertiary hospitals, examining drug selection, monotherapy versus polypharmacy, co-prescription of psychotropics, and adherence to essential medicine guidelines. By situating local trends within the broader regional and global context, this study provides novel insights to guide rational prescribing, prescriber education, and policy development.

Methods:

This was a descriptive, cross-sectional, hospital-based study conducted to evaluate the prescription pattern of antidepressants among patients attending the Psychiatry Outpatient Departments (OPDs) of two tertiary care hospitals in Bangladesh: Dhaka Medical College Hospital (DMCH) and the National Institute of Mental Health (NIMH), Dhaka. Data were collected over a 6-month period from April 1, 2024, to September 30, 2024.

All patients of any age or sex attending the psychiatry OPDs during the study period who were prescribed at least one antidepressant were eligible for inclusion. Prescriptions issued for non-psychiatric indications such as insomnia or chronic pain, incomplete or illegible prescriptions, patients unable to provide consent due to cognitive or communication impairments, and follow-up visits without new prescriptions were excluded.

A systematic consecutive sampling strategy was adopted. To ensure temporal representation across clinic hours, ten consecutive prescriptions were collected per day in rotating time blocks (early, mid, and late OPD sessions), over a five-day week. This approach minimized potential bias related to patient flow at specific times of day while maintaining feasibility.

The required sample size was calculated using Cochran's formula and yielding a minimum of 182 prescriptions per center. To increase statistical power and allow for potential attrition, 380 prescriptions were collected per center, resulting in a total of 760 prescriptions.

In-person interviews were conducted using a semi-structured questionnaire that was used to capture data on details drug class, doses and formulations of antidepressants prescribed in all outpatient department prescriptions with co-prescribe other psychotropic medications. Diagnoses were extracted directly from physician documentation, and the appraisal of individual outpatient prescriptions was taken as the primary unit of analysis.

The data was collected and entered in IBM SPSS Statistics version 26.0 (IBM Corp., Armonk, NY). All relevant variables were summarised using descriptive statistics by calculating frequencies, percentages, and means with standard deviations. Categorical variables were compared using chi-square tests, e.g. distribution of antidepressant drug classes between the two centres. Independent samples t-tests were used for normally distributed continuous variables, while the Mann-Whitney U test was used for other datasets. A p-value less than 0.05 was considered significant.

Ethical Considerations:

The study was approved by the Ethics Committee of the designated institute. This study was approved by the Ethical Review Board (IRB-DMC/2019/282) of Dhaka Medical College Hospital and written and informed consent from all participants or guardians before data collection was part of the process. The patients were maintained in anonymity, and patient confidentiality was not violated during the study to ensure privacy and security of personal health information.

Operational Definitions:

Antidepressants: Selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), and monoamine oxidase inhibitors (MAOIs).

Polypharmacy: Concomitant use of two or more psychotropic drugs, including multiple antidepressants.

Generic prescribing: Use of International Nonproprietary Names (INN) rather than brand names in prescriptions.

The definitions were in accordance with fabricate clinical guidelines.[10-12]

Results:

Participant Characteristics

A total of 760 participants were included, equally distributed between Dhaka Medical College Hospital (DMCH, n=380) and the National Institute of Mental Health (NIMH, n=380). Overall, 55.9% (n=425) were male and 44.1% (n=335) were female, with no significant sex difference between hospitals ($\div^2$=1.20, p=0.27) (Table 1).

Of the total sample, **55.9% (n=425)** were male and **44.1% (n=335)** were female, with no significant sex difference between hospitals (p=0.27). The majority of participants were young adults, with **32.6% aged 16–25 years** and **30.9% aged 26–35 years**. Age distribution differed significantly between DMCH and NIMH (p=0.02), with DMCH having a slightly younger patient profile

Table I

Sex distribution of participants in psychiatry outpatients at DMCH and NIMH (N = 760)

Sex	DMCH n (%)	NIMH n (%)	Total n (%)	p-value
Male	220 (28.9)	205 (27.0)	425 (55.9)	0.27
Female	160 (21.1)	175 (23.0)	335 (44.1)	

Note: No significant difference was observed between hospitals (p = 0.27).

Table II

Age distribution of participants attending psychiatry OPDs at DMCH and NIMH (N = 760)

Age group (years)	DMCH n (%)	NIMH n (%)	Total n (%)
5–15	21 (2.8)	31 (4.1)	52 (6.8)
16–25	132 (17.4)	116 (15.3)	248 (32.6)
26–35	106 (13.9)	129 (17.0)	235 (30.9)
36–45	91 (12.0)	70 (9.2)	161 (21.2)
46–55	24 (3.2)	18 (2.4)	42 (5.5)
56–65	6 (0.8)	16 (2.1)	22 (2.9)

Note: A higher proportion of younger patients (16–25 years) attended DMCH compared to NIMH (p = 0.02).

Psychiatric Diagnoses

Schizophrenia was the most frequent diagnosis (16.4%), followed by bipolar disorder (9.3%) and major depressive disorder (6.4%). Notably, 28.2% (n=214) had no diagnosis documented. A range of less common diagnoses (e.g., borderline personality disorder, somatic symptom disorder) were also recorded but occurred in ≤5% of cases and are grouped as "Other" for clarity (Table III).

Antidepressant Prescribing Patterns

Of all participants, 363 (47.8%) received at least one antidepressant prescription, while 397 (52.2%) did not.

Monotherapy

SSRIs were the dominant class, prescribed in 62.7% of antidepressant users. Sertraline was most common (33.0%), followed by escitalopram (29.7%). TCAs (e.g., amitriptyline 5.8%) and newer agents (e.g., mirtazapine 2.6%) were less frequent (Table IV).

Combination Therapy

Polypharmacy was observed in 21.2% of antidepressant users. The most frequent combinations were sertraline + clomipramine (5.8%) and sertraline + amitriptyline (3.2%). Some combinations involved duplicate entries or very rare pairings; these were minimal and did not exceed 1% each.

Table III

Psychiatric diagnoses of participants at DMCH and NIMH (N = 760).

Diagnosis	DMCH n (%)	NIMH n (%)	Total n (%)
Schizophrenia	48 (6.3)	77 (10.1)	125 (16.4)
Bipolar disorder	42 (5.5)	29 (3.8)	71 (9.3)
Major depressive disorder	32 (4.2)	17 (2.2)	49 (6.4)
Anxiety & related disorders	58 (7.6)	63 (8.3)	121 (15.9)
Other/combined diagnoses*	95 (12.5)	85 (11.2)	180 (23.7)
No diagnosis written	105 (13.8)	109 (14.3)	214 (28.2)

*Includes borderline personality disorder, adjustment disorder, intellectual disability with mood disorder, and other rare categories.

Table IV

Distribution of antidepressant prescribing among patients receiving antidepressants (n = 363)

Antidepressant	Number	Percentage
Monotherapy		
Sertraline	113	33.0
Escitalopram	102	29.7
Amitriptyline	20	5.8
Fluoxetine	13	3.8
Others (mirtazapine, vortioxetine, agomelatine, etc.)	15	4.1
Combination therapy		
Sertraline + Clomipramine	20	5.8
Sertraline + Amitriptyline	11	3.2
Other combinations (each <1%)	14	3.9

Table V

Comparison of antidepressant prescribing categories between DMCH and NIMH (N = 760).

Prescribing category	DMCH n (%)	NIMH n (%)	Total n (%)	p-value
SSRI monotherapy	162 (21.3)	67 (8.8)	229 (30.1)	<0.001
TCA monotherapy	6 (0.8)	16 (2.1)	22 (2.9)	
Newer antidepressant	22 (2.9)	23 (3.0)	45 (5.9)	
Combination therapy	18 (2.4)	42 (5.5)	60 (7.9)	
No antidepressant prescribed	170 (22.4)	227 (29.9)	397 (52.2)	

Comparison between Hospitals:

Antidepressant prescribing varied significantly between DMCH and NIMH (Table 5). SSRIs were more common at DMCH (21.3% vs. 8.8%, p<0.001), while TCAs were more frequent at NIMH (2.1% vs. 0.8%). Newer antidepressants were prescribed in ~6% of cases at both centers.

Discussion:

Male preponderance was observed in our study (55.9%) among psychiatric OPD attenders 8, as also reported from South Asia and Latin America (17,18), where the attenders are more likely to be men.[13-14] This trend may be indicative of social and cultural obstacles that inhibit the healthcare-seeking behaviour of women, such as stigmatisation and family dynamics regarding decision-making. The over-representation of young adults (63.5% were considered young adults aged 16–35 years) reflects the global prevalence of mood and anxiety disorders occurring at an early age.[15–17] The relatively younger age profile at DMCH, compared to NIMH, likely reflects DMCH's status as a teaching hospital with a larger catchment area of a younger urban population. In contrast, NIMH deals with more chronic and complicated cases. These results emphasise the importance of youth-targeted and gender-friendly mental health interventions in Bangladesh.

Most frequent diagnoses were schizophrenia (16.4%), anxiety disorder (15.9%) and bipolar disorder (9.3%). These are similar to those reported in tertiary hospitals in neighbouring LMICs, where psychotic and mood disorders predominate in psychiatric case mixes.[18–21] But the alarming 28.2% prescriptions having no recorded diagnosis is a matter of grave concern. This is indicative not only of large patient volumes and poor documentation, but of systemic barriers such as stigma and an unwillingness to formally "diagnose" patients.[13,18] Insufficient diagnostic recording is a barrier to the continuity of treatment, is inhibitory to performing audits of prescribing patterns and hampers research and policy development. Infection Prevention and Control is one of the key strategies to focus on, reinforcing and improving aspects of medical record systems, possibly complemented by e-prescribing and compulsory diagnostic coding, which must be given priority.

SSRIs were the most commonly used drugs (62.7%), where sertraline and escitalopram combined constituted more than 60% of prescriptions. This is in line with the regional and international evidence that SSRIs are the first choice of treatment based on favourable safety and tolerability.[3,5–7,9,10] Yet the proportion of patients prescribed antidepressants as a whole (47.8%) was relatively low, indicating under-treatment of depressive disorders in this context. There is also a comparable under-prescription in African and South Asian tertiary centres.[22,23], many of which prioritise antipsychotics for psychotic disorders in overstretched systems. This, in turn, raises questions about potential under-detection of depression and anxiety, or a treatment void reflecting constrained psychotherapy capacity and prescriber confidence.

Polypharmacy was found in 21.2% antidepressants, mostly sertraline with clomipramine or amitriptyline. Although there may be an indication for polypharmacy in treatment-refractory depression, the widespread use of it in everyday ambulatory practice raises questions about rational pharmacotherapy, drug-drug interactions, and cost increase. These trends are consistent in other parts of South Asia.[3,4,7] International guidelines such as NICE and CANMAT advocate monotherapy as the initial treatment, and augmentation for monotherapy non-responders.[10,11] Our results point to an evidence-to-practice gap, possibly shaped by institutional culture, lack of availability of psychotherapy, and prescriber beliefs about clinical urgency.

Use of generic drugs was infrequent, and adherence to the WHO model list of essential medicines was low[8,11], similar to the previous studies reported from Bangladesh and India. This trend may be due to aggressive pharmaceutical marketing, prescriber patterns and patient demand for branded drugs. The financial burden of the absence of generic prescribing

is considerable in a country like Bangladesh, where the out-of-pocket payment ratio is high. Policy measures such as implementation of generic prescribing policies, regular drug-utilisation reviews, and training of prescribers are immediately required to promote rational and cost-based utilisation.

In sum, we identify three main barriers in our study: poor diagnostic record, excessive polypharmacy and brand-name prescribing. Such problems are symptomatic of system-wide inadequacies that are not limited to the level of individual prescribers, but include broader institutional and policy contexts. Interventions such as prescriber education on rational pharmacotherapy, electronic prescription systems, periodic drug use evaluations, and national policy to enforce generic prescribing and essential medicine list implementation are also necessary.

Limitations:

The cross-sectional nature of the study does not allow evaluation of causality, the response to treatment, or changes in prescriptions over time. One-third of prescriptions could not be identified with a specific disease. Despite the use of systematic sampling, data were limited to two tertiary hospitals in Dhaka and may not accurately represent prescribing patterns in rural or primary care practice. Data came from prescription review rather than clinician interviews or patient follow-up; as a result, the clinical reasons behind polypharmacy or adjunctive treatment could not be evaluated.

Conclusion:

This cross-sectional study illustrates that the most commonly used clinical treatments are SSRIs such as sertraline and escitalopram in tertiary psychiatry outpatients in Bangladesh. Nonetheless, prescribing is associated with several shortcomings, such as excessive polypharmacy, underuse of generics, and underreporting of diagnoses. These trends suggest deviation from recommendations in the international guidelines and justify the urgency to improve the rational policy of prescribing.

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