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**ORIGINAL ARTICLE**DOI: <https://doi.org/10.3329/mediscope.v6i2.43153>**Prescribing pattern of antidepressant drugs in two teaching hospitals in Bangladesh****B Islam<sup>1</sup>, I Shahriar<sup>2</sup>, T Jannat<sup>3</sup>****Abstract**

As depression is a major public health problem, a drug utilization study is beneficial in clinical practice for rational prescribing and helpful for minimizing the medication errors. In our country antidepressant drugs are commonly used in treatment of depression. To obtain information regarding the prescribing pattern of antidepressant drugs in accordance with WHO prescribing indicators, a descriptive cross sectional study was carried out at psychiatry out-patient department of Sir Salimullah Medical College & Hospital (SSMCH) and Dhaka Medical College Hospital (DMCH) in Bangladesh. A total of 300 (150 in each hospital) prescriptions were analyzed by using WHO prescribing indicators and Essential Drug List of Bangladesh. Among 300 patients with major depression (64%, 58.66%), females were (53.33%, 58%) and males were (46.67%, 42%) which is commonly seen between the age group 18-27 years in DMCH and SSMCH respectively. Most commonly prescribed antidepressant as monotherapy was sertraline (58.02%, 70%). Average number of drugs per prescription was (2.24 ± 0.93, 2.12 ± 0.83). Percentage of drug prescribed by generic name and percentage of encounters with an injection prescribed was nil in both hospitals. Percentage of drugs prescribed from Essential Drug List of Bangladesh was (37.5%, 25.47%) in DMCH and SSMCH respectively. Prescribing pattern of antidepressant drugs in both teaching hospitals are almost similar in accordance with WHO prescribing indicators.

**Key words:** antidepressant drugs, rational prescribing, drug utilizations.

**Introduction:**

The World Health Organization (WHO) has reported that depression is the leading cause of disability in the world, and by 2020, it will be the second greatest public health concern.<sup>1</sup> In Bangladesh, the lifetime prevalence of major depressive disorder is 4.6%.<sup>2</sup> Over the years antidepressant prescribing patterns have undergone revolution with rational prescribing

practice being implemented globally, resulting in conventional drugs like tricyclic antidepressants (TCAs) and mono-amine oxidase inhibitors (MAOIs) being gradually replaced by selective serotonin reuptake inhibitors (SSRIs), serotonin norepinephrine reuptake inhibitors (SNRIs) and novel antidepressants.<sup>3</sup> Prescribing patterns need to be evaluated periodically to increase the

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therapeutic efficacy, decrease adverse effects and provide feedback to prescribers.<sup>4</sup> The present study has been carried out to obtain information regarding the current prescribing pattern of antidepressant drug by the medical prescribers in two tertiary level hospital in Bangladesh by applying some WHO prescribing indicators with a view to assessing rational or inappropriate prescribing. Prescribing indicators include the a) Average number of drugs per encounter b) Percentage of drugs prescribed by generic name c) Percentage of encounters with an antibiotic prescribed d) Percentage of encounters with an injection prescribed e) Percentage of drugs prescribed from Essential Drug List or formulary.<sup>5</sup>

### Methodology:

The study was a descriptive cross sectional observation study carried out in department of Pharmacology & Therapeutics of SSMC from period of June 2015 to June 2016, over one year. Patients attending in psychiatry outpatient department of Dhaka Medical College Hospital (DMCH) and Sir Salimullah Medical College and Hospital (SSMCH) were the study population. A total of 300 patients (150 in each hospitals) of depressive illness attending psychiatry OPD in this study were selected following purposive sampling technique and analyzed as per the WHO prescribing indicators. The inclusion criteria were age group of 18 – 60 years for both sexes with an established diagnosis of depression by clinician and patients willing to participate in the study whereas depression existing with other disorders like bipolar disorder and patients not willing to participate in the study were excluded.

A preformed customized pro-forma was used to collect the required drug information and analyzed on the basis of WHO prescribing indicators and essential drug list of Bangladesh. Demographic details, family history, medical history, and other general information was taken in that questionnaire. Data was analyzed by using Microsoft Excel 2007 and IBM SPSS 17.0

### Results and Observation:

Among 300 patients from both DMCH (150) and SSMCH(150), most of the patients belonged to the age group ranging from 18-27 years, 52.66% in DMCH and 48% in SSMCH and among them majority of the patient were female. Age distribution and other demographic details are shown in [Table 01]. Major depressive disorder was the most common disorder (64%, 58.66%), followed by Generalized Anxiety Disorder (24%, 28.66%) and obsessive compulsive disorder (7.33%,10%) in DMCH & SSMCH respectively [Table 02]. Selective serotonin reuptake inhibitors (SSRIs) were the most commonly prescribed drugs (54%, 60%) followed by tricyclic antidepressants (TCAs) (28%, 20%), SNRIs (10%,4.6%) and atypical group(8%,15.33%) in DMCH & SSMCH respectively [Table 03]. Amongst SSRIs, most frequently prescribed drug was sertraline (58.02%,70%) followed by escitalopram (20.99%, 22.22%), citalopram (12.34%, 4.44%) and fluoxetine (8.64%, 3.33%). Amongst TCAs, amitriptyline (61.90%, 43.33%) was commonly prescribed followed by Imipramine (21.42%,16.66%), clomipramine (16.66%, 40%). SNRIs (venlafaxine 100% in both) and Atypical (mirtazapine 100% in both) being the other most frequently used drug [Fig.01]. Along with antidepressants, the patients were also prescribed anxiolytic drugs (35.41%,35.84%), antipsychotic drugs (1.19%, 3.45%) and other drugs(PPI, Vitamin) (18.75%, 13.52%).

Different WHO recommended prescribing indicators are showed in [Table 04] as following: average number of drugs per prescription was (2.24±0.93, 2.12±0.83). No drugs were prescribed in generic form. No injectable medicine was prescribed in this study. Only 37.5%(DMCH) and 25.47%(SSMCH) drugs were prescribed from Essential Drug List of Bangladesh, 2008. The percentage of prescription were complete (100%) with respect to dose, duration & frequency in both DMCH and in SSMCH

**Table 1: Demographic profile of study population**

Characteristic of study population		DMCH (n= 150) No. (%)	SSMCH (n= 150) No. (%)
Age (yrs)	18 -27	79 (52.66% )	72 (48%)
	28 -37	38 (25.33% )	46 (30.66%)
	38 -47	21 (14% )	18 (12%)
	48 -57	12 (8% )	14 (9.33%)
Sex	Male	70 (46.67%)	63 (42%)
	Female	80 (53.33%)	87 (58%)
Marital status	Married	82 (54.66%)	78 (52%)
	Unmarried	68(45.33%)	72 (48%)
Occupation	Housewife	68(45.33%)	72 (48%)
	Unemployed	35(23.33%)	42 (42%)
	Student	22(14.66%)	16 (10.66%)
	Businessman	18(12%)	09 (6%)
	Service holder	07(4.66%)	11 (7.33%)
Level of education	No formal education	48 (32%)	42 (28%)
	Primary	20(13.33%)	27 (18%)
	Secondary	30 (20%)	36 (24%)
	SSC/HSC	34 (22.66%)	31 (20.66%)
	Graduate	18 (12%)	14 (9.33%)
Residence	Rural	112(74.66%)	123 (82%)
	Urban	38 (25.33%)	27 (18%)
Socio-economic status (Income)	Low (<Tk.10000/month)	95 (63.33%)	80 (53.33%)
	Medium (Tk.10000-20000/month)	40 (26.66%)	61 (40.67%)
	High (>Tk.20000/month)	15 (10%)	09 (6%)

**Table 2: Various disorders where antidepressant drugs were prescribed**

Types of psychiatric disorder	DMCH (n= 150 ) No. (%)	SSMCH (n= 150 ) No. (%)
Major Depressive Disorder (MDD)	96 (64%)	88 (58.66%)
Generalized Anxiety Disorder (GAD)	36 (24%)	43 (28.66%)
Obsessive Compulsive Disorder (OCD)	11 (7.33%)	15 (10%)
Chronic pain	07 (4.67%)	04 (2.67%)

**Table 3: Distribution of different classes of antidepressant drugs**

Antidepressant drugs		DMCH (n= 150) No. (%)	SSMCH (n= 150) No. (%)
SSRIs	Sertraline	47 (58.02%)	63 (70%)
	Escitalopram	17 (20.99%)	20 (22.22%)
	Citalopram	10 (12.34%)	4 (4.44%)
	fluoxetine	7 (8.64%)	3 (3.33%)
	<b>Subtotal</b>	<b>81 (54%)</b>	<b>90 (60%)</b>
TCAs	Amitriptyline	26 (61.90%)	13 (43.33%)
	Imipramine	9 (21.42%)	5 (16.66%)
	clomipramine	7 (16.66%)	12 (40%)
	<b>Subtotal</b>	<b>42 (28%)</b>	<b>30 (20%)</b>
SNRIs	venlafaxine	15 (100%)	7 (100%)
	<b>Subtotal</b>	<b>15 (10%)</b>	<b>7 (4.67%)</b>
Atypical group	mirtazapine	12 (100%)	23 (100%)
	<b>Subtotal</b>	<b>12 (8%)</b>	<b>23 (15.33%)</b>

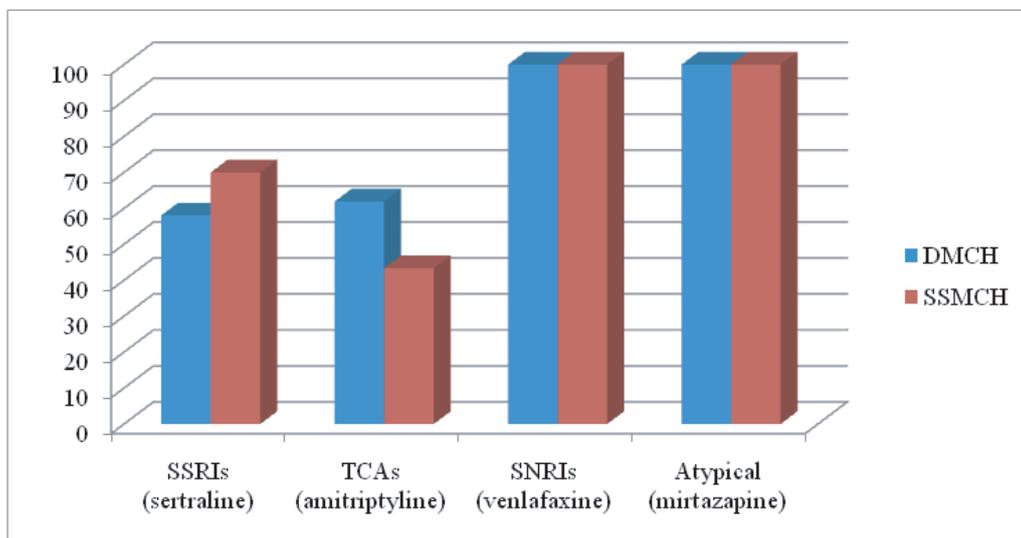


Figure 1 : Most commonly prescribed antidepressant drugs

Table 4: Prescribing pattern of antidepressant drugs according to WHO prescribing indicators

WHO recommended prescribing indicators	DMCH (n= 150)	SSMCH (n= 150)	P- Value
Average number of drugs prescribed per encounter	2.24±0.93	2.12±0.83	0.12
Percentage of the drugs prescribed by generic name	0%	0%	NS
Percentage of encounters with an injection prescribed	0%	0%	NS
Percentage of encounters with an antibiotic prescribed	NA	NA	NA
Percentage of drugs prescribed from Essential Drug List of Bangladesh	37.5%	25.47%	0.00094 (Significant)

### Discussion:

The present study aimed at evaluating the current prescription patterns of antidepressants among physicians and prevention of irrational use of drugs by reviewing the prescriptions in outpatient department by following WHO prescribing guidelines.

Out of total 300 prescriptions analyzed, 150 from DMCH and 150 from SSMCH, female patients formed the majority (53.33%, 58%) compared to male (46.67%, 42%) which is consistent with other studies.<sup>6-12</sup> The most susceptible age group range of 18-27 (52.66%, 48%) years in both sexes in both hospitals, which was similar to a study.<sup>13</sup> In this study, antidepressant drugs were prescribed more in married people in both hospitals and is comparable to previous study.<sup>6,9,14</sup> It was observed that married

female, housewife, less educated, unemployed, lower income group from rural area generally attended in psychiatry OPD who are prescribed more antidepressant drugs during this period.

Major depression was the most common disorder encountered (64%, 58.66%) followed by generalized anxiety disorder (24%, 28.66%), obsessive compulsive disorder (7.33%, 10%), chronic pain (4.67%, 2.67%) in DMCH and SSMCH respectively which is consistent with other study.<sup>10</sup>

Among the different antidepressants, SSRIs (54%, 60%) were the most commonly prescribed followed by TCAs (28%, 20%), SNRIs (10%, 4.66%) and atypical antidepressants (8%, 15.33%) in both DMCH and SSMCH respectively. This findings is consistent with other several studies.<sup>1,6,8,11-12,14-16</sup> Among SSRIs, Sertraline (58.02%, 70%) was

most widely used followed by escitalopram (20.98%, 22.22%), citalopram (12.34%, 4.44%) and fluoxetine (8.64%, 3.33%) in DMCH and SSMCH respectively which is consistent with other studies.<sup>1,13</sup>

TCA's were the second most prescribed with amitriptyline (61.90%, 43.33%), clomipramine (16.66%, 40%) and imipramine (21.42%, 16.66%) in DMCH and SSMCH respectively. The use of TCA's in this study was much lower than SSRIs, as reported in another study.<sup>12</sup> Venlafaxine among SNRIs (10%, 4.66%), and Mirtazapine among atypical antidepressants (8%, 15.33%) were prescribed in DMCH and SSMCH respectively to few patients which was similar with another study.<sup>6</sup> Along with antidepressants most of the patients were also prescribed anxiolytics, antipsychotics, others (anti-ulcerants, laxatives, vitamins) in both hospitals. This is consistent with other studies where benzodiazepines were most commonly prescribed to relieve the anxiety symptoms.<sup>1,3,6,13</sup>

Regarding the polypharmacy, there was no polypharmacy in our study. Our observation in DMCH and SSMCH over (20.66%, 24%) of prescriptions contained single drug, (48.66%, 45.33%) contained two drugs, (16.67%, 25.33%) contained three drugs and only (14%, 5.33%) of prescriptions contained four drugs respectively. This is consistent with other studies where polypharmacy was avoided.<sup>10,16</sup> Total 336 drugs were prescribed for 150 patient encounters in DMCH and total 318 drugs were for 150 patient in SSMCH, making the overall average number of drugs per encounter 2.24 and 2.12 respectively which is comparable with the findings of other studies where it ranged from 2 to 3 drugs per prescription.<sup>8,13</sup> Format of the prescriptions with respect to dose, duration, frequency was complete in 100% of the prescriptions of psychiatric OPD of both hospitals.

In the present study our observation was that, hundred percent (100%) drugs were prescribed by their brand names in both hospitals which was not in accordance with the WHO guidelines as rational prescribing

requires generic names of drug. This is consistent with another study.<sup>6</sup> In drug formulation practices in our study we observed that, the percentage of prescriptions with an oral drugs accounted for 100% where an injection encountered was 0% in hospitals which is in concordance with other studies.<sup>6,7,13</sup>

Regarding drug prescribing from essential drug list (EDL) of Bangladesh 2008, our observation was that, in DMCH, only 126 drugs (37.5%) out of 336 drugs in 150 prescriptions and in SSMCH, only 81 drugs (25.47%) out of 318 drugs in 150 prescriptions were prescribed from the EDL of Bangladesh, 2008 which did not meet the standard criteria of prescribing medications from an EDL. This is consistent with other studies where percentage of prescribing from EDL was low.<sup>7,13</sup> Among our main prescribing antidepressant drugs only amitriptyline is enlisted in EDL. Other drugs were ascorbic acid, diazepam, magnesium hydroxide, omeprazole, Vitamin B-Complex.

On the basis of our observation, it may be mentioned that overall prescribing pattern of antidepressants in psychiatric OPD was good which may be considered as an effort to improve the quality of health care services.

## Conclusion

Depression is one of the major public health concern worldwide and Bangladesh is not an exception. As per objective of the present study, it may be concluded that the overall prescribing pattern of antidepressant drugs among DMCH and SSMCH are almost similar in accordance with WHO prescribing indicators despite small deviation in prescribing practices. Regarding antidepressant therapy, prescriptions were complete in respect to dose, duration and frequency. The average number of drugs per prescription was higher than recommended by WHO. Generic name was ignored and list of essential drugs was followed partially. Although prescribing pattern of antidepressant drugs were similar in two teaching hospitals but list of essential drugs was followed more in DMCH than SSMCH.

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