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Prescribing pattern of antidepressants among patients with depression in a Mental Hospital of Nepal

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ABSTRACT

Background: Depression is one of the major mental disorders and on the verge of emergence. Study on rational prescription of antidepressants is important since their inappropriate use may lead to precipitation of depressive symptoms.

Objective: To study prescribing pattern of antidepressants among patients diagnosed with depression and observe its concordance with recommended guidelines.

Methods: This retrospective study was conducted in Mental Hospital Patan, Nepal. All the patients (≥18 years) diagnosed with depression and prescribed at least one antidepressant were enrolled. Records of patients were selected on a daily registration basis from 2018/01/15 to 2018/05/14. Data collection form was designed to record details of eligible patients from the hospital. Statistical Package for the Social Sciences (SPSS) version 21 was used for data analysis.

Results: A total of 114 records were reviewed. More than half of patients (51.8%) were female. Patients in between age group of 18-27 years were maximum in number (25.4%). It was observed that Selective Serotonin Reuptake Inhibitors SSRIs (74%) were the most commonly prescribed antidepressant (escitalopram (33.33%) and fluoxetine (33.33%). The most frequently prescribed dosages for fluoxetine fell within American Psychiatry Association (APA) and Centers for Medicare & Medicaid Services (CMS) guidelines and specified in the Antidepressant Treatment History Form (ATHF); other antidepressants were found to be prescribed at lower than recommended doses.

Conclusion: Prescribed doses for antidepressants were found to be lower than that recommended by the available guidelines. More studies on understanding the prescribing pattern of antidepressants and literacy among the public on their rational use needs to be conducted in Nepal.

Keywords: Antidepressants, Depression, Escitalopram, Fluoxetine, Prescribing Pattern, SSRI

1. Introduction

Depression (major depressive disorder /clinical depression) is a common but serious mood disorder. Extrapolations from Global Burden of Disease Study (GBD 2013) indicate that depression and anxiety are among the top ten causes of years of life lost to disability (YLDs) in South Asia, which includes Nepal [1]. Studies have indicated that antidepressant prescription varies by country and type of antidepressant chosen is influenced by physician and patient-related factors. Studies regarding dose of prescribed antidepressants and comparison with that recommended by standard guidelines are lacking [2]. Studies regarding antidepressant prescription have been performed under various topics and the major findings are:

- Factors influencing antidepressant prescribing and doses varied over time from first presentation, to antidepressant initiation and longer-term treatment [3].

Depression is one of the most treatable mental disorders. Between 80 % and 90 % of people with depression eventually respond well to treatment. Approximately 35 different antidepressants are currently available worldwide. The American Psychiatric Association (APA) has developed specific treatment guidelines for clinicians to consider when making diagnoses and treating patients for MDD. The guidelines of the Centers for Medicare and Medicaid Services (CMS) focus mostly on recommended dosing of antidepressant medication. In addition, the Antidepressant Treatment History Form (ATHF), which is commonly used in clinical research to assess a patient's treatment history, provides specific dosing guidelines for antidepressant medication [4].

Study on rational prescription of antidepressants is important since their inappropriate use may lead to precipitation of depressive symptoms. The primary aim of this study was to compare the prescribing pattern of antidepressants with standard guidelines provided by APA, CMS and ATHF.

2. Methods

2.1 Study Design, setting and period

This cross-sectional retrospective study was conducted in the Mental Hospital of Patan, Nepal. The medical records from 15th January, 2018 to 14th May, 2018 were reviewed.

2.2 Study population and eligibility criteria

A total of 114 cases were eligible to be included in the study. Patients diagnosed with (mild, moderate or severe form) major depressive disorder and also prescribed at least one antidepressant, those of age ≥ 18 years and those from Out Patient Department (OPD)

were included in the study. Patients with forms of mental illnesses other than depression or those who were admitted to the hospital and medical records with insufficient information and illegible handwriting were excluded.

2.3 Data collection instruments

The research was conducted by collecting data from medical records of the patients kept by the hospital. A data collection form was designed after an extensive literature review.

A pilot study was conducted using the designed data collection form and the available medical records after which necessary modifications were made. Also, we got the tool thus developed reviewed by the experts.

2.4 Ethical Clearance

Ethical approval was obtained from Nepal Health Research Council (NHRC) [Reg. no. 524/2018]. The consent for use of medical records kept by Mental Hospital, Patan was confirmed through an approval letter issued by the hospital itself. We did not inquire any patient directly in this study.

2.4 Data Analysis

We assessed the socio-demographic characteristics of the patients diagnosed with depression. Also, we assessed some features of the disease and also that of the antidepressants prescribed to them. SPSS version 21 was used for statistical analysis.

3. Results

Of the study participants (7,000), only 114 patients met the inclusion criteria. Of the patients who had an MDD diagnosis (n=128), 14 were excluded because they did not have an antidepressant medication filled during the study period.

Table 1 shows the baseline characteristics of the study participants. There was almost equal proportion of male and female participants in the study. Depression was most prevalent among the patients of age-group 18-27 years (n= 29, 25.4%). Out of 45 patients who had their marital status identified, depression was found to be the most common among married individuals (n= 26). Out of 37 patients who had their education status identified, the highest number of patients under study belonged to those who have obtained secondary level education (n=12) followed by higher secondary (n=11). Out of 40 patients who had their occupation status identified, the highest number of patients under study were private job holders (n= 9). Out of 56 patients who had their alcohol consumption behavior identified, the number of patients who had positive alcohol consumption behavior was (n=22). Out of 71 patients who had their family history of mental illness identified; 55 of the patients

diagnosed with depression had no history of mental illness in the family.

Table 1: Baseline Characteristics of the respondents

Characteristics	Number (n)	Percentage (%)
Gender (n=114)		
Female	59	51.8
Male	55	48.2
Age-group (in years) (n=114)		
18-27	29	25.4
28-37	27	23.8
38-47	22	19.5
48-57	16	13.7
58-67	9	7.9
68-77	9	7.9
≥78	2	1.8
Marital Status (n=45)		
Married	26	57.3
Single	9	20.5
Widowed	6	13.3
Divorced	4	8.9
Education Status (n=37)		
Illiterate	12	10.8
Literate	11	16.2
Secondary level	6	32.4
Higher secondary	4	29.8
Undergraduate and above	4	10.8
Occupation (n=40)		
Private Job	10	25
Agriculture	9	22.5
Unemployed	5	20
Business	7	17.5
Student	3	7.5
Foreign employment	2	5
Daily wages	1	2.5
Alcohol Consumption (n=56)		
Yes	22	39
No	34	61
History of Mental Illness (n=71)		
Yes	16	23
No	55	77

Table 2 shows the basic characteristics of depression reported in the study participants. Out of 45 patients who had their stressor (cause) for depression identified; family issues were the most common stressor (n=30). Out of 64 patients who had their total duration of illness (TDI) addressed, 1-6 months was the most common TDI (n=25). Out of 114 patients who had their symptoms addressed, sleep disturbance (n=66) was the most common followed by depressed mood (n=53) and 25 of the patients were found to have the suicidal ideations developed / suicidal attempts made

whereas the number of patients diagnosed with moderate depressive episode was (n=40).

Table 2: Disease Profile of the study population

Disease Characteristics	Number (n)	Percentage (%)
Self-reported cause of depression (n=45)		
Family issues	30	66.7
Study issues	4	8.9
Financial issues	5	11.1
Health issues	3	6.7
Relationship issues	2	4.4
Recently returned from foreign employment	1	2.2
Total Duration of Illness (TDI) (n=64)		
< 1 month	3	4.6
1-6 months	25	39.1
6-12 months	9	14.1
1-1.5 years	5	7.8
1.5-2 years	5	7.8
2.5-3 years	1	1.6
3.5-4 years	2	3.1
> 4 years	14	21.9
Suicidal Ideations or Attempts (n=114)		
Yes	25	22
No	89	78
Severity of depression (n=114)		
Mild	24	21.1
Moderate	40	35.1
Severe	19	16.7
Uncategorized	31	27.2
Disease Symptoms (n=114) (Multiple Options)		
Sleep disturbance of any type	66	57.9
Depressed mood	53	46.5
Loss of Concentration	41	35.9
Change in appetite	38	33.3
Loss of interest	35	30.7
Recurrent thought of death	25	21.9
Inappropriate guilt	16	14.0
Change of agitation/inhibition	14	12.3
Decreased energy	11	9.6
Loss of confidence	10	8.8

Figure 1 shows the particular antidepressant prescribed to the study participants. Escitalopram and Fluoxetine were found to be the most commonly prescribed drugs (n=41, 33%).

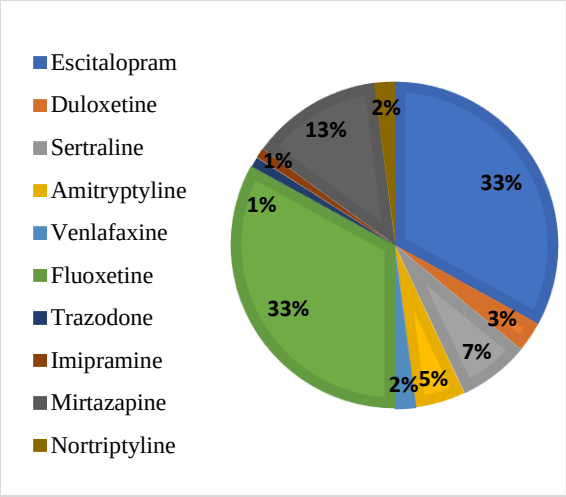

Figure 1: Prescribed antidepressants

Figure 2 shows the antidepressant class prescribed to the study participants. The most commonly prescribed drug classes, from most prescribed to least prescribed were Selective Serotonin Reuptake Inhibitors (SSRIs, N= 91, 73.98 %), Tricyclic Antidepressants (TCAN = 9, 7.31%), Serotonin- Nor epinephrine Reuptake Inhibitors (SNRIs, N=6, 4.87%), Tetra Cyclic Antidepressants (TeCA, N=16, 13.00%), Serotonin Antagonist and Reuptake Inhibitors (SARI=1, 0.81 %)

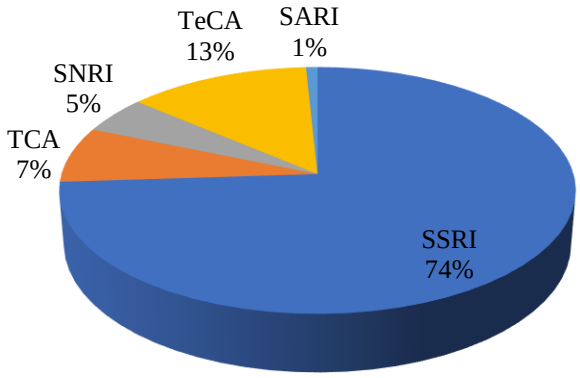

Figure 2: Prescribed antidepressant class

Table 3 shows prescribed antidepressants in accordance to the severity of depression diagnosed amongst the study participants. The frequency of antidepressants prescribed for moderate depressive disorder was n=44, escitalopram and fluoxetine (n=16) were the

most commonly prescribed. In the case of mild depression, the frequency of antidepressants prescribed was n=26; escitalopram (n=10) was the most prescribed one. For severe depressive disorder, the frequency of antidepressants prescribed was n=20, escitalopram and fluoxetine (n=8) were the most prescribed ones. The frequency of antidepressants prescribed in case of uncategorized depression was n=33, fluoxetine (n=12) was the most prescribed one.

Table 3: Antidepressants prescribed according to the severity of depression

Diagnosis	Escitalopram	Amitriptyline	Duloxetine	Fluoxetine	Sertraline	Trazodone	Imipramine	Mirtazapine	Nortriptyline	Venlafaxine	Total
Uncategorized	7	0	1	12	4	0	0	6	1	2	33
Moderate	16	4	0	16	3	1	0	3	1	0	44
Mild	10	1	1	5	2	0	1	5	0	1	26
Severe	8	1	1	8	0	0	0	2	0	0	20
Total	41	6	3	41	9	1	1	16	2	3	123

Table 4 shows the most commonly prescribed antidepressant medications, the most common daily dose, and related APA, CMS and ATHF dosing guidelines for the medications. The most frequently prescribed dosages for fluoxetine only fell within the APA and CMS guidelines and specified in the ATHF; all the other antidepressants were found to be prescribed at lower than recommended doses.

Table 4: Dosing guidelines and its comparison with prescribed doses among the patients under study

Class	**Drug**	**n Drug**	**%[c]**	**Common dose[d] (mg/day)**	**n Taking common dose[e]**	**% Taking common dose[f]**	**Recommended guidelines**		
							APA	**CMS**	**ATHF**
SSRI	Escitalopram	41	33.33	5	26	63.41	10~20	10~20	10
	Fluoxetine	41	33.33	**20**	**30**	**73.17**	20~60	20~80	20
	Sertraline	9	7.31	25	5	55.55	50~200	50~200	100
		91	73.98						
TCA	Amitriptyline	6	4.87	10	3	50	100~300	75~150	200
	Imipramine	1	0.81	25	1	100	100~300	75~200	200
	Nortriptyline	2	1.62	12.5	2	100	50~200	75~150	76
		9	7.31						

Class	Drug	n Drug	%[c]	Common dose[d] (mg/day)	n Taking common dose[e]	% Taking common dose[f]	Recommended guidelines		
							APA	CMS	ATHF
SNRI	Duloxetine	3	2.43	20	2	66.66	60~120	40~120	40
	Venlafaxine	3	2.43	37.5	3	100	75~375	75~375	225
		6	4.87						
TeCA	Mirtazapine	16	13	7.5	13	81.25	15~45	15~45	30
SARI	Trazodone	1	0.81	25	1	100	150~300	150~400	400
		123	100						

[a] Drug class abbreviation: SSRI, Selective Serotonin Reuptake Inhibitor; TCA, Tricyclic Antidepressant; MAOI, Monoamine Oxidase Inhibitor; SNRI, Serotonin Norepinephrine Reuptake Inhibitor; TeCA, Tetracyclic Antidepressant; SARI, Serotonin Antagonist and Reuptake Inhibitor; NDRI, Norepinephrine-Dopamine Reuptake Inhibitor

[b] total number of drugs taken by the patients

[c] Percent of the particular drug prescribed

[d] most common dose prescribed for the particular drug

[e] total number of patients taking that common dose

[f] percentage of the common dose taken by the patient for the particular drug (f=e/b*100)

4. Discussion

This study is the first of its kind to report the prescribing pattern for antidepressant medications in Nepal among patients with depression and how these practices compare with established dosing guidelines issued by the APA and CMS and specified in the ATHF.

The study showed that people of age group 18-27 years were the most affected by depression; this finding was consistent with several studies; one of such studies reported that patients aged 21–24 years had higher prevalence rates for prescription than those aged 16–17 [5]. In another study, depression was more commonly seen between patients with age group 21-40 years [6].

Depression was found to be more prevalent among females compared to males according to our study. Various studies conducted throughout the world have suggested that depression is more dominantly prevalent among the females [7].

Our study revealed that depression was most common among married individuals and the least among widowed ones. Our finding is in parallel with a previously done research which showed that married people had higher risk of depression [7].

It was found in our study that people who had obtained secondary and higher secondary education were mainly affected by depression. The simple hypothesis from European and US reports that low levels of educational attainment increase the risk and severity of MDD [8].

Family psychiatric history and parental depression, primarily maternal depression has been associated with a child's risk for developing depression [8]. This finding contradicts our result which suggests that family history was not associated with onset of depression.

It was found that sleep disturbances followed by depressed mood, loss of interest and loss of concentration were the most common symptoms observed among the patients under study. Our finding lends support to a study which found that Anhedonia/loss of interest and concentration problems were more common in adults with MDD [9].

Our study suggested that SSRIs are the most commonly prescribed group of antidepressants escitalopram being the most common medication; this finding is in parallel with the findings of a study which concluded that SSRIs were the most common group and escitalopram was the most common medication used [10]. Another study found out that SSRIs were the most frequently prescribed antidepressants and their prescribing was increasing over nearly the last 10 years [11]. SSRIs are popular because although the efficacy of the SSRIs is comparable to that of the TCAs, the SSRIs have significantly fewer side effects. Unlike the TCAs, they could be used safely in many patient populations, including the elderly and children, both of whom are particularly sensitive to the adverse effects of TCAs. SSRIs also could be prescribed for patients with multiple comorbidities. Because of their overall efficacy, safety, and tolerability, they have become widely prescribed by primary care physicians [4].

Our finding suggested that the most frequently prescribed dosages for fluoxetine only fell within the APA and CMS guidelines and specified in the ATHF; all the other antidepressants were found to be prescribed at lower than recommended doses. TCAs and TeCAs may be prescribed at lower doses because of their increased toxicity and corresponding risk of overdose. The majority of depressed patients should be treated with a low dosage of SSRIs and SNRI, generally corresponding to one tablet per day. Increasing the dose may perhaps be beneficial for some patients with depression, in particular those with severe depression [11]. Other several

reasons why antidepressant drugs may have been prescribed at lower than recommended doses include off-label use of antidepressants at low dose as sedative and hypnotic, risk of adverse effects at higher doses and preference of lower starting dose for prescribing antidepressants.

This study assessed only the descriptive characteristics and hence we could not analyze the factors associated with prescribing pattern of antidepressants. Also, the data collection was done only in Mental Hospital, Patan, thus these results may not be generalized to other populations in Nepal due to high levels of ethnic and geographic variations within the country. Most of the medical records we assessed had information on first-time visit of patients to the hospital which is why we could not assess the data from follow-up visits.

5. Conclusion

This study assessed the baseline characteristics of patients diagnosed with depression in a Mental Hospital located in the urban setting of Nepal. It found that most of the prescribed doses of antidepressants did not align with recommended international guidelines; further study is needed to investigate the reasons behind them.

We also recommend the encouragement of regular follow-up by the patients and a comprehensive record keeping by the hospitals to conduct further studies in this area. Furthermore, increasing literacy of public on mental health issues including depression and rational use of related drugs including antidepressants could be the best possible area to intervene.

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