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Study of Adverse Drug Reaction of Anti-Depressants in Adult Patients: A Nepalese Perspective

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Abstract: Background of the study: Depression is a prevalent mental disorder characterized by various symptoms, including low mood, lack of pleasure, changes in appetite and sleep, and difficulty concentrating. Antidepressants are commonly used to manage depression as well as other related disorders, such as anxiety and somatoform disorders. This study aimed to investigate the adverse drug effects experienced by adult patients who were using antidepressants at Chitwan Medical College Teaching Hospital in Nepal. **Methods**: This study was a retro-prospective, observational study consisting of 117 adult patients under antidepressant medication. The adverse drug profile for the patients was collected using an antidepressant side effect checklist developed by the NHS foundation trust. Statistical analysis was performed using SPSS version 20. **Result**: The study group consisted of adult patients using antidepressants at Chitwan Medical College Teaching Hospital, Chitwan, Nepal. The mean age of the group was 40.9 ± 12.8, with 63.2% females and 36.7% males. The most common conditions for which antidepressants were prescribed were depression (49.5%), anxiety disorder (31.6%), and somatoform disorder (13.6%). Amitriptyline was the most commonly used medication in monotherapy (64.1%), followed by escitalopram and sertraline. Dry mouth, weight gain, drowsiness, blurred vision, problems with sexual function, and an increase in appetite were the most commonly reported adverse effects. The incidence of certain adverse effects was higher in the multiple therapy group than in the monotherapy group ($p < 0.05$). **Conclusion**: The incidence of adverse drug effects is high in patients taking antidepressants, especially those receiving multiple medications. Educating patients about common side effects and prescribing monotherapy whenever possible are crucial in reducing the incidence.

Keywords: adverse drug effect; antidepressants; depression; side effects of antidepressants; Nepal

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1. Introduction

Depression is a widespread mental disorder that can cause sadness, loss of interest, guilt, sleep and appetite disturbances, fatigue, and difficulty concentrating. It can impair one's ability to function and can lead to suicide. Mild cases can be treated without medication, but moderate to severe cases require medication and therapy. Depression can be diagnosed and treated by non-specialists as part of primary healthcare [1].

In addition to being a significant contributor to disability and early death, depression is a significant global public health issue [2]. The Global Burden of Disease report found that depression is more prevalent in women than in men, with rates expected to rise significantly by 2030, and becoming the second leading cause of disability-adjusted life years (DALYs) after ischemic heart disease. Currently, depression affects 1.9% of men and 3.2% of women,

with one-year prevalence rates of 5.8% for males and 9.5% for females [3]. In Nepal, a study reported a crude prevalence of depression at 11.7% [4]. Meanwhile, the incidence rate of adverse drug reactions (ADR) caused by antidepressant medications was found to be 4.54% [5]. However, the prevalence of ADRs associated with antidepressants in Nepal has not been assessed yet. These findings highlight the significant burden of depression in the country and the potential risks associated with antidepressant use.

Antidepressants are prescribed to treat various mental health conditions, including major depressive disorder, dysthymia, anxiety disorders, obsessive compulsive disorder, eating disorders, ADHD, addiction, dependence, and sleep disorders, as well as physical conditions such as chronic pain, neuropathic pain, and migraines. These medications can be prescribed alone or in combination with other drugs [6].

Adverse drug reactions (ADRs) are defined by the World Health Organization (WHO) as unexpected and harmful responses that occur at normal therapeutic doses of drugs used for prophylaxis, diagnosis, or treatment of disease, or for the modification of physiological function [7]. To address adverse drug reactions (ADRs), preventive measures, targeted therapies, adjustments to dosage schedules, and potentially discontinuing the medication may be necessary. It is important to note that nearly all medications have some degree of side effects or negative consequences in addition to their intended therapeutic effects [8]. Patients with depression are known to have a higher incidence of adverse drug reactions (ADRs) related to antidepressant medications. These ADRs can significantly impact medication adherence and contribute to treatment discontinuation [9]. Adverse drug reactions (ADRs) can significantly decrease people's quality of life, leading to poor adherence to antidepressant medications. This can result in longer hospital stays, increased healthcare costs, reduced treatment outcomes, physical morbidity, social stigma, and, in severe cases, even death [10]. The incidence of adverse drug reactions (ADRs) leading to hospitalization is reported to range from 0.2% to 41.3%. As a result, healthcare costs have risen by 5–10% [11].

Adverse effects of antidepressant drugs based on mechanism of action [12]

Various literature and real world data have provided insights into the adverse effects of antidepressant drugs based on their mechanisms of action. These adverse effects can vary depending on the specific pharmacological actions of the medications. Here, we summarize some of these effects categorized by their respective mechanisms of action.

Antidepressant Drug	**Adverse Effect**
Norepinephrine transporter blockade:	Anxiety, diaphoresis, tachycardia, tremor.
Serotonin reuptake inhibition:	Anorexia early in the treatment and weight gain later, anxiety, ejaculatory disturbances, decreased libido, nausea and vomiting, diarrhea, sedation, insomnia, serotonin syndrome.
Dopamine reuptake inhibition:	Psychosis, Parkinsonism, psychomotor activation.
Alpha-1 adrenergic receptor blockade:	Postural hypotension, dizziness, antihypertensive effect, reflex tachycardia.
Dopamine D2 receptor blockade:	Dystonia, Parkinsonism, prolactin elevation.
Histamine H1 receptor blockade:	Drowsiness, orthostatic hypotension, sedation, weight gain.
Muscarinic acetylcholine receptor blockade	Blurred vision, memory impairment, delirium, dry mouth, constipation, urinary retention.

Monitoring for adverse drug reactions (ADRs) is critical in a hospital setting as it helps to identify the nature and types of ADRs and pinpoint patients who are at a higher risk of experiencing ADRs [13]. Adverse drug reaction (ADR) monitoring is less prevalent in developing countries, such as India, where the rate is reported to be below 1%, compared

to 5% in developed nations. This highlights the need for improved pharmacovigilance systems and increased awareness of ADRs in developing countries [14]. There is a research gap in Nepal regarding the adverse drug profiles of adult patients using antidepressants, with a particular focus on adverse effects and depressed patients. This study aims to fill this gap and provide a better understanding of the factors associated with adverse drug profiles. It will also serve as a baseline for future studies and aid in developing appropriate strategies, interventions, and health education regarding depression and reducing adverse effects in adult Nepalese patients. Additionally, this study will highlight the importance of clinical pharmacists in ADR monitoring and reporting, as well as strengthening Nepal's pharmacovigilance system.

Research Questions

(i) What is the existing profile among adult patients using antidepressant drugs?
(ii) Which is the most frequently used antidepressant drug?
(iii) How does the adverse profile differ in monotherapy and multiple therapy?
(iv) Is there any association between adverse effects and the mechanism of action of the drug?
(v) How common is the prescription of other drugs along with antidepressants in the management of depression and other mental illnesses?

2. Objectives

The main objective of this study is to investigate the adverse drug profile in adult patients using antidepressants in the outpatient department (OPD) of Chitwan Medical College Teaching Hospital in Chitwan, Nepal. Additionally, the study aims to determine the demographics of patients who visit the OPD and whether they receive single or multiple therapies. The study also seeks to identify the factors contributing to depression and the most frequently prescribed antidepressants at the hospital. By accomplishing these objectives, the study will contribute to a better understanding of the use of antidepressants in this setting and inform the development of appropriate strategies to improve patient outcomes.

3. Patients and Methods

3.1. Study Design

A retro-prospective observational study design was used to determine the adverse drug profile and its associated factors among adult patients using antidepressants.

3.2. Study Site/Study Population/Study Unit

This study was conducted at the Chitwan Medical College teaching hospital, Chitwan, Nepal, where various ethnic groups of depressive patients reside. The research sample consisted of 117 adult patients who had been taking antidepressant medication for at least 2 weeks and were above the age of 20.

3.3. Sampling Technique

The Chitwan Medical College Teaching Hospital's OPD in Chitwan District was purposefully chosen for the study. The required number of samples was chosen using simple random sampling.

3.4. Data Collection Procedure

The study specifics were explained to every patient who arrived at the OPD, as well as any caregivers, and their verbal agreement was collected.

The patient's OPD card was used to collect the data, together with communications with the doctor, the patient, and lab results.

Age, gender, prior medical history, prescribed medications (single or multiple), height, weight, sleep habits, state of hunger, headaches, and other details were all collected; information was consistently captured, facilitating data analysis and comparisons across different patients or cases.

3.5. Data Management and Analysis

Data compiling, checking, and editing were performed manually. Any necessary editions immediately after data collection were performed. Data entry and analysis were carried out using IBM SPSS version 20 (IBM corporation, Armonk, NY, USA) and Microsoft Office Excel 2007.

3.6. Operational Definitions of Variables

Educational Status: Educational status will be categorized as shown below.

(i) Illiterate: Those who cannot read and write their name;
(ii) Literate: Those who can only read and write their name;
(iii) Primary level: Those who have completed grade 8;
(iv) Secondary level: Those who have completed SLC;
(v) Higher secondary level: Those who have completed high school or a +2 level, or equivalent;
(vi) Graduated: Those who have completed an undergraduate or postgraduate degree, or equivalent.

3.7. Variables of Interests

Dependent variables

Associated factors of antidepressants.

A patient under treatment with an antidepressant drug.

Independent variables

Age, sex, family income, family history related to depression, psychiatric illness, duration of drug use, duration of illness, blood pressure, ethnicity, religion, type of family, and education of respondent.

3.8. Inclusion and Exclusion Inclusion

Inclusion Criteria:

- All confirmed cases of depression and the patient under treatment;
- Medicine used for more than 2 weeks.

Exclusion Criteria:

- Adult patients aged below 20 years;
- The patient has a condition other than depression;
- The patient uses an antipsychotic drug.

3.9. Ethical Consideration

This study was conducted after obtaining ethical clearance from the institutional review committee (IRC) of Chitwan Medical College (reference number: CMC-IRC-2073/074:96). Permission from CMC Hospital was obtained before starting the data collection.

The information obtained from the respondents was kept confidential and privacy was maintained.

4. Results

4.1. Socio-Demographic Characteristics of the Respondents: Age, Education Level, Sex, Occupation, Religion, and Ethnic Group

The socio-demographic characteristics of the respondents are shown in Table 1. The table shows that out of 117 respondents, most of the respondents, 43 (36.8%), were from the age group 26–40, followed by 42 (35.9%) from the age group 41–55, and 19 (16.2%) from age group less than or equal to 25.

Table 1. Socio-demographic characteristics of the respondents: age, education level, sex, occupation, religion, and ethnic Group (n = 117).

Variable	Frequency	Percentage%
Category of Age		
<25 years	19	16.2
26–40	43	36.8
41–55	42	35.9
56–70	11	9.4
Above 70 years	2	1.7
Education level (n = 117)		
Illiterate	24	20.5
Literate	25	21.4
Primary Level	20	17.1
Secondary Level	22	18.8
Higher Secondary Level	14	12
Graduated	12	10.3
Sex (n = 117)		
Male	43	36.7
Female	74	63.2
Occupation (n = 117)		
Job	19	16.2
Agriculture	13	11.1
Business	9	7.7
Labor	6	5.1
Housewife	54	46.2
Student	12	10.3
Others	4	3.4
Religion (n = 117)		
Hindu	85	72.7
Buddhism	13	10
Christian	17	15.5
Islam	0	0
Others	2	1.8
Ethnic group (n = 117)		
Chettri/Brahmin	82	72.6
Janajati	24	11.1
Dalits	8	14.5
Others	3	1.7

Most respondents, 25 (21.4%), were literate followed by 24 (20.5%) literate, 22 (18.8%) with a secondary level, and 20 (17.1%) with a primary level. Regarding sex, 43 (36.7%) were male and 74 (63.2%) were female. Regarding occupation, most were housewives, 54 (46.2%), followed by those with a job, agricultural workers, and students. Related to religion, most of them were Hindus, 85 (72.7%), followed by Christians and Buddhists. Regarding ethnicity, the most common were Chhetris/Brahmins, 82 (72.6%), followed by Dalits, and Janajatis.

4.2. Socio-Demographic Characteristics of the Respondents: Family Income, Type of Family, and Family History Related to Depression

The socio-demographic characteristics of the respondents are shown in Table 2. Most of the families had an income of more than Rs.100000 or 762.12 USD/years, 64 (54.7%), followed by 53 (45.29%) with less. Regarding family type, most of them were from a nuclear family, 56 (47.9%), followed by 47 (40.2%) from extended and 14 (12%) from joint family. Regarding family history, 86 (73.5%) had no history of depression and 31 (26.5%) had a history of depression.

Table 2. Socio-demographic characteristics of the respondents: family income, type of family, and family history related to depression.

Variable	Frequency	Percentage%
Family income		
less than Rs.100000 or 762.12 USD/yr.	53	45.3
more than Rs.100000 or 762.12 USD/yr.	64	54.7
Type of family		
Nuclear	56	47.9
Extended	47	40.2
Joint	14	12
Family history related to depression		
No	86	73.5
Yes	31	26.5

4.3. Characteristics of the Population: Weight, Height, BMI, BPS, and BPD

The characteristics of the population are shown in Table 3.

Table 3. Characteristics of the population: weight, height, BMI, BPS, BPD.

Variable	Mean Values	±SD
Weight-kg	62.1	±11.924
Height-cm	156.3	±9.047
BMI	25.4	±4.316
Systolic pressure	118.8	±15.874
Diastolic pressure	80.9	±10.815

The mean ± SD of weight was 62.1 ± 11.924, height was 156.3 ± 9.047, BMI was 25.4 ± 4.316, BPS was 118.8 ± 15.874, and BPD was 80.9 ± 10.815.

4.4. Duration of Drug Use and Duration of Illness

The median duration of illness was 24 months (range: 1–228 months) and the median duration of drug use was 12 months (range: 0.5–144 months) (Table 4).

Table 4. Duration of drug use and duration of illness.

Variable	Minimum	Maximum	Mean	Median
Duration of drug use (months)	0.5	144	20.9	12
Duration of illness (months)	1	228	48.4	24

4.5. Respondent Characteristics Regarding Disease Distribution, Drug Use Other than Antidepressants, and Type of Drug Therapy

The Table 5 shows that out of 117 respondents, most of them had depressive illness. 58 (49.6%), followed by anxiety disorder, somatoform disorder, and other categories of mental illness (Figure 1).

Concerning drug use other than antidepressants, 21/117 (17.9%) were only using antidepressants; the remaining 96 (82.2%) had other drugs in their treatment plan in addition to antidepressants.

Regarding to type of drug therapy, most of the respondents were using monotherapy, 75 (64.1%), 35 (29.9%) were under multiple therapies, and 7 (6%) were taking no antidepressant drugs.

4.6. Distribution of Patients Based on Drug Use (Monotherapy Only)

The most common drug used in monotherapy was amitriptyline (22.6%), followed by escitalopram, sertraline, and paroxetine (Figure 2).

Table 5. Respondent characteristics regarding disease distribution, drug use other than antidepressants, and type of drug therapy.

Variable	Values	Percentage%
Disease distribution (n = 117)		
Depressive illness	58	49.6
Anxiety disorder	37	31.6
Somatoform disorder	16	13.7
Others	6	5.1
Drug use other than antidepressants (n = 117)		
No	21	17.9
Yes	96	82.1
Type of drug therapy (n = 117)		
Monotherapy	75	64.1
Multiple therapy	35	29.9
Not antidepressant	7	6

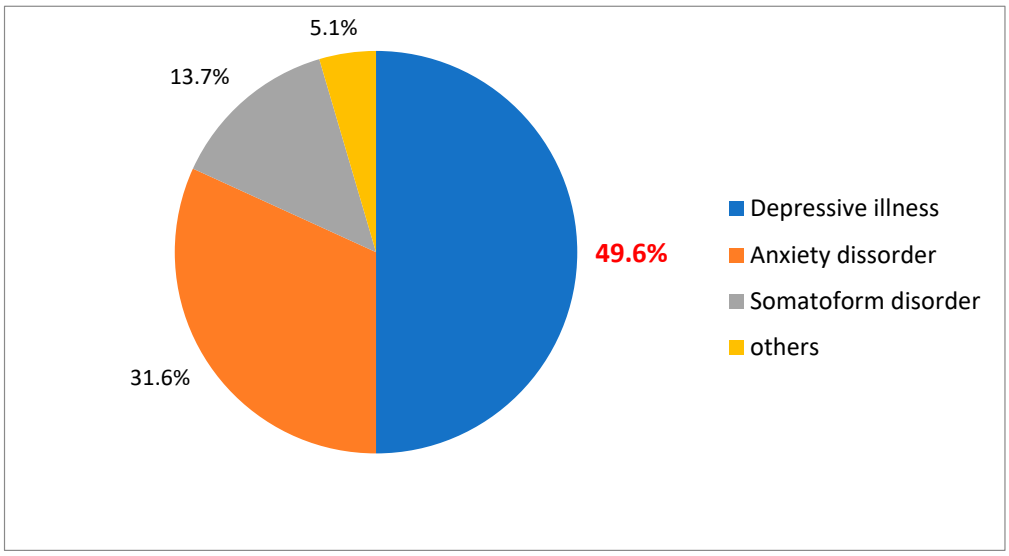

Figure 1. Classification of psychiatric illness.

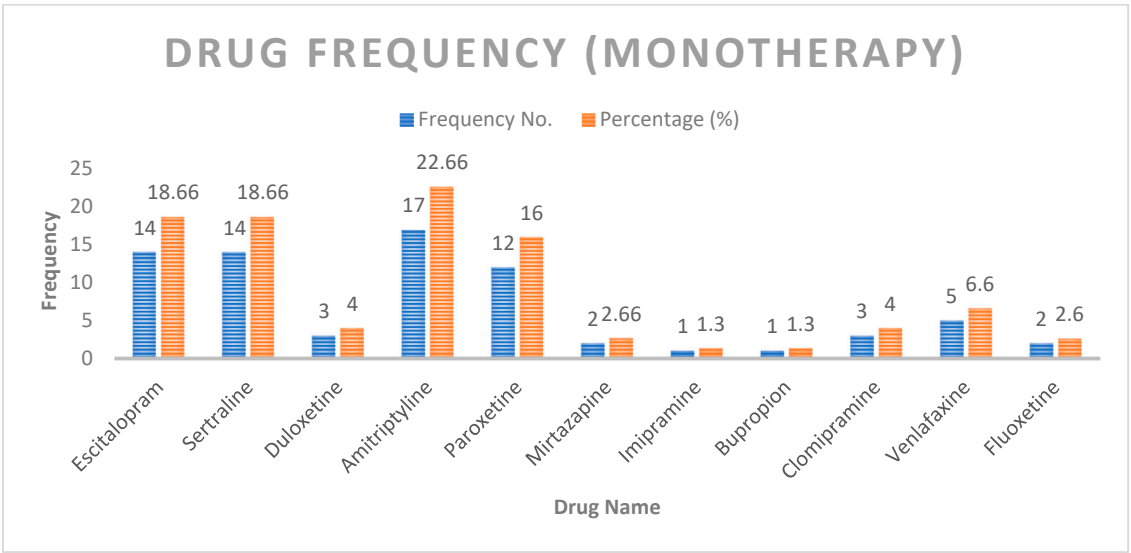

Figure 2. Distribution of patients based on drug use (monotherapy only).

- **Distribution of patients based on drug use (multi-therapy only) n = 35**

The different drug combinations and their frequency are shown in Figure 3. The most common combination used in multiple therapy was amitriptyline and escitalopram (17.1%).

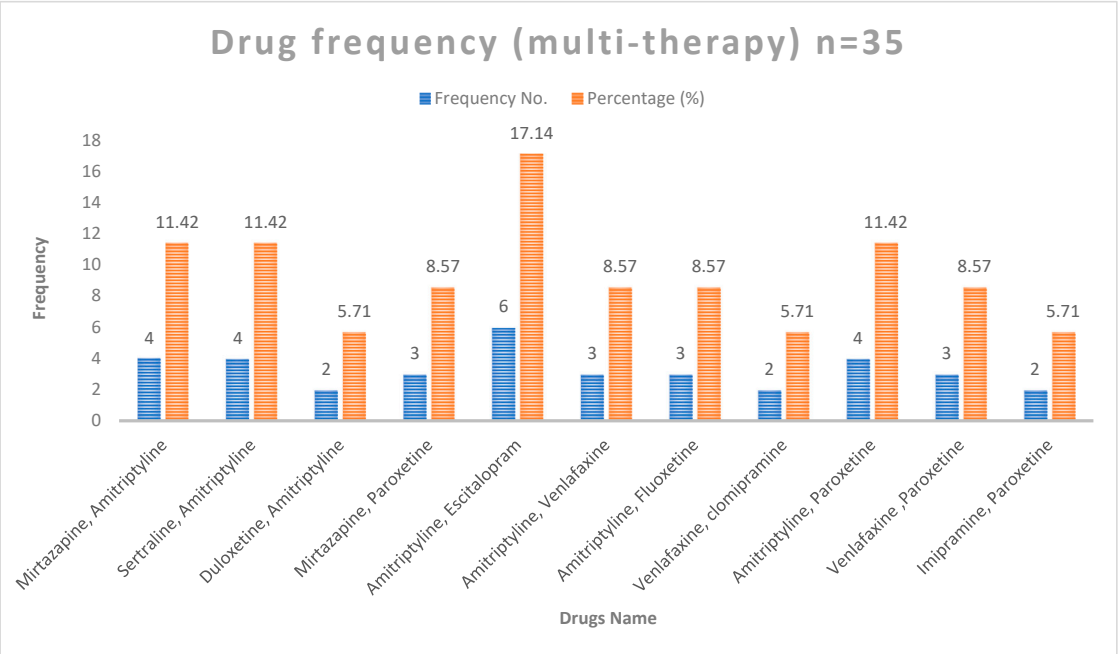

Figure 3. Distribution of patients based on drug use (multi-therapy only).

4.7. Adverse Drug Profile of Total Respondents under Treatment of Antidepressants

Based on the side effect check list develop by the NHS foundation trust used for the adverse drug profile in the patients using antidepressants, dry mouth was the most commonly reported adverse effect (60.9%), followed by weight gain (58.1%), drowsiness (56.4%), and blurred vision (46.4%). The incidence of adverse effects, such as increased appetite, problems with sexual function, palpitation, sweating, and light headedness, was almost similar (43.6–40.9%). The least commonly reported adverse effect was disorientation (3.6%) (Table 6).

Table 6. Adverse drug profile of total respondents under treatment of antidepressants.

Side Effect	No. (%)
Dry mouth	67 (60.9)
Drowsiness	62 (56.3)
Insomnia	19 (17.2)
Blurred vision	51 (46.3)
Headache	24 (21.8)
Constipation	34 (30.9)
Diarrhea	35 (31.8)
Increase appetite	48 (43.6)
Decrease appetite	30 (27.2)
Nausea and vomiting	30 (27.2)
Problem with urination	23 (20.9)
Problem with sexual function	49 (44.5)
Palpitation	46 (41.8)
Feeling light-headed on standing	45 (40.9)
Feeling like the room is spinning	19 (17.2)
Sweating	46 (41.8)
Increase body temperature	35 (31.8)
Tremor	37 (33.6)
Disorientation	4 (3.6)
Weight gain	64 (58.1)

4.8. Comparison of ADRs in Monotherapy (n = 75) and Multiple Therapy (n = 35)

The comparison of monotherapy and multiple therapy ADRs are shown in Table 7. The incidence of certain adverse effects (diarrhea, problems with sexual function, palpitations, and tremor) was higher ($p < 0.05$) in the multiple therapy group compared to monotherapy.

Table 7. Comparison of ADRs in monotherapy (n = 75) and multiple therapy (n = 35).

Adverse Effect	Monotherapy				Multiple Therapy				*p*-Value
	Variable				Variable				
Dry mouth	0 35	1 12	2 24	3 4	0 8	1 8	2 14	3 4	0.123
Drowsiness	31	24	15	4	17	11	6	1	0.872
Insomnia	64	7	4	0	27	1	6	1	0.061
Blurred vision	42	26	7	0	17	14	4	0	0.765
Headache	61	8	5	1	25	6	3	1	0.680
Constipation	53	7	14	1	23	9	2	1	0.056
Diarrhea	60	14	1	0	25	5	5	0	0.020
Increase appetite	43	18	12	2	19	8	8	0	0.659
Decrease appetite	55	7	6	7	25	3	3	4	0.986
Nausea and vomiting	56	13	5	1	24	4	6	1	0.310
Problem with urination	58	11	6	0	29	5	1	0	0.581
Problem with sexual function	45	10	15	5	16	2	9	8	0.050
Palpitation	52	17	6	0	12	15	6	2	0.002
Feeling light-headed on standing	42	26	7	0	23	10	2	0	0.596
Feeling like the room is spinning	63	10	2	0	28	5	2	0	0.715
Sweating	45	17	9	4	19	10	3	3	0.771
Increase body temperature	49	18	7	1	26	5	4	0	0.587
Tremor	55	16	4	0	18	10	7	0	0.025
Disorientation	71	4	0	0	35	0	0	0	0.164
Weight gain	20	27	20	8	26	9	8	9	0.220

Here, 0, 1, 2, and 3 is absent, mild, moderate, and severe, respectively.

4.9. Percentage of Moderate/Severe Symptoms: Comparison between Monotherapy and Multiple Therapy

The incidence of many of the adverse effects (16/20) was not significantly different between the monotherapy and multiple therapy groups. The incidence of diarrhea, problems with sexual function, palpitation, and tremor were significantly higher in the multiple therapy group ($p < 0.05$) (Table 8).

Table 8. Percentage of moderate/severe symptoms compared between the monotherapy and multiple therapy groups.

Adverse Effect	Monotherapy (n = 75)	Multiple Therapy (n = 35)	*p* Value
	N (%)	N (%)	
Dry mouth	28 (37.3)	18 (51.4)	0.123
Drowsiness	19 (25.3)	7 (20)	0.872
Insomnia	4 (5.3)	7 (20)	0.061
Blurred vision	7 (9.3)	4 (11.4)	0.765
Headache	6 (8)	4 (11.4)	0.680
Constipation	15 (20)	3 (8.5)	0.056
Diarrhea	1 (1.3)	5 (14.2)	0.020
Increase appetite	14 (18.6)	8 (22.8)	0.659
Decrease appetite	13 (17.3)	7 (20)	0.986
Nausea and vomiting	6 (8)	7 (20)	0.310
Problem with urination	6 (8)	1 (2.8)	0.581
Problem with sexual function	20 (26.6)	17 (48.5)	0.050
Palpitation	6 (8)	8 (22.8)	0.002
Feeling light-headed on standing	7 (9.3)	2 (5.7)	0.596
Feeling like the room is spinning	2 (2.6)	2 (5.7)	0.715
Sweating	13 (17.3)	6 (17.1)	0.771
Increase body temperature	8 (10.6)	4 (11.4)	0.587
Tremor	4 (5.3)	7 (20)	0.025
Disorientation	0 (0)	0 (0)	0.164
Weight gain	28 (37.3)	17 (48.5)	0.220

4.10. Respondent Responses on Adverse Effects among Different Antidepressant Drugs

The respondent responses on adverse effects among different antidepressant drugs are shown in Table 9. ADRs were more common in patients treated with escitalopram, sertraline, amitriptyline, and paroxetin, followed by venlafaxine, mirtazapine, duloxetine, clomipramine, imipramine, bupropion, and fluoxetine.

4.11. Patient Side Effects with Most Commonly Used Drugs

The most commonly used drugs with side effects are shown in Table 10. The most common adverse effects are dry mouth, drowsiness, headache, diarrhea, problems with urination, problems with sexual function, palpitation, feeling light-headed on standing, and feeling like the room is spinning with escitalopram use. Blurred vision, decreased appetite, sweating, increase body temperature, and tremor were found with sertraline use. Constipation, increased appetite, disorientation, and weight gain were found with amitriptyline, and insomnia, nausea, and vomiting with paroxetine use.

Table 9. Respondent responses on the adverse effects among different antidepressant drugs.

Adverse Effect	Different Drugs Name								
	Escitalopram (n = 15)	**Sertraline (n = 15)**	**Duloxetine (n = 3)**	**Amitriptyline (n = 17)**	**Paroxetine (n = 13)**	**Mirtazapine (n = 4)**	**Clomipramine (n = 3)**	**Venlafaxine (n = 5)**	**Fluoxetine (n = 2)**
Dry mouth	10	8	1	11	6	3	3	2	0
Drowsiness	4	2	0	4	0	1	0	0	1
Insomnia	9	9	0	11	11	1	3	1	0
Blurred vision	7	8	0	7	4	3	2	2	2
Headache	6	3	0	3	1	1	0	1	0
Constipation	4	2	1	6	3	2	1	1	0
Diarrhea	4	3	0	1	2	1	2	0	0
Increase appetite	7	6	1	9	5	3	2	0	1
Decrease appetite	3	6	0	4	4	1	1	1	1
Nausea and vomiting	5	3	0	3	5	1	1	2	0
Problem with urination	4	3	0	3	3	3	0	1	0
Problem with sexual function	9	3	1	5	3	3	3	2	2
Palpitation	9	4	0	5	4	1	1	0	0
Feeling light headed on standing	9	6	1	7	4	2	1	2	1
Feeling like the room is spinning	6	1	0	2	2	0	1	0	0
Sweating	4	9	3	8	3	1	1	1	1
Increase body temperature	5	6	1	6	4	1	1	3	1
Tremor	2	6	0	5	1	3	1	1	2
Disorientation	0	0	0	1	0	1	1	0	0
Weight gain	10	11	2	13	9	4	2	4	2

Table 10. Patient side effects with the most commonly used drugs.

Adverse Effect	Escitalopram (n = 15) (N, %)	Sertraline (n = 15) (N, %)	Amitriptyline (n = 17) (N, %)	Paroxetin (n = 13) (N, %)
Dry mouth	10 (66.6)	8 (53.3)	11 (64.7)	6 (46.1)
Drowsiness	4 (26.6)	2 (13.3)	4 (23.5)	0 (0)
Insomnia	9 (60)	9 (60)	11 (64.7)	11 (84.6)
Blurred vision	7 (46.6)	8 (53.3)	7 (41.1)	4 (30.7)
Headache	6 (40)	3 (20)	3 (17.6)	1 (7.6)
Constipation	4 (26.6)	2 (13.3)	6 (35.2)	3 (23.0)
Diarrhea	4 (26.6)	3 (20)	1 (5.8)	2 (15.3)
Increase appetite	7 (46.6)	6 (40)	9 (52.9)	5 (38.4)
Decrease appetite	3 (20)	6 (40)	4 (23.5)	4 (30.7)
Nausea and vomiting	5 (33.3)	3 (20)	3 (17.6)	5 (38.4)
Problem with urination	4 (26.6)	3 (20)	3 (17.6)	3 (23.0)
Problem with sexual function	9 (60)	3 (20)	5 (29.4)	3 (23.0)
Palpitation	9 (60)	4 (26.6)	5 (29.4)	4 (30.7)
Feeling light-headed on standing	9 (60)	6 (40)	7 (41.1)	4 (30.7)
Feeling like the room is spinning	6 (40)	1 (6.6)	2 (11.7)	2 (15.3)
Sweating	4 (26.6)	9 (60)	8 (47.0)	3 (23.0)
Increase body temperature	5 (33.3)	6 (40)	6 (35.2)	4 (30.7)
Tremor	2 (13.3)	6 (40)	5 (29.4)	1 (7.6)
Disorientation	0 (0)	0 (0)	1 (5.8)	0 (0)
Weight gain	10 (66.6)	11 (73.3)	13 (76.4)	9 (69.2)

5. Discussion of the Study

The study found that in the cohort of depressed patients, 63.2% were female, which is consistent with previous research by Bhawesh Koirala in 2015 where 63% of the cohort was female [15], suggesting that females may be more susceptible to depression or more likely to seek help for depressive symptoms compared to males. In terms of age, the mean was 40.9 ± 12.807 years, with 54.5% male and 65.5% female. These findings indicate that depression can affect individuals across a wide age range, with the highest incidence observed in middle-aged and older adults. Regarding education, 20.5% were illiterate and 79.5% were literate. The majority of the patients were housewives (46.2%), with other occupations including a job (16.2%), agriculture (11.1%), business (7.7%), labor (5.1%), student (10.3%), and other (3.4%). These findings highlight the diverse socioeconomic backgrounds and occupations of individuals affected by depression. The most commonly reported adverse drug reactions were problems with sexual function (60%), dryness of the mouth (66.66%), weight gain (66.6%), and insomnia (60%). It is important to note that the prevalence of ADRs can vary depending on the specific antidepressant medication used. Escitalopram and paroxetine were mentioned as commonly prescribed antidepressants associated with sexual dysfunction, while escitalopram was linked to dry mouth and weight gain. A similar study by Vijay Kaul and Shaktibala Dutta, 2015, using the Hamilton depression rating scale, found that the mean age was 46.8 ± 1.10 years, with 41.41% male and 58.59% female. Regarding education, 47.4% were illiterate and 52.5% were literate. The majority of patients were farmers (65.6%), with other occupations including employed (23.2%) and other (11.1%). The most commonly reported adverse drug reactions were dryness of the mouth (10.5%), weight gain (5.2%), sexual dysfunction (10.5%), and insomnia (5.2%) [16]. Escitalopram is the most often prescribed antidepressant in much of Europe [17], although amitriptyline was the most commonly used antidepressant in this research, followed by escitalopram. This suggests that the choice of antidepressant may vary across different regions and healthcare settings. In a study performed in the UAE, escitalopram was reported as the primary culprit for ADRs [13].

According to the Antidepressant Adverse-Effect Checklist and the UKU Side Effect Rating Scale, diarrhea (26.6%) is a frequent adverse effect of escitalopram medication, and insomnia (84.6%) is a common side effect of paroxetine treatment. In a 2009 study performed by Rudolf Uher and Anne Farmer, it was shown that diarrhea (9%) and insomnia (36%) were also prevalent with escitalopram administration [18]. The 2014 meta-analysis,

comprising 58 randomized controlled trials and five observational studies identified a higher risk of sexual dysfunction with escitalopram and paroxetine compared to other antidepressants [19].

According to the study, the occurrence of sexual dysfunction as a side effect of antidepressants varied depending on the medicine used. Sexual dysfunction was reported in 60% of escitalopram patients, 20% of sertraline patients, 29.4% of amitriptyline patients, and 23.0% of paroxetine patients. This is congruent with the findings of a research published in 2001 by Montejo A and Llorca G, who discovered that the incidence of sexual dysfunction was high with numerous antidepressants, including fluoxetine (57.7%), sertraline (62.9%), fluvoxamine (62.3%), venlafaxine (67%), paroxetine (70.7%), and citalopram (72.7%) [20].

The ADE tool was utilized to evaluate the adverse effects of commonly prescribed drugs, including escitalopram and sertraline, for the treatment of depression. The study findings were substantiated by a comparable investigation conducted by Bhawesh Koirala at a tertiary care center in Eastern Nepal. The reference article reinforces the study's observations of a higher occurrence of dry mouth among patients receiving escitalopram (66.6% in the study vs. 34.9% in the reference article) and sertraline (53.3% in the study vs. 30% in the reference article). Additionally, the reference article supports the study's outcomes regarding insomnia, demonstrating elevated rates for both escitalopram (60% in the study vs. 12.8% in the reference article) and sertraline (60% in the study vs. 6.7% in the reference article). Furthermore, the reference article aligns with the study's findings on headaches, diarrhea, nausea and vomiting, sweating, tremor, and weight gain, indicating comparable or similar prevalence rates for escitalopram and sertraline [15] (Table 11).

Table 11. Comparison of the ADRs of commonly used drugs with a reference article [15].

Adverse Effect	Escitalopram	Escitalopram	Sertraline	Sertraline
	Study Shows	Reference Article Result	Study Shows	Reference Article Result
Dry mouth	66.6%	34.9%	53.3%	30%
Insomnia	60%	12.8%	60%	6.7%
Headache	40%	24.4%	20%	35%
Diarrhea	26.6%	4.7%	20%	1.7%
Nausea and vomiting	33.3%	15.1%	20%	13.3%
Sweating	26.6%	15.1%	60%	13.3%
Tremor	13.3%	17.4%	40%	25%
Weight gain	66.6%	62.8%	73.3%	55%

6. Conclusions

This study on adverse medication responses to antidepressants in adult patients, carried out in Nepal, offers insightful information on the patient profile and frequency of side effects. According to the data, adverse medication responses are very common in adult antidepressant users.

The study included predominantly female patients within the age range of 26–40 years, many of whom were literate housewives. Most patients belonged to the Hindu religion and Chettri/Brahmin ethnicity, with a higher income level and nuclear family structure. The prevalence of family history related to depression was relatively low.

The patients exhibited average BMI, systolic blood pressure, and diastolic blood pressure values within the study's measured ranges. The duration of drug use and illness varied, with most patients experiencing depressive illness and using monotherapy. Some patients also received additional medications such as clonazepam, propranolol, pantoprazole, amisulpride, amlodipine, and valproate.

When comparing adverse drug reactions between monotherapy and multiple therapy for antidepressants, this study found a higher incidence of certain adverse reactions, including diarrhea, problems with sexual function, palpitations, and tremors, in the multiple therapy group. The most commonly prescribed drugs in monotherapy were escitalopram, sertraline, amitriptyline, and paroxetine.

The adverse effects reported by patients using antidepressants included dry mouth, weight gain, drowsiness, blurred vision, increased appetite, problems with sexual function, palpitations, sweating, lightheadedness, and disorientation. Dry mouth was the most frequently reported adverse effect, while disorientation was the least commonly reported.

In conclusion, this prospective study emphasizes the importance of monitoring and managing adverse drug reactions in adult patients using antidepressants. The findings highlight the need for healthcare providers to be aware of the potential side effects associated with different antidepressant medications and to consider the impact of multiple therapy. Individualized patient care and regular evaluation of adverse reactions can contribute to optimizing treatment outcomes and improving patient well-being.

7. Recommendations

- Multiple therapy for antidepressants was associated with a higher incidence of adverse effects compared to monotherapy. Therefore, monotherapy is preferred.
- Selective serotonin reuptake inhibitors (SSRIs) are commonly associated with sexual dysfunction in adults. Therefore, they may be less preferred.
- Weight gain is a major side effect of antidepressants, and patients should engage in regular exercise to manage it.
- Patients should not discontinue or miss doses of antidepressants due to adverse effects without first consulting with their physician.

8. Limitation of the Study

- The research study was conducted only on adult patients above 20 years of age. Therefore, the findings may not be generalizable to other age groups.
- The data were collected from only one psychiatric department in the OPD of Chitwan Medical College. Therefore, the findings may not be representative of the larger population.
- There was limited time for data collection and poor patient compliance, which may have affected the accuracy and completeness of the data collected.

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