

# FACTORS INFLUENCING THE CHOICE OF ANTIDEPRESSANTS IN FIRST EPISODE OF MAJOR DEPRESSION — A CENTER BASED STUDY

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## ABSTRACT

**Background:** The economic loss due to major depressive disorders is estimated to run in to billions of dollars annually. In United States alone, more than 9 billion dollars are spent every year on the purchase of antidepressants. Although there is a wide variety of antidepressant available, there is little empirical evidence to guide clinicians in their selection.

**Objective:** To determine the factors influencing choice of antidepressants for treating first episode of major depression.

**Materials and Methods:** This is a descriptive cross-sectional study carried out on first episode of major depressive disorder admitted in a private psychiatric facility, Iftikhar Psychiatric hospital from February 2014 to July 2015. By using purposive sampling technique, 140 patients were included in this study. Data was analyzed using SPSS 16. Factor correlation was assessed by chi square test.

**Results:** Average age of the patients was reported to be 25.8 years where majority were females (76.4%). Selective serotonin reuptake inhibitors were most commonly prescribed antidepressants. Choice of antidepressant had a significant relationship with co morbid physical condition. Out of the total respondents, 7.1% suffered from co morbid diabetes mellitus, 9.2% of patients suffered hypertension, 10% from chronic heart disease, 5.7% of patients were pregnant and 7.8% of depressed patients were breast feeding their child. However, gender, area of residence and marital status had no significant relationship with the choice of antidepressant prescribed.

**Conclusion:** This study shows that choice of antidepressants is affected by factors such as side effect tolerability, old age, cost affordability, pregnancy, lactation and co morbid physical illness.

**Key Words:** Anti depressants, co-morbidities, socio-demographic status, side effects.

## BACKGROUND

Major depressive disorder is a serious, disabling illness causing loss of functioning<sup>1</sup>. Major depression is currently the leading cause of disease burden in North America and the fourth-leading cause worldwide. By the year 2030, it is predicted to be the second-leading cause of disease burden worldwide after HIV<sup>2</sup>. Delays or failure in seeking treatment after relapse or failure of health professionals to provide treatment can lead to severe disability<sup>3</sup>.

Depression also co occurs with many physical disorders such as heart disease, incident stroke, asthma and osteoarthritis. It can significantly impair health and worsen the outcome<sup>3,4</sup>. Even common disorders such

as migraine and gastric ulcer are related to recurrent episodes of major depressive disorder<sup>4,5,6</sup>. Depression co morbidity is associated with severe functional impairment, high rate of recurrence, poor response to treatment and increase in health care visits. This leads to worsening of outcome and increase in health care cost<sup>2</sup>.

The economic burden caused by work force productivity losses and cost of treatment due to major depressive disorders in western countries is estimated to run in to billions of dollars annually<sup>7,8</sup>. In United States alone, more than 9 billion dollars are spent every year on the purchase of antidepressants<sup>9,10</sup>.

Although there is a wide variety of antidepressant available, there is little empirical evidence to guide clinicians in their selection. Research suggests that most of the antidepressants are equal in efficacy in treating major depressive disorder. Therefore APA guidelines recommends that choice of antidepressant should be made on the basis of side effect tolerability, patient preference and medication cost. These guideline provide limited guidance in the selection of antidepressants<sup>11,12,13</sup>.

The purpose of this study was to find out the factors affecting the choice of antidepressants for the treatment of first episode cases of Major Depressive

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disorder. Findings of this study will be used to improve prescribing patterns in cases of major depressive disorder in our clinical setting.

## MATERIALS AND METHODS

The study adopted a descriptive cross-sectional study design. Data was collected from patients suffering from major depressive disorder for the first time in their life. This study was carried out from on cases admitted in Iftikhar Psychiatric hospital from February 2014 to July 2015. Subjects were selected through purposive sampling technique in which 140 patients were interviewed through semi-structured questionnaire. The subjects included in the study were diagnosed on the basis of DSM V criteria. Those who refused to give informed consent or had a history of depression previously were excluded from this study. SPSS 16 was used for data analysis where emphasis was on assessing factor correlation through chi-square test.

## RESULTS

The results of the study revealed that the mean age of the respondents was 25.8 years with standard deviation of 7.7. Majority of them (76%) were females whereas 56.4% of the total respondents were married, 40% unmarried and 2.8% were divorced. 75.7% belonged to rural areas and 24.2% belonged to urban areas.

Selective serotonin reuptake inhibitors were the most commonly prescribed antidepressant. Fluoxetine was prescribed in 30%, escitalopram in 22.8%, paroxetine in 15%, sertraline in 12.1% and citalopram to 7.1% of depressed patients. Venlafaxine, an serotonin-nor epinephrine reuptake inhibitor was prescribed to 3.5% patients and tricyclic antidepressant in 9.2% of cases. Majority of depressed patients did not suffer from any co morbid condition. However, 7.1% suffered from co morbid diabetes mellitus, 9.2% from hypertension, and 10% from chronic heart diseases. Moreover, 5.7% of patients were pregnant and 7.8% of depressed patients were breast feeding their child. It was revealed from the study that choice of antidepressant had a significant relationship with co morbid physical condition. However, gender, area of residence and marital status has no significant relationship with the choice of antidepressant prescribed.

One of the factors that psychiatrists took into consideration while prescribing drugs was found to be cost of the medicine. In this study 9.2% of newly diagnosed cases were prescribed first generation antidepressant because they are more affordable and can be used in those individuals who can tolerate their side effects<sup>16</sup>. Another factor considered was side effect tolerability especially in older patients. Majority of patients above 65 years of age were prescribed second generation antidepressants i.e escitalopram and fluoxetine.

**Table 1: Types of antidepressants used**

Antidepressants Prescribed	Frequency	Percentage
Flouxetine	42	30
Paroxetine	21	15
Escitalopram	32	22.8
Sertraline	17	12.1
Citalopram	10	7.1
Venlafaxine	5	3.5
Prothiadine	13	9.2

**Table 2: Relationship of Illness Related Factors with the Choice of Antidepressants**

Respondents Fact sheet	Frequency	Percentage	Significance of Relationship with Choice of Antidepressants (Pearson Chi Square test)
<b>Gender</b>			0.359
Male	33	23.5	
Female	107	76.5	
<b>Residence</b>			0.607
Urban	34	24.2	
Rural	106	75.7	
<b>Marital Status</b>			0.882
Unmarried	56	40	
Married	79	56.4	
Divorced	4	2.8	
Separated	1	0.7	
<b>Co-morbidity</b>			0.001
Diabetes Mellitus	10	7.1	
Hypertension	27	19.2	
Chronic Heart Disease	14	10	
Pregnancy	8	5.7	
Lactation	11	7.8	

## DISCUSSION

In this study, majority (75.4%) of patients were prescribed selective serotonin reuptake inhibitors. Fluoxetine was prescribed in 30%, paroxetine in 15% and Escitalopram was used in 22.8% of cases. These findings are consistent with previous studies showing selective serotonin reuptake inhibitors to be the most

commonly prescribed antidepressants<sup>7,13</sup>. The main reason for this preference is that although first generation antidepressants (tricyclic antidepressants and monoamine oxidase inhibitors) are equal in efficacy to second generation antidepressants (selective serotonin reuptake inhibitors), they cause troublesome side effects. These include dryness of the mouth and eyes, urinary hesitancy, constipation and cardiac arrhythmias and erectile dysfunction. In addition, TCAs prove lethal when taken in overdose<sup>14,15,16</sup>. Even patients using SSRI experience side effects but they are better tolerated by the patient and are safer in over doses<sup>17</sup>.

Another factor considered was side effect tolerability especially in older patients. Majority of patients above 65 years of age were prescribed second generation antidepressants, escitalopram and fluoxetine. This finding is consistent with recommended guidelines. The main reason for this is that both escitalopram and fluoxetine were well tolerated by elderly patients with major depressive disorder<sup>18</sup>. Older adults often suffer from co morbid physical conditions and are more prone to suffer from medication side effects especially to first generation antidepressants<sup>19</sup>. Moreover, a higher risk for drug-drug interactions may cause them to terminate treatment prematurely. Therefore SSRI are treatment of choice due to better side effect tolerability and fewer drug interactions<sup>19,20</sup>.

In this study 5.7% of newly diagnosed cases were pregnant women often try to avoid or discontinue antidepressants during pregnancy and are 5 times as likely to relapse as compared to women who maintained their antidepressant treatment across pregnancy<sup>21,22,23,24,25</sup>. The expecting mothers were prescribed fluoxetine which is consistent with previous research<sup>21</sup> Although some studies have suggested association between use of selective serotonin reuptake inhibitor during pregnancy and various fetal abnormalities such as low birth weight, lower Apgar scores, anal atresia, hypospadias and cystic kidney<sup>22,23</sup>. However, other studies have also linked these outcomes to untreated maternal depression<sup>26,27,28,29</sup>. Thus, it has been difficult to determine a causal relationship between these abnormalities and antidepressant exposure during pregnancy<sup>28,29</sup>.

Similarly, 7.8% of the depressed women were breast feeding their children. These mothers prefer to avoid pharmacological treatment because of concerns regarding medication adverse effects in the nursing infants<sup>23,24,25</sup>. Studies have shown that these patients receive fewer prescriptions for psychotropic medications compared to non-breastfeeding women<sup>23,24</sup>. The high prevalence of untreated depression causes functional impairment in mothers, psychopathology in children and adversely impacts the mother-infant relationship<sup>26,27</sup>.

In this study majority of breast feeding women were prescribed paroxetine and sertraline. This finding is consistent with previous research which shows that sertraline and paroxetine can be used safely during

lactation and are not detectable in infant's serum while their mothers continued to use these medication<sup>28,29,30</sup>. In this study 7.1% depressed patients presented with co morbid diabetes mellitus. They were prescribed fluoxetine and sertraline which is consistent with recommended guidelines. Tricyclic antidepressants should be avoided as they increase craving and increase blood glucose level<sup>31</sup>.

In this study 10% of depressed patients suffered from co morbid chronic heart disease. They were prescribed sertraline which is in accordance with the NICE guidelines. Sertraline and citalopram have the lowest interaction potential<sup>32</sup>. Citalopram is associated with dose dependent QT prolongation and should be avoided in patients with QT Interval prolongation or congenital QT syndrome<sup>33,34</sup>.

## CONCLUSION

This study concludes that the choice of antidepressant in newly diagnosed cases of major depressive disorder is affected by factors such as side effect tolerability, old age pregnancy, lactation and co morbid physical illness such as heart disease, diabetes mellitus and hypertension.

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