Original Article

DOI: 10.7860/JCDR/2014/8661.4524

Pharmacotherapy of Bipolar Affective Disorder: A Hospital based Study from Sub Himalayan Valley of Nepal

Pharmacology Section

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ABSTRACT

Introduction: In Bipolar disorder the mood of the patients fluctuates between depression and mania. The main objective of the study was to find out the commonest mood stabilizers used for the treatment of Bipolar affective disorders in Western Nepal in hospitalized patients in an actual clinical set up.

Methods: This was a cross-sectional study which was conducted between October 2009 and September 2010 at Psychiatric ward at Manipal teaching hospital, Pokhara, Nepal, a tertiary care hospital situated in Western Nepal. The diagnosis of the disease was based on ICD-10 (Tenth revision) Classification of mental and Behavioural disorders, Diagnostic Criteria for Research. We calculated odds ratio and their 95% confidence intervals (95% CI). p< 0.05 was considered as statistically significant.

Results: 62.1% of the patients were less than 40 yrs, 56.3% were male, 72.4% were unemployed and 75.9% of the patients were having monthly income <10,000/month. As far as ethnicity is concerned 37.9% of the cases were Brahmin and by occupation 29.9% of the patients were students followed by housewife 25.3%, labour 17.2%, retired 13.8% respectively. Drugs and Psychotherapy [OR 1.4, 95% (CI 0.575, 3.4017)] was prescribed in age <40 years as compared to age>40 yrs. Male patients [OR 7.22, 95% (CI 0.862, 60.499)] and [OR 2.353, 95% (CI 0.857, 6.455)] received drugs by trade names and drugs not from the national drug list of Nepal as compared to females. Monthly income <10,000/month and [OR 2.8, 95% (CI 0.742, 10.56)] tendency of receiving drugs by trade names. Among the mood elevators Sodium valproate was the commonest drug to be prescribed in 51/87(58.6%) patients followed by Lithium in 30/87 (34.5%) cases and Carbamazepine in 6/87 (6.9%) cases. Sodium valproate was prescribed at 1,000 mg/day, Lithium was prescribed at 900 mg/day in and Carbamazepine was prescribed at 800 mg/day.

Conclusion: Among all the mood elevators Sodium valproate is the commonest drug prescribed for the treatment of bipolar affective disorder, recommended that there is a trend of using newer drugs like sodium valproate rather than the conventional mood stabilizers like Lithium for bipolar affective disorder in Western Development region of Nepal.

Keywords: Bipolar disorder, Depression, Mania, Mood stabilizers, Pharmacotherapy

INTRODUCTION

The prevalence of bipolar disorder over a lifetime is around 1% of the general population [1]. Nepalese population consists of a wide range of ethnic/tribal groups namely the Brahmin, Chettri, Gurung, Newar, Puns, Magar, Dalit [2]. Currently a large number of drugs are available for the treatment of bipolar affective disorder. Some of the psychiatrists prefer traditional therapy with Lithium. The therapeutic index of lithium is low and an acute intoxication may appear which may lead to death or a permanent disability. Renal toxicity is a common toxicity of Lithium, which is characterized by Chronic Tubulointerstitial Nephropathy and a substantial glomerular pathology [3-5]. Furthermore, mixed mania, rapid cycling type and bipolar disorder associated with substance abuse do not respond well to lithium therapy [1]. Antipsychotics can be used in acute and maintenance phases of treatment of Bipolar affective disorder [1]. Nowadays various modes of treatment have been developed for the treatment of bipolar disorder viz. antiepileptics like sodium valproate, carbamazepine, lamotrigine, gabapentin and topiramate, newer antipsychotics like clozapine, risperidone and olanzapine are used in the treatment for bipolar disorder and endorsed as a better alternative to Lithium because of less adverse effects and wider margin of safety [6].

The data related to mood stabilizers and bipolar affective disorder is lacking in western region in particular and Nepal in general. Banerjee et al. presented a paper on the treatment of unipolar major depression disorder in an International conference, ICRMSW 2013. This study is the first study regarding the drug utilization study of mood stabilizers in bipolar disorder in psychiatric inpatient from Nepal.

The objectives of the study were:

1. The commonest mood stabilizers used for the treatment of Bipolar affective disorders in Western Nepal in hospitalized patients in an actual clinical set up.

2. The Socio-demographic and economic condition of the psychiatric patients with bipolar affective disorders Western Nepal.

METHODS

Study design and the participants

This was a cross sectional study which was conducted at Manipal teaching hospital, Pokhara, Nepal, a tertiary care hospital situated in Western Nepal. It is a 750 bedded private hospital which is providing the health care facilities to Western development region from 1998 onwards [8] consists of three zones namely Dhaulagiri, Gandaki and Lumbini, 16 districts, 865 Village development committee, 12 municipalities, 21 district hospitals, 42 primary health centres, 145 health posts and 691 sub-health posts and comprises of a total population of 4,571,013 [9]. 50 beds were allotted for psychiatric inpatients. Prior to the study ethical committee approval was taken

Socio-demographic Factors (%)			p-value	95% CI
Age	More than40 yrs	33(37.9)	0.001†	[22.7, 49]
	Less than 40 yrs	54(62.1)		[51, 72.3]
Gender	Female	38(43.7)	0.094×	[33.1, 54.7]
	Male	49(56.3)		[45.3, 66.9]
Employment	Employed	24(27.6)	0.00001†	[18.5, 38.2]
	Unemployed	63(72.4)		[61.8, 81.5]
Monthly Income	>10000/month	21(24.1)	0.00001†	[15.6, 34.5]
	<10000/month	66(75.9)		
Ethnicity	Magar, Pun	3(3.4)		[0.7, 9.7]
	Others	6(6.9)		[2.6, 14.4]
	Chettri	6(6.9)		[2.6, 14.4]
	Gurung	6(6.9)		[2.6, 14.4]
	Dalit	15(17.2)		[10. 26.8]
	Newar	18(20.7)		[12.7, 30.7]
	Brahmin	33(37.9)		[27.7, 49]
Occupation	Others	3(3.4)		[0.7, 9.7]
	Jobholder	3(3.4)		[0.7, 9.7]
	shopkeeper	6(6.9)		[2.6, 14.4]
	Retired	12(13.8)		[7.3, 22.9]
	Labour	15(17.2)		[10, 26.8]
	Housewife	22(25.3)		[16.6, 35.7]
	Student	26(29.9)		[20.5, 40.6]

[Table/Fig-1]: Socio-demographic factors
†p<0.05, statistically significant., × p>0.05, statistically not significant., - p-value cannot calculate

from the institutional ethical committee, Manipal Teaching hospital, Nepal (IEC Letter no./Ref no. MEMG/NHRC/GA) and written informed consent was taken from the subjects.

Data collection

The study was carried out between October 2009 and September 2010 at Psychiatric ward in Manipal Teaching hospital. The collected data include socio-demographic details such as age, gender, occupation, ethnicity, employment, monthly income in NPR.

Inclusion criteria: A total number of 87 cases of critical nature admitted patients with bipolar affective disorder were included in the study. The diagnosis of the disease was based on ICD-10 (Tenth revision) Classification of mental and Behavioural disorders, Diagnostic Criteria for Research [10].

Exclusion criteria: All the outpatients were excluded as the research aims to study about the psychiatric patients with bipolar affective disorder who were critically ill for which hospitalization is required.

Sample size calculation: 95% confidence interval and, significance level α = 5%, P = 80%, Q = 20%, allowable error = 11%, required sample size was 79. P = percentage of sodium valproate used for the treatment of Bipolar Affective Disorder. In the pilot study done prior to the original study with 10 patients was admitted in the psychiatry ward with Bipolar Affective Disorder.

Data management and statistical analysis

The data collected was analysed using Excel 2003, R 2.8.0 Statistical Package for the Social Sciences (SPSS) for Windows Version 16.0 (SPSS Inc; Chicago, IL, USA) and EPI Info 3.5.1 Windows Version. Odds ratio and their 95% confidence intervals (95% CI) were calculated by logistic regression model. p< 0.05 was considered as statistically significant.

RESULTS

Age: Among 87 cases of bipolar affective disorder 62.1% of the patients were less than 40 yrs.

Gender: 56.3% were male and 43.7 % were females.

Employment and Monthly Income: 72.4% were unemployed and 75.9% of the patients were having monthly income <10,000/ month.

Caste and occupation: Most of the patients were Brahmin 37.9% and by occupation 29.9% of the patients were students followed by housewife [Table/Fig-1].

Bipolar disorder and treatment

Drugs with trade names were prescribed in 72.4% cases, drugs not from National list of Nepal were prescribed in 89.7% cases. Drugs along with psychotherapy were given in 58.6% cases [Table/Fig-2]. A Combination of mood stabilizers and antipsychotics were used in 51.7% subjects [Table/Fig-3]. The most common drugs that were given were Sodium valproate along with Risperidone in 24.1% cases [Table/Fig-4]. Among the mood stabilizers Sodium valproate was the commonest drug to be prescribed 58.6% [Table/Fig-5]. Sodium valproate was prescribed at 1000 mg/day in 62.7% cases [Table/Fig-6]. Male patients {OR 2.353(95% CI 0.857, 6.455)} received drugs by trade names as compared to females. Employed patient had received drugs by trade names [OR 1.92, 95% (CI 0.7, 5.269)] as compared to unemployed patients [Table/Fig-7].

DISCUSSION

Socio-demographic factors and Bipolar Disorder

According to our study, in Bipolar affective disorder most of the patients were <40 yrs and male subjects. Similar finding was found in a study from Kathmandu, Nepal which has revealed that psychiatric disorders are more prominent in younger age group [11]. Most of the subjects were unemployed and 75.9% of the patients were having monthly income <10000/month. Similar findings were reported by Trivedi JK et al., in India which has reported that bipolar disorder is common at 21-40 years and it involves the economically productive sections of the society [12]. This may be due to fact that initial signs of psychiatric disorders occur in psychosocial stressors and are relatively dominant in the younger age group. A study conducted by Risal A in Nepal revealed that low socio-economic status of people is associated with a higher prevalence of psychiatric disorders [13]. This finding is parallel to the outcome of study done in Sweden by Lessen E et al., as the data showed that utilization of psychotropic drugs were more among individuals with low income [14]. As per the occupation of subjects are concerned bipolar affective disorder was common in students followed by housewife. Similar findings were reported by Banerjee et al., in Nepal and Fahmida A et al., in Bangladesh which also showed that psychiatric disorders are common in housewives and students [15-17]. This could be due to the stressful life pattern and the effects resulted due to child birth which may lead to various psychiatric disorders among housewives. However, among students, some causes of high prevalence psychiatric disorders could be due to stressful life and inability to cope up with their studies [18].

Bipolar disorder and treatment

Most of the drugs were prescribed by Trade names. Drugs by Generic name were prescribed in 27.6% of the subjects only. It was also reported that drugs were prescribed more commonly by trade names in Nepal [13-16]. Evidence based research also has elucidated that by promoting the use of drugs by trade name will increase the cost of the therapy where other generic alternatives are available [19-23]. In a study conducted by Patel V concluded that most of people from low- and middle-income countries with mental diseases do not receive evidence-based care, leading to chronicity and increased costs of care of treatment [24].

Types of drugs

Poly pharmacy is commonly practiced in the management of bipolar affective disorder [25]. A Combination of mood stabilizers and antipsychotics was the mainstay of treatment in this study. The

Socio-demographic factors		Generic /trade (n=87)		Essential drugs/nonessential drugs (n=87)		Type of therapy (n=87)	
		Generic n=24 (27.6)	Trade n= 63 (72.4)%	Non-essential drugs n=78 (89.7)%	Essential drugs n=9 (10.3)%	Drugs and psychotherapy n=51 (58. 6)%	Drug monotherapy n=36 (41.4)%
Age	Less than 40 yrs	12(50)	42(66.7)	48(61.5)	6(66.7)	30(58.8)	24(66.7)
	More than40 yrs	12(50)	21(33.3)	30(38.5)	3(33.3)	21(41.2)	12(33.3)
	p-value	0.119×		0.764×		0.458×	
Gender	Female	7(29.2)	31(49.2)	37(47.4)	1(11.1)	18(35.3)	20(55.6)
	Male	17(70.8)	32(50.8)	41(52.6)	8(88.9)	33(64.7)	16(44.4)
	p-value	0.07†		0.037†		0.06†	
Employment	Employed	9(37.5)	15(23.8)	18(23.1)	6(66.7)	15(29.4)	9(25)
	Unemployed	15(62.5)	48(76.2)	60(76.9)	3(33.3)	36(70.6)	27(75)
	p-value	0.157×		0.006†		0.65×	
Monthly income	>10000/month	3(12.5)	18(28.6)	21(26.9)	0(0)	21(41.2)	0(0)
	<10000/month	21(87.5)	45(71.4)	57(73.1)	9(100)	30(58.8)	36(100)
	p-value	0.096×		0.074×		0.000†	
Ethnicity	Magar, Pun	0(0)	3(4.8)	3(3.8)	0(0)	0(0)	3(8.3)
	Others	0(0)	6(9.5)	6(7.7)	0(0)	6(11.8)	0(0)
	Chettri	0(0)	6(9.5)	6(7.7)	0(0)	3(5.9)	3(8.3)
	Gurung	0(0)	6(9.5)	3(3.8)	3(33.3)	6(11.8)	0(0)
	Dalit	0(0)	15(23.8)	15(19.2)	0(0)	12(23.5)	3(8.3)
	Newar	15(62.5)	3(4.8)	18(23.1)	0(0)	12(23.5)	6(16.7)
	Brahmin	9(37.5)	24(38.1)	27(34.6)	6(66.7)	12(23.5)	21(58.3)
	p-value	0.000†		0.006†		0.001†	
Occupation	Others	0(0)	3(4.8)	3(3.8)	0(0)	0(0)	3(8.3)
	Job holder	3(12.5)	0(0)	0(0)	3(33.3)	3(5.9)	0(0)
	shopkeeper	3(12.5)	3(4.8)	6(7.7)	0(0)	0(0)	6(16.7)
	Retired	3(12.5)	9(14.3)	12(15.4)	0(0)	12(23.5)	0(0)
	Labour	3(12.5)	12(19)	12(15.4)	3(33.3)	12(23.5)	3(8.3)
	Housewife	0(0)	22(34.9)	21(26.9)	1(11.1)	7(13.7)	15(41.7)
	Students	12(50)	14(22.2)	24(30.8)	2(22.2)	17(33.3)	9(25)
	p-value	0.001†		0.000†		0.000†	

[Table/Fig-2]: Generic/Trade, essential drugs/non-essential drugs and type of therapy
Non-essential drugs n=78(89.7)%

most common drugs that were prescribed were Sodium valproate along with Risperidone followed by Lithium and Risperidone combination. It is evident from a study done by Goodwin G et al., that antipsychotics show better response in acute mania when added to lithium or valproate for patients showing no or a partial response to lithium or valproate alone [26]. Combination of drugs is commonly preferred because monotherapy with conventional agents often fails. Studies from United States and Europe indicate polypharmacy is the rule rather than the exception in bipolar affective disorder [27]. Further studies are required to prove the advantages in efficacy of combination therapy over monotherapy. Clinicians should consider the basic principles drug interactions, side effects, pharmacodynamics, and pharmacokinetics property of drugs when prescribing two or more medications concurrently [28].

There are alot of evidences which shows that lithium is the only true mood stabilizer, with published studies proving its efficacy in all phases of bipolar treatment but is also evident that on long term therapy with Lithium it can lead to depressive episodes [1] whereas in our study Sodium valproate ranked the first choice of drugs by the psychiatrists followed by Lithium and Carbamazepine. A study conducted by Vacheron-Trystram MN et al., at France depicts that Sodium valproate and Carbamazepine can be used in all phases of Bipolar affective disorder viz. acute treatment of mania and maintenance therapy and carbamazepine has been indicated for acute mania in many countries across the world [1]. In this study Sodium valproate was prescribed at 1000 mg/day, Lithium was prescribed at 900 mg/day and Carbamazepine was prescribed at 800 mg/day. This finding is quiet similar to the finding of a study done at Lucknow, India where drugs were prescribed in similar doses [12].

Limitation of the study and future research

A multi centric hospital based research having bigger sample size would be beneficial to assess the drug utilization pattern of mood stabilizers in bipolar affective disorder in Nepal.

CONCLUSION

Sodium valproate was found to be the commonest drug prescribed for the treatment of bipolar affective disorder, recommended that there is a trend of using newer drugs rather than the conventional mood stabilizers like Lithium for bipolar affective disorder. This is further complicated by poverty, unemployment, shortage of family income leading to high prevalence of psychiatric illness like bipolar affective disorder among Nepalese population. Interventions should target to address these factors to minimize the load of bipolar affective disorder in Nepal.

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Socio-demographic factors		Mood Stabilizers and Antipsychotics n=45 (51.7)%	Mood Stabilizers n=30 (34.5)%	Mood Stabilizers and anti-depressants n=6(6.9)%	Mood Stabilizers, anti-depressants and Antipsychotics n=6(6.9)%
Age	Less than 40 yrs	30(66.7)	21(70)	0(0)	3(50)
	More than40 yrs	15(33.3)	9(30)	6(100)	3(50)
	p-value	0.01†			
Gender	Female	18(40)	18(60)	2(33.3)	0(0)
	Male	27(60)	12(40)	4(66.7)	6(100)
	p-value	0.038†			
Employment	Employed	15(33.3)	6(20)	0(0)	3(50)
	Unemployed	30(66.7)	24(80)	6(100)	3(50)
	p-value	0.145×			
Monthly income	>10000/month	15(33.3)	6(20)	0(0)	0(0)
	<10000/month	30(66.7)	24(80)	6(100)	6(100)
	p-value	0.103×			
Ethnicity	Magar, Pun	3(6.7)	0(0)	0(0)	0(0)
	Others	6(13.3)	0(0)	0(0)	0(0)
	Chettri	0(0)	0(0)	0(0)	6(100)
	Gurung	3(6.7)	3(10)	0(0)	0(0)
	Dalit	9(20)	6(20)	0(0)	0(0)
	Newar	12(26.7)	3(10)	3(50)	0(0)
	Brahmin	12(26.7)	18(60)	3(50)	0(0)
	p-value	<0.001†			
Occupation	Others	0(0)	3(10)	0(0)	0(0)
	Job holder	0(0)	3(10)	0(0)	0(0)
	shopkeeper	6(13.3)	0(0)	0(0)	0(0)
	Retired	6(13.5)	6(20)	0(0)	0(0)
	Labour	9(20)	3(10)	0(0)	3(50)
	Housewife	15(33.3)	7(23.3)	6(100)	0(0)
	Students	9(10.3)	8(26.7)	0(0)	0(0)
	p-value	0.001†			

[Table/Fig-3]: Types of drugs
†p<0.05, statistically significant., × p>0.05, statistically not significant., - p-value cannot calculate

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Sociodemographic factors		Sodium Valproate and Risperidone n= 21 (24.1)%	Lithium and Resperidone n= 18 (20.7)%	Sodium Valproate n= 15 (17.2)%	Lithium n= 9 (10.3)%	Carbama-zepine n= 6 (6.9)%	Sodium Valproate and fluoxetine n= 6 (6.9)%	Sodium Valproate, Resperidone and fluoxetine n= 6 (6.9)%	Lithium and Olanzapine n= 3 (3.4)	Sodium Valproate and Olanzapine n= 3 (3.4)
Age	Less than 40 yrs	15(71.4)	12(66.7)	9(60)	6(66.7)	6(100)	0(0)	3(50)	3(100)	0(0)
	More than40 yrs	6(28.6)	6(33.3)	6(40)	3(33.3)	0(0)	6(100)	3(50)	0(0)	3(100)
	p-value	0.006†								
Gender	Female	12(57.1)	3(16.7)	14(93.3)	1(11.1)	3(50)	2(33.3)	0(0)	0(0)	3(100)
	Male	9(42.9)	15(83.3)	1(1.1)	8(88.9)	3(50)	4(66.7)	6(100)	3(100)	0(0)
	p-value	0.000								
Employment	Employed	6 (28.6)	9(50)	0(0)	6(66.7)	0(0)	0(0)	3(50)	0(0)	0(0)
	Unemployed	15(71.4)	9(50)	15(100)	3(33.3)	6(100)	6(100)	3(50)	3(100)	3(100)
	p-value	0.001†								
Monthly income	>10000/month	9(42.9)	6(33.3)	6(40)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	<10000/month	12(57.1)	12(66.7)	9(60)	9(100)	6(100)	6(100)	6(100)	3(100)	3(100)
	p-value	0.026†								
Ethnicity	Magar, Pun	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	3(100)
	Others	3(14.3)	3(16.7)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	Chettri	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	6(100)	0(0)	0(0)
	Gurung	0(0)	3(16.7)	0(0)	3(33.3)	0(0)	0(0)	0(0)	0(0)	0(0)
	Dalit	6(28.6)	3(16.7)	6(40)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	Newar	0(0)	9(50)	0(0)	0(0)	3(50)	3(50)	0(0)	3(100)	0(0)
	Brahmin	12(57.1)	0(0)	9(60)	6(66.7)	3(50)	3(50)	0(0)	0(0)	0(0)
	p-value	0.000†								
Occupation	Others	0(0)	0(0)	3(20)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	Job holder	0(0)	0(0)	0(0)	3(33.3)	0(0)	0(0)	0(0)	0(0)	0(0)
	shopkeeper	0(0)	6(33.3)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	Retired	0(0)	3(16.7)	3(20)	0(0)	3(50)	0(0)	0(0)	3(100)	0(0)
	Labour	6(28.6)	3(16.7)	0(0)	3(33.3)	0(0)	0(0)	3(50)	0(0)	0(0)
	Housewife	12(57.1)	0(0)	3(20)	1(11.1)	3(50)	0(0)	0(0)	0(0)	3(100)
	Students	3(14.3)	6(33.3)	6(40)	2(22.2)	0(0)	6(100)	3(50)	0(0)	0(0)
	p-value	0.000†								

[Table/Fig-4]: Treatment
†p<0.05, statistically significant., × p>0.05, statistically not significant., - p-value cannot calculate

Socio-demographic factors		Sodium Valproate n= 51 (58.6)%	Lithium n=30(34.5)%	Carbama-zepine n= 6 (6.9)%
Age	Less than 40 yrs	27(52.9)	21(70)	6(100)
	More than40 yrs	24(47.1)	9(30)	0(0)
	p-value	0.043†		
Gender	Female	31(60.8)	4(13.3)	3(50)
	Male	20(39.2)	26(86.7)	3(50)
	p-value	0.000†		
Employment	Employed	9(17.6)	15(50)	0(0)
	Unemployed	42(82.4)	15(50)	6(100)
	p-value	0.002†		
Monthly income	>10000/month	15(29.4)	6(20)	0(0)
	<10000/month	36(70.6)	24(80)	6(100)
	p-value	0.227×		
Ethnicity	Magar, Pun	3(5.9)	0(0)	0(0)
	Others	3(5.9)	3(10)	0(0)
	Chettri	6(11.8)	0(0)	0(0)
	Gurung	0(0)	6(20)	0(0)
	Dalit	12(23.5)	3(10)	0(0)
	Newar	3(5.9)	12(40)	3(50)
	Brahmin	24(47.1)	6(20)	3(50)
	p-value	0.000†		
Occupation	Others	3(5.9)	0(0)	0(0)
	Job holder	0(0)	3(10)	0(0)
	shopkeeper	0(0)	6(20)	0(0)
	Retired	3(5.9)	6(20)	3(50)
	Labour	9(17.6)	6(20)	0(0)
	Housewife	18(35.3)	1(3.3)	3(50)
	Students	18(35.3)	8(26.7)	0(0)
	p-value	0.000†		

[Table/Fig-5]: Mood stabilizers
p<0.05, statistically significant., × p>0.05, statistically not significant

Drugs		Dose of Drugs/ day
Sodium Valproate n= 51	500 mg/day	2(3.9)
	600 mg/day	17(33.3)
	1000 mg/ day	32(62.7)
	1200 mg/day	0(0)
Lithium n=30	600 mg/day	1(3.3)
	900mg/day	25(83.3)
	1200 mg/ day	4(13.3)
Carbamazepine n= 6	400 mg/day	1(16.7)
	600 mg/day	1(16.7)
	800 mg/day	4(66.7)

[Table/Fig-6]: Doses

Socio-demographic Factors		Drugs and Psychotherapy	Non-essential Drug	Trade
		Odds Ratio (Confidence Interval)		
Age	More than40 yrs	1	1	1
	Less than 40 yrs	1.4(0.575, 3.407) ×	1.25(0.291, 5.377)×	0.5(0.192, 1.301)×
Gender	Female	1	1	1
	Male	0.436(0.18 2, 1.045) ×	7.22(0.862, 60.499) ×	2.353(0.857, 6.455)×
Employment	Unemployed	1	1	1
	Employed	0.8(0.305, 2.101) ×	6.667(1.514, 29.363)†	1.92(0.7, 5.269) ×
Monthly Income	>10000/ month	1	1	1
		-	-	2.8(0.742, 10.56)×

[Table/Fig-7]: Logistic regression table
p<0.05, statistically significant., × p>0.05, statistically not significant - p-value cannot calculate

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FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Jan 26, 2014**
Date of Peer Review: **Apr 28, 2014**
Date of Acceptance: **May 06, 2014**
Date of Publishing: **Jun 20, 2014**