The Global Assessment Function comparison in bipolar patients at Mania episode and mixed episode and analysing the relationship between the anxiety and depression rate of these two groups of patients

Parisa Divsalar MD[1], Faeze Shafiei Darbasiabi MSc[2], Amir Nasehzadeh MSc[3], Kouros Divsalar MSc[4], Elham DehyadegaryPh.D [5]

1.Neurology Research Center, Kerman University of Medical Sciences, Kerman, Iran. Pasteur hospital, Bam University of Medical Sciences, Bam, Iran.
2.Neurology Research Center, Kerman University of Medical Sciences, Kerman, Iran.
3.Research Center for Tropical and Infectious Diseases, Kerman University of Medical Sciences, Kerman, Iran.
4.Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran.
5.Physiology Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran.
Corresponding Author: Kouros Divsalar, Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, Kerman, Iran.
Address: Postal Code: 7619813159, Neuroscience Research Center, Institute of Neuropharmacology, Kerman University of Medical Sciences, EbneSina Street, Jahad Blvd. Tel: 0341-2264180, Fax: 0341-2264198, Email: Kouros_Divsalar@yahoo.com

ABSTRACT: To compare two samples of Bipolar patients presenting in mixed and manic episodes to assess their difference in terms of anxiety, depression and functioning. The sample included 94 patients who were admitted to the Shahid Beheshti mental hospital of Kerman Iran during autumn, winter (2007) and spring (2008) and were firmly diagnosed suffering from bipolar disorder type-I based on DSM-IV framework. Then they were grouped under the two category of manic episode (48 Patients) and mixed episode (46 Patients).All patients were evaluated by the Hamilton's Rating Scale for Depression (HRSD) and the Hamilton's Anxiety Rating Scale (HARS). The patients' functionality was rated during their illness and for the period of 6 months prior to their admittance using "Global Assessment of Functioning" (GAF) scoring system. The average of both Hamilton's Depression and Anxiety rates in bipolar mixed patients were significantly higher than manic patients. The patient's functionality rate at the time of admission was reduced noticeably for both groups but the functionality between both groups while they were admitted to the hospital did not show a significant difference. Mixed patients may suffer from anxiety and depression more than manic ones, but both of these groups have impaired functionality.
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Introduction

Mood disorders are a wide group of disorders characterized by a loss of the sense of control and a subjective experience of a great distress. Patients experiencing both depression and manic episodes or patients experiencing manic episodes alone, are described as Bipolar disorder. Bipolar disorder is a recurring illness in psychiatry and often occurs in a periodical pattern **(1)**.

Recent studies in the USA, indicates high prevalence of both anxiety and substance abuse comorbidity in bipolar disorder patients. The hasty start of the illness, larger amount of Prior-year depressive episodes, higher rate of disability and lower mental and physical functionality reported by patients correlates with their anxiety **(2)**.

A review research analyzed the coexistence of other Psychiatrics Axis 1 disorders with bipolar disorder and concluded that, this comorbidity is often associated with earlier onset, more severe symptoms, lesser medicine

compliance and worth outcomes related to suicide and other complications **(3)**.

The presence of anxiety among bipolar patients is associated with earlier age onset that causes severe mixed episodes with inconsistency in symptoms, Severe Depressive symptoms, Greater number of medical illnesses, increase the risk of suicidal attempts, further functional impairment, lower life quality and worse outcome of the illness **(4-10)**.

The effective treatment of anxiety could reduce the severity of bipolar disorders and cause further improvement to treatment response and reduction in the risk of suicidal attempt **(5, 11)**.

Bipolar Patients in general show inferior cognitive performance than healthy controls **(12)**. A number of studies demonstrate that bipolar disorder often leads to occupational and social impairment. Reduction of functioning in bipolar patients in maintenance phase of their treatment is not only due to their specific disorder,

but also as the result of comorbidity with other illnesses **(13)**.

Bipolar mixed states lingers a classification quandary in mental health remedial scholarly, while the consequence of mixed states are generally worse than that of Manic or depressive episode, this area were an abandoned area of diagnostic defy **(14)**.

A publication research concluded that in Iran there has never been any study related to the anxiety and depression comorbidity of different level of bipolar patients, furthermore, there has never been a six month review analysis of these patients.

This research, intends to compare the comorbidity rate of anxiety and depression in bipolar patients admitted in Shahid Beheshti Hospital of Kerman and their functionality in both mixed and classic manic state.

Research Method

This research is carried out using Segment-Analysis method. The study group includes all bipolar patients who were admitted in The Shahid Beheshti Mental hospital of Kerman Medical School during autumn 2007, winter and spring 2008.

After history and physical examination, the patients whom were declared bipolar disorder in interview by two Psychiatrists –using DSM[*] IV method- were placed in two different groups **(15)**.

The first group of patients was in manic episode and the second group was in mixed episode. Any patients with any sign of depression and/or with any clinical doubt were discounted from the study.

Afterward, the patients were evaluated for depression and anxiety using The Hamilton's Rating scale for Depression (HRSD) and Hamilton's Anxiety Rating scale (HARS) tests, in addition their functionality was rated using the Global Assessment of Functioning DSM IV axis V during their illness and for the period of 6 months prior to their episode.

These two Hamilton's quantifying scales are designed in a way that enables the assessor to rank the anxiety and depression rate of a patient after clinical observations.

The Hamilton's Rating scale for depression is a scale of 24 factors with the validity of 65% and 66% and reliability 89% **(16-18)** and the Hamilton's Anxiety Rating Scale consists of 14 factors and the validity of 75% and reliability of 85% is reported **(18, 19)**.

Every question of HRSD and HARS was counted up as an indicator, and for every indicator a comparison was contacted between both groups. Every indicator is ranked in the scale of 0-2 or 0-4.

In term of frequency report, for every indicator total frequency of replies excluding zero were considered and the sum of all rating replies is used to calculate the grade of HRSD and HARS.

The Global Assessment of functioning (GAF) on the basis of DSMIV axis V moderates the general Level of functioning within a specific time period. (I.e. The patients' level of functioning at the time of assessment or the highest level of functioning during few months up to a year).

The functioning is considered as a blend of 3 bases of Social, Occupational and Psychological grounds. This scale is graded in 0-100 and the highest score of 100 indicates the highest level of functioning in all of the grounds.

At the late stage of the experiment, T Test, MANOVA, ANCOVA and Pearson Correlation Coefficient is used to analyze the data.

Results

From the total of 94 patients suffering from bipolar disorder 48 had manic episodes and 46 had mixed episode. 53.2 % (50) were male and 46.8 %(44) were female. The average age was (32.1 ±11.3) year.

The Demography characteristics of both groups have no meaningful differences (As illustrated in Table 1).

There was a significant difference($P<0.01$) between the average Hamilton Rate of Depression in manic group (23.9±6.9) and mixed group (34.9±8.5), besides the average Hamilton Anxiety rate in mixed group(22.3±7.9) was considerably higher than manic group (14.7±7.1). (Figure 2)

The patients' functionality at the time of admission and 6 months prior- admission did not have a significant difference; however the Wilcoxon test shows considerable difference in both of these groups functionality at the above timelines whereas the functionality at the time of admission in both manic and mixed groups was reduced significantly($P<0.001$).

Variance linear analysis model was used In order to collate Hamilton Rate of anxiety and Hamilton Rate of Depression with the patients' functionality. Further studies show in spite of collating the anxiety and depression rankings there is not a significant difference between two groups (Table 2).

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[*] The Diagnostic and Statistical Manual of Mental Disorders (DSM) is published by the American Psychiatric Association and provides diagnostic criteria for mental disorders. The DSM-IV is a categorical classification system and is a is a registered trademark belonging to the American Psychiatric Association.

Table 1: Demographic specification of patients participants in research

Variable	Diagnostic Group	Mania episode	Mixed episode	P Value
Gender	Male	29	21	$X^2 = 2.057$
	Female	19	25	P* = 0.152
Age (Mean ± SD)		31.7±10.9	32.6±11.9	T = 0.364 P = 0.716
Occupation	Housewife	8	18	
	Military	1	0	
	Civil servant	3	3	$X^2 = 8.188$
	Labour	14	10	
	Unemployed	20	15	P = 0.146
	Student	2	0	
Marital Status	Single	24	19	
	Married	22	21	$X^2 = 3.764$
	Widowed	2	3	P = 0.288
	Divorced	0	3	
Smoker	No	25	29	$X^2 = 1.154$
	Yes	23	17	P* = 0.304
Addiction	No	30	35	$X^2 = 2.033$
	Yes	18	11	P* = 0.184
Education	Illitrate	4	9	
	Primary School	14	10	U = 931.5
	Middle and High School	28	26	$P^a = 0.188$
	Higher Education	2	1	

* Fisher's exact test   [a] Mann-Whitney test

Table 2: Multi value analysis and the correspondence of depression and anxiety on the patients' functionality

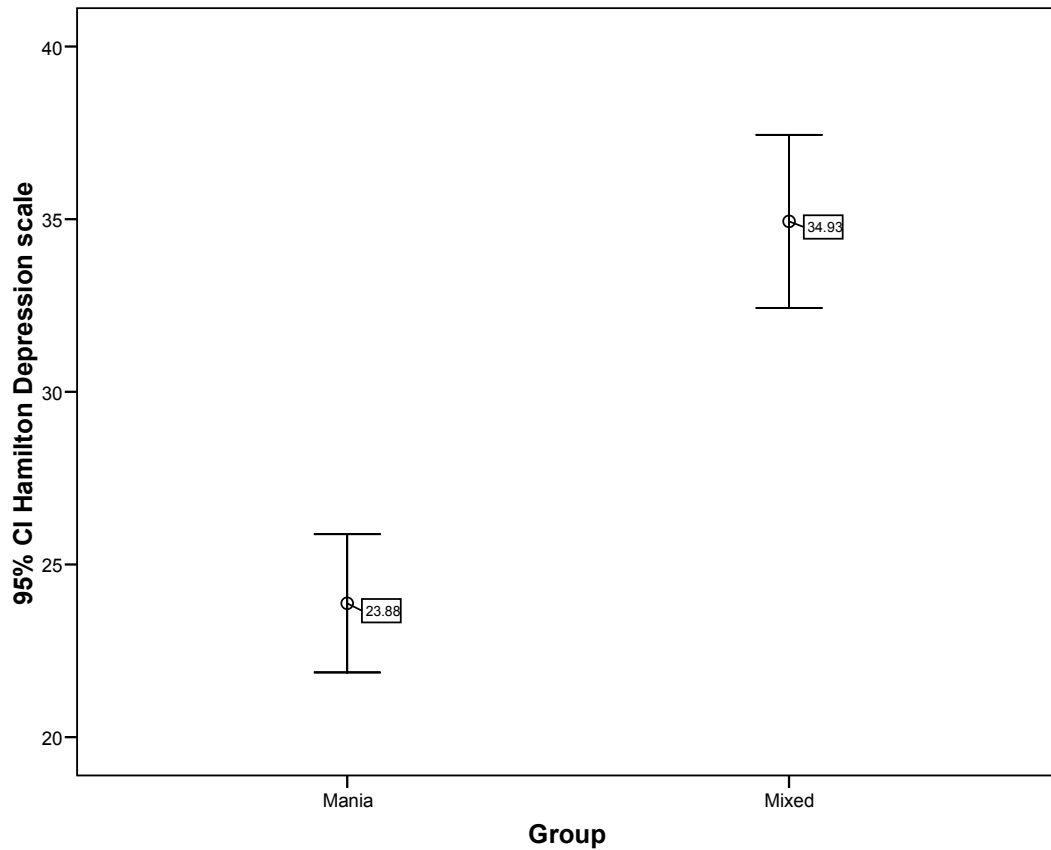|	F	P Value
Groups Comparison	0.626	0.431

$r^2 = 0.074$

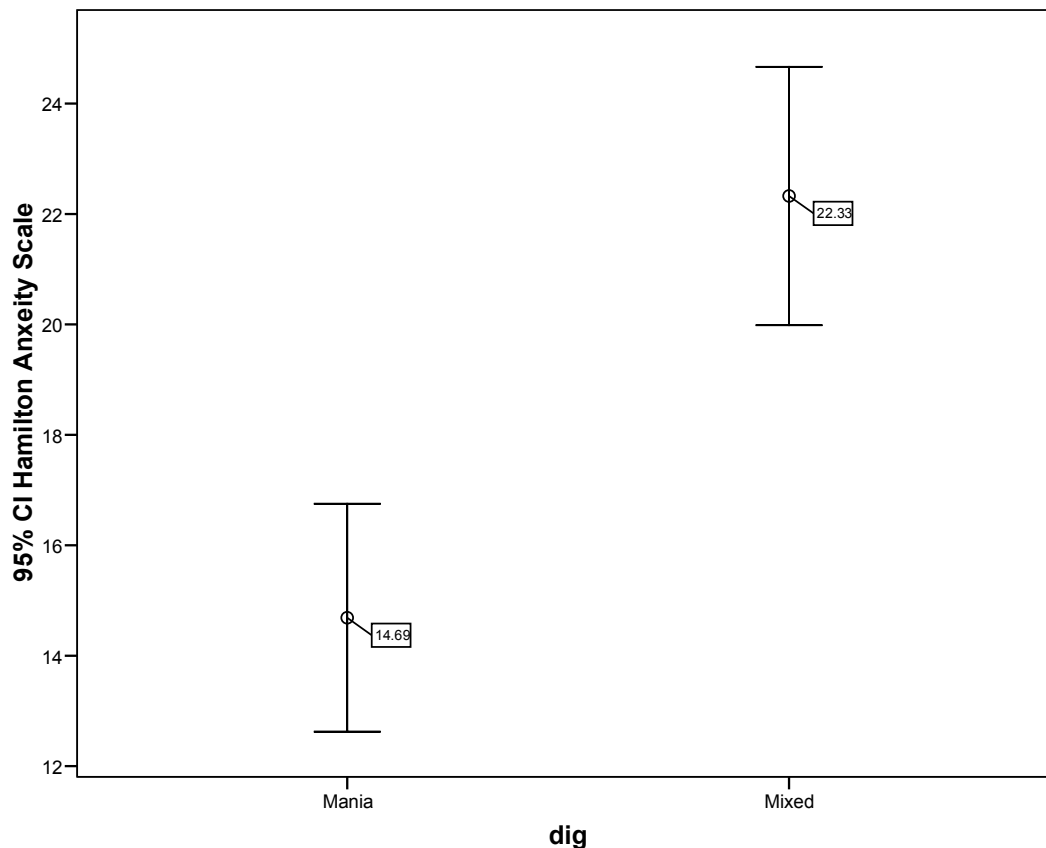**Figure 1:** the average of HRSD in Manic and mixed group (P<0.001)

Figure 2: The average of HRSA in Manic and mixed group (P<0.001)

Discussions

Patients with mixed episode who were admitted during this research were mainly female (57%) and that is in line with the Goldberg et al. research of the mixed states that reported more prevalence in women **(20)**. Most of the patients were single, Jobless with the Middle or High school educational background.

Meanwhile substance and tobacco abuse was evaluated in this research where from the total of 94 bipolar patients, 29 person (31 %) had substance abuse except smoking cigarette; 18 with manic and 11 with mixed episodes. 40 person (42 %) were smoking cigarette where 23 with Manic and 17 with mixed episodes. This research also shows similar results that found by Goldberg et al. **(20)**, Keller **(4)** and Hirshfield, Vornik **(21)**.

According to this research, the average Hamilton rate of Depression and anxiety in two groups of manic and mixed patients had significant difference and this result is harmonized with most studies in this field **(4-10)**.

The comorbidity of anxiety in mixed disorder patients often results in incorrect diagnosis of either anxiety or personality disorder **(22)**. The highest comorbidities in bipolar disorder patients are anxiety and substance abuse that causes difficulty in diagnosis hence treatment and poor prognosis of these patients **(9)**.

The Mixed episodes coincide significantly with anxiety and extended depressive episodes, hence early diagnosis and treatment of these comorbidities encompass the highest importance **(5)**.

The functionality of bipolar patients in both Manic and mixed states during their admittance was significantly diminished in compare of their prior 6 months and that corresponded to Aydemir et al. research results **(23)**. Bipolar episode happens together with both debility and significant functionality impairment in adults, and symptom reduction, results in a significant improvement of their functionality **(24)**.

Regardless of the considerable difference of depression and anxiety between mixed and manic groups, the functionality of patients within both groups did not have any significant difference. In some studies the bipolar I and II disorders were compared and the functionality impairment was increased when the depression and mania symptoms were increased and that

demonstrates the high level of functionality impairment in bipolar patients **(25, 26)**.

Some researchers reported of an increase in comorbidity and its connection to the impairment of functionality, and this research also proves that anxiety and depression lead to functional impairment **(13)**.

Plausibly we expect that the mixed patients with higher rate of comorbidity, have higher rate of functional impairment, besides Mania episode could also act as an effective mediator of functionality impairment although the intensity of Mania scales are not measured at this study.

The result shows in spite of a non-significant difference rate in Global functionality of both group of patients, each group of patients show a higher rate of certain impairments due to their moods and comorbidities. As an example, functionality impairment in manic patients is due to excessive temper, delusion and hallucination, and in mixed patients is due to anxiety and depression.

Bipolar mixed states remain as a neglected subject in mental health research with a diagnostic challenge and nosologic issue, while the consequences of mixed states are normally worse than mania and depression **(14)**. The variety of mood states in patients with bipolar disorder creates ambiguity and uncertainty in diagnosis and treatment strategies **(27)**. The Mixed bipolar diagnosis in DSM IV and ICD 10 has limited descriptions and the research on patients leads to a further comprehension of this disorder in mixed state and helps to understand the coincide signs. In major cases anxiety is a sign related to the mixed states and it has to be considered from this point of view, there still remain the boundaries to distinguish the mixed states of mania and depression **(28)**.

Limitations of this research was that the mania rating scales was not conducted and that could have a serious affect on reducing the patients functionality. It is also plausible that the lack of significant difference in functionality decrease between the two patient groups is as the result of the excessive mania states in manic group and the anxiety and depressive symptoms in the mixed group.

Since it is more likely that patients with severe mania episodes receive the treatment quicker than the patients with mixed episodes and have less diagnostic perplexity, which stipulates despite functionality impairment during the mania episodes is severe and serious but in mixed episodes has the more lengthy functionality disorder.

It is recommended that the global functionality of patients is monitored and analyzed for a longer duration antrospectively.

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