Study of subtypes of mixed mania according to Kraeplin's classification in Razi Hospital

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A B S T R A C T

Bipolar disorder is a common debilitating mental and disorder. According to a study conducted by the World Health Organization, bipolar disorder stands at fifth position among all diseases regarding disease burden. This study aimed to investigate if mixed mania, has different clinical manifestations and if the duration of the disorder, suicidal thoughts and the level of functioning for the mixed type differs from other forms of the disorder. In this cross sectional study 120 male and female patients with mixed mania episode were selected and using Young Mania rating scale, Hamilton Depression Scale, Raven IQ test for adults, and scale to assess the level of overall functioning were studied. The obtained data were analyzed using frequency statistics, ANOVA and chi-square test in SPSS 19. According to the results, the frequency of different types of mixed mania according to Kraeplin differs among the target population and no statically significant relationship was found between the severity of mania, severity of depression, the overall functioning and participants IQ. There was also no significant relationship between duration of subgroups of mixed mania and self-mutilation but there was a significant relationship between psychotic symptoms and the number of suicide attempts. It seems that DSM-IV-TR diagnosis of mixed mania is proper and valid which is clinically appropriate and cost-effective. Despite the existence of Kraeplin subgroups, there is no significant relationship between the severity of mania and depression, regarding mood, behavior and thought, making it unnecessary to separate them into currently existing subgroups.

Introduction

Bipolar disorder is a common disabling mental condition (1). According to the study by the World Health Organization, in terms of illness load the bipolar disorder is the fifth disorder among all of the known diseases (2). Treatment of this disorder and long-term stabilization of the mood of patients are difficult due to the lack of cooperation by patients, repetitive

reoccurrences, different improvements and the mixed state (3).

This illness demonstrates as manic attacks, depression or mixed episodes. The mixed episode is among the severe forms of the illness and is relatively common. Therefore, about 50% of the patients experience the mixed state during their life (4).The mixed form of bipolar disorder is hard to treat (2) because the risk of suicide is high in such patients and it starts at low ages. Moreover, this form of bipolarity lasts longer and the history of depression in the patient and the patients' family is profound. In addition, alcohol abuse is highly prevalent in this group and they lack adequate pre-awareness about the treatments (5).

According to the DSM-IV-TR criteria and sequence these patients meet the diagnostic criteria for major depressive disorder and manic attack (6).

However, it seems that this definition requires revision to have a more precise description of the patient's condition and study and to be able to determine the patient's treatment needs with more precision (7). For example, sometimes important symptoms such as anxiety are neglected (8).

Some of the studies have revealed the spectrum state of this disorder. Moreover, among patients who suffer from mixed mania according to the definition, there are non-similar and non-homogenous cases that demonstrate various dominant symptoms (9).

For instance, in some studies such patients respond better to valproic acid than lithium (2) whereas in some other studies no such findings were obtained (10). Sometimes the patients need mixed treatments (2) and

sometimes antipsychotic drugs are more effective (11).

Moreover, the mixed state is not always easy to diagnose. This form of bipolar disorder is studied less and there is little information about its treatment. The dysphonic type of this disorder is usually discussed in psychiatric textbooks and other types are overlooked.

In 1921, Emil Kraepelin described the mixed stated in details. He studied three dimensions of the disease, namely mood, behavior and thinking, and introduced six types of the disease based on the potential of each dimension for mania or depression.

If the aforementioned three dimensions are manic or if the three of them are depressive the mania or depression states are considered and not the mixed state. According to Kraepelin` definition and clinical observations, it seems that the mixed form of mania is a disease with various sub-groups with different durations, intensities and treatment responses (12).

Because of the following reasons the present study was carried out by raising questions such as "does mixed mania have different clinical demonstrations?" and "do the duration of the disease, suicide thoughts, and performance level different depending on the type?": the significance of the issue; high prevalence of this disorder among patients hospitalized in Razi Hospital; lack of adequate studies; and diagnostic and medical uncertainties.

Methods and Materials

A total of 120 participants were selected from patients hospitalized in the women and men training units of Razi Training and Medical Center of Tabriz. The patients were

diagnosed with episodes of mixed mania and were selected and included in the study using the convenience method and inclusion criteria.

Inclusion criteria included the following: patients aged between 18 and 50 years; and patients diagnosed with mixed mania by the professor operating at the unit in accordance with DSM-IV-TR and approved by SCID. The exclusion criteria included the following: presence of physical conditions associated with affective disorders and satisfaction of DSM-IV-TR criteria for affective disorders caused by the general medical conditions; an IQ lower than 85 according to the Raven's adults IQ test; presence of personality disorders; and history of different non-affective psychosis forms.

Scales used in this research included the Raven's adults IQ test, Hamilton R Scale Depression (HRSD), Yang Mania Scale (YMRS), and GAF.

The YMRS scale is scored from zero (lack of mania) to 90 (severe mania). The test questions were rated from 0 to 5 using the Likert 6-point scale. The reliability of the test was assessed based on the tester's reliability examinations and its internal consistency was shown to be satisfactory based on the correlations with other mania scales.

Using the Cronbach's alpha method, reliability of the questions for the patients and normal groups was 0.72 and 0.63, respectively. The reliability obtained by the assessors was 0.96.

The reliability coefficient for the questions was obtained using the Cronbach's method and the reliability of the questionnaire was assessed by evaluators. Results of these

assessments reflect the reliability of 0.72 for the patient group and a reliability of 0.63 for the normal group. The reliability obtained by the evaluators was also 0.96. In this regard, percentage ranks and T-standard scores were calculated as the norms for Young's mania scale. Moreover, the diagnostic validity coefficient for total scores and group membership (focal correlation) was 0.92. Results of the validity assessment of the questions revealed the high diagnostic power of the all of the questions in differentiating the normal group from the patient group. The simultaneous validity of Young's mania scale and the international master diagnostic questionnaire was 0.87. It was also equal to 0.89 and 0.84 for the first and second evaluators, respectively. According to the results of analyses of differentiation which were carried out with a cut-off point of 17.14 to differentiate the patients and normal participants, the specificity and sensitivity of both groups was obtained to be 98.4 separately. Finally, in the factor analysis two factors were extracted for the patient and normal groups. In sum, considering the results of this research it can be said that Young's mania scale is a reliable scale with satisfactory validity, sensitivity and specificity and is applicable in clinical and research projects.

The demographic information questionnaire was made by the researcher. In this questionnaire, the age, gender, marital status, education, history of self-mutilation, suicide attempts, hospitalization records, number of hospitalizations, and psychotic signs of the participants were questioned.

The HRSD Hamilton scale is a clinical tool used for assessment of depression. This scale has different forms and therefore the 24-question form was used in this research to assess physical, behavioral and mental

signs. In 1983, Dr. Mehryar and Mousavi translated the scale into Persian. In some assessments, a cut-off point of 16 is assumed for this scale. The validity of the questionnaire regarding its correlation with other scales is 60 to 84% and the internal consistency of the questionnaire varies from 84 to 90%. Qarayi, Mehryar and Mehrabi (2000) reported a reliability coefficient of 85 to 89% for this scale using the re-test method and with regard to Hamilton anxiety scale. The correlation coefficient for this scale was reported to be 65% by Touzandeh Jani and Abdollahian (1994) regarding the Beck depression scale.

Data obtained using the frequency, percentage; mean one-way analysis of variance and Chi-quare test was analyzed using SPSS 19.

Results and Discussion

Concerning the gender of participants it can be said that the gender distribution among the groups was not even and a total of 73 male (60.8%) and 47 female (39.2%) participants were studied (Table 1).

The age of the participants varied from 18 to 50 years with an average age of 28.99±23 years. 73 of the participants (60.8%) were married and 47 (39.2%) were single. 3 patients (2.5%) were illiterate and 8 (6.7%) had elementary education. 27 patients (22.5%) were guidance school graduates, 76 (63.3%) were high school graduates and 6 (5%) were B.A. and higher (Table 1).

According to the results of the IQ test, the IQ of the participants ranged from 90 to 111 with an average level of 93.77±9.44 (Table 1).

Among all the participants 39 (32.5%) had history of hospitalization (Table 1).

Concerning the existence of psychosis as an important aspect of the disease it can be said that of all of the participants 14 (11.7%) patients mentioned signs of psychosis (Table 1).

In addition, the study on participants revealed that 18 (15%) participants had self-mutilation records and 26 (21.7%) had records of suicide attempts and thoughts (Table 1).

In addition, the descriptive data for each of the mixed mania groups (Kraepelin's classification) is presented in Table 2.

The Young's mania test showed that the intensity of the mania expressed by patients ranged from 26 to 87 with an average level of 55.54±14.82 (Table 3).

Moreover, results of the Hamilton test also showed that the severity of depression announced by the participants ranged from 0 to 26 with an average level of 7.51±4.79 (Table 3).

On the other hand, results of the GAF scale revealed a social performance level of 5 to 35 with an average level of 12.10±4.08. Therefore, the results showed the very low effectiveness of these participants (Table 3).

Kraepelin believed that there are six types of mixed mania depending on whether the mood, behavior and thought aspects reflect mania or depression. According to his classification in the present study 21 (17.5%), 99 (82.5%), 96 (80%), 24 (20%), 79 (65.8%) and 41 (34.2%) demonstrated mania, depressive thinking, manic behavior, depressive behavior, manic mood and depressive mood, respectively. According to these findings the frequency of different manic subgroups was obtained and presented in Table 4 and Figure 1.

According to this data the highest frequencies for the manic groups were as follows:

1) Mania with Poverty of Thought
2) Excited or Agitated Depress
3) Manic Staple
4) Inhibited Mania
5) Depressive or Dysphonic Mania
6) Depression with Flight of Idea

According to the information obtained from the one-way analysis of variance of research scales it was found that among the different manic subgroups the variables (age, IQ, Hamilton's scale, Young's mania scale, and overall performance) were not significant among the subgroups (Table 5).

In addition, according to Table 6, no significant difference was observed between the mixed mania subgroups in terms of illness duration and history of self-mutilation. However, a significant difference was observed between psychotic signs and suicide attempt.

Research results showed that of the patients under study, 11.7% had psychotic signs. This finding does not comply with the findings of other studies as the reported a psychosis level of about 58.5% (7).

In addition, 15% of the patients had records of self-mutilation and 21.7% showed tendency for suicide. These findings do not comply with the findings reported by Fajirto et al. (2009) that suggested the percentage of suicide attempt was 21 to 54% (1, 13). Bandeti et al. (2007) also reported a suicide attempt percentage of 0.40% which is much larger than the figure obtained in this research (14).

In this study, most patients were male (60.8% vs. 39.2%) which was in contradiction with the research by Hilti et al. (2006) because the number of female participants in their study was higher. For instance, Vit and Morala (2009) reported an incidence rate of 58.6% and 42.4% for women and men, respectively (3, 7, and 15). The lack of consistency is perhaps caused by the fact that the number of male patients and male patients hospitalized in Razi Hospital is more than women or fewer women are hospitalized compared to men.

Most of the literate patients under study were guidance school graduates (63.3%) and 36.7% were illiterate. However, in the study by Vita and Morala the percentage of literate and illiterate patients was 43.6% and 8.1%, respectively (7).

The average age of patients was about 30 years which was consistent with the findings of previous studies and specialized psychological textbooks. This finding shows that most of the bipolar patients under study were young and it was therefore assumed as a principle (3, 5, 6, 16-17).

On the other hand, the age of participants ranged from 18 to 50 years which complied with the results reported by Hilti et al. (2006) who stated that the average age of patients were 18-34 and 35-50 years (16-17).

The highest IQ belonged to the manic state group and the lowest belonged to the EAD group. In Hamilton's depressive test the highest and mean severity of depressive signs were seen in the EDA group and the lowest severity of depressive signs was seen in the inhibited mania group. According to the Young's mania test, the highest severity of manic signs was seen in the inhibited mania group and the lowest was seen in the manic state group. In addition, according to the results of the social performance scale

the highest social performance was seen in the manic state group and the lowest was seen in the EAD group. However, in general, the age, IQ, Hamilton, Young's mania and overall performance variables were not significant among the subgroups. In this regard, the values obtained in the present study for the Young's mania and Hamilton's scales were 7.51 and 55.4, respectively. However, in previous studies the values reported for these variables were 28.3 and 18.5. These differences reflect the contradiction between the findings (7).

According to the research findings, the highest frequency of patients was seen in the Mania with poverty of thought (MWPT) subgroup with manic mood and activity whereas the lowest frequency was seen in the Depression with flight of idea (DWFI) subgroup with depressive mood and behavior. The other 4 subgroups (Excited or Agitated Depress, Manic State, Inhibited Mania, Depressive or Dysphonic Mania) were placed between the two categories. These findings are not consistent with the results of previous studies because different figures were reported by Vita and Morala (2009) and they observed the highest frequency in the manic state group (7). In addition, Vita et al. (2009) reported a score of 24.3% for the depressive type while in our study the sum of the score obtained for the Depressive or Dysphoric Mania (DDM), DWFI and Excited or Agitated Depression (EAD) subgroups was 33.3%. Therefore, the findings were relatively close and compliant (7).

On the other hand, the highest level of psychotic signs was seen in the DWFI group and the lowest severity of psychosis was seen in the DDM subgroup.

Among the Kraepelin subgroups the highest level of self-mutilation was seen in the

manic state subgroup and the lowest was seen in the EAD subgroup.

Moreover, among the Kraepelin subgroups the highest level of suicide attempt was observed in the manic state subgroup and the lowest was seen in the inhibited mania and DDM subgroups.

Hence, it seems that the diagnosis of mixed BMD-I by DSM-IV-TR (which reflects simultaneous manic and depression states in one person) is satisfactory and perfect and there is no need to differentiate this group from the subgroups introduced by Kraepelin. This finding is in contrast to the finding by Vita and Morala (2009) who stressed the revision of the criteria for bipolar disorder (7).

The lack of a depressive episode in manic disorder is interesting. Solomon et al. carried out a 20-year prospective observation to demonstrate the diagnostic value of unipolar mania. In their study, of the 27 patients under study 7 did not show any depressive episodes (18). Unipolar depression accounts for 10-20% of bipolar disorder and the rate is higher in European countries (19).

Cassidy et al. carried out a study on 327 hospitalized manic patients and indicated that the following subgroups are valid: hypomania, acute mania, delirious mania, and depressive mania. They also defined two different types of mix mania. The first type was characterized by severe depression and instable episodes of paranoia, irritability, and dysphoria. The second type was introduced as class mania in which different periods of classic mania and depression are observed (20).

Dislaver et al. conducted a study which revealed that aggression and paranoia are separate from dysphoria in mixed mania

state and depression has a dual role in this condition (21).

Conclusion

Research results showed that although different subgroups of mixed mania are identified, there is no significant difference between severity of mania and depression associated with mood, thinking and behavior in general. This finding perhaps indicates that the overlap between these dimensions leads to their neutralization. Although the three dimensions are evident in all of the subgroup, there is no significant difference between them.

According to the data obtained from the study, the highest frequency belongs to the subgroup with manic mood and activity but depressive thinking. The lowest frequency also belongs to a subgroup with depressive mood and behavior and manic thinking. The other 4 groups fall between two extremities.

Table.1 Demographic finding of patients

		Frequency	Percent
Gender	Male	73	60.8%
	Female	47	39.2%
Marital status	Single	47	39.2%
	Married	73	60.8%
Education	Uneducated	3	2.5%
	Primary	8	6.7%
	High School	27	22.5%
	Diploma and Associate Degree	76	63.3%
	Bachelor of arts / science and higher	6	5%
Hospitalization history	Yes	39	32.5%
	No	81	67.5%
Psychotic symptoms	Yes	14	11.7%
	No	106	88.3%
Self-immolation	Yes	18	15%
	No	102	85%
Suicidal thoughts	Yes	36	21.7%
	No	94	78.3%

Table.2 Descriptive finding of mixed mania subgroups based of Kraeplin's classification

		Inhibited Mania	Depression with Flight of Idea	Manic Staple	Mania with Poverty of Thought	Excited or agitated Depress	Depressive or Dysphonic Mania
Gender	Male	4	3	8	36	17	5
	Female	5	2	2	25	11	2
Education	Uneducated	1	1	0	0	1	0
	Primary	0	1	0	5	1	1
	High School	2	1	2	13	8	1
	Diploma and Associate Degree	6	2	7	39	18	4
	Bachelor of arts / science and higher	0	0	1	4	0	4
Marital status	Single	3	1	5	24	10	4
	Married	6	4	5	37	18	3
Hospitalization history	Yes	0	2	5	19	12	1
	No	9	3	5	42	16	6
Psychotic symptoms	Yes	4	0	2	3	4	4
	No	5	5	8	58	27	3
Self-immolation	Yes	1	1	1	9	5	1
	No	8	4	9	52	23	6
Suicidal thoughts	Yes	9	3	3	2	2	7
	No	0	2	7	59	26	0
Thought	Mania	9	5	0	0	0	7
	Depression	0	0	10	61	28	0
Behavior	Mania	0	0	0	61	28	7
	Depression	9	5	10	0	0	0
Mood	Mania	9	0	9	61	0	0
	Depression	0	5	1	0	28	7

Table.3 Descriptive finding of studied scales

Variable	Min	Max	Mean	Std Deviation
Young Mania rating scale	26	87	55.44	14.82
Hamilton Depression Scale	0	26	7.51	4.79
level of overall function	5	35	12.10	4.08

Table.4 Frequency and percent of mixed mania subgroups in male and female

	Frequency			Percent		
	Male	Female	Total	Male	Female	Total
Depressive or dysphonic mania	5	2	7	71.42%	28.57%	5.8%
Excited or agitated Depress	17	11	28	60.71%	39.29%	23.3%
Mania with poverty of thought	36	25	61	59.02%	40.98%	50.8%
Manic staple	8	2	10	80	20	8.3%
Depression with flight of idea	3	2	5	60	40	4.2%
Inhibited mania	4	5	9	44.44%	55.56%	7.5%

Table.5 ANOVA finding studied parameters

Variable	Sum of Squares	DF	Mean Square	F	P_Value
Age	58.22	26	2.24	2.30	0.1
IQ	31.64	20	1.58	1.16	0.30
Hamilton Depression Scale	38.94	17	2.91	2.35	0.3
Young Mania rating scale	54.43	31	1.76	1.33	0.16
level of overall function	10.73	8	1.34	1.01	0.43

Table.6 Chi-square table of variables

	Disease Duration	Psychotic symptoms	Suicidal thoughts	Self-immolation
Chi-square	9.58	28.99	77.57	0.58
DF	5	5	5	5
P_Value	0.07	0	0	0.99

Chart.1 Descriptive parameter between two genders
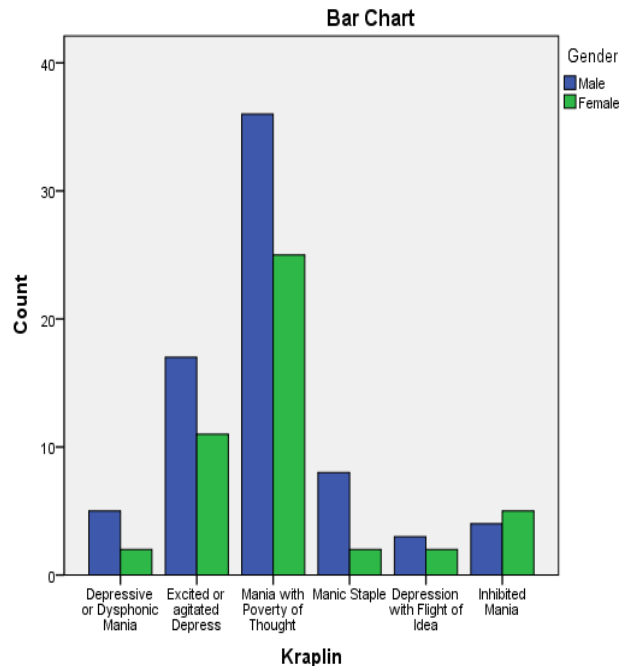
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