

Impact of Family Psychoeducation on Hospitalization and Relapse of Bipolar Disorder in Patients with Mixed and Manic Episodes: A Randomized Controlled Clinical Trial

Abstract

Introduction: Bipolar disorder (BD) is a disabling psychiatric disorder with frequent recurrences. Less than half of the patients with BD show good long-term response to treatment. Apart from pharmacotherapy, psychoeducation may be effective in reducing the symptoms and recurrence of BD, leading to improvements in patients' quality of life. In this study, we examined the effect of family psychoeducation on relapse rate and length of hospital stay in patients with BDs. **Methods:** This randomized controlled clinical trial (ethical committee number; IR.QUMS.REC.1394.136) was performed on 64 patients with BD at 22 Bahman Hospital of Qazvin, Iran. The patients were allocated into the following two groups: intervention and control groups. The patients in the control group received standard medical treatment, whereas those in the intervention group received 4 weekly sessions of family group psychoeducation, in addition to medical treatment. The patients were evaluated using the Beck Depression Inventory Rating Scale and the Young Mania Rating Scale. The recurrence rate, disease severity, and quality of life in both groups were evaluated. The intervention and control groups were followed up for 9 months regarding recurrence and hospitalization, and the results were compared between the groups. **Results:** Data analysis showed a reduction in the frequency and duration of hospitalization in the group receiving family psychoeducation and was dependent on the patient's level of education, place of residence (town/village), duration of illness, and frequency of hospitalization before the intervention. **Conclusion:** In addition to pharmacotherapy, family psychoeducation can have an enormous impact on patients with BDs and limit or decrease the risk of recurrence.

Keywords: *Bipolar disorder, family group psychoeducation, mania phase, mixed phase, recurrence*

Introduction

Bipolar disorder (BD) is an important mental disease, accompanied by recurrent manic and depressive episodes.^[1] Recent studies by the World Federation for Mental Health in 11 countries have reported a prevalence of 2.4%.^[2] According to multiple studies, BD is the sixth or seventh debilitating disorder worldwide.^[3] According to the World Health Organization (WHO), mood disorders are among the prominent health problems of the century.^[1] Several studies have also suggested that these disorders impose enormous costs on patients and the society and lead to a decline in financial resources and productivity.^[4-9] Only less than half of the patients with BD receive treatment.^[10] In addition, some studies have reported that only 25% of patients with BD are under the supervision of regional mental

health treatment systems in low-resource communities.^[11] These findings suggest a more comprehensive approach to medical and nonmedical interventions for these patients.

Although some BD patients may experience only one manic or depressive episode in their lifetime, nearly 95% of patients have recurrent episodes.^[12] One of the main reasons for recurrence is the patient's noncompliance to treatment,^[13] which can be due to lack of knowledge about the side effects of drugs, need for continuous treatment, and fear of addiction to the drugs.^[14,15] Despite the essential role of pharmacotherapy in successful treatment, it has been shown that medication alone cannot completely prevent the recurrence of disorder.^[15]

Nearly 40%–75% of BD patients on medication treatment experience recurrence

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in the 1st, 2nd, or 3rd year of treatment.^[16] In addition, a considerable number of patients (>50% in some studies) experience interepisode residual symptoms.^[17] Due to the chronic nature of BD, patients face problems in occupational and interpersonal relationships, and even the divorce rate in this group of patients has been reported to be very high.^[18]

Psychoeducation is one of the most widely used nonpharmacological treatments.^[19] Several studies have highlighted the importance of training in BD treatment. Training seems helpful in reducing the recurrence, burden, and progress of disorder while improving the patient's day-to-day functioning.^[16] Training programs have mainly focused on the patient's general knowledge about the disorder, risk factors for new episodes, and need for treatment.^[17] However, in the past two decades, evidence-based approaches have started to address the family's need for assistance, education, and support.^[18]

So far, different clinical applications, typically known as "psychoeducation," have been developed.^[19-24] In 2010, Reinares *et al.* showed that patients who received psychological training in the early stages of illness had lower recurrence rates.^[25] Moreover, Miklowitz *et al.* in 2003 showed that family psychoeducation leads to a reduction in the rate of relapse, an increase in treatment adherence, and fewer mood swings in mental patients.^[26] Similarly, in a previous study, a lower recurrence rate and reduced severity of depression were reported in a group receiving family psychoeducation.^[27] Rea *et al.* in 2003 showed that patients who received family psychoeducation had lower recurrence rates during 2 years of follow-up in comparison with patients receiving individual training.^[28] In addition, in a study conducted in 2008, a significant difference in the level of family compatibility was observed after family psychoeducation between the groups. However, no significant difference was found in the severity of symptoms or global functioning before hospitalization, during hospitalization, or after 3-month follow-up.^[29]

With this background in mind, we aimed to examine the effect of family education on BD recurrence and hospitalization frequency and duration among patients with BD, receiving 4 weeks of family-group psychoeducation after a 9-month follow-up.

Methods

Design and participants

Based on two-sided significance level at 5%, power 80%, and odds ratio of 0.18, the total sample size was estimated to be 56 individuals. After considering attrition, each group was estimated to have 32 participants for achieving sufficient power. Overall, 64 patients with BD, admitted to 22 Bahman Hospital of Qazvin, Iran, were recruited in this study. The individuals were enrolled after obtaining informed consent letters from them and their families (ethical committee number: IR.QUMS.

REC.1394.136). The inclusion criteria were as follows: (1) BD diagnosis based on the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revision criteria; (2) age range of 18–65 years; and (3) presence of at least one of the key family members completing the written consent form (the study objectives were explained to the participants). The exclusion criteria were: (1) lack of family consent to participate in the study; (2) family members or individuals from the control group who had received psychoeducation at other treatment centers; and (3) absence of key family members in a family training session. The patients were divided randomly (using randomization software, https://www.spss-iran.com/index_files/Sampling.htm), double blinded, by an assistant psychologist in the hospital to control and treatment groups, with 32 individuals in each group. To prevent participants' withdrawal from the study, the sessions were held once per week for 1 month at 22 Bahman Hospital of Qazvin in the spring of 2016.

Intervention

At least one of the main members of the family attended the family-group training sessions. Group training was conducted in 4 sessions/week, with each session lasting 60 min. Training sessions included information on the symptoms and course of BD, early signs of relapse, treatment methods, strategies at the time of relapse, systematic support strategies, training, anger management, problem-solving strategies, crisis management, and emphasis on continuation of treatment.

The general content of the sessions was as follows:

- First session: The concept of BD, its etiology, and associated manic or hypomania episodes
- Second session: Clinical course, depression, mixed episodes, and prognosis
- Third session: Some general information about mood stabilizers, antidepressants, and anti-manic medications and their side effects
- Fourth session: Early detection of new episodes (introduction to the necessary measures in the event of a new episode).

The control group was observed, and their medication intake was monitored. Both the patient and control groups were evaluated, using the Beck Depression Inventory (BDI) and Young Mania Rating Scale (YMRS) before and after the intervention. The questionnaires were administered again after a 9-month follow-up. The frequencies of disease recurrence and hospitalization (number and duration of hospital stay derived from hospital files, self-report, and family member report) were compared between the groups.

Measure

Beck Depression Inventory

BDI is a 21-item self-report scale, which was first developed by Aaron T. Beck and is a common

multiple-choice psychometric measure for depression severity.^[30] For the BDI total-scores, an α coefficient of 0.84 was determined (women: $\alpha = 0.83$; men: $\alpha = 0.85$). The questionnaire has a high validity and reliability.^[31] We used Persian version of this questionnaire^[32] to measure and monitor depression severity among patients and to evaluate the effect of family psychoeducation on the patients' scores.

Young Mania Rating Scale

Young Mania Rating Criteria were used to measure the severity of mania. The YMRS has satisfactory internal consistency ($\alpha = 0.8$) and test-retest reliability (intra-class correlation of 0.91).^[33] This 11-item scale is used to objectively score the severity of BD during the manic episode. The total scores of YMRS range from 0 to 60. To measure the severity of mania, we applied YMRS,^[34] which has been translated into Persian and validated by Shafiee *et al.*^[35]

Statistical analysis

For analyzing the data, IBM statistics company, SPSS, version 20 (Armonk, New York, USA) was used. Independent sample *t*-test was used to assess differences between variables. Repeated-measures ANOVA and Pearson's correlation analysis were used to assess the relationship among the variables. $P < 0.05$ was considered statistically significant.

Results

The study included a total of 64 BD patients (32 per group). The mean duration of the disease was 10 years in the patients. The patients who were experiencing a depressive episode (4.2%) were excluded from the study. At the time of admission, 84.5% of the patients were psychotic and 32.4% reported active suicidal ideation. The mean YMRS score was 41, which indicates severe episodes of mania and mixed episodes. The participants' demographic information is presented in Table 1.

Table 1 shows no significant difference between the groups in terms of age, disease duration, or age at disease onset (analyzed with independent sample *t*-test). However, the frequency and duration of hospitalization were significantly different before the study. A lower frequency, but longer duration of hospitalization, was reported in the intervention group versus the controls, which is an inevitable result of random group allocation. Patients in

both groups were under a physician-advised treatment program, as shown in Table 2.

Overall, 74.6% of the patients were treated with electroconvulsive therapy. The patients were reexamined after 9 months. They were evaluated regarding the frequency of recurrence and duration of hospitalization in a psychiatric hospital. All patients in the intervention group showed medical treatment compliance, based on their self-report and their caregivers' confirmation. However, in the control group, twenty patients reported regular drug consumption, whereas 12 patients reported irregular drug use or cessation of medication use.

Questions regarding medical treatment compliance were asked during interviews with patients and their families. The intervention-group families reported recurrence only once in two patients, whereas in the control group, recurrence occurred twice in 12 patients. Two patients from the intervention group were hospitalized, whereas 14 patients were hospitalized in the control group. Analysis and comparison of these findings between the groups, regardless of mixed or manic episodes, are presented in Table 3.

After the family psychoeducation program, a significant decline was observed in hospitalization duration in the intervention group in both periods (mixed or manic episodes), whereas a mild reduction was reported in the control group. The YMRS score in the intervention group after psychoeducation was reported as 5.32 ± 7.8 ($t = 3.26$, $P = 0.002$), which was found to be significantly improved in patients' prognosis.

Finally, we investigated the personal characteristics of family members (attending the program) including education level and analyzed the effect of these characteristics on the outcomes. We found a negative correlation between the family members' education level and duration of hospitalization ($r = -0.40$, $P = 0.01$). It seems that, in this study, the education level of family members had a positive impact on the duration of hospitalization [Table 4].

Moreover, the results showed that relapse and hospitalization frequency and duration were not correlated with age, educational level, sex, or age at disease onset in patients. The impact of family psychoeducation on the frequency of relapse and hospitalization frequency and

Table 1: Comparison between the groups in terms of age, age at disease onset, and disease duration

Groups	Mean±SD				
	Age	Age of onset	Duration of disease	Number of hospitalization before study	Duration of hospitalization before study
Intervention	38.3±9.1	26.8±7.7	11.3±8.3	2.5±1.8	33.5±5.6
Control	35.4±10.6	25.2±6.5	10.2±8.8	4.2±4.7	29.6±3.3
<i>t</i>	1.2	0.96	0.51	2	3.4
<i>P</i>	0.34	0.3	0.76	0.04	0.001

SD: Standard deviation

Table 2: The frequency of medication categories in all participants

Medication	Frequency (%)
VPA + SGA	52.1
VPA + SGA + FGA	28.2
VPA + Li + SGA	2.8
Li + SGA	4.2
VPA + LTG + SGA	5.6
CBZ + SGA	1.4
VPA + CBZ + FGA	2.8
VPA + Li + SGA + FGA	2.8

VPA: Valproate, FGA: First-generation antipsychotics, SGA: Second-generation antipsychotics, Li: Lithium, LTG: Lamotrigine, CBZ: Carbamazepine

Table 3: Comparison of bipolar disorder recurrence and frequency and duration of hospitalization after family psychoeducation between the groups

Groups	Mean±SD	
	Number of hospitalization after study	Duration of hospitalization after study
Intervention	0.11±0.3	1.74±5.34
Control	0.64±0.69	16.03±15.9
F (1)	2.12	39.6
P	0.14	0.001

SD: Standard deviation

Table 4: Pearson’s correlation between the educational level of family members and duration and frequency of hospitalization

Variables	Number of hospitalization after study	Duration of hospitalization after study
Participants’ education level		
r	-0.42	-0.40
P	0.28	0.01

length was independent of the patient’s educational level, sex, relationship type, or number of participants in the training sessions.

Discussion

Due to the high prevalence and social costs of BD, treatment and long-term management are inevitably necessary.^[2-4] BD affects the quality of life due to its frequent recurrence and nature.^[6-9] Long-term stay on medication is observed in less than half of the patients,^[10] while psychological education is one of the most profitable nonpharmacological treatments for BD psychosocial interventions, in our study it seems that family psychoeducation has reduced the recurrence rate.^[36] In line with the literature, in the present study, the mean recurrence of manic and mixed episodes was reduced, although the difference was insignificant, presumably due to the short

duration of follow-up (9 months). However, the present study results are different from those reported by Reinares, which showed that recurrence of mania and hypomania significantly decreased in the group receiving psychological education. Nevertheless, the decline in the recurrence of mixed and depressive episodes was not significant, similar to the present results.^[25] In a previous study, the severity of depression symptoms (not mania) reduced in case of recurrence after 1 year.^[27] However, considering the absence of hypomania and depression episodes in our participants, we could not investigate the effect of family psychoeducation on these episodes. In a study conducted in Iran, a significant difference was observed in family adaptation, whereas the severity of symptoms was not significantly different between the groups.^[29]

In the present study, the results showed that group-family training for patients with BD could reduce the rate of recurrence in the 9-month follow-up. The mean recurrence rate reduced in participants with mixed and manic episodes; however, the difference was insignificant. The most important finding of the current study is the reduction of hospitalization duration in BD patients (especially those with manic and mixed episodes), which emphasizes the impact of psychoeducation interventions on patients’ outcomes. We found that the influence of family psychoeducation on disease relapse depends on factors, such as the patient’s education level, place of residence (town/suburbs), duration of disease, and frequency of hospitalization before the start of the study. Because the effect of psychoeducation on the length of hospitalization was related to educational level, more attention should be paid to the general characteristics of family members, which might have profound effects on the outcomes of family psychoeducation.

Finally, the reduced length of hospitalization after family psychoeducation in patients with mixed and manic episodes highlights the positive impact of family training on BD. To raise awareness and provide further support for patients, the knowledge of patients and their families about the etiology, signs, symptoms, and risk factors for BD should be promoted. Through such measures, we can increase the patients’ health, facilitate a faster recovery without long admissions, and promote a better lifestyle.

Limitations

The duration of follow-up was 9 months, and therefore, the impact of family psychoeducation on longer periods has not been evaluated. Considering the selection of participants among hospitalized patients, patients who presumably suffered from more severe BDs were included, whereas patients with mild-to-moderate BDs were not included, which is a limitation. Moreover, unfortunately, family psychoeducation is not attainable by all patients because of absence of medical insurance support.

Conclusion

Psychotherapy should be generally considered as a method for the prevention of new episodes of BD. The available therapeutic instructions should recommend the application of psychotherapy for BD and propose such interventions as a treatment option.

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Conflicts of interest

There are no conflicts of interest.

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