

# Comparison of the effect of postdischarge education with multimedia and group discussion methods on family caregiving for patients with bipolar disorder in Shiraz Psychiatric Hospitals

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## ABSTRACT

**Background and Purpose:** Bipolar disorder is a common psychiatric disorder. The purpose of this study was to compare the effect of two postdischarge educational methods including multimedia and group discussion on family caregiving of patients with bipolar disorder. **Methods:** In this study, the families of 30 patients with bipolar disorder in Shiraz hospitals were studied and matched in terms of gender and age into two groups. One group received the group discussion and the other received the multimedia teaching method interventions. The demographic variables including age, gender, education, marital status, and relationship with the patient were collected. Data were analyzed using SPSS 18 software. **Results:** Most of the patients were male and most of their caregivers were female. The results showed that the pre and posttest mean and standard deviations of educational function ( $P = 0.007$ ), caregiving function ( $P = 0.0004$ ) and medication function ( $P = 0.04$ ) of the group receiving the multimedia teaching intervention were significantly different. However, the pre and post-test mean and standard deviations of caregiving function ( $P = 0.2$ ) and medication function ( $P = 0.3$ ) of the group receiving group discussion did not show a significant difference. However, there was a significant difference in educational function of this group ( $P = 0.02$ ). **Conclusion:** The use of multimedia method is more effective than the group discussion method and can be used as a tool to improve the caregivers of patients with bipolar disorder in Iranian society.

**Keywords:** Bipolar disorder, caregiving function, group discussion, multimedia education

## Introduction

Research has shown that educational interventions in the family and relatives of bipolar patients have benefits such as improving patient symptoms, enhancing patient adherence to treatment, reducing relapse and hospitalization, and alleviating stress on the family.<sup>[1]</sup>

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To achieve ideal medication outcomes, the international guidelines suggest including family education along with patient medication.<sup>[2]</sup>

The family plays a highlighted role in reassuring the patient about the psychiatrist's treatment decision, encouraging adherence to treatment, and providing the patient's history with the psychiatrist.<sup>[3]</sup> Insufficient knowledge of the patient's family and critical approach to the patient are among the risk factors of disease recurrence and readmission.<sup>[4]</sup> Family training is even

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effective in delaying the onset of the disease in adolescents with hereditary risk factors.<sup>[5]</sup>

Another important point is the problems associated with the education of families. Everyday responsibilities, occupational involvement, distance, and lack of time are some of the factors that cause the family members to fail in providing care and supervision in the disease process and sometimes become inaccessible to attend training sessions. Therefore, ease of access to the educational resource is very important.<sup>[1]</sup> Therefore, as stated above, it is necessary to provide different educational methods with the possibility of further consolidating information and increasing the willingness to engage to the family members of patients. However, modern teaching methods are rarely used and are largely based on direct and face-to-face communication with health professionals. The role of nurses in caregiving for patients and their families is very important. Given the aforementioned findings, the research experiences regarding caregiving functions of families with bipolar disorder and lack of sufficient studies in this field seems necessary.

Bipolar disorder is a type of mood disorder and mental illness. The disease, which is also known as mania-depression, is a mental disorder that causes abnormal changes in one's mood, energy, and functional ability. It is difficult to estimate the annual incidence of bipolar disorder accurately, but bipolar disorder can be seen in peoples of all races and social classes. It is associated with multiple disabilities and is considered as the sixth leading cause of disability in the world.<sup>[6]</sup> The increasing tendency to use and research the family educational interventions of psychiatric patients due to the knowledge of specialists about the burden of patient care on the family and creating a supportive structure and raising awareness among the family and relatives of bipolar patients is one of the important strategies in the treatment of these patients. In order to have a useful and effective intervention in the treatment of bipolar patients, the existence of an appropriate educational approach is of high priority.<sup>[7]</sup> The effectiveness of training is subject to the proper use of educational methods. These educational methods are needed to increase the programs' effectiveness. Education can be in the form of lectures, face-to-face or group discussions, audio-visual aids, videos, and online materials. In modern educational approaches, the face-to-face and unattended sessions are compared.<sup>[8]</sup>

Multimedia technology is one of the newest technologies to provide content by computer and easily communicate with the users through a variety of visual and audio media, enjoyment of dynamism, and beautiful graphical and visual effects.<sup>[9]</sup>

Group discussion is a valuable teaching method and gives participants the opportunity to freely express and exchange their ideas. In group discussion, both individual and societal abilities increase. Comprehension, thinking as well as the retention of content in the student mind increases. Learning areas include cognitive, emotional, and psychomotor domains.<sup>[9]</sup> Therefore, given the importance of psychiatric illnesses such as bipolar

disorder and the well-known impact of family education on the course of bipolar disorder on the one hand and the reduction of the stress imposed to the family and increasing family quality on the other hand, the aim of the present study was to compare the effects of two post-discharge educational methods including multimedia and group discussion on family caregiving function of patients with bipolar disorder in Shiraz psychiatric hospitals.

## Materials and Methods

The present study is a quasi-experimental study to compare the effect of two methods of postdischarge training, the multimedia method and the group discussion method, on family caregiving function of patients with bipolar disorder in Shiraz Psychiatric Hospitals in 2017. In this study, the families of 30 patients with bipolar disorder were studied and the convenient sampling was made in this study. The research population in this study is a family member of patients with bipolar disorder. Caregivers of bipolar patients were evaluated using a questionnaire and are divided into two groups of 15 individuals after pre-test. One of the groups received the 4-session group discussion intervention (one session per week) and the other group received a multimedia intervention. A post-test was taken one month after the intervention.

Patients' inclusion criteria were as follows: Patients with definitive diagnosis of bipolar disorder, informed consent of the patients' family, literacy of the caregiver, caregiver's overall health and having an Android phone in the multimedia group. Exclusion criteria included changing the caregiver during the intervention period and the caregiver's unwillingness or ability to continue attending the sessions. In this study, all caregivers of patients with bipolar disorder participated in a public hearing and received the demographic and consent forms. Participation in this study was voluntary.

Participants were pre-tested through a family questionnaire. After the pre-test, the patients with bipolar disorder were randomly divided into two groups. The first group received trainings associated with the required topics as group discussions. The second group received the same educational content in the form of interactive multimedia. The training sessions were designed in the form of multimedia training software, so that they learned how to use multimedia and its different parts in the first session and then the multimedia content was provided to them and they were followed up by telephone calls.

In this study, a questionnaire was used as pre-test and then as a post-test. The questionnaire consists of 38 short, 4-option questions. Responses are rated on a 4-point scale from 1 (never) to 4 (always). The scale consists of three subscales namely educational function, medication function, and caregiving function (min = 38 and max = 152).

Data were analyzed by SPSS software version 18 to address the demographic variables, the descriptive statistics (frequency,

mean and standard deviation); to investigate other variables, the inferential statistics (independent *t*-test, analysis of variance with repeated measures, Chi-square, and Pearson correlation) were used.

## Results

The results [Table 1] showed that the pre- and posttest mean and standard deviation of the multimedia training group were  $2.2 \pm 0.32$  and  $3.2 \pm 0.51$ , which showed a significant difference ( $P = 0.007$ ). There was also a significant difference in the educational function of the multimedia intervention group and the group discussion method with the pre- and posttest mean and standard deviation being  $2.67 \pm 0.226$  and  $2.93 \pm 0.248$  ( $P = 0.024$ ). However, there was no significant difference between the posttests of both the group discussion and multimedia training groups ( $P = 0.4$ ).

Table 2 shows the mean scores for caregiving functions. Scores between 1, 2, 3, and 4 are considered for always, sometimes, rarely, and never. As the mean approaches the number 4, the (always) option is more approved, which indicates a better function. The results of this study showed that the pre- and posttest mean and standard deviation of the multimedia receiving group were  $1.93 \pm 0.22$  and  $3.13 \pm 0.19$ , which showed a significant difference ( $P = 0.0004$ ). There pre- and posttest mean and standard deviation of the group discussion intervention group were  $2.06 \pm 0.18$  and  $2.64 \pm 0.25$ , which showed no significant difference ( $P = 0.2$ ). However, there was a significant difference between the posttests of the intervention group in the group discussion and the group retrieving multimedia method ( $P = 0.04$ ).

Table 3 shows the mean scores of medication functions. Scores between 1, 2, 3, and 4 are considered for always, sometimes, rarely, and never. As the mean approaches the number 4, the (always) option is more approved, which indicates a better function. The results of this study showed that the pre- and posttest mean and standard deviation of the multimedia receiving group

were  $2.46 \pm 0.28$  and  $3.14 \pm 0.55$ , which showed a significant difference ( $P = 0.04$ ). The pre- and posttest mean and standard deviation of the group discussion method were  $2.66 \pm 0.15$  and post-test  $2.93 \pm 0.25$ , which showed no significant difference ( $P = 0.37$ ) in the medication function. However, there was no significant difference between the posttests of the intervention group in the group discussion and the group retrieving multimedia method ( $P = 0.45$ ).

## Discussion

In this study, the hypothesis of the difference between the two intervention methods (multimedia and group discussion) was investigated. The results showed that the multimedia method has more influence on family caregiving function than group discussion.

Consistent with the results of the present study, Magliano *et al.* (2006) also reported a positive effect of education on the educational function of caregivers of patients with schizophrenia.<sup>[10]</sup> The results of Mojarad Kahani *et al.* based on the effectiveness of family group educational interventions of people with mental disorders on the educational function of families are consistent with the results of the present study.<sup>[11]</sup>

There was no significant difference between the posttests of the intervention group that received group discussion and the group receiving the multimedia method ( $P = 0.4$ ); the results of the two methods did not show a significant difference in improving their educational function.

Schulz *et al.* believed that family psychological training could increase patient survival. Moreover, the lack of agreement, coordination, and cooperation in the families or caregivers of the affected person aggravates the behavioral problems, lowers the quality of family functioning, and lowers the levels of problem solving in the family and reduces parent-child efficiency. They stated that increasing the coordination and cooperation in the family could reduce the stress in the home environment and

**Table 1: Mean scores of educational function of the discussion group and the group receiving educational software**

Educational function of the intervention group in multimedia method	Educational function of the intervention group in group discussion			
	Pretest	Posttest	Pretest	Posttest
Mean and standard deviation	2.2±0.32	3.2±0.51	2.67±0.226	2.93±0.248
Significance level between pre-test and post-test	0.007**		0.024*	

**Table 2: Caregiving function scores in the of the discussion group and the group receiving educational software**

Educational function of the intervention group in multimedia method	Educational function of the intervention group in group discussion			
	Pretest	Posttest	Pretest	Posttest
Mean and standard deviation	1.93±0.22	3.13±0.19	2.06±0.18	2.64±0.25
Significance level between pretest and posttest	0.0004***		0/2 insignificant	
Significance level between pretest and posttest of the multimedia group	0.04*			

**Table 3: Medication function scores in the of the discussion group and the group receiving educational software**

Variable	Educational function of the intervention group in multimedia method		Educational function of the intervention group in group discussion	
	Pretest	Posttest	Pretest	Posttest
Mean and standard deviation	2.46±0.28	3.14±0.55	2.66±0.15	2.93±0.25
Significance level between pretest and posttest	0.04*		0.37 insignificant	
Significance level between pretest and posttest of the multimedia group	0.45 insignificant			

thus reduce symptoms in the individual. Schulz also showed a decrease in the severity of symptoms and improvement in the intervention group under psychiatric training of family compared to the control group. Increased coordination and cooperation in the family is expected to reduce stress at home and thus reduce symptoms in the individual.<sup>[12]</sup>

The results of the present study also showed that the pre- and posttest mean and standard deviation of the medication function of the multimedia receiving group were  $2.46 \pm 0.28$  and  $3.14 \pm 0.55$ , which showed a significant difference ( $P = 0.04$ ). Therefore, this method is effective in improving the quality of families' function on medication and treatment. There was no significant difference between the pre-test  $2.66 \pm 0.15$  and post-test  $2.93 \pm 0.25$  of the group discussion group ( $P = 0.37$ ).

Regarding the effectiveness of the group discussion method on the families of patients with mental disorders, the results of the present study are consistent with that of Vernooij *et al.*, which suggest that group training of family members of patients with bipolar disorder have no significant impact on group medicinal function. The results of Dassen *et al.* indicate that multimedia training is effective for the medication function of patients with Alzheimer's disease, which is consistent with the present study.<sup>[13,14]</sup> Moreover, the findings of the research by Touzandeh Jani *et al.* on the group effect of family members of people with chronic psychiatric disorder suggest that group training did not have a significant impact on the medication function of caregivers of patients with chronic psychiatric disorder, which is in agreement with the present study.<sup>[15]</sup>

There was no significant difference between the posttests of the intervention group following the group discussion method and the group receiving multimedia training ( $P = 0.45$ ). This suggests that the efficacies of these two approaches in improving the medication function of families involved with bipolar disorder are not significantly different.

The results of this study also showed that the mean and standard deviation of the pre and posttests of the multimedia receiving group were  $1.93 \pm 0.22$  and  $3.13 \pm 0.19$ , which showed a significant difference ( $P = 0.0004$ ). Therefore, this method can affect the function and care of patients. In contrast, those of the group discussion group— $2.06 \pm 0.18$  and  $2.64 \pm 0.25$ —showed no significant difference ( $P = 0.2$ ). Therefore, this method does not have a great impact on the caregiving function of the patients' families. The results of this

study are consistent with that of Sheikholeslami *et al.* in which effective training for stress-coping skills were provided using a multimedia psychoeducational approach for family caregiving of schizophrenic patients.<sup>[16]</sup> The present study is in line with that of Tarraga *et al.* on improving family caregiving function of patients with Alzheimer's disease through a multimedia educational approach.<sup>[17]</sup>

There was a significant difference between the posttests of the intervention group and the multimedia receiving group ( $P = 0.04$ ). This suggests that the multimedia approach can work more effectively in improving the caregiving functions of families with bipolar patients.

## Conclusion

In this study, considering the effectiveness of multimedia intervention method compared with the group discussion of caregivers of patients with bipolar disorder, it seems that this intervention can reduce the depression, anxiety, and stress symptoms of family caregivers of patients with other psychiatric disorders by applying some changes. These findings can be used to educate patients, administrators, and nurses and to emphasize on the use of different approaches in teaching patients' caregiving function to students.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the family members of the patients included in the study have given their consent for their images and other clinical information to be reported in the journal. They understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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