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EFFECT OF PSYCHOEDUCATION ON PSYCHOLOGICAL DISTURBANCES AMONG CAREGIVERS OF PERSONS WITH BIPOLAR DISORDER

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Abstract

Bipolar disorder is a long lasting disruptive and distressing mental illness that can seriously effect the lives of affected persons and their family caregivers. Psychoeducation is thought to effectively satisfy the informational need of caregivers and reduce their psychological disturbances when caring their affected relatives. This research aims to study the effect of psychoeducation on the psychological disturbances among caregivers of persons with bipolar disorder. This was a quasi-experimental study with pretest-posttest design and control group. The sample for the study consisted of 30 caregivers of thirty persons with bipolar disorder and initially the samples was selected from outdoor of Sir Salimullah Medical College and Hospital, Dhaka through purposive sampling technique who met the inclusion criteria. They were randomly placed into two groups (an experimental group and a control group). The participants completed the Bangla version of General Health Questionnaires-28 (GHQ-28) scale before and after treatment. The experimental group attended two psychoeducation sessions (each session lasting 60 minutes) after baseline assessment but control group didn't receive psychoeducation sessions. After approximately 10 days of finishing psychoeducation sessions, again the GHQ-28 scale was used for monitoring the change in psychological disturbances into four dimensions i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. Data were analyzed by applying descriptive and inferential statistics including independent sample *t*-test, one-way ANOVA, ANCOVA, and paired sample *t*-test using SPSS version 23. The reliability of difference scores was also computed. The results showed that after applying psychoeducation, psychological disturbances i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression were significantly decreased ($p < .001$). These changes were not observed in the control group. The findings substantiate that within Bangladeshi context, psychoeducation can effectively help in reducing psychological disturbances for family caregivers of persons with bipolar disorder not only for their own psychological well-being but also for the betterment of their patients. The implications of these findings for research and practice are discussed.

Keywords: *Psychoeducation, psychological disturbances, caregivers, bipolar disorder*

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Introduction

Bipolar disorder previously was known as manic depression is a chronic, relapsing, and remitting illness, characterized by separate periods of mania (extreme shifting in mood, disinherited behavior, excessive activity, inflated self-esteem, decreased need for sleep) and depression (low mood, profound loss of interest, changes in sleep and appetite, low self-worth, suicidal ideas and plans) that can make day-to-day lives difficult (Merikangas *et al.,* 2007). Such disorder, which is associated with various disabilities, high rates of relapse and even suicide that was detected in the people of every social class and race and it's lifetime prevalence is almost 1% to 4% in the population (Bull, 2010; Boland & Alloy, 2013; Moreira *et al*., 2017). According to World Health Organization (WHO) bipolar disorder is the sixth leading cause of disability worldwide. A research was done in Bangladesh where found that the prevalence rate of bipolar disorder was about 0.4% in the general population (Firoz *et al.,* 2006).

In Bangladesh, the family members are closely attached to each other and care giving is a common social role here even if they live separately and they experience many difficulties and pressures during the periods of treatment, rehabilitation and recovery. Here, it is observed that in almost all sorts of patients with psychiatry illness including bipolar disorder depends on the care of their family members especially main caregivers. About 50% to 80% of patients with bipolar disorder live with or have regular contact with family members and rely on relatives for housing, emotional and financial support (Lehman & Steinwachs, 2001). These mentally sick people live with their family either due to lack of proper health care services or due to societal norms. It is stressful both for the patients and their family members especially for the main family caregiver (Merikangas, *et al*., 2007). Unfortunately, caregiving can have a detrimental impact upon their lives and well-being (Vella & Pai, 2012).

Caregiver's negative experiences may affect their ability to care for the patients, restrict their roles, activities and increase their psychosomatic, anxious or depressive symptoms (Awad &Voruganti, 2008). 93% of family caregivers of bipolar disorder patients reported a moderate or higher level of caregiving strain, when the patient was admitted to an inpatient unit or outpatient clinic and they also suffered by the symptoms of somatic complain, anxiety, depression, or social dysfunction (Dore & Romans, 2001; Ayuurebobi *et al*, 2015; Azman *et al*., 2015 and Hogan & John-Langba, 2016) and these exacerbated if their caregivers had lack of knowledge about the illness and how to deal with these difficulties and odd behaviors.

Psychoeducation is a specific form of education included issues about serious mental illnesses, information resources especially during periods of crisis, skills training and ongoing guidance about managing mental illnesses, problem solving, and social or emotional support (Dixon *et al*., 2001) that may upgrade the knowledge of the caregivers that can reduce their psychological disturbances (Hogarty *et al*., 1991 & Lefley, 1996). It is a participant directed approach that helps caregivers to cope with their care giving role, to develop their competence in handling care giving situations, to increase their knowledge of the illness, and to improve their consequences in family life (Barbato & D'Avanzo, 2000).

Psychoeducation is used to remove an individual's confusion, anxiety, and other barriers surrounding a psychiatric diagnosis which may obstruct progress in treatment. It also associated with positive outcomes including decreased symptoms of mental health problems particularly decreased anxiety and depression; improved quality of life, knowledge, self-esteem, resources, and family-marital climate; and increased adherence to and overall satisfaction with medication and treatment (Lukens & McFarlane, 2004 and George *et al*., 2005).

In Bangladesh, the numbers of persons with bipolar disorder have been increased day by day and have many organizations and institutions those are working to treat them only but ignored mental health conditions of family caregivers that have negative impact not only for the caregivers but also the ultimate improvement of persons with disorder. In this case psychoeducation can help them. So, now it is emergency needed to develop psychoeducation materials and test its efficacy on caregivers in Bangladeshi context. Since no study has been carried out to measure its effectiveness in Bangladeshi context, it is necessary to conduct this study that would entail immense benefit both for the caregivers and for their patients. The present study has been designed to meet this important need in Bangladeshi context.

The main objective of the study was to investigate the effectiveness of psychoeducation on caregivers of persons with bipolar disorder. The specific objectives were to develop psycho-education materials, to assess the severity level of psychological disturbances among the caregivers of persons with bipolar disorder, to investigate whether there is any significant difference in psychological disturbances among caregivers in terms of their age, gender, education, occupation, marital status, family income, family structure, relations with patients, gender of patients, and illness duration of patients, and to

investigate whether there is any effect of psychoeducation in reducing psychological disturbances in terms of somatic symptoms, anxiety & insomnia, social dysfunction, and depression among the caregivers.

Material and Methods

The present study was conducted by quasi-experimental study with pretest-posttest design and control group to compare between two groups of family caregivers of persons with bipolar disorder for the purpose of examining the effectiveness of psychoeducation on caregivers of persons with bipolar disorder where each participant's environmental conditions, time in pre-post assessment and intervention phase were varied.

Sample and Sampling Technique

A total of 30 family caregivers of bipolar patients were selected through purposive sampling technique based on some inclusion criteria (i.e., the main and primary caregiver of family having no known mental illness, caregivers whose patient was diagnosed within the preceding minimum two months of bipolar disorder according to DSM-5 criteria, and the patients had lived with their families for at least 6 months after the initiation of patient's symptoms) and some exclusion criteria (i.e., caregivers who had participated in another psychoeducation program during the preceding years or professional caregivers who were paid for caregiving, caring for more than one family member with mental illness, and caregivers who were not interested to attend the program at the time of data collection and psychoeducation program) from outdoor of Sir Salimullah Medical College and Hospital, Dhaka. There was no significant difference on psychological disturbances in terms of various demographic variables that's why participants were randomly allocated into two groups, one is experimental group and another is control group.

Data Collection

Enrolment, allocation, treatments, measures, and analyses of data of subjects in the present study were summarized in a flow diagram in Figure 1.

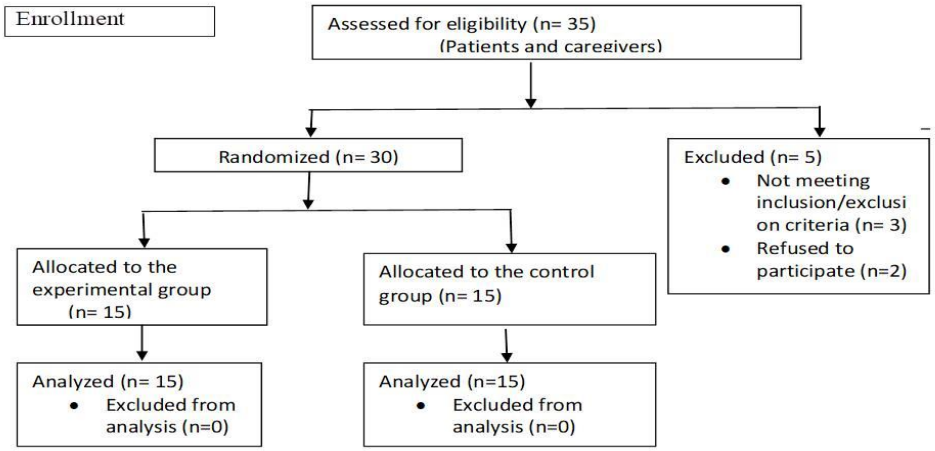

Figure 1. Design and protocol of the study.

Measuring Instruments and Outcome Measures

In the study following questionnaires were administered to measure and collect primary raw data from the participants.

1. Personal Information Form (PIF)
2. Bangla Version of General Health Questionnaire (GHQ-28)

Description of the instrument

Personal Information Form (PIF)

Personal Information Form (PIF) was used to collect data into two sections; the first section was consisted by the participant's age, sex, education, marital status, employment status, economic status, and relationship between the caregiver and the patient, caregiving duration, family types, habitat and other sections was consisted by patient's sex, illness duration, present health condition, which treatment is received.

Adapted Bangla Version of the General Health Questionnaire (GHQ-28)

The General Health Questionnaire (GHQ-28) consisted by 28 items and that was developed by Goldberg and Williams (1988). It was used for assessing the psychological disturbances in terms of both a full-scale score (maximum possible score 84) and scores on four sub scales each contains 7 items, reflecting somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. Score from 0 to 6 considered as having low, 7 to 13 as moderate, 14 to 21 as severe level in each subscale. It was shown to have test-retest reliability from 0.51 to 0.90 and split half reliability was shown to be 0.95. The concurrent validity of the questionnaire, as measured by Middlesex Hospital Questionnaire (MHQ), was .55 (p<.001). GHQ-28 was shown to have construct and content validity. Banoo (2001) translated it into Bangla. Significant correlation, r (28) =

.725 between scores of English and Bengali versions and test-retest reliability of Bengali version scale was found 0.756.

Psychoeducation material for caregivers of persons with bipolar disorder

Psychoeducation material (Bangla version) used in the study was prepared by following 8 steps and from the first judge evaluation to the final write up was done within four months. Psychoeducation included different aspects of bipolar disorder such as causes, signs, symptoms, prognosis, treatment, management (Table 1).

Table 1. Summary of sessions performed in this study

Session	Content	Goals
Session 1	• Aim of the study • An overview of the topics • Expectation	To orient caregivers to the program and to create a trusting relationship.
	• What is the meaning of mania, depression and bipolar disorder? • How common is bipolar disorder? • What are the signs and symptoms of mania, depression and mixed episode? • What are the causes of bipolar disorder? • How to diagnose of bipolar disorder? • What are the available treatments of bipolar disorder? ✓ Medications ✓ Psychotherapy • Prognosis	To understand and knowledge providing about bipolar disorder.
Session 2	• Review of the previous part of the session • What is care giving? • How to take care of the individuals with bipolar disorder? • Which activities and relationships are helpful? • Which actions have to follow to manage mood of individuals with bipolar disorder? • Knowing about clinics and centers for further assistance • Questions-answers and summary of the session • Termination	To adopt new roles, challenges and skills of coping and patient's management.

Procedure

Following eight steps, psychoeducation material in the present study was prepared by the researchers themselves for family caregiver's which included how the information and materials were gathered from sources, how it was evaluated by expert, how a draft was made, and also how its appropriateness was checked before applying on present research participants. After obtaining some necessary official approval for space, co-operation and assistance from the authority of Sir Salimullah Medical College and hospital, total 30 family caregivers were screened as participants based on inclusion-exclusion criteria and refusal to participation in psychoeducation program and also who met the purpose of the study. All the instruments were administered in pre-test session. Then 30 participants were divided equally into experimental and control groups by simple randomization where experimental group was comprised by 15 family caregivers who received psychoeducational intervention separately in hospital setting after pre-test within two sessions but control group didn't get any intervention. The duration of each session was one hour. After approximately 10 days of receiving the psychoeducation session, the participants were again interviewed and GHQ-28 scale was re-administered in post-test session. As the control group didn't receive benefit like the experimental group, a written psychoeducation material was provided to each caregivers of the control group after post-test session. After collecting data, the researchers gave thanks to the participants for their co-operation.

Results and Discussion

The scores on General Health Questionnaires (GHQ-28) and the information provided on the PIF were entered using Statistical Package for Social Science (SPSS) version 23. For measurement of reliability of the scale, data were analyzed for Cronbach's α and then reliability of difference scores was also identified. We computed descriptive statistics for measuring frequency, percentage, and severity of psychological disturbances and also inferential statistics like one-way ANOVA, independent sample *t*-test, ANCOVA, and paired sample *t*-test which results are presented in the following tables consecutively and also MS excel was used for graphical presentation like histogram.

The reliability of difference scores

To assess the effectiveness of psychoeducation, a GHQ-28 scale was administered to participants before intervention and then after intervention. Then the differences between the scores were calculated. The formula for the reliability of difference scores is as follows (Kline, 1996):

$$r_{diff} = \{[(r_{xx} + r_{yy})/2] - r_{xy}\}/(1 - r_{xy}),$$

where, r_{diff} = the reliability of the difference score, r_{xx} = the reliability of the pre-test, r_{yy} =the reliability of the post-test, and r_{xy} = the correlation between pre-test and post-test.

In case of experimental group, $r_{diff} = \{[(r_{xx} + r_{yy})/2] - r_{xy}\}/(1 - r_{xy})$
$= \{[(.66 + .72)/2] - .06\}/(1 - .06)$
$= .67$

In case of control group, $r_{diff} = \{[(r_{xx} + r_{yy})/2] - r_{xy}\}/(1 - r_{xy})$
$= \{[(.69 + .74)/2] - .33\}/(1 - .33)$
$= .58$

The difference score reliability both in experimental and control groups are low but acceptable.

In order to assess the severity level of psychological disturbances among family caregivers descriptive statistics were calculated and results of analysis is shown in Table 2.

Table 2. Descriptive statistics of caregivers according to the levels of four dimensions assessed by GHQ-28 scale.

Dimensions of GHQ-28 Scale	Severity Level					
	Low		Medium		High	
	Ss	%	Ss	%	Ss	%
Somatic symptoms	0	0	27	90.00	03	10.00
Anxiety and Insomnia	0	0	05	16.65	25	83.35
Social dysfunction	1	3.35	23	76.65	06	20.00
Severe Depression	0	0	05	16.65	25	83.35

Note. Ss = Subjects.

Results shown in Table 2 represents that among caregivers 90% had medium and 10% had high level of somatic symptoms, 16.65% had medium and 83.35% had high level of anxiety and insomnia, 3.35% had low, 76.65% had medium and 20% had high level of social dysfunction, 16.65% had medium and 83.35% had high level of severe depression. So, the findings revealed that most of the family caregivers are suffering from high levels of anxiety, insomnia and severe depression and medium levels of somatic symptoms and social dysfunction that happened as a result of caring the persons with bipolar disorder. The findings of the present study was supported by another study where found that caregivers experience more physical and mental stress than non-caregivers in the same age groups (Amirkhanyan *et al.,* 2003). The findings also supported by the study of McDonell *et al.* (2003) where they found that carers were reported great anxiety due to fear that their relative may attempt suicide and also reported that depressive symptoms are twice as common among caregivers as non-caregivers.

However, before applying inferential statistics, different assumption test in the form of histogram, normal Q-Q plot, skewness, and kurtosis were assessed where found that our data are approximately normally distributed.

Independent sample *t*-test and one-way ANOVA were carried out to find whether there was any significant variation in psychological disturbances among caregivers in terms of related socio-demographic characteristics and the findings are presented in Table 3.

Table 3. Sample characteristics and testing homogeneity of caregivers through independent sample *t*-test and one way ANOVA.

Socio demographic variables		Experimental (n=15)	Control (n=15)	Total (n=30)	*F/ t*-value	*p*
		f (%)	f (%)	f (%)		
Gender	Male	5 (33.3)	5 (33.3)	10 (33.3)		
	Female	10 (66.7)	10 (66.7)	20 (66.7)	-1.61	.12
Age	20-40 years	6 (40.0)	7 (46.7)	13 (43.3)		
	41-60 years	9 (60.0)	8 (53.3)	17 (56.7)	-0.90	.38
Education	Below S.S.C	8 (53.3)	9 (60.0)	17 (56.7)		
	S.S.C. - H.S.C.	6 (40.0)	2 (13.3)	8 (26.7)	0.06	.94
	Grad. –Post graduate	1 (6.7)	4 (26.7)	5 (16.7)		
Occupation	Housewife/Unemployment	10 (66.7)	11 (73.3)	21 (70.0)		
	Service holder	4 (26.7)	3 (20.0)	7 (23.3)	.18	.84
	Business	1 (6.7)	1 (6.7)	2 (6.7)		
Marital Status	Married	8 (53.3)	11 (73.3)	19 (63.3)		
					2.00	.16
	Unmarried	2 (13.3)	1 (6.7)	3 (10.0)		
	Divorce/ Separation	5 (33.3)	3 (20.0)	8 (26.7)		
Family Income	Below 10,000tk	8 (53.3)	5 (33.3)	13 (43.3)		
					0.58	.57
	10,000 – 20,000tk	4 (26.7)	8 (53.3)	12 (40.0)		
	Above 20,000tk	3 (20.0)	2 (13.3)	5 (16.7)		
Family Structure	Nuclear	9 (60.0)	5 (33.3)	14 (46.7)		
					-2.01	.06
	Extended	6 (40.0)	10 (66.7)	16 (53.3)		
Relationship with Patients	Parents - Children	8 (53.3)	8 (53.3)	16 (53.3)		
					1.56	.23
	Spouse	5 (33.3)	6 (40.0)	11 (36.7)		
	Siblings	2 (13.3)	1 (6.7)	3 (10.0)		
Patients Gender	Male	5 (33.3)	8 (53.3)	13 (43.3)		
					-0.09	.93
	Female	10 (66.7)	7 (46.7)	17 (56.7)		
Patients Illness Duration	<1 year	3 (20.0)	3 (20.0)	6 (20.0)		
					0.73	.50
	1 to 5 years	8 (53.3)	9 (60.0)	17 (56.7)		
	>5 years	4 (26.7)	3 (20.0)	7 (23.3)		

Note. p > .05.

Results reported in Table 3 shown that there were no significant differences in psychological disturbances among caregivers of persons with bipolar disorder in terms of their related socio-demographic variables.

Psychoeducation Effect

In order to compare mean difference of psychological disturbances among two groups both in pre-test and post-test MS excel were used and findings of analysis shown in Figure- 2 and also in Figure-3.

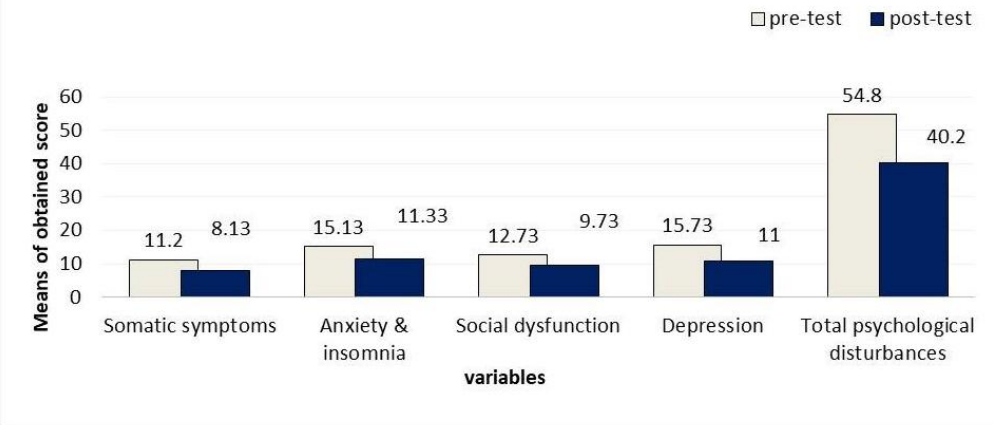

Figure 2. Mean differences of psychological disturbances between pre-test and post-test in the experimental group both in total and within four dimensions assessed by GHQ-28 scale.

From graphically presented findings in figure 2 revealed that in post intervention phase, the psychoeducation was effective in alleviating a greater percentage both in total psychological disturbances and also within four dimensions i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and depression of experimental group. Psychological disturbances were lessened for the participants of the experimental group in post-test phase as compared to pre-test phase.

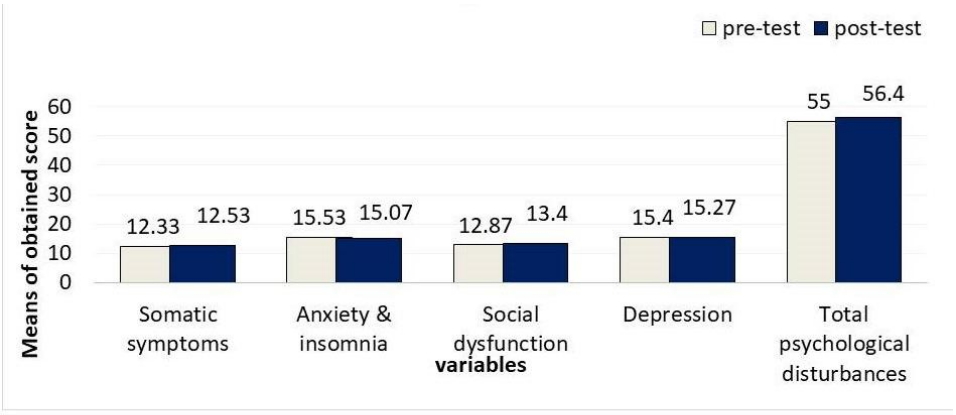

Figure 3. Mean differences of psychological disturbances between pre-test and post-test in the control group both in total and within four dimensions assessed by GHQ-28 scale.

The findings presented graphically in figure 3 shown that in the control group the severity level both in total psychological disturbances and also within its four subscales i.e., somatic symptoms, anxiety and insomnia, social dysfunction, and depression from pre-test to post-test was approximately same. The results indicate that most of the caregivers of the control group didn't receive any psychological intervention and they were not familiar with how to manage their disordered relatives effectively. They continued to manage their patients as like as they had managed they in previous time and their psychological disturbances were somehow increased that were revealed by GHQ-28 scale. The findings of the present study were also supported by the study conducted by George *et al*. (2005).

A one-way ANCOVA was conducted to compare the effectiveness of two groups and the results of ANCOVA shown in Table 4.

Table 4. Analysis of covariance (ANCOVA) model representing experimental and control groups on post-test score while covariate pre-test score of psychological disturbance.

Source	Type III Sum of Squares	df	Mean Square	*F*	*p*	Partial Eta Squared
Pre-test (covariate)	16.165	1	16.165	.448	.509	.016
Groups	1938.874	1	1938.874	53.756	.000	.666
Error	973.835	27	36.068			

Results reported in Table- 4 revealed that there was a significant difference in post-test score [F (1, 27) = 53.76, $p < .001$] between the groups whilst adjusting for pre-test score of psychological disturbances. Therefore, psychoeducation decreases psychological disturbance in the experimental group compared to the control group. In other words, 67% of the variance of total remaining scores is due to the effect of the treatment. The findings of present study have shown that caregivers after participating in psychoeducation had experienced lower levels of psychological disturbances than caregivers in control group.

For identifying whether the mean difference in experimental groups was significant or not, paired sample *t*-test were calculated and the findings shown in Table-5.

Table 5. Comparative outcome of paired-sample t-test values of total psychological disturbances with four sub-scale assessed by GHQ-28 scale in terms of the pre and post assessment in the experimental group.

Total GHQ-28 with Four Subscale	Pre-test		Post-test		*t*-value
	M	SD	M	SD	
Total Psychological Disturbances	54.80	1.90	40.20	8.10	7.20**
Somatic symptoms	11.20	1.61	08.13	3.70	4.08**
Anxiety & Insomnia	15.13	1.36	11.33	3.89	3.93**
Social dysfunction	12.73	1.39	09.73	3.06	4.35**
Severe depression	15.73	1.33	11.00	4.14	5.04***

Note. $^{**}p < .01$, $^{***}p < .001$.

Results reported in Table 5, shown that there is significant reduction both in total psychological disturbances in pre-test (M=54.80) as compared to post-test (M=40.20, t=7.20, p<.05) and also its four subscales i.e., somatic symptoms in pre-test (M=11.20) as compared to post-test (M=8.13, t= 4.08, p=.001), for anxiety and insomnia in pre-test (M=15.13) as compared to post-test (M=11.33, t= 3.93, p=.002), for social dysfunction in pre-test (M=12.73) as compared to post-test (M=9.73, t=4.35, p=.001) and in case of severe depression in pre-test (M=15.73) as compared to post-test (M=11.00, t=5.04, p<.001) by enhancing clarity of knowledge of caregivers.

The findings of this study are also supported by previous studies. Martire *et al.* (2009) found that psychoeducational approach had reduced the level of expressed emotion in caregivers towards the person with mental disorder and not for among them who developed coping strategies that helped decrease the burden and stress of caregivers. Another supported study was conducted by Navidian and Bahari (2008) where found that caregivers' level of social functioning in psycho-education group also improved significantly [F (2, 95), (p<.01)] over time duration from Time 1 to Time 3, when was compared with the routine care group. In addition, the score of the standard care group showed a marked deterioration at Time 2 and remained at a low level at Time 3. The same result was also identified by another study where it also found that depression scores significantly decreased in the patients' families and relatives who had received psychoeducation intervention (Radfar *et al.,* 2014).

Considering the supportive evidence and the findings of the present study, it can be concluded that psychoeducation intervention is effective for family caregivers for enhancing caregiver's quality of life and reducing psychological disturbances as compared to those of the control group. It can also be mentioned that regardless of having other psychosocial or medical treatment, psychoeducation has significant effect on caregivers for reduction of psychological disturbances that is emergency need not only for maintaining their psychological well-being but also for the patients to quick relieve with preventing relapse and rehabilitations.

Limitations and directions for future research

The present study has its own virtue though having some shortcomings. The study was carried out with a small number of selected participants only from one hospital in Dhaka city. A bigger and more extensive sample of all over the Bangladesh would be taken for more amendment outcomes. Moreover, psychoeducation was provided to the caregivers individually within two sessions. For getting more turned effect of psychoeducation among caregivers, more individual sessions with additional necessary psycho educational information and group setting including follow-up sessions would be considered. These limitations suggest a path for further research. However, the present study is an imperative stepping stone in educating the caregivers to bring about changes in patients acre and to promote psychological well-being both for patients and their caregivers.

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Conflict of Interests

The authors declared no conflict of interests.

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