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RESEARCH ARTICLE

Effect of psycho-education on Knowledge, Attitude and Burden among caregivers of persons with Bipolar Disorder – Randomized Controlled Trial

Linu Sara George, Dr. PSVN Sharma, Dr. Sreekumaran Nair

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*Corresponding Author

Linu Sara George

Abstract

Background: Bipolar disorder is a recurrent and long term mental illness that can seriously affect the lives of patients and their families. Bipolar disorder is different from the normal ups and downs that everyone goes through in life, its symptoms are severe. They can result in damaged relationship, poor job functioning and even lead to suicide. **Method:** A randomized controlled trial was used with a sample size of 50; 24 in experimental and 26 in control group. Five sessions of psycho-education was conducted for the caregivers in experimental group after the baseline assessment and the outcome was measured immediately after the intervention and at 1 month and 3 months. **Results:** The result shows that there was a significant improvement of knowledge and attitude scores among the care givers in the experimental group as compared to the control group ($p = 0.001$). There was a reduction in burden scores of the experimental group as compared to the control group ($p = 0.007$). **Conclusion:** Psycho-education can improve the knowledge and attitude among caregivers of persons with Bipolar Disorder and reduce caregiver burden.

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INTRODUCTION

According to National Mental Health Institute report, bipolar disorder is different from the normal ups and downs that everyone goes through in life, its symptoms are severe. It can result in damaged relationship, poor job functioning and even lead to suicide.

Caregivers of people with bipolar disorder face different challenges than with other illnesses (Ogilvie, 2005 and Collingwood, 2010). The caregiver will be affected by cultural and social attitudes to the illness, and these have important effects on the level of burden experienced. Manic episodes of the illness are very disruptive to daily life, work and family relationships. Great demands may be placed on the family members to be involved in caregiving. These demands can persist even during remission, where residual symptoms are often still present (Collingwood 2010).

Perlick et al (2007) reported that burden experienced by family caregivers of people with Bipolar Disorder are associated with problems in health, mental health, and cost. Psychosocial interventions targeting the strains of caregiving for a patient with Bipolar Disorder are needed.

Many studies have been conducted to identify the burden among caregivers of patients with Bipolar Affective Disorder (Zergaw et al, 2008), Naidian and Bahari, 2008) and (Binil, 2009). There are limited studies which have explored the effectiveness of an appropriate intervention to deal with the caregivers burden.

Psycho-educational goal includes helping patients to adjust and come to terms with a chronic illness, enhancing treatment compliance, providing information and emotional support to patients and their families. (Vieta and Colom (2004). Psycho-education, family focused psycho-education and cognitive behavior therapy can help both the patient and the family members to learn to recognize early warning signs of oncoming episodes, thus obtain early treatment and identify possible triggering factors (Scott et al 2007).

In our setting, the logistics of organizing individual psycho-education is manageable than group psycho education. Co-ordinating serial appointments of a group of caregivers from disparate social backgrounds and geographical locations for interventions have been found to be difficult in our clinical set up.

The investigator felt the need for a tested psycho-education package appropriate to the situation prevailing in the developing countries and also the need to know the impact of psycho-education in the routine care. The routine care for the patients includes pharmacotherapy, electroconvulsive therapy where indicated and other informal teaching given by the treating doctors and other mental health personnel. The present psycho-education would be an additional intervention to the individual participants. The aim of this study was to assess the effect of psycho education on knowledge, attitude and burden among caregivers of persons with Bipolar Affective Disorder.

2. Materials and methods

2.1 Study population, Study design

The study was a Randomized controlled trial (RCT) with two group parallel design. The intervention group received psycho-education and the control group received routine instructions from the healthcare personnel.

A total of 150 persons with Bipolar Disorder and their caregivers were screened for eligibility. Among them, 90 did not meet the inclusion criteria. Sixty caregivers were identified for participation. Caregivers were between 20-60 years of age, could listen, speak and comprehend Kannada language clearly were selected. Caregivers who were having chronic medical illness and those who were diagnosed with drug dependence or organic mental disorders were excluded from the study.

The sample size was obtained with this formula

$$n = \left[Z_{\alpha} \frac{\sqrt{2PQ}}{(P_1 - P_2)^2} + Z_{\beta} \frac{\sqrt{P_1Q_1 + P_2Q_2}}{(P_1 - P_2)^2} \right]^2$$

The alpha value was taken as 1.282 with a power of 80% and the level of significance as 5%. The primary outcome variable used for the sample calculation was adherence to treatment which was not included in this article. It was assumed that, the general adherence is 50% and expecting the change to 75% after completion of the intervention. To detect 0.25 difference, the sample size calculated as needed was 25. It was decided to recruit 30 each in both the groups assuming 20% of attrition rate from two selected hospitals of Udupi District, Karnataka, India. These hospitals were included by considering the similar type of treatment modalities given for the persons with Bipolar Disorder. Both the hospitals have outpatient facility which functions six days a week.

2.3 Randomization Procedure

Participants were randomly assigned to experimental and control arms by block randomization during their stay in the hospital. In this study the investigator used block randomization to assign participants randomly to the experimental and the control group. A block of size 10 was used and a total of 6 blocks was prepared much before the data collection considering a total of 30 samples in a sealed envelope. Ten folded and sealed paper with a written code designating experimental or control was kept inside the envelope and each of the participants was asked to pick the folded and sealed paper. Then the participants were assigned to either experimental group or control group based on the written code. Within each block, five participants were allocated to each arm of the trial.

The primary caregivers of those patients who met the inclusion criteria were included in the study. The experimental group was given psycho-education while both the groups were receiving the routine instructions from the health care personnel. The routine instruction includes the informal teaching given by the health care professionals. Both the groups were assessed at baseline, immediately after the last session and at one and three months. In the experimental group six of the participants refused to continue with the psycho education after the pre test. In the control group five of the participants gave only the pretest. Hence the final sample was 24 in experimental and 25 in control group respectively.

2.4 Ethical Considerations

The study was approved by the Hospital Ethics Committee. Written permission was obtained from the concerned hospital authorities. All caregivers who participated in the study were fully informed about the purpose of the study and the duration of the study. Signed consent was obtained from each caregiver.

2.5 Intervention

Psycho-education was carried out for caregivers in five sessions with each session lasting for 30 minutes during the hospital stay of their patients. In the usual clinical setting, the same caregiver may not come for each follow up visit of the patient. As it would be difficult to alter this, psycho-education for the caregiver was administered during the inpatient stay, consideration with availability of time while not interfering with their chores of looking after the patient, arranging for meals, attending to their cleanliness and washing of clothes, performing religious rituals etc. The present psycho-education which was developed by the investigator incorporates only the basic information related to Bipolar Disorder. The sessions were divided into meaning and causes, signs and symptoms, treatment, ways to lead a healthy life and the caregivers' responsibility. The psycho-education was delivered by the investigator by using flip charts, posters and handbook on Bipolar Disorder prepared by the investigator. The immediate effect was checked by administering the tools on the 6th day and short term effect at one month and three months after the psycho-education. The details of the sessions are given in Table 1.

2.6 Outcome measures

The outcome measures were knowledge and attitude with regard to Bipolar Disorder and also the burden among the caregivers. The tools used were: socio-demographic proforma, Knowledge Questionnaire for Family Caregivers, Scale of Family Caregivers attitude towards Bipolar Affective Disorder and Burden Assessment Schedule of SCARF. The socio demographic proforma, knowledge questionnaire and attitude scale was prepared by the investigator. The socio demographic proforma was used to collect the background information of the caregiver. The knowledge questionnaire for family caregivers consisted of 20 structured items under the areas meaning, epidemiology, causes, features, treatment and warning signs. The maximum possible score was 49. The five point rating scale of family caregivers attitude towards bipolar affective disorder consisted of 22 items under the areas; concept, occurrence, cause, treatment, relationship with family, acceptance and stigma. The range of possible scores varied from a minimum score of 22 to 120. The burden assessment schedule of SCARF was a standardized 40 item scale which measures different areas of burden like financial burden of caregivers, occupation, patient behaviour, social relations, caregiver's health, family relations and emotional burden. Each item is rated on a three point scale (not at all, to some extent and very much). The scores range from 40 to 120, with higher scores indicating greater burden (Thara et al, 1998). Validity was not done since it is a standardized tool. Criterion validity was established by comparing with the Family Burden Schedule (Pai and Kapur, 1981). All the tools were given to nine professional experts to ensure the validity of the items and translated to Kannada language.

The reliability of the knowledge questionnaire was established by using Kuder Richardson formula (Garret, 1981). The value obtained was 0.98 which clearly indicates the reliability of the tool. Cronbach alpha was used to calculate the reliability coefficient for Attitude Scale and Burden Assessment Schedule and it was found to be 0.79 and 0.87 respectively.

2.7 Statistical Analyses

The statistical package SPSS 16 was used for descriptive and inferential statistics. In line with the study hypotheses, differences between groups at each assessment point were the focus of analysis. Frequency and percentage was computed for describing socio-demographic characteristics of the caregivers of persons with Bipolar Disorder. Chi square and Exact test was computed to test whether there was a significant difference between the groups in their sample characteristics. Repeated measure analysis of variance was used to find the effect of psycho-education on knowledge, attitude and burden among the caregivers. This test was used because primary interest was between group comparison of change rate in the expected value of a response variables over time.

3. Results

Figure 1 shows the flow of subjects recruited to the study.

3.1 Baseline characteristics of caregivers

The baseline characteristics were summarized in table 1. Fifty two percent of the caregivers were females and belonged to the age group of 41-60 years. Most of them (64%) were married and were housewives (36%). Ninety two percent of the caregivers were Hindu by religion with an educational background of below Pre University College (70%). Both the groups were comparable at baseline.

3.2 Knowledge

The data presented in table 2 shows that the average improvement of knowledge score in the experimental group (33.6+_8.6) is significantly higher than the control group (17.6+_8.5). A significant difference was found between the groups ($p=0.001$).

3.3 Attitude

The data presented in table 3 indicates that the average improvement of attitude scores in the experimental group (89.7+_7.2) is significantly higher than the control group (73.1+_9.7). After the psycho-education a significant difference was found between the groups ($p=0.001$). This improvement was retained after 3 months of psycho-education. The study addressed the hypothesis that there was a significant difference between the control and the experimental group in terms of knowledge and attitude.

3.4 Burden

Table 4 shows the difference in burden scores among caregivers in the experimental (59.3+_10.7) and control group (70.1+_11.2). The finding indicated that the difference is statistically significant ($p=0.007$). The psycho-education has influenced reduction in burden scores of caregivers in the experimental group.

Table 1

Planned schedule of Psycho education programme

SESSION	DURATION	SESSION	ACTIVITIES
Session I	30 minutes	Overview of the sessions Meaning of terminologies and causes <ul style="list-style-type: none"> - State the meaning of Mania, Depression and Bipolar Disorder - Causes of Bipolar Disorder 	<ul style="list-style-type: none"> - Explained by using flip charts and relevant examples.
Session II	30 minutes	Review of first session Signs and symptoms of Bipolar Disorder <ul style="list-style-type: none"> - Signs and symptoms of Mania - Signs and Symptoms of Depression - Mixed episode 	<ul style="list-style-type: none"> - Flipchart - Narration of signs and symptoms by the caregivers based on their experience
Session III	30 minutes	Review of previous session Modalities of treatment <ul style="list-style-type: none"> - Medicines - ECT - Psychotherapy 	<ul style="list-style-type: none"> - Flipcharts - Discussion
Session IV	30 minutes	Review of previous session Measures to deal a healthy life Warning signs of bipolar mania and depression	<ul style="list-style-type: none"> - Posters - Flipcharts

Session V	30 minutes	Review of previous session Role of the caregivers	- Discussion with the caregivers - Posters
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Table 2: Baseline characteristics of Caregivers

Socio demographic variables	Experimental (n=24)		Control (n=26)		Total (n=50)		p value
	f(%)		f(%)		f(%)		
Age in years							
20-40	11	(45.8)	13	(50)	24	(48)	0.768
41-60	13	(54.2)	13	(50)	26	(52)	
Gender							
Male	13	(54.2)	11	(42.3)	24	(48)	0.402
Female	11	(45.8)	15	(57.7)	26	(52)	
Education							
< Pre University college	19	(79.2)	20	(76.9)	39	(78)	0.760
>_ Pre University college	8	(33.3)	5	(19.2)	13	(26)	
Illiterate	1	(4.2)	1	(3.9)	2	(4)	
Occupation							
Agriculture	0	(0)	3	(11.5)	3	(6)	0.286
Coolie	5	(20.8)	5	(19.2)	10	(20)	
House wife	7	(29.2)	11	(42.3)	18	(36)	
Clerical	1	(4.2)	0	(0)	1	(2)	
Teacher	1	(4.2)	2	(7.7)	3	(6)	
Professional	1	(4.2)	0	(0)	1	(2)	
Others	9	(37.5)	5	(19.2)	14	(28)	
Marital status							
Married	16	(66.7)	16	(61.5)	32	(64)	0.856
Unmarried	6	(25)	8	(30.8)	14	(28)	
Widowed	2	(8.3)	1	(3.9)	3	(6)	
Divorced /separated	0	(0)	1	(3.9)	1	(2)	
Relationship with patient							
Parent	6	(25)	9	(34.6)	15	(30)	0.395
Children	3	(12.5)	7	(26.9)	10	(20)	
Sibling	7	(29.2)	5	(19.2)	12	(24)	
Spouse	8	(33.3)	5	(19.2)	13	(26)	
Religion							
Hindu	22	(91.7)	24	(92.3)	46	(92)	0.241
Christian	0	(0)	2	(7.7)	2	(4)	
Muslim	2	(8.3)	0	(0)	2	(4)	

Table 3: Difference in knowledge scores among Caregivers

Group	Knowledge scores			p value
	Post test 1-pre test Mean \pm SD	Post test 2- pre test Mean \pm SD	Post test 3-pre test Mean \pm SD	

	(95%CI)	(95%CI)	(95%CI)	
Experimental (n=24)	12.8 ± 10.9 (8.2to17.4)	13.4 ± 9.6 (9.31to17.4)	14.8 ± 9.4 (10.8to18.7)	<0.001
Control (n=26)	0.3 ± 4.3 (-1.5to1.9)	0.2 ± 6.2 (-2.3to2.7)	1.2 ± 5.4 (-1.04to3.4)	

CI, Confidence interval

Table 4: Difference in attitude scores among Caregivers

Group	Attitude scores			p value
	Post test 1-pre test Mean ± SD (95%CI)	Post test 2-pre test Mean ± SD (95%CI)	Post test 3-pre test Mean ± SD (95%CI)	
Experimental (n=24)	6.9 ± 8.9 (3.1to10.6)	10.1 ± 10.5 (5.7to14.5)	13.2 ± 11.5 (8.3to18.03)	<0.001
Control (n=26)	-0.3 ± 4.8 (-2.2to1.7)	1.7 ± 8.2 (-1.6to5.05)	0.04 ± 7.7 (-3.05to3.1)	

CI, Confidence interval

Table 5: Difference in burden scores among Caregivers

Group	Burden scores			P value
	Post test 1- pre test Mean ± SD (95%CI)	Post test 2-pre test Mean ± SD (95%CI)	Post test 3-pre test Mean ± SD (95%CI)	
Experimental (n=24)	-9.1 ± 9.5 (-13.2to-5.09)	-8.7 ± 13.9 (-14.5to-2.8)	-9.5 ± 2.7 (-14.8to-4.1)	0.007
Control (n=26)	1.8 ± 5.9 (-0.6to4.2)	-3.3 ± 9.6 (-7.2to0.5)	-2.3 ± 9.8 (-6.3to1.7)	

CI, Confidence interval

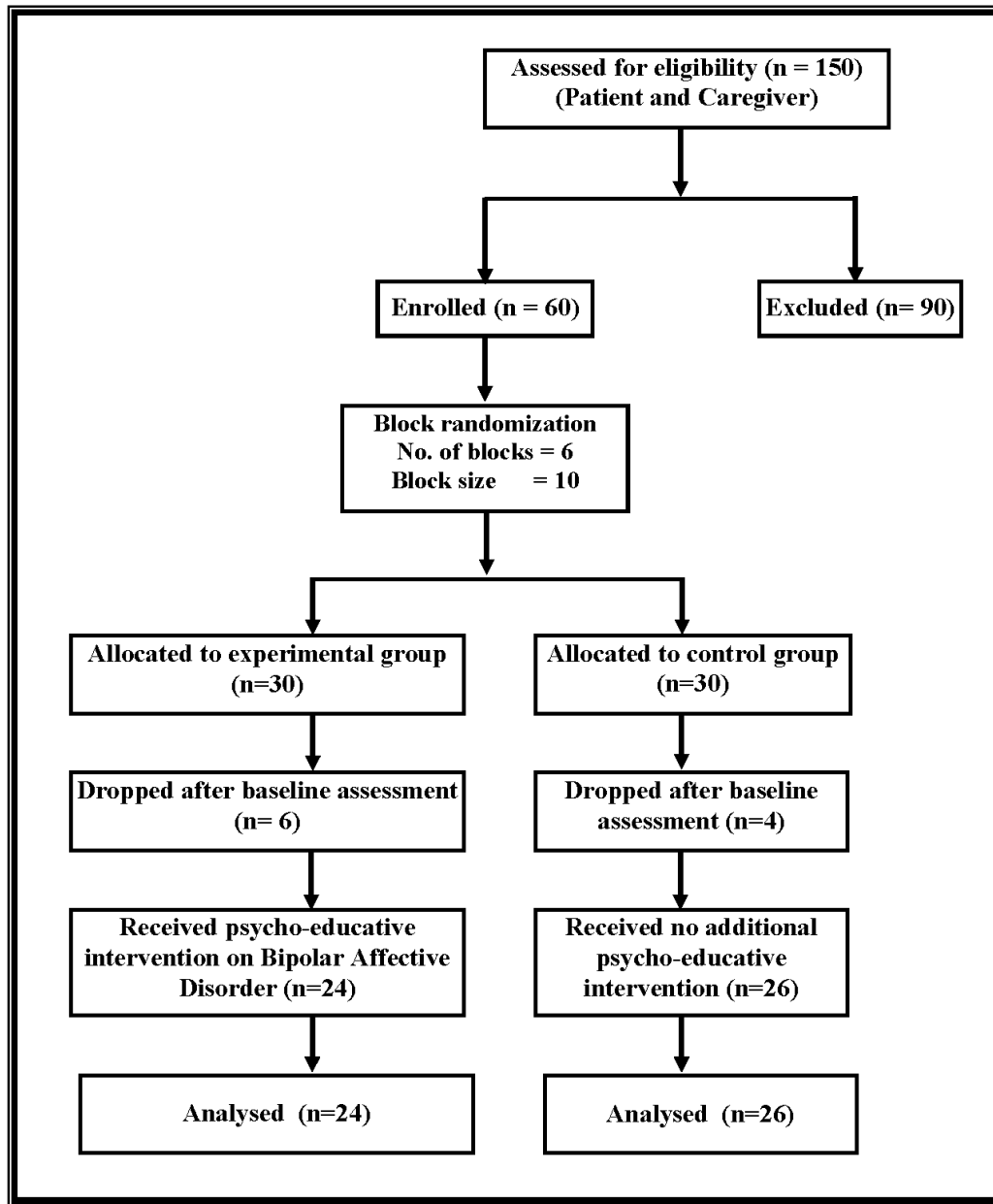


Fig 1: Flow chart of subjects recruited to study

4. Discussion

4.1 Knowledge and attitude among Caregivers

Result in the present study showed a significant difference in post test knowledge and attitude scores in experimental group as compared to the control group ($p=0.001$). The main finding of our study is that a significant improvement in knowledge and attitude scores in experimental group participants who received the psycho-

education plus the routine instructions from the health care personnel than in those in the control group who received only the routine instructions.

The results of the study by Reinares et al (2004) showed that psycho educated caregivers significantly improved their knowledge of bipolar disorder and reduced both the subjective burden and the caregivers belief about the link between the objective burden and patient. The same result was identified by Ghadirian et al(2009) where there was significant improvement in the total score of Family attitude questionnaire before and after the intervention between groups ($p=0.01$). On the basis of the present evidence it can be inferred that psycho-education is important for the caregivers to have a better understanding about their patient's condition and also to help them in their maintenance treatment. The improvement in knowledge and attitude was retained after three months of intervention.

4.2 Burden among Caregivers

The present study showed a significant difference in post test burden scores among caregivers in the experimental and the control group. ($p = 0.007$). The caregivers burden mainly depends on the condition, type of symptoms and functioning of the patient. The caregivers perception about bipolar disorder had an impact on the levels of burden experienced. Family interventions are deserving special attention since they may help to relieve the burden of care borne by relatives, which in turn may facilitate the task of supporting the patient. The psycho-educative intervention had reduced the burden among caregivers of persons with Bipolar Disorder and the impact was retained three months after the intervention.

The findings of the present study was supported by the study conducted by Bernard et al (2006) in which the objective burden was reduced significantly one year after the intervention ($p = 0.03$) and not directly after the intervention ($p = 0.30$). Omranifard et al (2009) confirm that there was no significant difference between the control and the experimental group in the mean score of family burden. Cujipers and Stam (2000) studied the effect of psycho educational support groups among 164 participants and the result showed 57% and 54% of variance in subjective burden.

The nurse must recognize her responsibility in educating the patient as well as the caregivers about Bipolar Disorder and its treatment so that frequent admissions to hospital and the duration of stay can be reduced. Families experience a lot of burdens like (financial, social and psychological) in serving as long term caregivers for their loved ones. Although the primary focus of family psycho-education was to improve patient outcomes, an essential intermediate goal is to promote the well-being of the family. Administrators of mental health services should be aware of the needs of the caregivers of patients having long term illness and formulate policies which enforce mental health professionals to include psycho social interventions in their day to day interventional activities with the patients and caregivers.

Longer follow up period may be used in order to understand the long effects of psycho-education. It was not feasible in this study to explore the lived in experience of caregivers. So the investigators recommend in conducting in- depth qualitative research in this area. The psycho-education material can incorporate specific information related to drugs in the future studies. The feasibility of a group psycho-education can be explored in our Indian setting.

This is the first study of its kind which was done in our setting. The present study used individual psycho-education because it is more specific and focused and can cover information and content that is more relevant for individual situation.

5. Conclusion

It is concluded that, psycho-education can improve the knowledge and attitude among the caregivers and reduce caregiver burden when combined with routine instructions. Educating the caregivers can bring about change in patient care. The results highlight the benefits of psycho-education as flexible supportive intervention in this setting.

Conflict of Interest

The author declare no conflict of interest.

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