

Effect of needs-assessment-based psychoeducation for families of patients with schizophrenia on quality of life of patients and their families: A controlled study

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ABSTRACT

Introduction: Family psychoeducation is one of the most routine interventions in a schizophrenic patients' management. We evaluated the effects of a needs-assessment-based educational program in comparison with the current program on global function and quality of life (QOL) of the patients and their families. **Materials and Methods:** In this controlled study, 60 schizophrenia patients and their families were allocated for a needs-assessment-based psychoeducation (treatment) and current education (control) programs. The family members of both the groups participated in 10 sessions of education, within about six months. The patients' global function and QOL were assessed with the global assessment of function (GAF) and the Schizophrenia Quality of Life Scales (SQLS), respectively. The families' QOL was assessed with the World Health Organization's (WHO) Quality of Life-BREF (WHOQOL-BREF). Assessments were done at the beginning and then every six months, for a total of 18 months. **Results:** Forty-two cases completed the study. Global function was improved with the treatment ($P = 0.002$), but not in the control group ($P = 0.601$). The patients' quality of life in the treatment group showed significant improvement on the psychosocial ($P < 0.01$) and symptoms/side effects subscale scores ($P < 0.01$), but not on the energy subscale score ($P > 0.1$). There was no significant change in the family's quality of life in both groups. **Conclusions:** The family psychoeducational needs assessment may lead to more improvement in schizophrenic patients' global function and quality of life, but has no significant effect on their families' quality of life. It is recommended that the psychiatric care centers develop their psychoeducation profiles based on the needs-assessment program.

Key words: Family, needs-assessment, psychoeducation, quality of life, schizophrenia

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INTRODUCTION

Schizophrenia is one of the most debilitating psychiatric disorders worldwide.^[1,2] Caring for patients with schizophrenia is a significant burden on the families and caregivers.^[3-7] Recent advancements in biological treatments reduces the need for long-term hospitalization, and therefore, the role of the patients' families is dominant in the treatment process. Hence, the related problems are experienced more in the family environment, which affects their daily life.^[5,8] Accordingly, interventions such as patient and family education and social work activities, with the aim of

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improving the patients function and also helping the families to appropriately deal with the patients' problems have gained more attention.^[9]

These programs are helpful in the treatment of schizophrenia, mainly through reduction of the expressed emotion and early detection of the relapse symptoms.^[10-15] Family psychoeducation is one of the most effective interventions in the treatment of schizophrenia patients. Various studies have shown that psychoeducation of schizophrenic patients' families not only enhances the social and global functions of the patients, but also improves the quality of life for both of them^[13,16-20]

Although the principles of psychoeducation programs that run in mental health centers of different countries are somewhat similar, the contents are markedly different. This can reflect the differences in the needs and attitudes of those receiving the education.^[21] Schizophrenia is a disorder with considerable heterogeneity in the symptoms and clinical course. Furthermore, the cultural and psychosocial status and attitude of the family and the patient toward the disorder could be different in various communities.^[22-25] Accordingly, the education program content should be adjusted based on the needs of the population.

We implemented and evaluated the efficacy of a needs-assessment-based psychoeducation program in our society. In the first step, the educational needs of schizophrenic patients' families were evaluated in a qualitative study. Our findings showed three major concepts with regard to the problems that the families experienced with the patients, including social functioning, stress reactions, and Not knowing much about the disease.^[25] On the basis of these results, we prepared booklets for a needs-assessment-based psychoeducation program. Then, in a controlled study we compared the effects of two methods of psycho-education including: (1) A needs-assessment-based and (2) a text-book^[26]-based psycho-education program for the schizophrenic patients' families, on their function and quality of life.

MATERIALS AND METHODS

Patients and settings

This controlled clinical trial was conducted on patients with schizophrenia and their families, in a Behavioral Research Center, in the Noor Hospital in Isfahan, (Iran), from 2011 to 2013 (six-month intervention and 18-month follow-up). The diagnosis of schizophrenia was approved by a psychiatrist after conducting a semi-structured interview, based on the DSM-IV-TR criteria.^[27] Patients with a debilitating disease, such as, uncontrolled epilepsy and mental retardation, and those who were addicted to any substance, drug or alcohol, and also, patients who had received psychoeducation or family therapy during the past two years were excluded from the study. Considering the type I error = 0.05, study power = 0.8, and expected difference of 25% in the response rate, between

the two groups, the sample size was calculated as 30 patients per group. The study was approved by the Ethics Committee of the Isfahan University of Medical Sciences, and all the participants signed an informed consent.

Intervention

The participants read and signed a consent form approved by the Ethical Research Committee of Isfahan University of Medical Sciences and then they were alternately divided into two groups of treatment and control. Both groups were under biological therapies with their attending psychiatrists in the same structure of 10 sessions biweekly and psychoeducation for their families done with a similar structure in a pattern provided by Atkinson and Coia,^[26] but the content of psychoeducation for the treatment group was slightly different and was provided by a needassessment study.^[28] In this group we added some items based on need assessment such as: What the family attitude and practice have to be with regard to the ignorance of routine religious activities (such as prayer, Hejab, Fast and....) by the patients? The content of the control group education program was only text-book-based^[26] psychoeducation of the schizophrenic patients' families that was implemented as a routine program in this clinic. Structurally our intervention was done in 10 serial sessions (two sessions per month) and the subjects included for education were: (1) What do you know about schizophrenia? (2) What is schizophrenia? (3) What causes schizophrenia? (4) Different methods of treatment of schizophrenia, (5) Problems of the patient's family, (6) Family and Schizophrenia (learning ways to deal with stress), (7) Creating an environment with minimal stress (coping skills), (8) How to manage and control the chaotic behaviors of the patients, (9) Use of services that deal with the crises, and (10) Where are we and where will we be?

Teachers of the treatment group were two residents of Psychiatry, who had been trained for needs-assessment-based psychoeducation, but the control group was educated by two mental health nurses, who were working for the clinic.

Assessments

Baseline characteristics of the disease and the demographic variables were assessed using a semi-structured interview with both patients and their family members.

The global assessment of function (GAF) index was used to evaluate the global function of the patients. The GAF was widely used to assess the schizophrenia patients' outcomes; this score reflected the construct of the global psychological, social, and occupational functioning that the scale was designed to measure. It is a numeric scale with 10-point intervals and a total score ranging from 0 to 100, where a higher score indicated a better performance. This scale is accepted worldwide as a reliable and valid instrument for the assessment of psychiatric patients' global functioning in the clinical and research settings.^[29] Hilsenroth and colleagues reported an Intraclass Correlation Coefficient of 0.86 for this

scale (ICC > 0.74 indicates an excellent reliability of the scales); with regard to the validity of the scale they reported two related loading factors of social and occupational function that scored 0.58 and 0.60 by clinicians and 0.64 and 0.64 by external raters, respectively.^[30]

The Schizophrenia Quality of Life Scale (SQLS) was used to measure the patients' quality of life. The SQLS developed by Wilkinson and colleague in 2000, reported a reliability of 0.95 for the psychosocial and 0.85 for the motivation and energy (cognition and vitality) subscales. The overall reliability of the total score was not reported. SQLS is a self-administered 30-item questionnaire with responses scored from 0 to 4 and evaluates the quality of life on three subscales: Psychosocial, motivation and energy, symptoms, and side effects. The score of each subscale can be converted from 0 to 100 in such a way that higher scores indicate greater impairment in the quality of life.^[31]

The quality of life of families was assessed with the World Health Organization's Quality of Life Questionnaire-Short Form (WHO Quality of Life-BREF (WHOQOL-BREF), which is the summarized form of the WHOQOL-100. The questionnaire had 26 items with a response scale of 1 to 5 and measured the quality of life in four main areas: Physical health, mental health, social relationships, and environmental health. The score could then be converted to the 0 to 100 range, where a higher score was assigned to a better quality of life.^[32]

In this study, we used the Persian version of the WHOQOL-BREF, which has appropriate validity and reliability (Cronbach's alpha = 0.61 to 0.74).^[33] Patients and their families completed the mentioned instruments at the beginning and then every six months (months 6, 12, and 18).

Statistical analyses

Data were analyzed with the SPSS software version 16.0 (IBM Corporation, Chicago, Ill). Quantitative and qualitative variables were reported by median, mean \pm standard deviation (SD), and frequency (%), respectively. The Independent Sample *t*-test was used for comparison of quantitative variables between the two groups. The Mann-Whitney U Test was applied. Since data were not normally distributed, the Friedman test was applied to evaluate the significance of the changing trends in the GAF, SQLS, and WHOQOL-BREF scores in time. A *P* value of less than 0.05 was considered significant in all analyses.

RESULTS

In this study 74 cases (patient and their families) were entered into the study, but 14 cases were excluded according to the criteria. Finally, 30 cases were included in each group, Eighteen were excluded because the patient or the family did not attend more than 50% of the evaluations. Thus, 20 cases in the treatment and 22 in the control group completed the study [Table 1].

Table 1: Comparison of demographic characteristics between the two groups

	Case n=20	Control n=22	P
Age, year	31.8 \pm 8.3	49.7 \pm 10.8	<0.001*
Male/female	15/5	19/3	0.294
Disease duration, year	9.8 \pm 6.3	18.1 \pm 12.3	0.002*
Education level, from illiterate (0) to MSc and above (7)	4.9 \pm 1.4	3.5 \pm 1.3	0.002**
Marital status			
Single	15	9	
Married	3	12	0.050***
Divorced/separated	2	1	

* Independent *t*-Test, ** Mann-Whitney U Test, *** Chi-Square Test

Patient's quality of life

The psychosocial subscale score decreased nonsignificantly from 46.67 to 40.00 (*P* =0.092) in the treatment group, no significant change was observed in the control group (50.00 to 55.00, *P* > 0.1), The energy subscale score decreased in both the treatment (50.00 to 41.07, *P* > 0.1) and control groups (69.64 to 69.64, *P* > 0.1), changes were not significant.

According to repeated measure analysis, there was a difference between the two groups in this regard (*P* < 0.01), Table 2.

The symptoms/side effects subscale score significantly decreased in the treatment group (15.62 to 7.81, *P* < 0.01), but no change was observed in the control group (37.5 to 34.37, *P* > 0.1) [Table 2].

Family's quality of life

No significant change was observed in the physical health subscale score in the two groups – treatment (63.00 to 56.00 *P* > 0.1) and control (38.00 to 47.00, *P* > 0.1). Also, the psychological health subscale score did not significantly change in the treatment (56.00 to 56.00, *P* > 0.1) or the control group (38.00 to 38.00, *P* > 0.1). With regard to the social relationship subscale score, there was no increase in the treatment group (50.00 to 50.00, *P* > 0.1) and a nonsignificant increase in the control group (31.00 to 44.00, *P* > 0.1). According to the repeated measure analysis, the two groups were significantly different in this regard (*P* < 0.01) [Table 2].

Finally, there was no change in the environmental health subscale score in the treatment group (56.00 to 56.00, *P* > 0.1), it decreased nonsignificantly in the control group (50.00 to 47.00, *P* > 0.1), and there was a difference between the two groups in this regard (*P* = 0.0310).

There was a significant increase in the GAF score from the baseline to the eighteenth month in the treatment group (from 37.00 to 45.04, *P* < 0.01). The GAF score did not change significantly in the control group (33.45 to 34.00, *P* > 0.1) [Table 2].

Controlling covariates

According to the differences in the significant factors between the two groups, with the possible effects on the

Table 2: Changes in the total GAF, SQLS, and WHOQOL-REF during the study in the two groups

Group	Case		Control		P value between groups ³
	Mean (SD)	Median (min - max)	Mean±SD	Median (min - max)	
GAF0_total	38.0 (11.0)	3.8 (2 - 6)	32.0 (9.7)	3 (2 - 6)	0.055
GAF6_total	43.0±11.0	4.3 (2 - 7)	33.0±9.4	3 (2 - 6)	0.001
GAF12_total	44.0±12.0	4.4 (3 - 7)	32.0±12.0	3 (1 - 7)	0.001
GAF18_total	46.0±12.0	4.6 (3 - 7)	33.0±11.0	3 (2 - 7)	<0.001
P value each group ¹	0.001		0.601		
Total P value trend ²	0.002				
Sqol0_total	37.2±16.7	33.9683 (13.07 - 69.85)	50.2±15.3	51.3492 (13.07 - 69.85)	0.016
Sqol6_total	35.5±14.4	33.7202 (23.35 - 82.38)	50.2±16.6	54.1766 (23.35 - 82.38)	0.010
Sqol12_total	32.9±15.2	30.2629 (14.34 - 77.04)	48.9±16.1	52.2867 (14.34 - 77.04)	0.003
Sqol18_total	31.6±16.1	30.8234 (10.14 - 74.26)	49.7±16.9	54.9107 (10.14 - 74.26)	0.001
P value each group ¹	0.321		0.816		
Total P value trend ²	0.130				
Who0_total	56.3±11.9	59.2500 (32.75 - 76.75)	43.5±12.6	43.8750 (17.50 - 67.50)	0.002
Who6_total	57.1±10.8	57.1250 (36.25 - 75.00)	44.6±14.9	40.8750 (17.25 - 78.00)	0.005
Who12_total	56.7±13.3	54.1250 (37.75 - 81.50)	46.5±17.9	44.7500 (17.25 - 81.25)	0.049
Who18_total	56.9±14.9	54.1250 (33.00 - 92.50)	43.7±16.2	43.1250 (17.25 - 76.50)	0.007
P value each group ¹	0.702		0.303		
Total P value trend ²	0.328				

¹: Comparison between follow-up time in treatment and control groups, ²: Comparison between follow-up time in total, ³: Comparison between groups, SD: Standard deviation, GAF: Global assessment of function, SQLS: Schizophrenia quality of life scales, WHOQOL-BREF: World Health Organization's Quality of Life-BREF

outcomes such as, age, disease duration, educational level, and marital status, and considering these factors as covariates, we repeated the analysis. With regard to global function, the needs-assessment-based intervention remained associated with the GAF score changes ($P = 0.05$). Regarding the patient's quality of life, the needs-assessment-based intervention remained associated with the changes in the psychosocial ($P < 0.01$) and symptoms/side effects subscale scores ($P < 0.01$), but not with the energy subscale score ($P > 0.1$). Finally, with regard to the family's quality of life, the needs-assessment-based intervention was not associated with changes in any subscale scores.

DISCUSSION

The aim of the present study was to compare the effects of a needs-assessment-based psychoeducation program with the current method^[26] of psychoeducation on schizophrenic patients' functions and quality of life, as also of their families. We found that education based on needs-assessment led to a greater improvement in the patient's global function and quality of life, but has no significant effects on the quality of life of their families. This supports our hypothesis that education-based needs-assessment is more effective than the currently used educational method for the treatment of schizophrenia.

Thus far, many studies have addressed the effectiveness of psychoeducation in the treatment of schizophrenia. In a systematic review on 44 clinical trials (including 5142 patients), it was found that psychoeducation improves global and social functioning and quality of life of the patients and improves satisfaction with mental health

services.^[13] Although the components and content of the current educational programs are different, successful programs should have the following approaches in common: (1) Considering schizophrenia as an illness, (2) should be designed and directed by professionals, (3) should be a part of a more comprehensive treatment package that includes biological treatments, (4) consider the family members as treatment factors and not the patients, (5) focus on the disorder outcome, although family outcomes are also important, and (6) not having the conventional belief of family therapy that behaviors and relationships in the family play the key role in the etiology and development of schizophrenia.^[10] The information content of family psychoeducation programs are diverse, and in general, include awareness about the nature of the disorder and its symptoms, the drugs, and their complications, adherence to treatment, getting familiar with the early symptoms of relapse, crisis strategy, role of the family in treatment, training communication skills, rehabilitation, and education on health behaviors.^[10,13]

Psychosocial and economical differences as well as the varieties in attitudes toward and perception of the disorder in prioritizing the educational needs among different communities makes it necessary to customize the content of the educational programs according to the priorities. Each psychosocial intervention requires financial resources, time, appropriate facilities, and educated and motivated therapists; all of these may fall short in different communities.^[14] When education is coordinated with the family needs, it conveys a sense of being understood, which would enhance participation of the families in the treatment sessions.^[13] Linszen *et al.*^[34] demonstrated that the education on additional issues that are not needed by the family or considered as low-priority items

by them would increase the stress.^[35] In a study similar to the current study in India, two family education programs; one standard and organized program and a flexible program tailored to the needs of the family members, were compared. The obtained results indicated that although the two methods were not significantly different in psychopathology and the disease burden for the caregivers, most families considered the latter more appropriate, which led to higher family cooperation.^[36]

The effect of family psychoeducation on the family's quality of life has been investigated in a limited manner by previous studies and most of them have evaluated the family burden. Some studies reported that family psychoeducation can reduce family/caregiver burden.^[20,37-40] In contrast, Chan *et al.* reported short-term, but not long-term benefits of psychoeducation for family burden.^[41] Also, González-Blanch *et al.* reported that a brief family psychoeducation is not sufficient to reduce the family burden.^[42] Some other studies also did not find any beneficial effects of family education^[43] or family group treatment^[44] on family outcomes. Differences among the mentioned studies could be attributed to differences in the methods of family burden assessment and more importantly to the type of intervention. Our intervention, even though it was based on the educational needs of the families, did not improve the family outcome. It is possible that our assessment method was not appropriate as we used a general, and not a disease-specific quality-of-life questionnaire for the family. Also, it is essential to appropriately integrate the family's quality of life issues into the psychoeducation program, for which our intervention might have inadequacies, as it was focused on patient care. These results highlighted the need for new approaches in the area of psychoeducation, based on both the patient's and family's needs.

Our study had some limitations. Considering the limited human resources, the sample size was small and the follow-up period was short. Moreover, the two groups were not matched in their basic characteristics, although we used multivariate analysis to overcome this shortcoming.

CONCLUSIONS

The obtained results in the study indicated that family psychoeducation based on needs-assessment led to more improvement in schizophrenic patient's global function and quality of life, but had no significant effects on their family. Therefore, the content of educational programs should be customized in each community with regard to their own needs-assessment. Also, it seemed that the family's quality of life issues needed to pay more attention to the manner in which they approached the psychoeducation program content. These approaches would enhance the effectiveness of the education and also prevent spending time and financial resources on unnecessary items. Further studies with larger sample sizes and longer follow-up periods are warranted in this regard.

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