



The Effects of Family Psychoeducation Courses on Depression, Anxiety and Family Functioning in the Caregivers of Schizophrenic Patients

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Abstract

Background: Schizophrenia is one of the most serious psychiatric diseases that affects the patient's family members in addition to the patient himself. This disease can lead to depression and anxiety in the family members of the patient and even affect their functioning.

Objectives: The present study was conducted to investigate the effect of a short-term family psychoeducation course on the depression and anxiety family functioning in caregivers

Methods: In this before-after clinical trial, 163 first-degree family members of patients with schizophrenia were invited to participate in a short-term FPE course. A total of 65 of this group attended the first training session. Prior to the first session, the beck depression inventory (BDI), the beck anxiety inventory (BAI), and the family assessment device (FAD) were completed for the participants based on a family functioning model. Six months after the end of the FPE course, the 36 subjects who had completed the initial questionnaires and fully attended the sessions were invited to complete the questionnaires again. A total of 31 subjects completed the questionnaires again at this stage. The data were analyzed by SPSS-20 software using Mann-Whitney and Wilcoxon rank tests.

Results: The mean age of the participants in both stages of questionnaire completion was 48.64 ± 11.85 years. Among them, 16 (51.6%) were female, and 15 (48.4%) were male. Also, six (19.4%) subjects had an education above high school, and mothers were the most frequent participating family members with a frequency of 11 (35.5%). The anxiety and depression scores of these subjects were 10.8 ± 5.14 and 6.9 ± 2.45 at baseline, respectively. These scores decreased significantly after six months to 5.03 ± 2.48 and 4.40 ± 1.9 , respectively. In addition, among family functioning, Role and Behavioral control was significantly improved (P -value < 0.05).

Conclusions: The results of this study showed that depression and anxiety levels decreased in the family members of the examined patients six months after an FPE course. This effect can be further investigated through studies conducted with control groups. These findings suggest that the integration and institutionalization of FPE programs in the healthcare system are essential for improving the status of patient caregivers with severe psychiatric illnesses and their families.

Keywords: Schizophrenia, Caregivers, Family Education

1. Background

Schizophrenia is a chronic and severe psychiatric disease that afflicts more than 23 million people in the world (1). This disease causes disability in the patient's routine life and usually affects their education and occupation (2). More than 50% of schizophrenia patients across the world, especially in developing countries, do not receive proper treatment; one of the reasons for this issue is the lack of access to healthcare services. Schizophrenia is curable and controllable, and medicinal treatment along with psychosocial support is effective in improving the patients' status. It has now been proven that the old therapies pro-

vided in psychiatric hospitals do not work, and new therapeutic approaches should be used in Community Mental Health Centers (CMHCs) instead (3).

Schizophrenia affects not only the patient but also his / her family. In addition, the family has a significant role in the progression of the disease and the alteration of the severity of its incidence (4). It should generally be accepted that this disease increases the burden on family caregivers (FCGs) and engages the family members' feelings and emotions, and pushes them toward depression as well (5). These problems can interfere with the social and occupational functioning of the patient's family members. With the onset of the disease, the family begins to focus on

the patient's problems and forgets their own health (6). As unofficial caregivers, family members become so involved in the health of their patients that anxiety and stress overcome them, and they become a high-risk group for mental illness (7). For this reason, and with the tension growing in the family environment, the possibility of recurrence of the disease increases despite the family's care efforts. Considering this issue, paying attention to the health of the family and the home environment will also help the patient recover (8).

Some health interventions, including education and support for family members, have a significant reducing effect on anxiety and depression in this group (9). Family psycho-education (FPE) courses have been designed and implemented from around 30 years ago to reduce the problems faced by FCGs and patients (10, 11). The FPE is held by psychologists and psychiatrists and seeks to promote knowledge, capability, and hope in family members and guides their feelings of dissatisfaction with life and having to face a family member with a chronic psychiatric disorder such as schizophrenia toward a sense of satisfaction (12). The purpose of FPE courses is not only to raise awareness and improve the functioning of family members and reduce their anxiety and stress, but it is also considered part of the patient's treatment that can help reduce the frequency and severity of disease relapses (13). Studies have shown that better responses are obtained by adding FPE to the conventional treatment of schizophrenic patients (14-16).

Iran is also one of the developing countries where the mental health system is transforming from old-style psychiatric hospitals toward CMHCs. According to studies conducted in Iran, the prevalence of psychotic disorders in the early years of this century was 0.89% based on the diagnostic and statistical manual of mental disorders (DSM-IV) classification (17). Meanwhile, ten years later, Sharifi et al. reported the prevalence of psychotic diseases less than the previous study and about 0.5% based on the DSM-IV diagnostic criteria (18). Considering the results of these two studies as well as the WHO figures, the number of people with schizophrenia in Iran ranges from at least 400 (considering the prevalence of 0.5%) to 800,000 (considering the prevalence of 1% based on global findings). At least 400,000 families throughout the country are therefore involved with this chronic problem. If reducing the burden on caregivers is considered one of the mental health goals in Iran, macro policies are needed to cover the large population of these families (about 1.5 million people). Launching CMHCs is among the programs that the Ministry of Health has designed to reduce the burden of mental illness on patients and their families as the main emphasis in care-

giving. This ministry has developed guidelines for setting up these centers and determined the ways to deal with and treat all mental disorders in patients and their caregivers (19). The FPE is one of the methods detailed in this guideline.

2. Objectives

The present study was conducted to determine the effect of FPE on family functioning, anxiety, and depression in the family members of patients with schizophrenia.

3. Methods

In this before-after clinical trial, family members of patients with schizophrenia were selected using convenience sampling. This study was approved by the Ethics Committee of Qazvin University of Medical Sciences with IRCT code: 20180223038835N1, and all participants gave written informed consent. The samples comprised the family members of patients who were hospitalized in the psychiatry department with diagnosis of schizophrenic patients were 351 patients from March 20 to September 20, 2017, then were contacted with them. Approximately 50% of the invited people, 163 persons, participated in the present study. Many people did not have the necessary cooperation in the two sessions completely that we mentioned in the limitations of this study. According to a power of 80% and a level of significance of 5%; finally, 31 samples were included in the study. The inclusion criteria consisted of family caregivers (20 to 60 years old), including father, mother, spouse, sister, or brother of patients who were the primary caregivers and lived with the patient. According to the initial interview, family caregivers did not have any mental disorder and signed a consent form to participate in the study. Exclusion criteria consisted of patients with any other mental disorders such as schizophrenia, mental retardation, drug abuse, and epilepsy, and unwillingness or dissatisfaction to continue participation in the study (absence more than two sessions in the educational program). We also excluded patients with uncompleted data.

At first, the subjects were interviewed using the beck depression inventory (BDI), the beck anxiety inventory (BAI), and the family assessment device (FAD) based on the McMaster model of family functioning (MMFF). The interviews were held by a collaborating psychiatrist in 8 - 12 person groups in the hospital conference hall during two weekly sessions.

BAI is a 21-item questionnaire scored on a 4-point Likert scale from 0 to 3 that examines anxiety symptoms in

the person. The total scores of the questionnaire determine the individual's anxiety score. The maximum score in the questionnaire is 63, and a score above 36 indicates high anxiety that needs treatment. The questionnaire has already been psychometrically assessed in Iran, and its reliability and validity are acceptable for the Iranian society (20). BDI has also been evaluated for the Iranian society, and its validity and reliability have been confirmed (21). The BDI, just like BAI, has 21 items and is scored on a 4-point Likert scale from 0 to 3. Emotional, cognitive, and physical symptoms are the domains of the questionnaire. The maximum total score of this questionnaire is 63. Scores 0 to 13 indicate no depression, 14 to 19 indicate mild depression, 20 to 28 indicate moderate depression and scores above 29 indicate severe depression.

The FAD has 60 items within six domains, including problem-solving, communication, roles, affective responsiveness, affective involvement, and behavioral control. Each domain is composed of a number of items, and the interviewee can answer the items with options ranging from 'strongly agree' to 'strongly disagree'. Lower scores for each domain and for the total FAD indicate functioning with less disorder. This questionnaire was designed by Epstein et al., and its validity and reliability have been measured (22). The questionnaire has also been evaluated in Iran, and its validity and reliability have been approved (23).

The FPE courses were designed in accordance with the CMHC guidelines and included two 120-minute sessions. The sessions were held in groups and managed by two individuals. The educational subjects included an introduction to psychiatric diseases in general, an introduction to schizophrenia, the disease symptoms, warning signs and early help, treatment, and medications, and ways for families to help their patients. Six months after the training, BDI, BAI, and FAD were re-completed for those who had participated in the intervention program. Six people did not visit at this stage. In addition, nine questionnaires were excluded due to deficiencies.

The collected data were entered in SPSS-20 software. Considering that the subjects were grouped in only one intervention group, the scores before and after the intervention were calculated and compared. The paired t-test was used to compare the scores. In addition, the subjects were divided into two groups in terms of education. The student t-test was used to compare the scores of these two groups. The Mann-Whitney and Wilcoxon rank tests were used for comparison in cases where the distribution was not normal or for non-parametric variables.

4. Results

A total of 31 participants completed the training course and completed the questionnaires six months later too. The mean age of the subjects was 48.64 ± 11.85 years, and 16 (51.6%) were female, and 15 (48.4%) were male. Mothers were the most frequent participating family members with the frequency of 11 (35.5%). Table 1 shows the subjects' demographic characteristics and family relationship with the patient.

Table 1. Demographic Characteristics of the Subjects

Index	No. (%)
The main caregiver of the patient in the family	
Father	5 (16.1)
Mother	11 (35.5)
Spouse	8 (25.8)
Sister	1 (3.2)
Brother	2 (6.5)
Child	4 (12.9)
The family caregiver's place of residence	
Urban	27 (87.1)
Rural	4 (12.9)
The caregiver's education	
Below high school	19 (61.3)
High school and above	12 (38.7)
The family caregiver's gender	
Female	16 (51.6)
Male	15 (48.4)

The comparison of participants' scores before and after the intervention showed a significant increase in the domains of roles and behavioral control six months after the intervention. The depression and anxiety scores of the participants were 6.9 ± 2.45 and 10.8 ± 5.14 , respectively, before the intervention, which represented a low depression and anxiety level. After the intervention, these scores decreased significantly to 4.40 ± 1.9 and 5.03 ± 2.48 , respectively, which again represented a low depression and anxiety level. In addition, among family functioning, Role and Behavioral control was significantly improved (P -value < 0.05) (Table 2).

5. Discussion

The present findings revealed a significant reduction in the subjects' depression and anxiety scores and a significant increase in the scores of the roles and behavioral con-

Table 2. A Comparison of the Indices before and Six Months after the Intervention in the Participants

Index	Before the Intervention	Six Months After the Intervention	P-Value
Anxiety	10.8 ± 5.14	5.03 ± 2.48	< 0.001
Depression	6.9 ± 2.45	4.40 ± 1.9	0.001
Family functioning			
Communication	17.0 ± 6.01	17.64 ± 5.86	0.403
Affective involvement	18.22 ± 5.77	19.8 ± 5.92	0.061
Roles	20.83 ± 9.95	25.06 ± 9.23	0.01
Problem-solving	9.03 ± 3.86	9.29 ± 3.28	0.5
Affective responsiveness	13.06 ± 4.57	13.96 ± 5.07	0.182
Behavioral control	18.96 ± 8.58	22.12 ± 8.00	0.04
Total score	22.2 ± 8.11	23.06 ± 7.94	0.319

rol domains after six months. After dividing the subjects into two groups in terms of their level of education, no significant change was observed in any of the indices in those with an education above high school, while a significant reduction was observed in anxiety and depression scores and a significant increase in the roles score in the subjects with an education below high school.

Studies show that 60% of people with schizophrenia live with their family members, and 25% of these FCGs suffer from mental disorders (24). Although a high prevalence has been reported for depression and anxiety in these individuals, they showed no signs of mood disorders prior to the affliction of a family member of theirs with schizophrenia (25). The most important factors related to depression in these people included gender, socioeconomic status, number of family members, marital status, and the relationship with the patient. The results of this study showed that none of the FCGs had depression in the 31 families studied; however, their depression scores decreased further after the FPE course. The same was true for anxiety. Although the stress and anxiety of caregiving comprised one of the factors contributing to the affliction of these people with mood disorders (26), no clear anxiety was observed in the present study.

The results of another study conducted in Iran on the family members of schizophrenic patients showed a significant decrease in the depression score after an FPE course. The discussed study was a clinical trial on 90 family members of patients divided into an FPE intervention group and a control group. Their results showed that education, occupation, and relationship with the patient were factors contributing to the effect of the FPE course on the subjects (27). The present findings were similar to the results of that study. The depression score decreased significantly after the FPE course, but the reducing effect of the course on de-

pression was significant only in people with lower levels of education.

Another study was also conducted in Iran on the family members of patients with schizophrenia. In that study, the family members received an educational package in the intervention group. In addition, they participated in a group discussion about schizophrenia. In contrast, two control groups, including a placebo control group (without a training package and group discussion) and a negative control group, were also studied. All the subjects were interviewed at baseline and three months after the end of the intervention. Their results showed that the subjects' awareness had increased in the intervention group, and the effects of the disease on their feelings and attitudes had declined. One of the important points of their study was that although there were few people in the intervention group, they collaborated with the researchers until the end of the study (28). This is a point that was not observed in the present study, as 15 of the 46 subjects (about 30%) became unwilling to continue participation in the study for any reason.

A study similar to the present study was conducted in India as a developing country, in which 30 family members of schizophrenic patients entered an intervention study with no control groups. By the end, 26 of these people remained in the study. The assessment of depression and anxiety in this group before and after the study did not reveal a significant change (27). In the present study, there was a significant reduction in anxiety and depression scores, even though the present study was also an interventional study without a control group, and therefore, these changes cannot be solely attributed to FPE.

Nevertheless, according to the results, roles showed a significant increase only in the subjects with an education level below high school. This domain has 11 items cat-

egorized into five groups, including financial or capital resources, parenting and support, personal development, family management, and sexual satisfaction. The score obtained in this domain was nevertheless very close to the cut-off point (29), and it perhaps cannot be considered indicative of a disorder. In addition, the improved functioning is not solely related to the increase in the subject's educational level and requires a change in attitude and continuous training on ways of coping with stress if the goal is to achieve behavioral improvements in the individual.

The truth is that the presence of a patient with a severe and chronic psychiatric disorder, which is associated with periods of exacerbation, is very difficult for family members, especially those who are directly responsible for taking care of the patient and imposes a lot of burden on the caregiver. The lack of information about the disease and the feeling of inadequacy in taking care of the patient exacerbates anxiety in the FCG. This situation is especially more discernible in the patients' parents (30). Therefore, most international guidelines recommend setting up CMHCs and organizing FPE courses. Establishing such centers will also help save the family budget, and families can benefit from these community centers at much lower costs than psychiatric hospitals. FCGs can thus be at least relieved of the financial burden of their patient's disease (30). Nevertheless, due to the various problems in societies, especially in developing societies, as well as the different views of some health policymakers, such centers have not yet become well spread around the world.

For the past years, CMHCs have been designed in Iran according to global patterns and have been incorporated into some healthcare centers. One of the important tasks of these centers based on the protocol developed by the Ministry of Health is to include the training of patients' families. The purpose of these sessions is to educate families about their patient's behaviors being unwanted and thereby reducing the family's anger toward the patient. At the same time, the family members of these patients will be able to talk to each other about their patients' problems and learn how to treat the patient correctly both from the trainer and from each other. In addition, they learn self-care, thereby diminishing their anxiety and depression. At the same time, the family members of the patients will be able to talk to each other about their patients' problems and learn the correct way of treating their patients both from the trainer and from each other. In addition, family members will also learn self-care in these sessions and will be able to employ strategies to control anxiety and depression and, if necessary, seek help from a psychiatrist to improve their own life and health.

Based on a three-year experience of holding FPE

courses at Qazvin Psychiatric Hospital, despite the contact with the family members of the patients, only 30 - 50% have participated in these courses. The design of these courses should be modified such that FCGs are both able and willing to attend all these sessions in spite of all their problems. In addition, families should be properly familiarized with these courses so that they can see clearly how their participation in these sessions can reduce their caregiving burden both for themselves and for the patients. Frequent follow-ups of patients through phone calls or visits at home can be pursued to introduce these courses.

Most of the people who did not participate after the initial call were those with a higher level of anxiety and depression and more disrupted family function, and they did not participate in the initial interventions either; as a result, the individuals who participated in the educational courses were those with a better function and less anxiety and depression.

Our study had weak points, e.g., this study did not have a control group, and the sample drop was high. One of the strong points of the present study was that we observed that the contents of the training sessions are not able to answer all the questions of the families. Thus, we write an educational booklet "answer to 33 repetitious questions of family bipolar and schizophrenia patients" and present it to the families in the sessions (31). One of the limitations of this study is that some people lived in villages or remote areas; thus, it was not possible for them to attend the meetings in the first and second sessions. Finally, it is recommended that these centers be evaluated regularly to institutionalize them and attract more patients and families to the centers, and the results of these evaluations should be used to modify the guidelines. Accordingly, it is possible to redesign and modify the executive guidelines of the centers based on the needs of the community, assess the possibility of their implementation, and integrate the centers across cities and villages, particularly in the primary healthcare system, at all levels.

5.1. Conclusion

The results of this study showed that the depression and anxiety levels of the FCGs decreased six months after the FPE course. Despite the short duration of the training, this finding suggests that holding even a short-term educational course may have a positive effect on the anxiety and depression of FCGs. A controlled clinical trial can better verify these results. Despite the positive effect of these courses on depression and anxiety, these programs appear to not have yet been institutionalized for implementation in the target group, as only 25% of those invited for FPE participated in this study. According to the results

of this study, further studies are recommended to assess the implementation and evaluation of these programs and their institutionalization and integration into the health-care system.

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Footnotes

Authors' Contribution: Seyede Zahra Hashemi: Designed the study and wrote the manuscript; Seyed Alireza Haj Seyed Javadi: Edited the manuscript; Seyed Mohsen Zamir: Edited the manuscript; Ameneh Barikani: Analyzed the data.

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References

- World Health Organization. *Mental health: schizophrenia*. 2013. Available from: www.who.int/mental_health/management/schizophrenia/en/.
- Tandon R, Gaebel W, Barch DM, Bustillo J, Gur RE, Heckers S, et al. Definition and description of schizophrenia in the DSM-5. *Schizophr Res*. 2013;**150**(1):3-10. doi: [10.1016/j.schres.2013.05.028](https://doi.org/10.1016/j.schres.2013.05.028). [PubMed: [23800613](https://pubmed.ncbi.nlm.nih.gov/23800613/)].
- World Health Organization. *Comprehensive Mental Health Action Plan 2013-2020*. Geneva: World Health Organization,; 2013. Available from: apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R8-en.pdf.
- Addington J, Van Mastrigt S, Hutchinson J, Addington D. Pathways to care: help seeking behaviour in first episode psychosis. *Acta Psychiatr Scand*. 2002;**106**(5):358-64. doi: [10.1034/j.1600-0447.2002.02004.x](https://doi.org/10.1034/j.1600-0447.2002.02004.x). [PubMed: [12366470](https://pubmed.ncbi.nlm.nih.gov/12366470/)].
- Chakrabarti S. Family interventions in schizophrenia: Issues of relevance for Asian countries. *World J Psychiatry*. 2011;**1**(1):4-7. doi: [10.5498/wjp.v1.i1.4](https://doi.org/10.5498/wjp.v1.i1.4). [PubMed: [24175161](https://pubmed.ncbi.nlm.nih.gov/24175161/)]. [PubMed Central: [PMC3782168](https://pubmed.ncbi.nlm.nih.gov/PMC3782168/)].
- Kuipers E, Onwumere J, Bebbington P. Cognitive model of caregiving in psychosis. *Br J Psychiatry*. 2010;**196**(4):259-65. doi: [10.1192/bjp.bp.109.070466](https://doi.org/10.1192/bjp.bp.109.070466). [PubMed: [20357299](https://pubmed.ncbi.nlm.nih.gov/20357299/)].
- Lasebikan VO, Ayinde OO. Family burden in caregivers of schizophrenia patients: prevalence and socio-demographic correlates. *Indian J Psychol Med*. 2013;**35**(1):60-6. doi: [10.4103/0253-7176.112205](https://doi.org/10.4103/0253-7176.112205). [PubMed: [23833344](https://pubmed.ncbi.nlm.nih.gov/23833344/)]. [PubMed Central: [PMC3701362](https://pubmed.ncbi.nlm.nih.gov/PMC3701362/)].
- Weisman AJPT. Integrating culturally based approaches with existing interventions for hispanic/latino families coping with schizophrenia. *Psychother Theor Res Pract Train*. 2005;**42**(2):178-97. doi: [10.1037/0033-3204.42.2.178](https://doi.org/10.1037/0033-3204.42.2.178).
- Gutierrez-Maldonado J, Caqueo-Urizar A. Effectiveness of a psycho-educational intervention for reducing burden in Latin American families of patients with schizophrenia. *Qual Life Res*. 2007;**16**(5):739-47. doi: [10.1007/s11136-007-9173-9](https://doi.org/10.1007/s11136-007-9173-9). [PubMed: [17286192](https://pubmed.ncbi.nlm.nih.gov/17286192/)].
- Anderson CM, Reiss DJ, Hogarty GE. *Schizophrenia and the family: A practitioner's guide to psychoeducation and management*. Guilford Press; 1986.
- Riebschleger J, Scheid J, Luz C, Mickus M, Liszewski C, Eaton M. How are the experiences and needs of families of individuals with mental illness reflected in medical education guidelines? *Acad Psychiatry*. 2008;**32**(2):119-26. doi: [10.1176/appi.ap.32.2.119](https://doi.org/10.1176/appi.ap.32.2.119). [PubMed: [18349331](https://pubmed.ncbi.nlm.nih.gov/18349331/)].
- Veltro F, Falloon I, Vendittelli N, Oricchio I, Scinto A, Gigantesco A, et al. Effectiveness of cognitive-behavioural group therapy for inpatients. *Clin Pract Epidemiol Ment Health*. 2006;**2**:16. doi: [10.1186/1745-0179-2-16](https://doi.org/10.1186/1745-0179-2-16). [PubMed: [16859548](https://pubmed.ncbi.nlm.nih.gov/16859548/)]. [PubMed Central: [PMC1552055](https://pubmed.ncbi.nlm.nih.gov/PMC1552055/)].
- McFarlane WR. Family interventions for schizophrenia and the psychoses: A review. *Fam Process*. 2016;**55**(3):460-82. doi: [10.1111/famp.12235](https://doi.org/10.1111/famp.12235). [PubMed: [27411376](https://pubmed.ncbi.nlm.nih.gov/27411376/)].
- Barbato A, D'Avanzo B. Family interventions in schizophrenia and related disorders: a critical review of clinical trials. *Acta Psychiatr Scand*. 2000;**102**(2):81-97. doi: [10.1034/j.1600-0447.2000.102002081.x](https://doi.org/10.1034/j.1600-0447.2000.102002081.x). [PubMed: [10937780](https://pubmed.ncbi.nlm.nih.gov/10937780/)].
- Dixon L, Adams C, Lucksted A. Update on family psychoeducation for schizophrenia. *Marital Fam Ther*. 2000;**26**(1):5-20. doi: [10.1093/oxford-journals.schbul.a033446](https://doi.org/10.1093/oxford-journals.schbul.a033446). [PubMed: [10755667](https://pubmed.ncbi.nlm.nih.gov/10755667/)].
- Patterson TL, Leeuwenkamp OR. Adjunctive psychosocial therapies for the treatment of schizophrenia. *Schizophr Res*. 2008;**100**(1-3):108-19. doi: [10.1016/j.schres.2007.12.468](https://doi.org/10.1016/j.schres.2007.12.468). [PubMed: [18226500](https://pubmed.ncbi.nlm.nih.gov/18226500/)].
- Mohammadi MR, Davidian H, Noorbala AA, Malekafzali H, Naghavi HR, Pouretamad HR, et al. An epidemiological survey of psychiatric disorders in Iran. *Clin Pract Epidemiol Ment Health*. 2005;**1**:16. doi: [10.1186/1745-0179-1-16](https://doi.org/10.1186/1745-0179-1-16). [PubMed: [16185355](https://pubmed.ncbi.nlm.nih.gov/16185355/)]. [PubMed Central: [PMC1253522](https://pubmed.ncbi.nlm.nih.gov/PMC1253522/)].
- Sharifi V, Amin-Esmaeili M, Hajebi A, Motevalian A, Radgoodarzi R. Twelve-month prevalence and correlates of psychiatric disorders in Iran: the Iranian Mental Health Survey, 2011. *Arch Iran Med*. 2015;**18**(2):0.
- Sharifi V, Abolhasani F, Farhoudian A, Amin-Esmaeili M. Community mental health centers in Iran: Planning evidence-based services. *Iran J Psychiatry Clin Psychol*. 2013;**19**(3).
- Kaviani H, Mousavi A. Psychometric properties of beck anxiety inventory in an Iranian population age and sex classes. *J. Med*. 2008;**66**(2):136-40.
- Dobson K, Mohammad Khani P. [Psychometric characteristics of the beck depression inventory-II in patients with major depressive disorder in partial remission. *Social Welfare And Rehabilitation Sciences*]. 2006;**8**:82-96. Persian.
- Epstein NB, Baldwin LM, Bishop DS. The mcmaster family assessment device. *J Marital Fam Ther*. 1983;**9**(2):171-80. doi: [10.1111/j.1752-0606.1983.tb01497.x](https://doi.org/10.1111/j.1752-0606.1983.tb01497.x).
- Zadehmohammadi A, Malek Khosravi G. The preliminary study of psychometric and reliability of family assessment device. *Journal of family research*. 2006.
- Magana SM, Ramirez Garcia JJ, Hernandez MG, Cortez R. Psychological distress among latino family caregivers of adults with schizophrenia: the roles of burden and stigma. *Psychiatr Serv*. 2007;**58**(3):378-84. doi: [10.1176/ps.2007.58.3.378](https://doi.org/10.1176/ps.2007.58.3.378). [PubMed: [17325112](https://pubmed.ncbi.nlm.nih.gov/17325112/)]. [PubMed Central: [PMC2396526](https://pubmed.ncbi.nlm.nih.gov/PMC2396526/)].

25. Minhas FA, Niazi RS, Basheer S, Najam N. Depression and anxiety in the caregivers of mentally ill patients. *J Pak Psychiatr Soc.* 2005;2(1):27-9.
26. Laidlaw TM, Coverdale JH, Falloon IR, Kydd RR. Caregivers' stresses when living together or apart from patients with chronic schizophrenia. *Community Ment Health J.* 2002;38(4):303-10. doi: [10.1023/a:1015949325141](https://doi.org/10.1023/a:1015949325141). [PubMed: [12166917](https://pubmed.ncbi.nlm.nih.gov/12166917/)].
27. Rezaei O, Bayani A, Mokhayeri Y, Wayne K, Sadat Y, Haroni J, et al. Applying psychoeducational program on general health and communication skills in caregivers of patients with schizophrenia: A randomized controlled trial. *Eur J Psychiatry.* 2018;32(4):174-81. doi: [10.1016/j.ejpsy.2018.04.001](https://doi.org/10.1016/j.ejpsy.2018.04.001).
28. Aghayusefi A, Mirzahoseini H, Khazaeli M, Assarnia A. The Effect of Psychoeducational Interventions on Illness Management in Families of Schizophrenic Patients. *Practice in Clinical Psychology.* 2016;4(2). doi: [10.15412/j.jpccp.06040208](https://doi.org/10.15412/j.jpccp.06040208).
29. Mansfield AK, Keitner GI, Dealy J. The family assessment device: An update. *Fam Process.* 2015;54(1):82-93. doi: [10.1111/famp.12080](https://doi.org/10.1111/famp.12080). [PubMed: [24920469](https://pubmed.ncbi.nlm.nih.gov/24920469/)].
30. Hsiao CY, Tsai YF. Factors of caregiver burden and family functioning among Taiwanese family caregivers living with schizophrenia. *J Clin Nurs.* 2015;24(11-12):1546-56. doi: [10.1111/jocn.12745](https://doi.org/10.1111/jocn.12745). [PubMed: [25488264](https://pubmed.ncbi.nlm.nih.gov/25488264/)].
31. Seyedeh Zahra H, Seyed Alireza HS]. [*Answer to 33 repetitious questions of family bipolar and schizophrenia patients*]. 1st ed. Iran: Ebnsinapub; 2020. p. 1-32. Persian.