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Evidence Based Care Journal 2017, 9:57 originally published  
online 01 January 2017

DOI: 10.22038/ebcj.2017.20528.1477

Online ISSN: 2008-370X

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EVIDENCE BASED CARE



## The Effect of Stress Management Training on Positive Experiences of Families Caring for Patients with Schizophrenia

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Received: 07/12/2016

Accepted: 05/01/2017

Evidence Based Care Journal, 6 (4): 57-65

### Abstract

**Background:** Living with schizophrenic patients and its associated stress and negative psychological burden can bring about different experiences for their families. The provision of stress management training for these families can be helpful in increasing self-confidence and enhancing interpersonal communication in these caregivers, which can improve their mental health status and enhance the quality of patient care.

**Aim:** Regarding this, the aim of the present study was to investigate the impact of stress management training on positive experiences of the families giving care to patients suffering from schizophrenia.

**Method:** This randomized controlled clinical trial was conducted on 57 primary caregivers of schizophrenic patients admitted to Ibn Sina Hospital in Mashhad, Iran in 2016. For the purpose of the study, the participants were divided into the control (including 29 individuals) and experimental groups (entailing 28 subjects). Subsequently, a stress management training program was administered on the experimental group within six one-hour sessions. On the other hand, the control group only received educational pamphlets on stress management at the end of the study. Additionally, the standardized Experience of Caregiving Inventory developed by Szmukler et al. was filled out by the caregivers before and three months after the intervention. The data analysis was performed using independent-samples t-test and Mann-Whitney U test through SPSS version 11.5.

**Results:** The findings of this study revealed that 50% (14 cases) and 69% (20 subjects) of the participants in the experimental and control groups were female, respectively. The results revealed no significant differences in the total scores for positive experiences of the caregivers in the control ( $61.2 \pm 17.3$ ) and experimental groups ( $62.3 \pm 20.7$ ) at the pre-intervention stage ( $P=0.40$ ). Likewise, no significant difference was observed between the total scores of the control group ( $64.5 \pm 14.3$ ) and experimental group ( $67.6 \pm 12.9$ ) at the post-intervention stage ( $P=0.40$ ).

**Implications for Practice:** Given the findings of the present study and considering that positive experiences are taken into account as parts of high levels of needs and performance among the caregivers, it seems that improving such positive experiences requires specific and complementary interventions.

**Keywords:** Patient care experience, Schizophrenia, Stress management

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## Introduction

Nowadays, schizophrenia is considered as one of the most common and debilitating mental disorders across the world (1). The symptoms experienced by the schizophrenic patients are often enervating (2). Accordingly, poor social functioning, self-care deficiency, movement disorders, and thought disorders are taken into account as the criteria for schizophrenia in most diagnostic systems (1). Given that the performance of these patients is disrupted in various occupational, educational, social, interpersonal, and self-care dimensions; they need permanent care in different and extensive aspects. Several studies have shown that more than 70% of the schizophrenic patients in Asian countries are living with their own families after getting discharged from hospital (3).

In the nursing profession, family is considered as the main agent promoting individual and public health, which is of fundamental importance since the most significant function of this unit is to meet the needs of its members during their evolutionary stages (4). Therefore, reviewing and recognizing family issues are essential for the nursing care services, which require the identification of the performance, strengths, and weaknesses of such a unit and also the health and welfare status of its members (2). Family is considered as a social system, and the disruption of any of its members can lead to disorders in the entire family system. This disrupted system can in turn intensify the disorders in the members and lead to new challenges (3).

The families with patients should not only provide them with the necessary care, but also be able to comply with diseases and their symptoms, and manage and control them (5). The caregivers' experiences of taking care of the patients living with mental diseases are very important since they lead to the establishment of interactions between the disease of the family member and factors inside or outside of the life of caregiver. These experiences cause anxiety, distress, as well as emotional, psychological, social, and economic stress in the members of the family, especially the primary caregivers. Such pressures can also reduce the quality of patient care and endanger the physical and mental health status of the family members, particularly the primary caregivers (6).

Accordingly, the findings of a study carried out by Hares Abadi et al. (2012), investigating the amount of the mental and psychological stress among the family caregivers of the patients with schizophrenia demonstrated that 51.4%, 36.4%, and 12.2% of the caregivers had acute, mild, and slight stress, respectively (5). The results of the aforementioned study also revealed that families experience much more distress when faced with these kinds of stressful situations, which can disrupt family structure and functioning unless they could cope with such a new situation (7).

Family functioning refers to the ability to deal with mental and psychological stress, conflicts, and difficulties (8). Scholars believe that higher amounts of stress are directly correlated with poor family functioning (9). The provision of unprincipled care for the schizophrenic patients by the family members can deteriorate the conditions of these patients. Accordingly, the caregivers' excessive criticism, too much interference in patient life, infrequent positive talks, inattention to treatment, and negative attitudes to these patients can lead to a decline in the mental and psychological abilities of these patients and also affect the course of disease and the associated relapses (10).

In order to retrieve such families to their ordinary functioning, it is essential to remove or even deal with the related problems through training programs (7). In this regard, stress management training to families is of utmost importance. The cognitive-behavioral stress management technique can increase the ability of the individuals to reduce stress and properly cope with stressful situations (11). Stress management training refers to a set of techniques and methods that are used to lower stress experienced by individuals or increase their ability to deal with life stressors (12).

The cognitive-behavioral approach to stress management is seeking positive modifications through an emphasis on changing attitudes in order to modify and maintain behaviors via identification of thoughts, situations, and excitements. In this method, it is believed that if therapists cannot modify the conditions, they can change the clients' attitudes towards life events and stressors. Using this method, the therapists enhance the clients' abilities to control stress and deal effectively with problematic situations, which in turn strengthen their sense of self-efficacy and reduce their feelings of helplessness (13).

In this therapeutic approach, the clients are assisted to identify their distorted thinking patterns and dysfunctional behaviors. To this aim, regular discussions and perfectly organized behavioral assignments are applied and the clients are expected to actively participate in the discussions by collecting information, providing feedbacks, and suggesting new strategies (14). The cognitive-behavioral approach to stress management is built on a strong theoretical foundation, and its

effectiveness in reducing disease symptoms and improving patient quality of life has been demonstrated (15).

Despite the benefits of stress management training, it has some drawbacks such as being time-consuming and costly; however, these shortcomings can be tackled through holding group work (16). Group therapy can be also beneficial as it can provide an opportunity for the information transfer, altruism, growth in social skills, imitative behaviors, peer learning, corrective emotional experiences, and emotional discharge (17).

Schizophrenia is a prevalent disorder, which leaves multiple effects and consequences on the family functioning. The majority of the families with such patients lack the required knowledge and skills regarding the patient care; as a result, they cannot make a balance between patient care and other responsibilities (18). Regarding this, the employment of stress management training for families becomes much more significant since this type of training has undeniable advantages including assisting the caregivers to comply with the patients and patient care. Based on the searches in the domestic and international databases, no similar study was found to investigate the issue discussed in the present study; however, few investigations examined the effects of stress management on different variables. Therefore, the aim of the present study was to investigate the impact of stress management training on positive experiences of patient care among the families with schizophrenic patients.

## Methods

This randomized controlled clinical trial was conducted on the families (i.e., the primary caregivers of patients) with schizophrenic patients admitted to Ibn Sina Hospital in Mashhad, Iran using non-probability sampling method (i.e., convenience sampling). For the purpose of the study, the participants were assigned into the experimental and control groups, and a pretest-posttest design was applied.

To calculate the sample size, a pilot study was administered on 20 primary caregivers and the "Comparing Two Population Means" formula was employed. As a result, with the confidence interval of 95% and statistical power of 80%, each group was estimated to entail 25 samples; however, to accommodate the dropouts, 30 participants were assigned into each group (i.e., a total of 60 individuals). One subject was removed from the control group due to not attending the post-test session. Additionally, two participants were crossed out from the experimental group because of failing to attend the training sessions and take the post-test. Accordingly, the control group and the experimental group were comprised of 29 and 28 participants, respectively.

For data collection, the researchers referred to Units 1 and 2 for males, Training Units 1 and 2 for males, Unit 1 for females, as well as Training Units 1 and 2 for females in Ibn Sina Hospital and enrolled the caregivers of the schizophrenic patients who expressed willingness to participate in the study and met the inclusion criteria. After selecting the study samples, they were divided into experimental and control groups through random assignment using the SPSS version 11.5.

To this end, a list of all the caregivers of the schizophrenic patients was provided and they were assigned numbers. Subsequently, the two right digits of the number randomly offered by the software were considered. If the two right digits conformed to the number of the individuals in the list, that person was selected as the first member in the first group, and then the subsequent numbers (in case of conformity with the number of individuals in the list) were used to complete the 30 members. Then, these 30 individuals were removed from the list and the second group was selected in the same manner (out of the ones remaining in the list).

The inclusion criteria included: 1) a minimum literacy level of primary school, 2) age range of 18-60 years, 3) living with the patients, 4) lack of any known mental disorders or impairments causing disruptions in the trainings, 5) no experience of severe crisis over the recent six months, 6) duration of disease course  $\geq 6$  months, and 7) no history of prior admission to a psychiatric hospital. On the other hand, the exclusion criteria entailed: 1) unwillingness to continue to participate in the study and attend the training sessions, 2) absence in more than one training session, 3) reports on acute stress in the final stage (i.e., after the completion of the training process and prior to the post-test), and 4) participation in other training courses on stress management.

The data collection instrument in this study included a demographic information form and the Adjusted Experience of Caregiving Questionnaire. The demographic information form contained six items about personal characteristics of the caregivers and some information about the patients (e.g., age, gender, marital status, caregiver's level of education, duration of disease course, and frequency of

hospitalization). The Adjusted Experience of Caregiving Questionnaire was developed based on the Experience of Caregiving Inventory developed by Sz mukler et al. (19). This questionnaire was used to evaluate the experiences of family caregivers with patients suffering from severe psychiatric diseases as well as the effectiveness of psychological training on these caregivers (19).

This 14-item questionnaire was comprised of two sub-scales including positive personal experiences and positive aspects of relationships. Each item was graded on a five-point Likert- scale (i.e., never, rarely, sometimes, often, and almost always). The minimum and maximum scores for this instrument were 0 and 56, respectively, and the higher score indicated stronger positive experiences.

The validities of all the research instruments were evaluated using content validity, verified by 10 faculty members of Mashhad University of Medical Sciences. The reliability of the Adjusted Experience of Caregiving Questionnaire was measured using Cronbach's alpha coefficient, which rendered values of 0.75, 0.70, and 0.82 for the sub-scales of personal positive experiences, positive aspects of relationships, and total instrument, respectively.

In the sampling stage, the research objectives were explained to the caregivers meeting the inclusion criteria within 10 min according to a coordinated program. Subsequently, they completed the consent forms in one of the visiting rooms of the hospital. Then, the Experience of Caregiving Questionnaire was distributed among all the participants and they were asked to fill them out completely.

In the intervention stage, the experimental group were divided into three groups of 10 individuals and received stress management training in Ibn Sina Hospital in Mashhad for three weeks. For more coordination, the invited individuals were called the day before or on the same day of the training session. The attendees were directed to the classroom where the training was held through the installation of some guide sheets provided by certain staff. Consequently, the stress management training was administered within six one-hour sessions (three sequential weeks) for 10-member groups using cognitive-behavioral approach and the Life Skills booklet (chapter on stress and excitement management) published by the Ministry of Health, Treatment, and Medical Education.

Training was in the form of workshops taught by a researcher who had fulfilled stress management training courses and held certificates in terms of knowledge and ability to conduct such training workshops through question and answer, lecture, and group discussion. The content of the first session included the introduction of the group, explanation of the objectives, definition and diagnosis of stress, and recognition of the sources and symptoms of stress. Topics in the second session were focused on such issues as types of stress, ways of coping with stress, as well as primary and secondary evaluation of stress.

The objectives of the third session included familiarity with adaptive coping, maladaptive coping, the benefits of effective coping, event prediction and avoidance, thought-stopping techniques, and practices for such techniques. The fourth session covered some issues like familiarity with stress management, problem-solving method and its practices, as well as main solutions to cope with stress (e.g., time management). The objectives of the fifth session included familiarity with recommendations and small applicable points to cope with stress (e.g., increasing general power), physical methods to cope with stress, sports and their benefits (psychological and physical), the impacts of sports on stress, and the effects of nutrition, sports, and sleep on stress at the beginning of the training session.

The topics of the sixth session were preparations to cope with stress, encouraging behavior training, coping with irrational thoughts, as well as relaxation and its related practices. The participants in both groups were asked to attend the location of training sessions to fill out the Experience of Caregiving Questionnaire. No intervention was administered on the control group; however, they were given educational pamphlets about stress management training at the end of the data collection stage.

To follow the ethical considerations, a letter of introduction was submitted to the given authorities in the research context. Furthermore, the researchers provided the necessary explanations to the participants and ensured them about the confidentiality of their personal information. Subsequently, the consent forms were obtained from the subjects and they were informed about their eligibility to leave the study at any time and any stage along with the issues on the delivery of the study results to families.

To illustrate and summarize the demographic characteristics of the caregivers, descriptive statistics (including mean, standard deviation, and absolute and relative frequency) were used. In terms of the analytic statistics, Kolmogorov-Smirnov and Shapiro-Wilk tests were initially employed to verify the normal distribution of the quantitative data. Subsequently, the independent t-test, paired sample t-test, and Mann-Whitney, Wilcoxon signed-rank, Chi-square, and Fisher's Exact tests, as well as

Spearman's rank-order correlation were employed to make the variables of the study homogeneous and examine the relationships between the demographic and dependent variables. The data analysis was performed through the SPSS version 11.5. The P-value less than 0.05 was considered to be statistically significance.

## Results

The results showed that 50% (14 individuals) and 69% (20 individuals) of the caregivers in the experimental and control groups were female. The results obtained from the Chi-square test indicated that both groups were homogeneous in this respect ( $P=0.145$ ). The mean ages of the experimental and control groups were  $44.7\pm 9.8$  and  $39.8\pm 11.7$  years, respectively. The independent t-test revealed that both groups were homogeneous in terms of age ( $P=0.094$ ). Other demographic characteristics of the participants in the experimental and control groups along with the results for their homogeneity are presented in Table 1.

**Table 1. Descriptive statistics of caregivers' and patients' demographic characteristics**

Group		Experimental group number (%)	Control group number (%)	Test Results
Caregiver's marital status	Single	4 (14.3)	5 (17.9)	* $P=1.000$
	Married	24 (85.7)	23 (82.1)	
Caregiver's level of education	Primary school	3 (10.7)	0 (0.0)	** $P=0.47$
	Secondary school	11 (39.3)	11 (39.3)	
	Diploma	9 (32.1)	12 (42.9)	
	Associate's degree	0 (0.0)	4 (14.3)	
	Bachelor's degree and higher	5 (17.9)	1 (3.6)	
Duration of disease course (year) (SD±Mean)		9.0±7.6	7.1±5.9	** $P=0.48$
Frequency of hospitalization		3.8±3.3	3.0±1.6	** $P=0.55$

\* Fisher's exact test, \*\*Mann-Whitney U test

The results of the Mann-Whitney U test also suggested no statistically significant difference between the two groups in terms of the mean scores for the sub-scale of positive personal experiences before the intervention ( $P=0.707$ ). Moreover, the independent t-test demonstrated that the mean scores for positive personal experiences were not statistically different between the two groups ( $P=0.282$ ) at the post-intervention stage. The results of the within-group test also demonstrated that the scores for the sub-scale of positive personal experiences obtained by the experimental ( $P=0.066$ ) and the control groups ( $P=0.426$ ) were not significantly different in the pre- and post-intervention stages (Table 2).

**Table 2. Comparing mean scores for the sub-scale of positive personal experiences among caregivers of schizophrenic patients before and after intervention for both groups**

Positive personal experience	Experimental Group (SD±Mean)	Control Group (SD±Mean)	Within-Group Test
Before intervention	58.0±24.2	58.1±20.2	* $P=0.70$
After intervention	66.2±13.6	61.9±16.2	** $P=0.28$
Differences between pre- and post-intervention stages	8.2±23.8	3.8±25.2	** $P=0.49$
Within-group test	*** $P=0.06$	**** $P=0.42$	

\*Mann-Whitney U test, \*\*Independent t-test, \*\*\*Wilcoxon signed-rank test, \*\*\*\*Paired sample t-test

Similarly, the results of the independent t-test revealed that the scores for the sub-scale of positive aspects of relationships in the experimental and control groups were not significantly different both at the pre- and post-intervention stages ( $P=0.621$ ,  $P=0.661$ , respectively). Furthermore, the results of the paired sample t-test showed that the mean scores for the sub-scale of positive aspects of relationships obtained by the experimental ( $P=0.596$ ) and the control groups ( $P=0.556$ ) were not significantly different in the pre-intervention stage, compared to those in the post-intervention stage (Table 3).

**Table 3. Comparing mean scores for the sub-scale of positive aspects of relationships among caregivers of schizophrenic patients before and after intervention for both groups**

Positive points of relationship	Experimental group (SD±Mean)	Control group (SD±Mean)	Within-group test
Before intervention	67.1±20.4	64.3±21.4	*P=0.62
After intervention	69.0±15.1	67.2±15.7	*P=0.66
Difference between pre- and post-intervention stages	2.5±24.7	2.8±26.2	*P=0.96
Within-group test	**P=0.59	***P=0.56	

\*Independent t-test, \*\*Paired sample t-test

Additionally, the Mann-Whitney U test revealed that the means for the total score of the positive personal experience in the experimental and control groups were not significant at the pre- and post-intervention stages ( $P=0.429$ ,  $P=0.401$ , respectively). Likewise, the results of the within-group test showed that there were no statistically significant differences between the experimental and control groups at both stages of the study in this regard ( $P=0.219$ ,  $P=0.726$ , respectively) (Table 4). In addition, the results of the Spearman's rank-order correlation suggested that only the level of education among caregivers was significantly correlated with the sub-scale of positive personal experience ( $P=0.026$ ,  $r=0.298$ ).

**Table 4. Comparing means and standard deviations of total scores for positive experiences among caregivers of schizophrenic patients before and after intervention for both groups**

Total score of positive experiences	Experimental group (SD±Mean)	Control group (SD±Mean)	Within-group test
Before intervention	62.3±20.7	61.2±17.3	*P=0.42
After intervention	67.6±12.9	64.5±14.3	**P=0.40
Difference between pre- and post-intervention stages	5.3±21.9	3.3±22.5	*P=0.51
Within-group test	***P=0.21	***P=0.76	

\*Mann-Whitney U test, \*\*Independent t-test, \*\*\*Wilcoxon signed-rank test

## Discussion

The aim of the present study was to investigate the impact of stress management training on positive experiences of the families caring for patients suffering from schizophrenia. As the findings of this study indicated, no significant difference was observed between the experimental and control groups in terms of their total scores for positive experiences of caregiving for schizophrenic patients in the post-intervention stage. However, the mean score of the positive experience of patient care in the experimental group was higher than that in the control group.

Similarly, no significant difference was observed between the scores for the sub-scale of positive personal experience and positive aspects of relationships between the two groups. Since no similar studies were found in the domestic and international related literature, the results of the present study were separately compared with those of other investigations in terms of their different dimensions.

Sheikholeslami et al. (2013) investigated the effectiveness of stress-coping skills training through psycho-educational approach on family functioning and mental well-being among the schizophrenic patient caregivers. They observed no significant difference between the experimental and control groups in terms of the patients' family functioning; nevertheless, the mean score for family functioning in the experimental group was higher than that in the control group (20). The results of the given study were consistent with the findings of the present investigation.

It was argued that stress management training was effective for the caregivers of patients with severe mental disorders such as schizophrenia and mood disorders. These families were looking for solutions to deal with their problems due to incomplete information about caring these patients; furthermore, they faced with numerous emotional, psychological, and mental challenges; as a result, they would welcome effective coping skills presented in the stress management training (11, 13). Moreover, these types of training programs have their own problem-oriented benefits whose purpose is to modify incorrect and irrational cognitions in individuals (21).

In a study conducted by Ozkan et al. (2013), it was revealed that the provision of the mental training program for families and phone call follow-ups could lead to a significant decrease in the caregivers' psychological burden, expression of emotions, and depression and also more protection in terms of patient care (22). The results of the mentioned study were not in line with those of the present study due to factors such as duration of intervention and follow-ups, educational contents, types of research instruments, and cultural differences. The aforementioned study was conducted in a Turkish context using an eight-session intervention, a six-month follow-up, and educational contents different from those used in the present study (due to its cultural differences with Iran). Consequently, the effects of these factors on the results of the present study were not negligible.

Considering the sub-scale of positive personal experience, the results of the present study suggested that the caregivers in the experimental group had higher levels of positive experiences than those in the control group; nevertheless, this difference was not statistically significant. This sub-scale highlights such experiences as increased self-confidence, more intimate relationships with family members and other individuals, and exploration into one's strengths. More positive experiences in the experimental group could be associated with the benefits of stress management training program because such a program puts more emphasis on providing information about the disease, supports, training, and coping skills to lower pressures on the caregivers (23, 24).

One of the reasons for observing a significant difference between the pre- and post-intervention stages in terms of this sub-scale was cultural factors in Iran. In this respect, Mottaghipour et al. (2011) suggested that the tendency to report positive aspects in Iranian culture is something that should be considered. In other words, they investigated how family members paid attention to expressing feelings and positive aspects in difficult conditions such as long-term care of the patients suffering from chronic diseases (23). Furthermore, the education level of the participants was a contributing factor to the results of each study (24).

The results of the present study showed that the education level was significantly and positively correlated with caregiver's personal experience because this factor could affect their perception of training and the way to complete the questionnaire. It should be noted that in the present study, the majority of the individuals in both groups had diploma or lower education degrees. In a study carried out by Linacre (2011) it was demonstrated that long-term (more than six months) relationship between patient and caregiver and their positive experiences could lead to significant changes (24), which is inconsistent with the findings of the present study. Such discrepancy could be due to the follow-up duration, study population, and research context.

Additionally, the results of this study demonstrated that the positive aspects of relationships among caregivers in the experimental group were non-significantly higher than those in the control group. This dimension of positive patient care experiences dealt with such issues as effective individuals in the improvement of patient and the value of the presence of the patient in the family (23). It is also natural that training the ways of managing stressful situations can affect the relationships between patients and caregivers.

Accordingly, experts believe that family-oriented educational interventions may significantly enhance the experiences of patient care in the family (25). The results of these studies clarified the importance of education to families affected with functioning disorders; however, one of the reasons of observing non-significant difference in the scores of these sub-scales could be associated with cultural backgrounds. It should be noted that in the cultural context of Iran, people tend not to express positive aspects of their relationships exactly or they may spell them out just unrealistically or falsely (23). Moreover, the families of the patients with severe mental disorders such as schizophrenia living with difficult and stressful conditions need to be studied in terms of articulating positive aspects of their relationships because such factors can affect the given interventions (23, 24).

Considering one of the reasons for the significant difference in the total scores of positive experiences, it should be noted that positive experiences of caregivers (including personal positive experiences and positive aspects of relationships) are classified as parts of high levels of needs and performance among individuals, which can be obtained provided that the basic needs are fulfilled. Likewise, the present study revealed that meeting and promoting this level of performance requires long-term special and complementary interventions targeting the reduction of psychological and mental stress and caregiving burden as well as the basic needs of the caregivers.

One of the limitations of this study was the researchers' trust in the accuracy of the answers given by family caregivers. Furthermore, short-term follow-up was another limitation to this study which did not allow the researchers to do more accurate comparisons in terms of the effects of the educational interventions.

### **Implications for Practice**

The findings of the present study demonstrated that stress management training had no significant effect on positive experiences of the schizophrenic patients' caregivers although the scores for positive experiences of patient care in the experimental group were higher than those in the control group. Nevertheless, long-term follow-ups and attending to such intervening variables as caregiver's levels of education and longer duration of patient care could lead to different results. Consequently, further studies are recommended to examine the long-term experiences of the schizophrenic patients' caregivers focusing on controlling factors such as levels of education and duration of patient care.

### **Acknowledgments**

This research paper was extracted from a master's thesis in psychiatric nursing approved by the Ethics Committees of Mashhad University of Medical Sciences and Healthcare Service Center with the code number of 940782. The present study was also confirmed and registered in the Iranian Registry of Clinical Trials (IRCT2016122731248N2). Hereby, the authors of this study express their gratitude to the Vice-Chancellor's Office for Research and Technology in Mashhad University of Medical Sciences for their funding. We also appreciate all the professors, staff, and authorities in Ibn Sina Psychiatric Hospital in Mashhad and the respectable families participating in this study for their collaboration.

### **Conflict of interest**

The authors declare no conflict of interest in this study.

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