

# Design, Implementation and Evaluation of a Health Promotion Program for Family Caregivers of Chronic Mental Disorders: A Mixed Methods Study

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Family caregivers of patients with chronic mental disorders who are responsible for taking care of the patient face many problems that can endanger the psychosocial health of these people. This study was conducted to develop, implement, and evaluate a psychosocial health promotion program for family caregivers of patients with chronic mental disorders. This research is an exploratory sequential mixed-method study conducted using a qualitative-quantitative design. A qualitative study was conducted to explain the needs and psychosocial problems and the solution to improve the psychosocial health of family caregivers of patients with chronic mental disorders in two psychiatric care centers in Isfahan were conducted. Then the program was written based on Kern's programming development approach. In the quantitative stage, a part of the developed program was implemented as virtual group psychoeducation for 67 caregivers, and its impact on caregivers' burden of care was evaluated. The findings from the qualitative phase of the study led to the emergence of 3 main categories and the findings from the quantitative phase of the study indicated that the implementation of the compiled program causes a significant reduction in the burden of care in family caregivers of chronically mentally ill patients ( $p < 0.05$ ). The current program was prepared and developed using an evidence-based approach. Policymakers and members of the mental health team can take a valuable step toward reducing the care burden of family caregivers of chronic mental patients by using the content of the developed mental health promotion program

**Key Words:** Caregiver; Health Promotion; Caregiver Burden

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## INTRODUCTION

Today, we are facing an alarming increase in the incidence of mental disorders worldwide; it is estimated that approximately 19% of the world's population and 31.3% of the general population of Iran suffer from some kind of mental disorder.<sup>1</sup> Chronic mental patients make up approximately 2% of the population.<sup>2</sup> The prevalence of schizophrenia throughout life is approximately 1%, and that of bipolar disease is approximately 2%; in mild forms of the disease, the prevalence reaches up to 5%.<sup>3</sup>

Today, along with the progress in the provision of psychiatric services, we are witnessing a kind of change in the

treatment of patients with chronic mental disorders and moving the place of care from medical centers and hospitals to care in the family. This has caused families to form the main support system in the continuous care of such patients in society.<sup>4</sup> Due to the existence of strong family relationships in Eastern countries, a member of the family suffering from a chronic mental illness will bring responsibility and social burden not only for the patient but also for all family members.<sup>5</sup> As a devastating disease, it is considered not only for the patient but also for his family.<sup>6</sup>

The care of these patients starts from the onset of the disease and will continue as lifelong care.<sup>7</sup> Caregivers should make changes in their lives with changes in disease conditions and continuously adapt to the new needs of the

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patient. Social isolation and lack of social support are common experiences of these families.<sup>8</sup> In addition to emotional and physical support for their patients, these families must also bear the negative effects of stigmatization and discrimination.<sup>9</sup> In Iran, approximately 88.5% of families of patients with schizophrenia experience negative attitudes and stigma. Additionally, approximately 30% of caregivers of people with major depressive disorder and 50.5% of families with bipolar disorder suffer from discrimination and ridicule from the people around them.<sup>10</sup> The stigma of suffering from mental illness and the stereotypes that exist in society about these patients are even effective in adherence to treatment.<sup>11</sup>

The existence of a patient with a mental disorder in the family also endangers the mental health of other family members, and anxiety occurs in the family, which makes accepting a family member suffering from a mental illness an exhausting process.<sup>9</sup> By taking care of a patient with a mental disorder, these people experience many emotions that have many negative effects on them from a social and psychological point of view and provide them with the foundation for psychosocial problems.<sup>10</sup>

The term psychosocial acknowledges that people's social issues and psychological issues have a very close, dynamic, and integrated relationship with each other.<sup>12</sup> Therefore, interventions based on the promotion of psychosocial health are defined as any intervention that emphasizes the improvement of the psychological and social health of people. The realization of these interventions for the patients' families brings psychological, emotional, and social well-being to them<sup>13</sup> and helps them adapt to their physical, psychological, and social needs as caregivers.<sup>14</sup>

However, most of the time, it is observed that the main focus of the health care team is on meeting the needs of patients and treating their problems, and the needs and health of family caregivers are generally of secondary importance<sup>8</sup> and lack sufficient support resources and necessary preparation for care. are among their patients.<sup>4</sup> Considering the importance of the family, which plays the main role in the care and treatment of patients with mental disorders, neglecting the mental and social health of these people has lowered their quality of life.<sup>15</sup> In Iran, approximately 55% of patients' families of patients with mental disorders reported that they receive average and lower social support. Based on this, it can be said that one of the main responsibilities of the health care system is social and psychological support for these people.<sup>10</sup> Therefore, effective planning is the first step in reducing the emotional and psychological burden of families and improving their psychosocial health.<sup>16</sup>

Considering the need for more attention in the field of health policies as well as planning to support the families of patients suffering from chronic mental disorders,<sup>8</sup> the researchers of this study decided to conduct a study with the aim of designing, implementing, and evaluating a psychosocial health promotion program for family caregivers of patients with chronic mental disorders. Since the ques-

tions related to the above research are too broad to be examined with a specific qualitative or quantitative method and provide the necessary answers, in this study, we benefited from a mixed methods study.

## MATERIALS AND METHODS

### 1. Study design and settings

This mixed study conducted with a sequential exploratory (qualitative-quantitative) method aimed at designing, implementing, and evaluating a psychosocial health promotion program for family caregivers of chronically mentally ill patients was conducted in Noor and Farabi therapeutic training centers affiliated with Isfahan University of Medical Sciences (in Iran). The reason for choosing these educational and therapeutic centers, in addition to being known as active centers in the field of accepting and treating patients with mental disorders, was that they were located in different areas of Isfahan City, and it was possible to examine the needs of family caregivers of patients with chronic mental disorders with different cultural, social, and economic levels. In fact, by choosing these centers, sampling was performed with maximum diversity.

Kern's programming model was used to design the program. The use of this approach leads to an increase in skills and knowledge in the development of educational and care products for patients and their families<sup>17</sup> and can be effective in meeting the needs of family caregivers of patients and in reducing the burden of care in caregivers, increasing performance and quality of life-related to health in patients be located and used in rehabilitation situations.<sup>18</sup> This model is a six-step approach that includes 1. Problem identification and needs assessment 2. Prioritizing solutions 3. Determining basic and partial goals 4. Determining the content of program 5. Implementing the program 6. Evaluation.<sup>19</sup>

### 2. Step 1: problem identification and needs assessment (qualitative study)

In this step of the study, the qualitative phase was conducted using the exploratory descriptive method, which helps the researcher understand the real world as it is experienced by the study participants and is used where the dimensions of the problem are unknown or the problem is too complex.<sup>20</sup>

### 3. Participants and data collection

The participants were selected purposefully. After obtaining the code of ethics from the research assistant of the Faculty of Nursing and Midwifery of Isfahan University of Medical Sciences and obtaining the necessary permits, the study was carried out from October 2021 to February 2022. Based on this, the researcher visited Farabi and Noor educational centers in person. By studying the files of chronic mental patients, he obtained access to their main caregiver, and then in person or by phone, the field of entry of

caregivers who met the criteria for entering the study and interview was provided. Additionally, interviews were conducted with psychiatrists, nurses working in psychiatry and clinical psychologists, social workers, the occupational therapy manager of a psychiatric hospital, managers of the charity unit, and managers of the care unit for chronic mental patients affiliated with welfare centers, as well as a legal expert who works with patients and families, to better identify the various dimensions of psychosocial problems and needs, as well as ways to improve the psychosocial health of family caregivers of patients with chronic mental disorders. For this purpose, after obtaining written informed consent from the participants at this stage, an in-depth individual and face-to-face interview was conducted with the coordination of the researcher and the research participants.

The entry criteria for interviews with family caregivers included being the main family caregiver of a patient with chronic mental disorder, being responsible for taking care of the patient, having taken care of the patient with chronic mental disorder for at least two years, and being willing to participate in the study. They did not suffer from psychological problems. Additionally, the entry criteria for health team members included at least 1 year of work experience in these departments and willingness to participate in the study.

During the interview, the audio of the interview was recorded without mentioning their names and their complete anonymity, and written informed consent was obtained from them. The semistructured, face-to-face, and individual interviews aimed to identify the problems and solutions to improve the psychosocial health of family caregivers of chronically mentally ill patients. In this study, the duration of the interviews was between 20 and 60 minutes, with an average of 40 minutes.

Sample questions from family caregivers included.

What is the experience of caring for a patient with a mental disorder like for you?

How has the illness of a family member affected your life?

What problems do you face when caring for your patient?

What makes your situation better or worse as a family caregiver?

Sample questions from health team members included the following:

What problems do family caregivers of chronic mental patients face?

According to the existing conditions, what solutions do you suggest to improve the quality of care and services for these families?

#### 4. Data analysis

Data analysis was performed using the conventional content analysis method using the 7-step method of Graneheim and Lundman.<sup>21</sup> The four criteria of validity or acceptability, trustworthiness, transferability, and verifiability were used as the criteria of scientific accuracy and validity of the qualitative stage.<sup>22</sup>

#### 5. Second step: prioritizing solutions

To prioritize the strategies for improving the psychosocial health of family caregivers of chronic mental patients, a matrix was prepared, and based on that, the program for improving the psychosocial health of family caregivers of chronic mental patients was prepared. To adjust the items of different sections of the matrix, the findings obtained from the qualitative content analysis of the interviews conducted with family caregivers of chronic mental patients and members of the health team were used. A total of 37 items were compiled, and based on the similarity of the items to each other, they were placed in 8 categories. Twelve solutions related to the need for psychosocial empowerment of caregivers, 1 solution related to the category of social health problems of the caregiver, 3 solutions related to the category of inappropriate family bed and effective psychological support of the family, 7 solutions related to the economic problems of the caregiver, and 3 solutions related to the problem category of access to services. There were 5 solutions related to the category of improving the support of government systems, 3 solutions related to the category of improving the support of the health care system, and 3 solutions related to the category of improving the support of informal systems.

Then, to identify the priority solutions, the Delphi technique was performed. For this purpose, this matrix was distributed among 14 mental health specialists, including 14 people (10 senior experts in psychiatry working in the department of psychiatry, a member of the academic staff of the university, 1 person who is a PhD student in psychiatry, 1 person with a doctorate in psychiatry and a university faculty member, 3 psychiatrists and 1 person with a master's degree in psychology and 1 person with a doctorate in psychology) who were interested in the subject and had the necessary experience in this field. Each item was examined in terms of its importance, feasibility, and cost-effectiveness by expert panel members on a 5-point Likert scale, and the panel members were asked to rate each item from 1 to 5. Scoring was performed on this basis: (1) very low, (2) low, (3) medium, (4) high, and (5) very high. After collecting the matrices, the researcher entered the data into SPSS version 20 software and calculated the mean and standard deviation of each item using the basics of descriptive statistics, and the priority of the solution to improve the psychosocial health of family caregivers of chronically mentally ill patients was obtained based on the consensus of experts. If more than 80% of the panel members agreed on a solution, the level of agreement was very high. In fact, the items that scored above 12 (out of a total score of 15) were accepted.

#### 6. The third and fourth steps: determining the objectives and content of the program

To develop the program, the main categories of psychosocial health improvement strategies (which were prioritized by carrying out the Delphi technique) were considered the basis for determining the general goals and the items of

each category as partial goals of the psychosocial health promotion program for family caregivers of chronically mentally ill patients. By searching the available evidence, a guideline was prepared for each of the solutions according to the available studies and the review of guidelines and protocols in the National Institute for Health and Care Excellence (NICE) and the Scottish Intercollegiate Guidelines Network (SIGN) databases, as well as the clinical guidelines available in the medical centers and the deputy health department.

After the draft of the program was written by the researchers, the program was given to a panel of experts to validate the content and finalize it. The members of the expert panel team included two psychiatrists, two PhDs in psychiatric nursing, and two PhDs in clinical psychology working in psychiatry departments. After reaching the consensus and final approval of the panel of experts, a decision was made on how to implement and evaluate part of the finalized program.

### **7. Fifth and sixth step: implementation and evaluation (quantitative stage)**

Qualitative Phase of this mixed method study was published in *IJNMR* in 2023.

Using a quasiexperimental study, the quantitative phase of this study was conducted. Since the whole program developed for the promotion of psychosocial health for family caregivers of chronically mentally ill patients could not be implemented and evaluated in a short period of time and according to the available facilities, according to the points obtained for the strategies to improve the psychosocial health of family caregivers of chronic mental patients, in the Delphi phase and the opinion of the experts in the second panel as well as the members of the research team, the decision was made to implement an educational program aimed at improving the awareness of family caregivers of chronic mental patients regarding the nature of the disease, symptoms and symptoms of the disease, treatment methods, how to manage the symptoms of the disease, methods to prevent relapse, how to get the patient's cooperation in the treatment, methods to prevent the patient's aggression and suicide, as well as how to establish therapeutic communication between caregivers and these patients.

Regarding the implementation of the program, it was decided to implement the program virtually and on WhatsApp Messenger.

- Scores obtained in the Delphi phase.
- Experts' opinions on paying attention to health guidelines and maintaining the necessity of observing social distancing due to the spread of the coronavirus epidemic.
- The distance of many family caregivers of chronic mental patients and the difficulty of commuting to participate in face-to-face classes were strong predictors of the lack of regular participation of family caregivers in face-to-face training sessions in medical centers.
- Evidence shows that web-based interventions are accessible and cost-effective,<sup>23</sup> so much so that in today's

world, there are many efforts to promote mental health through web-based interventions (mainly known as e-mental health programs).<sup>24</sup>

The research population in the quantitative phase included the family members of people with chronic mental disorders, including spouses, fathers, mothers, sisters, brothers, and children, who were responsible for the care and emotional and economic support of patients referred to Noor and Farabi medical centers in Isfahan.

The criteria for entering the research included

- The patient was hospitalized in Noor or Farabi medical centers affiliated with Isfahan University of Medical Sciences.
- The sample should be the main caregiver of the patient and be responsible for all patient care responsibilities.
- Has taken care of a patient with chronic mental disorder for at least 2 years.
- Only one person from each family could enter the study.
- Interested in participating in the study.
- Not participating in a similar study at the same time.
- Able to communicate and be literate in reading and writing.
- Care age is 18 years and older.
- The caregiver should take care of only one chronic patient in the family.
- Ability to access the Internet and WhatsApp Messenger.
- Does not have a known mental disorder, including psychosis, or other physical disorders in such a way as to cause dysfunction.

The samples were selected by a convenient sampling method and were placed in the test and control groups using a random number table. The sample size in each group was determined to be 35 people. Informed consent was obtained from the samples. The data collection tools were the demographic profile form and Zarit care burden questionnaire.

Training sessions for the intervention group were held online and in the WhatsApp messaging space. The intervention group received the psychosocial health promotion program in 4 weeks (Table 1). The rules of the group included the complete study of educational materials, doing assigned tasks, and removing from the group if two assignments were not completed.

On Saturdays, the list of contents sent for the week was posted for caregivers. Two days a week (Sunday and Tuesday) were dedicated to sending educational materials in the form of audio and text messages related to the subject and photos written throughout the day. Two days a week (Wednesday and Thursday) were dedicated to questions and answers to caregivers' questions. Fridays were dedicated to summarizing the submitted materials. Skill-based exercises were provided for the samples participating in the considered intervention group, the exercises performed by the samples were sent to the researcher virtually in the interval between the sessions, and the necessary feedback was given to the samples from the researcher's side. One

**TABLE 1.** The contents of the web-based Psycho-social Health Promotion Program

Session	Content
Session 1	Familiarization of samples in intervention group with the program, how to hold virtual sessions and group rules (complete studying educational materials, checking if the assignments are done and note if two tasks were not completed, remove the relevant samples from the group), the general list of titles was provided to the audience.
Session 2	Familiarization of caregivers with the nature of the chronic mental illness, causes, signs, and symptoms of illness, home practice concerning identifying symptoms in their patient.
Session 3	Familiarity of caregivers with the causes and symptoms of recurrence of the disease, the importance of taking medications and follow-up treatment, home practice concerning reminding the side effects and problems of drug discontinuation and nonfollow-up treatment.
Session 4	Familiarity of caregivers with the importance and concepts of establishing therapeutic communication with chronic mental patients in the family, familiarity with patient acceptance skills in the family, home practice concerning the effect of using one of the communication skills with the patient.
Session 5	Familiarity with active listening skills, home practice concerning the impact of using active listening skills on the patient.
Session 6	Familiarity of caregivers with hallucinations and delusions and how to communicate therapeutically with patients when there was a change in perception and thinking, home practice to identify symptoms.
Session 7	Familiarity of caregivers with how to communicate therapeutically with patients in the stage of depression and mania, home practice concerning the effect of using one of the communication skills with the patient.
Session 8	Familiarity of caregivers with how to communicate with the aggressive patient, identifying the symptoms of suicide in the patient and how to act in the patients at risk of suicide, home practice concerning the impact of using one of the communication skills with the patient, program summary.

of the great advantages of this study was that the researcher was available to the audience all the time so that if there was any ambiguity in the materials sent to them, he could solve them, and feedback was taken from the learners during the presentation of the content. After the implementation of the program, the Zarit questionnaire was completed by the test and control groups, and the content of the program was given to the control group. Data analysis was performed in SPSS 20 software using descriptive and analytical statistics. The level of significance was considered  $p < 0.05$ .

### 8. Ethics statement

This study is the result of the doctoral thesis of psychiatric nursing at Isfahan University of Medical Sciences. The results of a quantitative phase of this large study have already been published in the IJNMR journal. The present study is a national study in Iran. This project has been approved by the Ethical Committee of vice-chancellor of the Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences (with ethics code IR.MUI.NUREMA.REC.1400.107 and, code:3400418). The written informed consent of the participants in the study was obtained from the participants, and the participants were assured that the information was confidential. The control group received educational content after the intervention. This study was conducted considering the Declaration of Helsinki.

## RESULTS

### 1. Findings of the first step

Fifteen family caregivers and 34 members of the mental health care team and support service providers participated in this study (Tables 2 and 3). Additionally, 875 pri-

**TABLE 2.** Information of family caregivers in qualitative phase

	Care givers	Number	Percentage
Gender of caregivers	Male	7	46.66%
	Female	8	53.34%
Age of caregivers (year)	20-30	3	20%
	31-40	3	20%
	41-50	2	13.33%
	51-60	5	33.34%
	> 60	2	13.33%
Relationship with the patient	Father	2	13.33%
	Mather	3	20%
	Sister	2	13.33%
	Brother	1	6.66%
	Spouse	4	26.68%
	Children	3	20%
Type of disorder	Schizophrenia	7	46.66%
	Bipolar mood disorder	6	40%
	Depression	2	13.34%
Years of care	2-10	3	20%
	11-20	8	53.34%
	21-30	4	26.66%

mary codes were obtained. After removing duplicate and similar codes, 35 subsubcategories were obtained by merging the subcategories based on the similarity of 9 subcategories and 3 main categories (Table 4).

### 2. Findings of the second step

Using the Delphi technique, the priority of the solutions obtained in the first step of the study was achieved. Table 5 shows the number of 11 solutions that obtained more than 80% agreement and entered the next stage as the chosen

**TABLE 3.** Information of the health team members in qualitative phase

Health team members		Number	Percentage
Gender	Male	15	44.12%
	Female	19	55.88%
Age (year)	20-30	1	2.95%
	31-40	15	44.12%
	41-50	11	32.35%
	51-60	7	20.58%
Education rate	Bachelor degree	14	41.17%
	Master degree	11	32.35%
	Doctor degree	9	26.48%
Profession	Psychiatric nurse	15	44.12%
	Psychiatrist	6	17.64%
	Psychologist	5	14.72%
	Social psychiatrist	1	2.94%
	Hospital assistant	2	5.88%
	Charity officer	1	2.94%
	Expert of justice	1	2.94%
	Responsible for the patient care and rehabilitation center	1	2.94%
	Responsible for hospital occupational therapy	1	2.94%
	Social helper	1	2.94%
Work experience (years)	2-10	9	26.47%
	11-20	16	47.06%
	21-30	9	26.47%

solution.

### 3. Findings of the third and fourth steps

The program resulting from this study aimed at promoting psychosocial health for caregivers of chronically mentally ill patients included 2 general goals, with specific goals and implementation strategies for each goal (Table 6).

### 4. Findings of the fifth and sixth steps

Seventy sample people participated in the study, 3 people from the experimental group were excluded from the study, and data analysis was performed on 67 family caregivers. The findings showed that there was no statistically significant difference between the intervention group and the control group in terms of demographic variables ( $p > 0.05$ ) (Table 7). The independent *t* test showed that the average care burden (SD) before the intervention between the intervention group was 54.15 (15.17) and the control group was 52.17 (10.57), and this difference was not statistically significant ( $p=0.534$ ). However, after the intervention, the independent *t* test showed that there was a statistically significant difference in the mean (standard deviation) care burden between the intervention 46.18 (8.95) and control groups 53.17 (7.68) ( $p=0.001$ ).

In the intervention group, based on the paired *t*-test, there was a statistically significant difference between the average care burden before and after the intervention ( $t_{31}=3.38$ ,  $p=0.002$ ). However, there was no statistically significant difference in the control group before and after the intervention ( $p=0.607$ ) (Table 8).

## DISCUSSION

This study was conducted with the aim of developing, implementing, and evaluating a psychosocial health promotion program for family caregivers of chronically mentally ill patients. In the qualitative stage, we were able to formulate the program. In the quantitative stage, based on the results of the Delphi stage in the present study and the emphasis of mental health care professionals on improving the knowledge of caregivers regarding the nature of the disease, how to treat it, knowing the types of drugs and side effects of drugs, and how to prevent the recurrence of the disease. (first rank of priority in the Delphi phase) and the need to establish therapeutic communication between caregivers and patients (second rank of priority). In the quantitative phase of this study, the decision was made to provide psychoeducation of these two basic components to family caregivers of chronically mentally ill patients as a way to improve mental health. The social status of these people was taken, and the effectiveness of the implemented program was measured on the amount of care burden experienced by family caregivers of patients with chronic mental disorders.

Examining the average caregiver burden in the present study, according to the Zarit caregiver burden questionnaire, indicated that caregivers suffer from moderate to severe caregiving burdens. The study by Ramezani et al.<sup>25</sup>, which was conducted on family caregivers of elderly patients with psychiatric disorders, showed that 68% of caregivers experience moderate to severe care burden. Similarly, the results of Vaidya and Patel's<sup>26</sup> study, which was con-

**TABLE 4.** Findings of the qualitative phase

Sub- sub categories	Sub categories	Main category
Psychological complications	Caregiver mental health	Health challenges of caregivers
Psychosomatic complications	problems	
Experience stigma and social discrimination	Caregiver social health	problems
Forced to hide the disease	problems	
Condemned to social isolation		
Lack of understanding and empathy of society		
Society's ignorance of mental illness		
Traditional structure of society		
Inappropriate interaction between the patient's family members	Unfavorable family	Inappropriate context of care
Other family members suffering from mental illnesses	background	
Failure to accept the disease from the family		
The impact of problems caused by the disease on all family members		
Imposing the financial burden of the disease	Financial problems	
Insufficient income in the family		
Conflict of professional responsibility and continuous care		
The vicious cycle of economic hardship and disease treatment		
Helplessness and despair of the caregiver	Abandonment of care	
Decreased family performance to care for the patient		
The caregiver's constant preoccupation with caring	Complexity of care	
Caregiver's encounter with the multiplicity of roles		
Limitation of the caregiver's normal life routine		
Failure to accept care from the patient's side		
The interaction of the health team and the caregiver	Responsive health care	The need for a coherent support system
Psychological support and empathy of the health team with the caregiver	system	
Educational needs of caregivers		
Improving life skills in caregivers		
Psychological evaluation and treatment of other family members of the patient		
Family and patient follow-up after discharge		
Financial support for the patient's family	Official support of	government systems
Legal protection of caregivers	government systems	
Access to psychiatric services		
Raising awareness of all people in the community about mental disorders		
Support network of family and friends	Informal support	
The role of nongovernmental organizations		
The activity of peer support associations		

**TABLE 5.** The priority of solutions with high agreement in the Delphi stage

Priority	Solution	Mean (SD)
1	Education about the nature of the disease, treatment process, drugs and side effects to the caregiver	13.84 (0.31)
2	Adequate familiarity of the caregiver with therapeutic communication skills with the patient	13.61 (0.46)
3	Involving the family in the decision-making process of the treatment	13.46 (0.43)
4	Group psychoeducation and family therapy for family caregivers online	13 (0.35)
5	Teaching stress management skills to caregivers	12.69 (0.41)
6	Teaching problem solving skills to caregivers	12.61 (0.43)
7	Teaching the skill of expressing emotions to the caregiver	12.38 (0.41)
8	Proper communication between the treatment team and the caregiver	12.37 (0.42)
9	Comprehensive training for patients and caregivers at the time of discharge	12.30 (0.64)
10	Group psychotherapy and family therapy training for family caregivers in person	12.17 (0.43)
11	Effective follow-up of the family and the patient after discharge	12.15 (0.61)

ducted on 1,140 family caregivers of patients with chronic mental disorders who had cared for their patients for more than 6 months, showed that 42% (48 people) of family caregivers had an average care burden and 34% (36 people) of caregivers experienced a severe care burden.

Psychoeducation has been proposed as an effective auxiliary therapy tool for patients and their families with various types of psychiatric disorders. Its effectiveness in promoting adherence and preventing relapse in schizophrenia and bipolar disorder patients has been well established. In

**TABLE 6.** General objectives, goals and strategies of the psychosocial health promotion program for family caregivers

General objectives	Goals	Strategies to achieve goals
Psychosocial empowerment of family caregivers	<p>Education about the nature of the disease, treatment process, drugs and side effects to the family caregiver of a patient with chronic mental disorder.</p> <p>Adequate familiarity of caregiver with therapeutic communication skills with patients with chronic mental disorder.</p> <p>Teaching stress management skills to family caregivers of patients with chronic mental disorders.</p> <p>Teaching problem-solving skills to family caregivers of patients with chronic mental disorders.</p> <p>Teaching emotion expression and control skills to family caregivers of patients with chronic mental disorders.</p>	<p>Face-to-face group psychoeducation for family caregivers.</p> <p>On the web group psychoeducation for family caregivers.</p> <p>Comprehensive training on the time of discharge for patients and family caregivers.</p> <p>Peer education of family caregivers.</p>
Improving the psychosocial support of the mental health care system for family caregivers	<p>Appropriate interaction of the treatment team with the family caregiver of a chronically mentally ill patient.</p> <p>Effective follow-up of patients with chronic mental disorders and their family caregivers after discharge.</p>	<p>Improving proper communication between mental health care team members and family caregivers of patients with chronic mental disorders.</p> <p>Involving the family in the decision-making process of treating patients with chronic mental disorders.</p> <p>Implementation of a follow-up program for patients with chronic mental disorders and their family caregivers after discharge.</p>

fact, the empowerment of patients and their family members is done by improving the awareness of these people about the disease and how to manage it, and it helps the caregivers to better cope with the disease and manage it more effectively.<sup>27</sup> Conscious participation of families in the care of chronically mentally ill patients improves the ability to adapt as well as the quality of life of the patient, family, and caregivers. Therefore, it is considered a suitable intervention to reduce the experienced burden of caregiving and, as a result, increase the quality of life of family caregivers of chronically mentally ill patients.<sup>28</sup>

With regard to deciding on the type and method of training, according to the things we obtained in the qualitative phase of the study, it includes face-to-face group psychology training, virtual group psychology training, and comprehensive training at the time of discharge as a solution. Improving the psychosocial health of caregivers. Virtual group psychoeducation had a score of 13, which was higher than the other two solutions. After that, comprehensive training at the time of discharge (score of 12.30) and face-to-face group psychoeducation (score of 12.15) were noticed by the experts participating in the Delphi phase. In this study, one of the biggest reasons that caused virtual education to obtain a higher average was due to the existence of the coronavirus pandemic and compliance with health guidelines. On the other hand, many efforts today to support mental health are made using web-based or compu-

ter-based interventions, mainly known as e-mental health care, which usually provide short-term smartphone-based programs. The outbreak of the COVID-19 pandemic accelerated the development of web-based care services because electronic mental health programs can provide necessary and quick support to people who are limited in making contact with public places due to compliance with health protocols. Therefore, the comprehensive development of electronic mental health care has been emphasized, and the scope of electronic mental health support is expanding and includes an increasing number of interventions.<sup>29</sup> Therefore, worldwide, there has been a growing interest in using Internet-based ICT-based educational and support programs for people with mental illnesses and their family caregivers. Internet-based approaches can be beneficial and attractive for its users because caregivers can access the educational or support program at the right time and in any place they see fit. They do not have to travel a long distance to attend a doctor's office or clinic; the importance of this case can save time and money for caregivers. On the other hand, with the use of electronic mental health programs (due to the absence of the caregiver and the patient in psychiatric centers), the family no longer faces the stigma of caring for a patient with a mental disorder in society. It can be said that the use of Internet-based methods for training and supporting caregivers is promising in low- and middle-income countries with a high number of Internet



**TABLE 7.** Demographic information of caregivers and patients with chronic mental disorders

Variable	Intervention group (n=32)	Control group (n=35)	Statistical test	p
Age of caregivers (year), mean (SD)	41 (12.81)	42 (12.15)	0.53*	0.60
Age of patients (year), mean (SD)	31.28 (12.08)	40.34 (13.36)	2.91*	0.10
Duration of patient care (year), mean (SD)	8.81 (5.68)	9.34 (5.36)	0.39*	0.70
Caregiver's gender, n (%)			0.01**	0.91
Male	16 (50)	17 (48.57)		
Female	16 (50)	18 (51.43)		
Caregiver's marital status, n (%)			1.41***	0.67
Single	7 (21.88)	10 (28.57)		
Married	25 (78.12)	24 (68.58)		
Divorced	0 (0)	1 (2.85)		
Widower	0 (0)	0 (0)		
Relationship with the patient, n (%)			3.61***	0.47
Father	4 (12.5)	4 (11.43)		
Mother	7 (21.88)	5 (14.29)		
Sister/brother	15 (46.87)	13 (37.14)		
Child	2 (6.25)	2 (5.72)		
Spouse	4 (12.5)	11 (31.42)		
Patient's gender, n (%)			0.06**	0.81
Male	11 (34.37)	13 (37.14)		
Female	21 (65.63)	22 (62.86)		
Patient's marital status, n (%)			5.86***	0.096
Single	19 (59.37)	15 (42.85)		
Married	8 (25)	18 (51.43)		
Divorced	4 (12.5)	2 (5.72)		
Widower	1 (3.13)	0 (0)		
Type of disease, n (%)			4.69**	0.095
Schizophrenia	13 (40.62)	6 (17.14)		
Bipolar	10 (31.25)	17 (48.57)		
Depression	9 (28.13)	12 (34.29)		

\*Independent t-test. \*\*Chi-square. \*\*\*Fishers exact.

**TABLE 8.** Determining and comparing the care burden score in the intervention and control groups

Variable	Mean (SD)		Intergroup test result (t, df, p)
	Intervention	Control	
Before the intervention	54.15 (15.17)	52.17 (10.57)	0.63, 65, 0.534*
After the intervention	46.19 (8.95)	53.17 (7.68)	3.43, 65, 0.001*
Within group statistics (t, df, p)	3.38, 31, 0.002**	0.51, 34, 0.607**	

\*Independent t-test. \*\*Paired t-test. SD: standard deviation.

users.<sup>30</sup> It has also been found that electronic mental health interventions are comparable in effectiveness to traditional face-to-face psychotherapy, thus providing a practical solution for people who do not have access to face-to-face therapy. Therefore, all over the world, there is a growing interest in using educational programs and online support based on information and communication technologies for people with mental illnesses and their family caregivers, which can be beneficial and attractive because caregivers can access the educational or support program at the right time and in any place they see fit. They do not have to travel a long distance to attend a doctor's office or clinic and can save time and money for caregivers. On the

other hand, by using electronic mental health programs, the family no longer faces the stigma of caring for a patient with a mental disorder in society. It can be said that the use of Internet-based methods for training and supporting caregivers is promising in low- and middle-income countries (such as Iran) with a high number of Internet users.<sup>31</sup> Electronic mental health interventions are comparable in effectiveness to traditional face-to-face psychotherapy, thus providing a practical solution for people who do not have access to face-to-face therapy.<sup>32</sup>

Seyedfatemi et al.<sup>33</sup> conducted a study aimed at investigating the effect of psychological training based on a virtual social network on the resilience of family caregivers

of patients with severe mental disorders through Telegram for four weeks. The results state that psychological training based on virtual social networks improves the resilience of family caregivers of patients with severe mental disorders.<sup>33</sup> Shamseddin et al.<sup>34</sup> conducted a study with the aim of determining the effect of virtual training of life skills on the functioning of the families of patients with chronic mental disorders for three weeks (six 60-minute sessions) through WhatsApp Messenger. The results of the study showed that life skills training improved the areas of general functioning, problem-solving, communication, roles, emotional response and behavior control, and emotional fusion of family functioning of chronic mental disorders.<sup>34</sup>

Finally, it can be stated that in the present study, the reduction in care burden experienced can be because the content presented to the family caregivers of patients with chronic mental disorders based on extensive needs assessment in the qualitative stage and the use of the Delphi stage and the experts' opinions was about determining the priority of caregivers' problems and needs. Additionally, this effectiveness can be attributed to providing correct information from a reliable source and giving caregivers the opportunity to resolve care uncertainties, as well as expressing the caregiver's experiences and feelings regarding the care of the patient and continuing to provide education and support even after the patient was discharged from the hospital. In addition, the caregivers could read the audio and text of the training sent to the training group many times at the appropriate time, and this was not limited to a specific time and place (like what we see in face-to-face training).

Currently, the lack of education for chronic mental patients and their families is perceived. Continuous care of patients with chronic mental disorders without support resources can lead to frustration and pressure on family caregivers and affect their coping skills and quality of life. This study led to the development of a psychosocial health promotion program for family caregivers of patients with chronic mental disorders. The findings of this study can help members of the mental health team and policymakers in this area to gain deeper insight into the needs and psychosocial problems, as well as strategies to improve the psychosocial health of family caregivers of chronically mentally ill patients. The members of the mental health team are expected to consider themselves responsible in front of the patient's family caregiver and try to establish empathic communication and solve problems and answer care questions and uncertainties. There are currently no suitable infrastructures for the implementation of family-oriented services for this category of caregivers. It is necessary to review the provision of services from a patient-centered approach to a comprehensive patient-family-centered approach. Therefore, the managers and policymakers of this field should take into consideration the required manpower and employ experts in this field to implement the program that is based on evidence.

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## CONFLICT OF INTEREST STATEMENT

None declared.

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