

The Effect of the Web-Based Psychosocial Health Promotion Program on the Burden of Care in Family Caregivers of Patients with Chronic Mental Disorders

Abstract

Background: Family members of Chronic Mental Disorders (CMD), who are responsible for patient care, face many physical, psychological, and social problems which make them face the burden of care. This study aimed to investigate the effect of a psychosocial health promotion program on the care burden of family caregivers of patients with CMD. **Materials and Methods:** This is a quasi-experimental study that was conducted in two intervention and control groups in the form of pretest and posttest. This study was performed on 67 family caregivers of patients with CMD in Farabi and Noor centers in Isfahan, Iran. Participants in this study were randomly divided into two intervention and control groups. Data from the intervention and control groups were collected in two stages, before and after the intervention by demographic information form and Zarit burden questionnaire. The intervention group received a web-based psychosocial health promotion program in eight sessions in 4 weeks. At the end of the intervention, the Zarit questionnaire was completed by the intervention and control groups. **Results:** The mean score of care burden between the intervention and control groups was not statistically significantly different before the implementation of the program ($p = 0.534$). But after the intervention, the mean score of care burden was significantly different between the two groups ($t_{65} = 3.43, p = 0.001$). **Conclusions:** This study provides evidence for the benefits of web-based psychosocial health promotion program in reducing the perceived care burden of the caregiver of CMD.

Keywords: Caregiver burden, health promotion, internet-based intervention, Iran, mental disorders

Introduction

Improvement of mental health is considered as an issue in the general health of communities. Mental health problems are on the rise today.^[1] According to estimates, about 19% of the world's population suffers from various types of mental disorders,^[2] which are known as one of the main causes of health impairment. Bipolar mood disorder, schizophrenia, and depression are recognized as Chronic Mental Disorders (CMD) and are associated with high levels of perceived care burden in caregivers.^[3]

Families are the main support system in the ongoing care of such patients. Therefore, it is known as the most important source of support in the care, symptom management, and treatment process of these patients.^[4,5] Accordingly, CMD in any member of a family leads to psychological,

social, and responsibility burdens in all family members.^[6] This requires a tireless effort whose impact on the lives of caregivers of these patients is irrefutable and is known as the care burden.^[7] The burden of the caregiver is "the extent to which caregivers realize that caregiving has adversely affected their emotional, social, financial, physical, and spiritual functioning."^[8]

These caregivers experience a great deal of care-related burdens, negative emotions, and difficulty in coping with such issues. Thus, the ability of these caregivers to cope with and adapt to these conditions is impaired, which is a significant threat to their mental and social health, affecting their lives in general.^[3,9] That is why families need help in managing these problems.^[10] Today, many efforts have been made to integrate web-based therapeutic

Fatemeh Lohrasebi¹, Jahangir Maghsoudi², Mousa Alavi³, Mohammad Akbari³

¹PhD of Nursing, Department of Psychiatric Nurse, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, ²PhD of Nursing, Associate Professor, Department of Psychiatric Nurse, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, ³Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

Address for correspondence:

Dr. Mohammad Akbari,
Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
E-mail: mohammadakbari@nm.mui.ac.ir

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and educational interventions with conventional therapies. During the COVID-19 epidemic, these approaches accelerated and became popular because of their social distance.^[11] 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 distance to attend the office or clinics and meet their therapist. The importance of this item can save time and money for caregivers. With the use of electronic mental health programs (due to the lack of presence of the caregiver and the patient in psychiatric hospitals), the family no longer faces the stigma of caring for a patient with a mental disorder. The usefulness of using this method in countries with medium or low income and with the high number of internet users is promising.^[12] The results of a study that was conducted on family caregivers of patients with severe mental disorders through Telegram platform for 4 weeks stated that psychological training based on virtual social network improves the resilience of family caregivers of patients with severe mental disorders, and with respect to the low cost and quick access of people to virtual networks, the content of this educational program can be widely used for family caregivers.^[13] Also, a study that was conducted with the aim of determining the effect of virtual training of life skills on the functioning of the family of patients with CMD in WhatsApp application in six sessions showed that problem solving, communication, emotional response, and behavior control in the family of patients with chronic mental disorders were improved.^[14] Likewise, the psycho-education program by using mobile phones in the form of calls and text messages can reduce the stress of family caregivers of discharged patients with bipolar disorder.^[15]

Therefore, due to the need to support the families of patients with CMD^[16] and the importance of Internet-based interventions that can help bridge the existing treatment gap for patients,^[17] this study aimed to determine the effect of web-based psychosocial health promotion program on burden of care in family caregivers of patients with CMD.

Materials and Methods

This study was conducted in 2021 and 2022 and is a part of a larger mixed-method study, approved and carried out in the faculty of Nursing and Midwifery, Isfahan University of Medical Sciences. This is a quasi-experimental study with a control group and pretest–posttest design. Our target population was family caregivers who cared for a patient with CMD whose patient was admitted to a psychiatric ward in either Farabi or Noor hospitals in Isfahan. Family caregivers refer to the family members of patients with CMD including the spouse, father, mother, sister, brother, or child, who were responsible for the care and physical, emotional, and financial support of the patient.^[3] The samples participating in the study were selected by

convenience sampling method and, then, randomly divided in intervention and control groups. The sample size was determined by $Z_1 (Z_{1-\alpha/2})$ and $Z_2 (Z_{1-\beta})$ and considered 1.96 and 0.84, respectively. The s and d values were estimated using a similar study.^[18] The sample size considering 10% potential attrition estimated as 35 samples for each intervention or control group.

Inclusion criteria were as follows: being the main caregiver of the patient and able to communicate in Persian, having not participated in a similar program, being willing to participate in the study, absence of known mental illness in the caregiver, and having access to the Internet and WhatsApp messenger. Exclusion criteria were as follows: the reluctance of the participant to continue participating in the study, inability to participate regularly in the scheduled program, and failure either to perform the assigned tasks or send them to the researcher. Demographic Information Form and Zarit Burden Scale (ZBS) were used before and after the intervention to collect data in both intervention and control groups. The ZBS contains 22 items and was completed by caregivers. The items in this questionnaire are scored on a 5-point Likert scale from “never” (score 0) to “almost always” (score 4). The score that can be obtained in this questionnaire is between 0 and 88. The lowest care burden score (0) indicates no care burden, while 88 indicates maximum care burden, and 61–88 indicates severe, 30–60 moderate, and below 30 shows mild care burden. This questionnaire was translated into Persian by Navidian *et al.*^[19] Its retest reliability was 0.94 and Cronbach’s alpha was 0.86 for the sample size of 64, which indicates the acceptable internal reliability of this criterion.

Initially, the psychosocial health promotion program was developed. In this way, in the form of a qualitative study, we explored the problems and strategies to promote psychosocial health from the perspective of family caregivers of patients with CMD and members of the health team. Then, matrices were prepared, compiled, and distributed among 14 members of the panel of experts in the Delphi phase. Through the Rand Appropriateness Method technique, each item was evaluated and the priorities of program strategies were obtained, and based on the priorities found, the psychosocial health promotion program for family caregivers of patients with CMD was developed. The content of the developed program was approved by the expert panel. In order to determine the effectiveness of the developed program, since the entire program could not be evaluated due to limited time and resources, a part of the program was implemented as a pilot. Regarding the implementation of a part of the program, according to the points obtained in the Delphi stage and the opinion of experts based on health procedures and the need to observe social distance due to the prevalence of the corona pandemic, and also since studies had already been conducted as face-to-face training for caregivers,^[20,21] as well as the availability and widespread desire to use smartphones

in most Iranian families, the decision was made to run the program virtually and web-based on WhatsApp messenger.

First, the researcher referred to psychiatric wards and studied the documents of patients with CMD. If they had inclusion criteria, the researcher contacted their families, and after describing the objectives of the study, if desired, the main caregiver was entered the study. Then, an appointment was made in the medical centers, and the informed written consent, demographic information form, and ZBS were completed by the samples. Using random allocation, a total of 70 samples were divided into intervention ($n = 35$) and control ($n = 35$) groups on WhatsApp. The psychosocial health promotion program was implemented in eight sessions in 4 weeks for the intervention group. At the beginning of each week, a weekly to-do list was posted for the caregivers. Two days a week were dedicated to sending educational materials in the form of voice and text messages, related to the subject and photos. Two days a week were dedicated to asking and answering caregivers' questions. The last day of each week was dedicated to summarizing the submitted materials [Table 1]. The skill-based homework provided for the intervention group was considered, and the homework, performed by the samples, was sent to the researcher virtually in the interval between sessions, and the necessary feedback was given to the samples by the researcher. At the end of the intervention, ZBS was completed by the intervention and control groups, and educational content was provided to the control group. Data were then analyzed using Statistical Package for Social Sciences (SPSS) software (IBM SPSS Statistics, Version 20.0. Armonk, NY: IBM Corp; 2011). Descriptive statistics such as mean, and standard deviation, and inferential statistics such as independent t -test and Paired sample t -test were used to analyze data. p -value < 0.05 is considered to be statistically significant.

Ethical considerations

The present study is a national study in Iran (with ethics code IR.MUI.NUREMA.REC.1400.107). A written consent of the participants in the study was obtained from the samples, and the samples assured that their information was confidential. The control group received educational content after the intervention.

Results

Data analysis was performed on 67 family caregivers of patients with CMD (3 members of the intervention group were excluded). The findings showed that there was no statistically significant difference between the intervention and control groups in terms of demographic variables including age and gender of the caregiver and the patient, duration of patient care, the relationship between caregiver and patient, and the type of chronic mental illness ($p > 0.05$) [Table 2]. The independent t -test showed that the mean (SD) score

Table 1: The contents of the web-based psychosocial 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 non-follow-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 care burden before the intervention was not statistically significant between the intervention 54.15 (15.17) and control 52.17 (10.57) groups ($p = 0.534$). But after the intervention, the independent t -test showed that there was a statistically significant difference in the mean (SD) score of care burden between the intervention 46.18 (8.95) and control 53.17 (7.68) groups ($p = 0.001$).

Paired t -test showed that in the intervention group, there was a statistically significant difference between the mean score of care burden before and after the intervention ($t_{31} = 3.38$, $p = 0.002$). But in the control

Table 2: 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 (years); mean (SD)	41 (12.81)	42 (12.15)	0.53*	0.60
Age of patients (years); mean (SD)	31.28 (12.08)	40.34 (13.36)	2.91*	0.10
Duration of patient care (years); mean (SD)	8.81 (5.68)	9.34 (5.36)	0.39*	0.70
Caregiver's gender n (%)				
Male	16 (50)	17 (48.57)	0.01**	0.91
Female	16 (50)	18 (51.43)		
Caregiver's marital status n (%)				
Single	7 (21.88)	10 (28.57)	1.41***	0.67
Married	25 (78.12)	24 (68.58)		
Divorced	0 (0)	1 (2.85)		
Widower	0 (0)	0 (0)		
Relationship with the patient n (%)				
Father	4 (12.50)	4 (11.43)	3.61***	0.47
Mother	7 (21.88)	5 (14.29)		
Sister/Brother	15 (46.87)	13 (37.14)		
Child	2 (6.25)	2 (5.72)		
Spouse	4 (12.50)	11 (31.42)		
Patient's gender n (%)				
Male	11 (34.37)	13 (37.14)	0.06**	0.81
Female	21 (65.63)	22 (62.86)		
Patient's marital status n (%)				
Single	19 (59.37)	15 (42.85)	5.86***	0.096
Married	8 (25)	18 (51.43)		
Divorced	4 (12.50)	2 (5.72)		
Widower	1 (3.13)	0 (0)		
Type of disease n (%)				
Schizophrenia	13 (40.62)	6 (17.14)	4.69**	0.095
Bipolar	10 (31.25)	17 (48.57)		
Depression	9 (28.13)	12 (34.29)		

*Independent *t*-test; **Chi-square; ***Fisher's exact

Table 3: Determining and comparing the care burden score in the intervention and control groups

Variable	Mean (SD)		Intergroup test result (<i>t</i> , <i>df</i> , <i>p</i>)
	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 (<i>t</i> , <i>df</i> , <i>p</i>)	3.38, 31, 0.002**	0.51, 34, 0.607**	

*Independent *t*-test; **Paired *t*-test. SD=standard deviation

group, there was no statistically significant difference before and after the intervention ($p = 0.607$) [Table 3].

Discussion

The findings of this research indicated that the application of this program is effective in reducing the care burden of caregivers. The results of this study also showed that the care burden, perceived by caregivers in the intervention group, was significantly reduced after the intervention ($p < 0.05$).

Previous studies have shown the effectiveness of family-based programs in reducing the caregiver burden of family caregivers of patients with mental disorders.^[22,23] However, the interventions in previous studies were performed face-to-face

with patient caregivers. In the present study, our intervention was performed virtually without face-to-face contact with the caregivers, and the results of this intervention were encouraging in reducing the burden of care.

Several studies showed that using web-based and virtual programs could reduce the stress^[15] and improve the resilience^[13] and performance^[14] of family caregivers of CMD. Granholm *et al.*^[24] stated that mobile-assisted cognitive behavioral therapy program has been able to reduce the negative symptoms of schizophrenia and can be used as a psychosocial intervention for patients with schizophrenia. Cai *et al.*^[25] in their study, found that texting via mobile phone is effective in adhering to treatment in patients with schizophrenia.

A study by Noel *et al.*^[26] stated that using a web-based educational program for caregivers with dementia could improve self-confidence and self-efficacy and reduce caregivers' stress and depression symptoms. But their program did not affect the burden of caregivers of patients with dementia, because the experience of caregiving burden depends on many factors, such as the severity, type, and duration of behavioral symptoms, the stage of dementia, available support services, and facilities, the relationship between the caregiver and the patient, time and number of hours spent on care and health status of the person with dementia. The effectiveness of the present study can be attributed to the provision of the correct information from a reliable source and the opportunity for caregivers to resolve care uncertainties as well as to express the caregiver's experiences and feelings regarding the care of the patient. The difference and advantage of the present study are that the program, implemented in this study, was developed by conducting a qualitative study and using the opinion of experts in the Delphi phase to prioritize the needs and problems of CMD family caregivers.

With respect to the aforementioned studies, it can be seen that Internet-based interventions can be as effective as face-to-face interventions.^[27] Nowadays, the use of smartphones, while saving time and being affordable, can be a suitable alternative to face-to-face health promotion programs. In addition, the spread of the COVID-19 pandemic accelerated the use of web-based treatment methods due to safety precautions.^[28] With regards to the benefits of using a virtual health promotion program, it is recommended that these programs be widely used by mental health centers and professionals.^[26] The only limitation of the present study was the generalizability of its results to all family caregivers of patients with CMD, due to the lack of access to technology by all caregivers, as well as the lack of digital literacy in the use of virtual training in some caregivers.

Conclusion

This study provides evidence for the effectiveness of web-based psychosocial health program in improving the perceived burden of the caregiver and suggests that it be an integral part of the psychiatric services, provided to CMD and their informal caregivers.

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Conflicts of interest

Nothing to declare.

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