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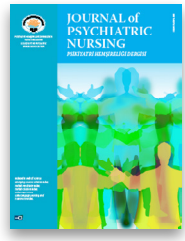

Experimental Research

# The effect of an emotional development psychoeducation program on the emotion management skills and caregiver burden of caregivers patients with mental illness: A randomized clinical trial

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## Abstract

**Objectives:** This study used an experimental, pre-test–post-test control group repeated measures design to evaluate the effect of an emotional development psychoeducation program (EDPP) on the emotion management skills and caregiver burden of caregivers of patients with mental illness.

**Methods:** The study was conducted in the Community Mental Health Centers (CMHC) affiliated with the Bakirkoy Mental and Neurological Diseases Training and Research Hospital. The sample consisted of 61 caregivers (experimental: 31 and control: 30) who met the inclusion criteria and agreed to participate in the study. Data were collected using a Caregiver Demographics Questionnaire, the Emotion Management Skills Inventory (EMSI), and the Caregiver Burden Inventory (CBI).

**Results:** All participants had similar demographic characteristics. There was no significant difference in pre-test EMSI and CBI scores between the experimental and control groups. The experimental group had a significantly higher post-test EMSI score than the control group. Although the experimental group had a lower post-test CBI score than the control group, the difference was statistically insignificant.

**Conclusion:** Health-care administrators should inform CMHC nurses about EDPPs and encourage them to attend them regularly.

**Keywords:** Caregiver burden; caregiver; emotion management; mental illness.

People with mental illness at an early age experience educational, social, and professional problems and have difficulty performing the activities of daily living, resulting in passivity, loss of ability, and dependence.[1] Caregivers support people with mental illness. In other words, they help meet their needs. However, caregivers face physical, social, psychological, and financial problems and find themselves in a challenging situation.[2] Living with people with mental illness is a stress factor for caregivers.[1] The World Federation for Mental Health states that the burden of care should be considered a global problem as caring for people with chronic illness requires tireless effort and energy.[3]

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Caregiving is a burdensome and stressful experience. Family members who live with and provide care to people with mental illness without any support experience various emotions and emotional reactions from the first psychotic attack of the patients to the later stages of the disease.[4,5] While caring for a loved one evokes positive emotions such as compassion, sympathy, and love, all the extra responsibilities can lead to mixed feelings after a certain point.[6] For example, family members feel confusion, anxiety, and fear of the unknown early on. After diagnosis, they feel helplessness, guilt, loss, insecurity, and shame. They feel stress, hopelessness, anxiety, boredom, defeat, anger, and disappointment when they have to live with the persistent symptoms of the disease and perform activities of daily living.[7–11] They feel anxiety, fear, and anger because of the possibility of relapse.[11] According to the American Public Health Association, caregivers often feel bored, exhausted, irritable, guilty, or helpless.[12] Olwit et al.[13] reported that most of the caregivers of patients diagnosed with schizophrenia experience chronic sadness. Chadda[6] stated that the emotions in the care given to relatives change from time to time and that positive and negative emotion emerge at different times.

Emotions play a critical role between stress and illness. Our responses to opportunities or challenges affect our biological system, making them either resilient or vulnerable to diseases.[14] Caregivers devote their entire time to patients and ignore or suppress their emotions or mood swings to hide them from them, resulting in emotional burdens, stress, depression, and anxiety.[12,15,16] Kumar Ranjan et al.[17] reported that 59.2% of the caregivers of schizophrenia patients experienced stress, 56.2% experienced anxiety, and 48.5% experienced depression. Fitryasari et al.[18] stated that caregivers of schizophrenia patients lost control of their emotions and experienced emotional burdens by getting angry at the uncontrollable patient behavior. Peng et al.[19] stated that caregivers of schizophrenia patients, in addition to providing daily care, suppress their negative emotions for fear of affecting the emotional state of the patients, and this situation leads to more psychological distress. It is necessary to provide caregivers with the ability to cope with their emotions to prevent physical and emotional harm, support their ability to maintain their caregiver role, and develop caregivers' emotionally.[20]

It is thought that there is a need for psychoeducational programs that will enable caregivers to realize their emotional distress, cope with negative emotions such as anxiety and anger, and help them stay healthy in terms of psychological and physiological aspects. The number of randomized controlled studies on the emotion management skills of caregivers of individuals with mental disorders is limited in the literature.[21–23] Behrouian et al.[21] found that emotion regulation training applied with cognitive methods significantly reduced the anxiety, stress, and depression of caregivers of schizophrenia patients. Moskowitz et al.[22] stated that the positive emotion regulation intervention they applied to caregivers of dementia patients had an effect on the psychological well-being of caregivers. Jenaabadi[23] found that emotional regulation training applied to mothers of children with special needs was good for their mental health. Therefore, we developed an emotional development psychoeducation program (EDPP) based on the cognitive-behavioral approach.[24–36] This study investigated the effect of the EDPP on emotion management skills and the care burden of caregivers of people with mental illness.

**What is presently known on this subject?**

- Caregivers of patients with mental illness need psychoeducation to help regulate their emotions to cope with difficulties. Emotional development psychoeducation programs (EDPP) are promising interventions to help caregivers of patients with mental illness regulate their emotions.

**What does this article add to the existing knowledge?**

- The emotional development psychoeducation program helped the caregivers of patients with mental illness manage their emotions. The emotional development psychoeducation program had no direct effect on the caregiver burden of the experimental group.

**What are the implications for practice?**

- Community mental health-care nurses should offer the EDPP to caregivers.

The hypotheses are as follows:

- (H1) When caregivers who have received EDPP are compared with those who did not receive this training, their emotion management skills scores will be higher
- (H2) When caregivers who have received EDPP are compared with those who did not receive this training, their caregiver burden scores will be lower.

## Materials and Method

### Study Design

This study adopted a randomized control group repeated measures (pre-test, post-test, and follow-up) experimental research design to investigate the effect of the EDPP on the emotion management skills and caregiver burden of caregivers of patients with mental illness.

### Research Setting and Date

The study was carried out in three Community Mental Health Centers (CMHCs) affiliated with Bakirkoy Psychiatric and Neurological Diseases Training and Research Hospital, considering the current number of patients and the availability of caregivers of patients with mental disorders, between January 2016 and June 2016.

Bakirkoy CMHC is a 2-storey building with a basement. In the building, the chief physician room, physician room, interview room, group room, team room, computer room, music room, TV room, painting room, sports room, dressing room, shower room, business workshop, toilet, kitchen, library, dining hall, and masjid. At Bakirkoy CMHC, one specialist doctor, one assis-

tant doctor, three psychologists, one social worker, two nurses, one health officer, and one occupational therapist are working.

Gungoren CMHC is a 5-storey building with a basement. In the building, there is a physician's room, a team room, a treatment room, an interview room, a group room, a business workshop, a cafeteria, a toilet, and a disabled toilet. At Gungoren CMHC, one specialist doctor, one assistant doctor, one psychologist, one social worker, three nurses, one security, and one staff worker.

Zeytinburnu CMHC is a 3-storey building with a basement. In the building, physician room, team room, group room, treatment room, interview room, computer room, business workshop, library, cafeteria, and office. At Zeytinburnu CMHC, one specialist doctor, one assistant doctor, one psychologist, one nurse, one health officer, one secretary, and one staff member.

## Population and Sample

The study population consisted of all caregivers (n:1740) of patients with mental illness registered at the CMHCs affiliated with the Bakirkoy Mental and Neurological Diseases Training and Research Hospital. A power analysis (G*Power, v3.1.7) was performed to determine the sample size. The results revealed that a sample size of 32 (16 for each group) would be large enough to detect significant differences between groups (d=1.446, α=0.01, and power=90%). The target sample was 70 patients (35 for each group) to avoid missing data. Eligible caregivers were listed by an independent person (n=600). Then, 35 caregivers were randomly assigned to the intervention group, and 35 caregivers were randomly assigned to the control group using a simple randomization method with the participants and the researcher. Randomization was performed using a computer-generated random number generator (http://www.stattrek.com/statistics/random-number-generator.aspx). Single blinding was done with the participants during the practice (Fig. 1).

### Inclusion Criteria

- Primary caregiver
- Having provided care for at least 6 months
- No mental illness
- Literate
- No hearing, comprehension, or vision problems
- Not having attended a psychoeducation program on emotional development before
- Being able to attend the EDPP regularly.

### Measurements

The data were collected using a Caregiver Demographics Questionnaire, the Emotion Management Skills Inventory (EMSI), and the Caregiver Burden Inventory (CBI).

### Caregiver Demographics Questionnaire

The Caregiver Demographics Questionnaire consisted of items descriptive of the caregivers (age, gender, education, marital status, etc.) and characteristics of the patient (age, duration of the disease, diagnosis, etc.).[36–38] Participants filled out the questionnaire before the EDPP.

### EMSI

The EMSI was developed by Cecen.[36] The inventory consists of 28 items (20 negative and eight positive statements). The items are rated on a five-point Likert-type scale. The total score ranges from 28 to 140, with higher scores indicating better emotion management skills. The inventory has a Cronbach's alpha of 0.83, which was 0.81 in the present study. Participants filled out the EMSI 3 times (pre-test, post-test, and follow-up).

### CBI

The CBI was developed by Novak and Guest[39] and adapted to Turkish by Kucukguclu et al.[40] The inventory consists of 24 items rated on a five-point Likert-type scale. It is one of the first instruments developed to measure the caregiver burden of caregivers of patients with cognitive impairment. High scores are associated with a high burden of care. The inventory has a Cronbach's alpha of 0.94, which was 0.89 in the present study. Participants filled out the CBI 3 times (pre-test, post-test, and follow-up).

## Data Collection and Program Implementation

The EDPP, which was prepared based on cognitive behavioral therapy techniques, was created by the researcher by taking expert opinion.[24–36,41,42] The program aimed to help caregivers recognize their mood swings during caregiving, express their feelings freely, manage their complex emotions, and develop cognitive awareness. To control and correct the EDPP, a pilot study was conducted with three caregivers, which lasted for 9 weeks, by obtaining the pilot study institution's permission from the Friends of Schizophrenia Association before the EDPP. The program was revised after receiving expert opinion and feedback and then applied once a week for 9 weeks. Each session consisted of two parts (30 min each) and a 15-min recess. EDPP was presented to the experimental group with visual stimuli using a computer in the group room where group training was held at CMHC. Caregivers in the control group were called twice during the 9-week period. The control group was not given any training. Every week, the participants in the experimental group were reminded of the training by telephone before the training. Four people in the experimental group could not participate in the psychoeducation program regularly, and five people in the control group left the study due to health problems. The sample consisted of 61 caregivers

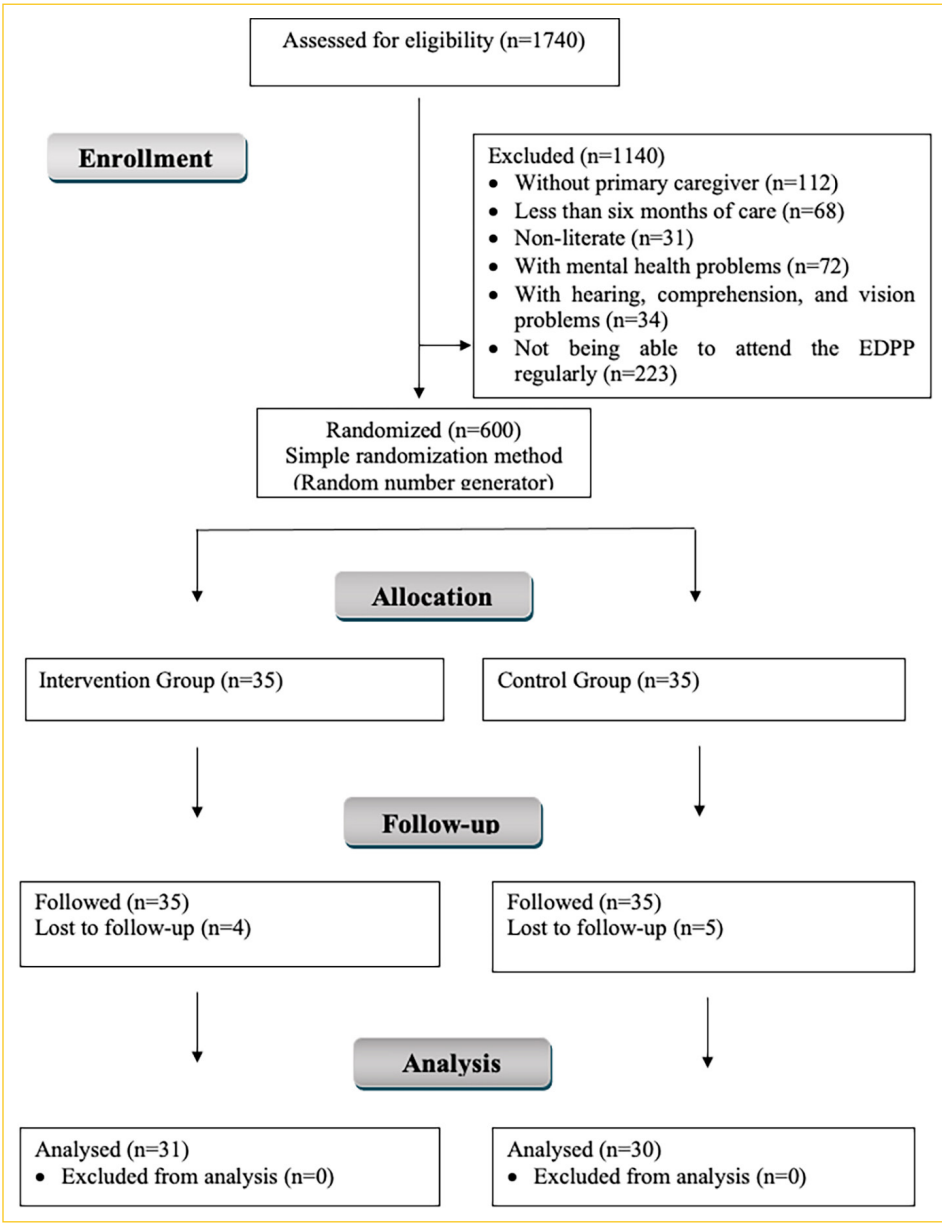


**Figure 1.** Consort diagram of the study.

(experimental: 31 and control: 30) (Fig. 1). Data were collected from the experimental and control groups 3 times (before the EDPP [pre-test], after the EDPP [post-test], and 3 months after the EDPP [follow-up]) using a Caregiver Demographics Questionnaire, the EMSI, and the CBI.

The sessions and goals of the EDPP are as follows:

i. Session – Warm-up, introduction, and group rules
ii. Session – Recognizing and distinguishing emotions
iii. Session – Facing emotions
iv. Session – Relationship between emotions, thoughts, and behaviors
v. Session – Relationship between unrealistic thoughts and emotions
vi. Session – Managing emotions
vii. Session – Using "me" and body language to express emotions
viii. Session – Empathy
ix. Session – Conclusion

The average age was 51.61±11.25 years in the experimental group and 52.97±12.18 in the control group. The groups were similar in terms of age, gender, education, marital status, child status, employed status, who lives with, age of patients, duration of illness, disease diagnosis of individuals, and degree of closeness of caregiving (Table 1). To test the equivalence of the experimental and control groups before the EDPP, the independent group's t-test was applied to the pre-test mean

**Table 1. Comparison of descriptive characteristics of caregivers and patients in the experimental and control groups**

| Variables | Experimental (n=31) | | Control (n=30) | | Statistics test | p |
|---|---|---|---|---|---|---|
| | Mean±SD | | Mean±SD | | | |
| Caregiver characteristics | | | | | | |
| Age | 51.61±11.25 | | 52.97±12.18 | | -0.452[a] | 0.653 |
| | n | % | n | % | | |
| Gender | | | | | | |
| Female | 20 | 45.5 | 24 | 80 | 1.818[b] | 0.178 |
| Male | 11 | 35.5 | 6 | 20 | | |
| Education | | | | | | |
| Primary | 14 | 45.2 | 12 | 40.0 | 6.137[b] | 0.105 |
| Middle | 2 | 6.50 | 9 | 30.0 | | |
| High | 6 | 19.4 | 4 | 13.3 | | |
| Universty | 9 | 29.0 | 5 | 16.7 | | |
| Marital status | | | | | | |
| Married | 23 | 74.2 | 23 | 76.7 | 0.500[b] | 0.823 |
| Single-Widowed | 8 | 25.8 | 7 | 23.3 | | |
| Child status | | | | | | |
| Yes | 23 | 74.2 | 27 | 90 | 2.577[b] | 0.108 |
| No | 8 | 25.8 | 3 | 10 | | |
| Employed Status | | | | | | |
| Yes | 7 | 22.6 | 5 | 16.7 | 0.337[b] | 0.561 |
| No | 24 | 77.4 | 25 | 83.3 | | |
| Who Live With | | | | | | |
| Nuclear family | 23 | 74.2 | 26 | 86.7 | 1.501[b] | 0.221 |
| Extended family | 8 | 25.8 | 4 | 13.3 | | |
| Patients characteristics | | | | | | |
| Age | 41.87±14.87 | | 38.90±11.96 | | [a]=0.858 | 0.394 |
| Duration of illness | 19.29±10.80 | | 16.30±8.09 | | [a]=1.220 | 0.227 |
| Disease diagnosed | | | | | | |
| Schizophrenia etc. | 19 | 61.3 | 14 | 46.7 | [b]=1.325 | 0.516 |
| Bipolar | 5 | 16.1 | 7 | 23.3 | | |
| Psychotic | 7 | 22.6 | 9 | 30.0 | | |
| Degree of affinity to caregiver | | | | | | |
| Child | 15 | 48.4 | 16 | 53.3 | [b]=0.308 | 0.958 |
| Spouse | 7 | 22.6 | 7 | 23.3 | | |
| Mom | 3 | 9.70 | 2 | 6.70 | | |
| Brother | 6 | 19.4 | 5 | 16.7 | | |

[a]: Independent-Samples T Test; [b]: Chi-square. SD: Standard deviation.

scores of the scales (Table 2). There was no significant difference between the pre-test scores of the experimental and control groups. Experimental and control groups are equivalent in terms of related variables.

## Study Variables

Average scores on the EMSI and the CBI served as the study's dependent variables. An independent variable in the study was the EDPP.

## Ethical Considerations

Permission was obtained from the Association of the Friends of Schizophrenia (June 02, 2015/330) and the Clinical Research Ethics Committee of the Training and Research Hospital affiliated with Medipol (Date: June 02, 2015; Protocol No: 332). The written approval of the Turkish Ministry of Health was obtained to conduct the study at the CMHCs. (Protocol No: 95273397/770). The study was conducted in accordance

**Table 2. The results of the experimental and control groups' pre-test scores**

| Variable | Experimental (n=31) | Control (n=30) | Comparison of differences between groups | |
|---|---|---|---|---|
| | Mean±SD | Mean±SD | t | p |
| EMSI | 86.08±12.06 | 88.27±16.64 | -0.593 | 0.555 |
| CBI | 45.01±21.95 | 44.24±17.72 | 0.008 | 0.994 |

t: Independent-samples t-test. SD: Standard deviation; EMSI: Emotion Management Skills Inventory; CBI: Caregiver Burden Inventory.

with the Declaration of Helsinki. Permission was obtained from the owners of these scales for the scales to be used in the research. Caregivers were informed about the research purpose and procedure. Verbal and written consent was obtained from those who agreed to participate in the study.

### Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS, v.21.0) at a significance level of 0.05. The data were analyzed using descriptive analyses, Chi-square test, independent groups t-test, one-way analysis of variance for repeated measures, two-way analysis of variance for repeated measures, and paired t-test with Bonferroni correction.

## Results

Hypothesis 1 predicted that the EDPP would help the experimental group participants develop emotion management skills. The data were analyzed using a two-way analysis of variance to test the hypothesis. The two-way analysis of variance showed a significant difference in EMSI scores between the groups according to the between-group (F=4.024, p=0.049), group*time (F=10.152, p=0.000), and time (F=5.002, p=0.008) common effect. The experimental group participants had a significantly higher mean post-test EMSI score than the pre-test EMSI score. They had a lower mean follow-up EMSI score than post-test score, but the difference was statistically insignificant (Table 3).

Intergroup interaction and the source of the main effect were determined using the Bonferroni-corrected paired t-test. The experimental group had a significantly higher post-test EMSI score (X=97.10) than the pre-test EMSI score (X=86.08) (q=11.02; p<0.001). They had a significantly higher follow-up EMSI score (X=95.25) than the pre-test EMSI score (X=86.08) (q=9.17; p<0.001). There was no significant difference between the pre-test (X=88.27), post-test (X=87.47), and follow-up EMSI scores (X=85.03) in the control group (Table 4).

Hypothesis 2 predicted that the EDPP would help reduce the burden of care for the experimental group participants. The two-way analysis of variance did not show a significant difference in CBI scores between the groups according to the between-group (F=0.119, p=0.731) and group*time (F=0.273 p=0.762) common effect. However, there was a significant difference in CBI scores between the groups according to the time effect (F=4.852, p=0.009). The experimental group participants had a lower post-test CBI score than the pre-test CBI score. They also had a lower follow-up CBI score than the post-test CBI score (Table 3).

## Discussion

It was observed that the overall score averages of the caregivers' ability to manage emotions after EMSI in the experimental group increased significantly compared to before the EMSI, and the effect of this increase was preserved after the follow-up. It was determined that there was no statistically significant difference in the measurements made before, after, and follow-up the EMSI of the caregivers in the control group. There was a significant difference in EMSI scores between the experimental and control groups. These results support H1. Behrouian et al.[21] divided caregivers of patients with schizophrenia into intervention and control groups and provided emotion

**Table 3. EMSI and CBI scores two-way analysis of variance**

| Scales | Pre-test | Post-test | Follow-up | Group | | | Time*group | | | Time | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean±SD | Mean±SD | Mean±SD | F | p | ηp2 | F | p | ηp2 | F | p | ηp2 |
| EMSI | | | | | | | | | | | | |
| Intervention | 86.08±12.06 | 97.10±12.10 | 95.25±12.28 | 4.024 | 0.049* | 0.064 | 10.152 | 0.000* | 0.147 | 5.002 | 0.008* | 0.078 |
| Control | 88.27±16.64 | 87.47±15.93 | 85.03±12.99 | | | | | | | | | |
| CBI | | | | | | | | | | | | |
| Intervention | 45.01±21.95 | 39.26±18.95 | 37.37±23.49 | 0.119 | 0.731 | 0.002 | 0.273 | 0.762 | 0.005 | 4.852 | 0.009* | 0.076 |
| Control | 44.97±17.70 | 41.20±19.87 | 40.34±20.64 | | | | | | | | | |

F: Two-way analysis of variance in repeated measures. ηp2: Partial eta squared results for repeated-measure before and after the EDPP intervention, and at 3-month follow-up. EMSI: Emotion Management Skills Inventory; CBI: Caregiver Burden Inventory; SD: Standard deviation; EDPP: Emotional development psychoeducation program.

**Table 4. Mean differences obtained from the Bonferroni multiple comparison test regarding EMSI score**

| Group | F | p | ηp2 | 1–2 p | 1–3 p | 2–3 p |
|---|---|---|---|---|---|---|
| Intervention | 13.715 | 0.000* | 0.314 | 0.000 | 0.000 | 0.324 |
| Control | 1.116 | 0.312 | 0.037 | | | |

*: Pre-test1 Post-test2 Follow-up3. EMSI: Emotion Management Skills Inventory.

regulation training for the former. They then administered the Depression, Anxiety, and Stress Scale-21 Items (DASS-21) to both groups. They found that the intervention group had a significantly lower DASS-21 score than the control group after the training. Moskowitz et al.[22] provided an online positive emotion regulation intervention for caregivers of patients with dementia and determined that the caregivers had lower levels of depression and higher levels of well-being after the intervention. Jenaabadi[23] looked into the impact of emotion regulation training on depression, anxiety, and stress among mothers of children with mental illness. Based on the results, he concluded that the training could be used to improve caregiver mothers' mental health and reduce their emotional strain. Kwon et al.[43] in their meta-analysis of the effectiveness of Cognitive Behavioral Therapy for caregivers of dementia patients, they found that Cognitive Behavioral Therapy can significantly improve depressive symptoms. Our results are similar to those reported by studies on emotion regulation training programs that are believed to play a key role in preventing mental illness. We think that our results are associated with four factors. First, we held the EDPP in groups. Second, the sessions took place in a comfortable and assuring setting. Third, we encouraged the experimental group participants to express their feelings and thoughts among those with similar problems. Fourth, we also gave homework assignments to allow the participants to express their feelings and thought that they could not during the sessions. Caregivers who recognize and express their feelings and thoughts are more likely to feel relieved and stay mentally healthy. EDPPs can help caregivers stay mentally healthy in the face of care-related problems. We also think that the fact that the control group was a non-psychoeducation group and there was no change in their lifestyle during the study period may have had an effect on the result.

It was determined that the post-test and follow-up CBI scores of the experimental group participants were significantly lower than the pre-test CBI scores. It was found that the mean CBI scores of the caregivers in the control group before EDPP decreased after EDPP and this decrease continued after the follow-up. However, there was no significant difference in CBI scores between the experimental and control groups, indicating that the EDPP had no significant effect on the burden of care. Therefore, this result does not support H2. Similarly, Gonzalez-Fraile et al.[44] their study on caregivers of people with intellectual disabilities found that the psychoeducational intervention they applied was not effective in reducing the burden of care. On the other hand, Silaen et al.[45] a systematic literature review found that psychoeducational interventions have a significant effect on reducing the burden of caregivers of schizophrenia patients. Although the EDPP did not significantly reduce the burden of care, we think that it helped the experimental group participants socialize with their peers, realize that they were not the only ones with care-related problems, and experience some catharsis by expressing their feelings and thoughts among others. We should also take into account the fact that the burden of care depends on numerous biopsychosocial factors. Caregivers experience a "time-dependency burden" as their patients become more dependent on them, a "developmental burden" depending on whether they are ready to provide care, a "physical burden" that makes them feel physically tired or uncomfortable, and a "social burden" as they think that they have to make drastic changes in their work and family lives. For this purpose, the burdens of caregivers in the experimental and control groups are expected to change over time, but our results are not surprising as we cannot expect a significant change in such burdens in the experimental group in 3 months due to the effect of EDPP. However, if we administer the EDPP for a longer period of time, it will significantly reduce the burden of care for caregivers.

### Limitations

This study had two limitations. First, the follow-up period was only 3 months. Second, it is the difficulties experienced by the caregivers in the experimental group in submitting their homework on time.

## Conclusion

This study showed that EDPP increased caregivers' emotion management skills but did not affect caregiver burden in the short term. Psychiatric nurses play an active role in the practices of psychoeducation and psychosocial therapies and they are becoming more visible in this field in our country.[46] The EDPP is a therapeutic intervention that can be administered by psychiatric nurses. The program helped the caregivers recognize, express, and manage the care-related emotions they had suppressed or avoided speaking about. Therefore, this study is important for psychiatric nursing practice and future research. Health-care administrators should consider scientific data and inform CMHC nurses about the EDPP accordingly. CMHC nurses should administer the EDPP to caregivers regularly. Researchers should conduct further studies to determine how long the EDPP should be applied and how it affects the burden of care in the long term.

**Ethics Committee Approval:** The study was approved by the İstanbul Medipol University Non-Interventional Clinical Research Ethics Committee (No: 332, Date: 02/06/2015).

**Authorship Contributions:** Concept – N.A.S., S.B.; Design – N.A.S., S.B.; Supervision – N.A.S., S.B.; Fundings - N.A.S., S.B., G.T.Ö.Y.; Materials – N.A.S., S.B., G.T.Ö.Y.; Data collection &/or processing – N.A.S., S.B., G.T.Ö.Y.; Analysis and/or interpretation – N.A.S., S.B.; Literature search – N.A.S., S.B.; Writing – N.A.S., S.B.; Critical review – N.A.S., S.B.

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