

ORIGINAL PAPER

## Development and preliminary evaluation of a structured online psychoeducation program for caregivers of individuals with bipolar disorder

Merve Ikizoglu<sup>1</sup> , Oya Mortan Sevi\*<sup>2</sup> 

<sup>1</sup> Bahçeşehir University, Department of Psychology, İstanbul, Türkiye

<sup>2</sup> Yaşar University, Faculty of Human and Social Sciences, Department of Psychology, İzmir, Türkiye

### Abstract

This study aimed to develop a structured, manualized online psychoeducation program for caregivers of individuals with bipolar disorder and to conduct a pilot study examining its preliminary effects on caregiver burden, expressed emotion, and knowledge about bipolar disorder. It was expected that the program might contribute to enhancing caregivers' knowledge about the bipolar disorder and potentially reducing caregiver burden as well as emotional responses toward the individual with diagnosis. Nine volunteers from the Turkish Bipolar Life Association applied for the study, eight participants attended the first session, and six participants completed 3-6 sessions. The Knowledge Scale on Bipolar Disorder, Perceived Family Burden Scale, and Level of Expressed Emotion Scale were used, along with Satisfaction Scale. While results showed an increase in knowledge level, and reductions in both caregiver burden and expressed emotion, these changes were not statistically significant. The findings were discussed in relation to existing research, highlighting both the potential and the limitations of the program. The study emphasizes the importance of further research into accessible, structured psychoeducation for caregivers of individuals with bipolar disorder.

**Keywords:** psychoeducation, caregivers, bipolar disorder, online session

### Bipolar bozukluğu olan bireylerin bakım verenlerine yönelik yapılandırılmış bir çevrimiçi psikoeğitim programının geliştirilmesi ve ön değerlendirilmesi

#### Öz

Bu çalışma, bipolar bozukluğu olan bireylerin bakım verenleri için yapılandırılmış ve el kitabı haline getirilmiş bir çevrimiçi psikoeğitim programını geliştirmeyi ve programın bakım veren yükü, duygu dışavurumu ve bipolar bozukluk ile ilgili bilgi düzeyi üzerindeki etkilerine ilişkin bir pilot çalışma yürütmeyi amaçlamaktadır. Programın, bakım verenlerin bipolar bozukluk ile ilgili anlayışını geliştirmeye ve hem bakım veren yükünü hem de tanı almış olan bireye yönelik duygu dışa vurum düzeyini azaltmaya katkıda bulunması beklenmektedir. Çalışmaya Türkiye Bipolar Yaşam Derneği'nden dokuz gönüllü başvurmuş, sekiz katılımcı ilk seansa gelmiş ve altı üye 3-6 seansı tamamlamıştır. Bipolar Bozukluk Bilgi Ölçeği, Algılanan Aile Yükü Ölçeği, Duygu Dışa Vurum Düzeyi Ölçeği ile Doyum Ölçeği kullanılmıştır. Sonuçlar, bilgi düzeylerinde artış ile bakım veren yükü ve duygu dışa vurum düzeylerinde azalma olduğunu göstermiş ancak bu değişiklikler istatistiksel olarak anlamlı bulunmamıştır. Bulgular, mevcut literatürle ilişkili şekilde tartışılarak programın hem potansiyeline hem de sınırlılıklarına dikkat çekilmiştir. Çalışma, bipolar bozukluğu olan bireylerin bakım verenlerine yönelik erişilebilir ve yapılandırılmış psikoeğitim programlarına dair daha fazla araştırma yapılmasının önemini vurgulamaktadır.

**Anahtar Kelimeler:** psikoeğitim, bakım verenler, bipolar bozukluk, çevrimiçi oturum

## INTRODUCTION

### Caring For a Patient with Bipolar Disorder

Bipolar disorder is a chronic psychiatric condition that persists throughout a person's life. The lifelong nature of the disorder creates significant challenges not only for the patient but also for their caregivers. Just as bipolar disorder impacts family members, family members in turn influence the course of the illness. This highlights a mutual and dynamic interaction. Therefore, bipolar disorder cannot be considered independently of the family environment (Agergaard-Jensen et al., 2024; Coryell et al., 1993; Goldstein & Miklovitz, 1997).

Efforts to reduce hospitalization and manage the condition at home through medication therapy place additional responsibilities on caregivers. Caregivers play a crucial role in the lives of individuals with bipolar disorders.

However, providing care for a loved one who is chronically ill presents numerous emotional and practical challenges. It is essential for caregivers to develop coping strategies and adapt to the ever-changing nature of the disorder. Caregiving is not only a task but also a transformative process for the caregiver. In this context, it becomes important for family members in caregiving roles to invest in self-improvement. Being an effective caregiver requires the acquisition of knowledge and skills. The more one learns about illness, the more manageable it becomes to deal with its associated difficulties (Agergaard-Jensen et al., 2024; Gutierrez & Scott, 2004; Kahn et al., 2000).

Mood episodes experienced throughout the course of bipolar disorder are particularly challenging for caregivers, who often struggle with how to respond appropriately during such times. Additionally, the uncertainty surrounding the timing of future episodes during remission can lead to heightened anxiety. The caregiving process can

\*Corresponding Author. E-mail: oya.mortansevi@yasar.edu.tr

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take a toll on the caregiver's own mental health. Studies have shown that caregivers of individuals with bipolar disorder experience increased rates of depression and anxiety, leading to a higher demand for mental health services (Steele et al., 2010). Furthermore, caregivers often neglect their own self-care, and their social relationships may deteriorate. Many caregivers withdraw from social interaction due to feeling misunderstood by others and the burden of stigma associated with mental illness (Arguvanlı & Taşçı, 2013). Consequently, the overall quality of life for caregivers tends to decline, affecting them physically, psychologically, socially, and environmentally (Çoban et al., 2013). These findings underscore the importance of providing psychological support to caregivers throughout the caregiving process.

Berk et al. (2011) detail the multifaceted roles caregivers play in the management of bipolar disorders. According to their perspective, caregivers are instrumental in supporting patients during both acute episodes and recovery phases. They are encouraged to motivate patients to maintain a stable lifestyle. At the same time, caregivers must also attend to their own well-being to sustain caregiving in a healthy and effective manner. In doing so, they may also find themselves confronting societal stigma associated with mental illness.

### The Importance of Knowledge About Bipolar Disorder

Arguvanlı and Taşçı (2013) reported that 68.4% of the caregivers in their study expressed a need for more information, and 64.5% indicated a need for support in caregiving. These findings highlight the importance of being well-informed about bipolar disorder and acquiring strategies to manage the fluctuations associated with the illness. As Kahn et al. (2000) emphasized, the more knowledge caregivers gain about the disorder, the better equipped they are to cope with the challenges it presents. Similarly, Lim and Ahn (2003) found that when caregivers possess limited knowledge about the illness, they are more likely to adopt negative coping strategies. This lack of information not only affects their psychological response but also increases the overall burden of caregiving.

### The Effects of Bipolar Disorder on Caregivers

**Burden.** The burden experienced by caregivers negatively affects not only the caregivers themselves but also individuals with bipolar disorder. Studies indicate that the clinical outcomes of patients are closely related to the burden carried by caregivers (Jensen et al., 2024; Ampalam et al., 2012; Caqueo-Urizar et al., 2009; Koutra et al., 2016; Perlick et al., 2001, 2005, 2007, 2010; Solomon & Draine, 1995). When caregivers are overwhelmed, the quality of care may decrease, potentially leading to poorer prognosis and increased symptom severity in patients.

**Expressed Emotion.** The characteristics and symptom severity of bipolar disorder significantly influence the quality of relationships between patients and their caregivers. Research shows that patients with more chronic

forms of the illness may exhibit increased irritability and negativity in their interpersonal interactions. These behaviors can lead to caregiver frustration, which in turn may result in more negative reactions toward the patient. Simoneau et al. (1998) emphasize that the symptomatic state and illness characteristics of patients are key predictors of caregiver-patient interaction styles, such as problem-solving approaches.

Caregivers may display high levels of expressed emotion (EE), which is characterized by critical, hostile, or emotionally overinvolved attitudes. High EE often manifests through negative verbal expressions, including criticism, disagreement, self-justification, or suggestions of unhelpful solutions. In contrast, caregivers with low EE are more likely to use positive communication strategies such as expressions of acceptance, self-disclosure, agreement, and constructive problem-solving. The emotional tone and communication style of caregivers significantly influence the patient's mood and behavior. According to Simoneau et al. (1998), patients find high EE attitudes to be distressing, as they tend to involve criticism and negativity. These perceived stressors can trigger symptoms and increase the risk of relapses.

A study conducted in Turkey found that over half of the caregivers of individuals with bipolar disorder demonstrated high levels of expressed emotion. The findings suggested that caregivers' beliefs about mental illness and their coping styles influenced EE levels more than the sociodemographic or health-related characteristics of the patients and caregivers. Additionally, economic status and perceived social support were identified as important factors contributing to the level of expressed emotion (Güngör Uğuz, 2019). Wendel et al. (2000) further noted that the level of expressed emotion during an acute episode can shape caregivers' post-episode perspectives. Caregivers with low EE during episodes were more likely to believe that patients' symptoms and negative behaviors could be managed during remission, compared to those with high EE.

The role of the family after the patient's discharge has long-term implications for both prognosis and functional outcomes. Miklowitz et al. (1988) reported that the rate of relapse is significantly higher in families with high EE. In line with this, Kocabıyık et al. (2005) found that patients exposed to high EE experienced more frequent relapses and hospitalizations, and their adherence to medication was markedly poorer.

### Programs for Caregivers of Patients with Bipolar Disorder

According to the literature, most psychoeducational interventions in bipolar disorder are designed for joint participation of patients and their family members. However, there is a notable lack of psychoeducational programs targeting caregivers alone. Researchers who emphasize the critical role of family support have developed various psychosocial treatment models that are generally family-focused and grounded in psychoeducation (Clarkin et al., 1998; Miklowitz & Goldstein, 1997; Madigan et al., 2012; Perlick et al., 2010; Reinares et al., 2004). One of the most

prominent among these is *Family Focused Therapy (FFT)*, developed by Miklowitz.

FFT was adapted from Behavioral Family Management (BFM), originally designed by Falloon and colleagues in the context of schizophrenia treatment (Falloon et al., 1984; Miklowitz & Goldstein, 1990). BFM was a 9-month intervention comprising psychoeducation, communication skills training, and problem-solving training for patients with schizophrenia and their family members (including parents, spouses, or adult siblings). Falloon et al. (1984) demonstrated that combining BFM with medication significantly reduced psychotic relapse rates and improved social functioning, compared to medication alone plus supportive individual therapy. Building upon this model, Miklowitz began adapting FFT in the late 1980s for adults with bipolar disorder. The FFT model consists of 21 sessions over nine months, including: Psychoeducation (weekly sessions over the first 3 months), Communication Enhancement Training (weekly, then bi-weekly sessions until month 5 or 6), and Problem-Solving Skills Training (biweekly to monthly sessions through month 9) (Miklowitz & Chung, 2016).

The overarching goal of FFT is to support both the patient and their caregivers throughout the treatment process. In his book, Miklowitz (2010) elaborates on the three core modules of FFT: (1) *Psychoeducation* (7 sessions): This module combines didactic teaching and interactive discussion. It covers symptom recognition, early warning signs, relapse prevention planning, risk and protective factors, and the importance of medication adherence; (2) *Communication Enhancement Training*: This module focuses on improving family relationships by interrupting negative interaction patterns, encouraging active listening and empathetic statements, balancing praise and criticism, and promoting clear, respectful communication. Skills taught include expressing positive emotions, making clear behavioral requests, and managing conflict effectively; and (3) *Problem-Solving* (typically the last 3–4 sessions): Families identify specific, recurring conflicts (e.g., household responsibilities, finances, or routines), generate possible solutions, weigh their pros and cons, and create an actionable plan to implement selected strategies. In Turkey, FFT was first applied by Özerdem et al. (2009) to assess its feasibility in a Turkish context. The core structure of FFT was maintained, with minor adaptations—particularly in translating written homework into oral formats. Caregivers participating in the program expressed satisfaction and demonstrated improvements in quality of life.

Outside of FFT, *Multi-Family Psychoeducational Group Therapy* has also been developed as a semi-structured intervention involving six sessions aimed at educating patients and their families on the nature of the illness, coping strategies, and improving family dynamics (Bordbar & Faridhosseini, 2012). A variation of this model was implemented in Iran, where a psychoeducation program was delivered exclusively to the families of bipolar patients. The program focused on managing patient crises and addressing relational issues (Bordbar & Faridhosseini, 2012). Another study in Iran involved providing two-hour psychoeducation sessions to the family members of hospitalized bipolar patients, covering the nature of the disorder,

side effects of medications, and associated risk factors (Fayyazi et al., 2009).

Despite these efforts, there is currently no standardized, culturally adapted psychoeducational program in Turkey either for individuals with bipolar disorder or their caregivers (Çakır & Özerdem, 2010; Baysan-Arabacı et al., 2018). The lack of trained professionals in this specialized field and challenges in translating clinical practice into structured research are cited as key barriers to the development of culturally specific therapy models (Çakır & Özerdem, 2010).

## Current Study

The existing literature on psychoeducation in bipolar disorder primarily emphasizes outcomes related to patients, such as relapse prevention, symptom severity, quality of communication, and mood stabilization. However, there is a relative scarcity of studies focusing on the direct impact of psychoeducation on caregivers. This study aims to address this gap by developing a manualized psychoeducation program specifically for caregivers of individuals diagnosed with bipolar disorder. The program is predominantly based on the principles of Family Focused Therapy (FFT) developed by Miklowitz (2010), with adaptations tailored to caregivers' needs. The primary objective of this pilot study is to assess the feasibility and potential effects of the intervention on caregivers' burden, expressed emotion, and knowledge about bipolar disorder. The study is guided by the following hypotheses: (1) Caregivers' knowledge about bipolar disorder will significantly increase following the psychoeducation program; (2) Caregivers' level of burden will significantly decrease by the end of the program; and (3) Caregivers' level of high expressed emotion toward the patient will significantly decrease after participation in the program.

## METHODS

### Participants

Participants were recruited with the support of the Bipolar Life Association. An announcement regarding the study was posted on the association's social media platforms to reach potential participants. Due to the COVID-19 pandemic, the psychoeducation program was conducted online, which enabled participation from various cities across Turkey, including Istanbul, Tokat, and Antalya. Inclusion criteria for participation in the psychoeducation program were as follows: (1) Being the primary family member of a patient diagnosed with bipolar disorder, including at least one documented manic episode, currently in a remission state, and undergoing regular psychiatric treatment under the supervision of a psychiatrist. (2) Aged between 18 and 60 years. (3) Having completed at least primary school education. (4) Not having any organic disorder, mental disorder, or physical disability. (5) Not having a psychiatric diagnosis and not using psychiatric medication. A total of 9 caregivers met the inclusion criteria and participated in the program. Of these, 8 were female and 1 was male. The average age of participants was 29.8

**Table 1. Characteristics of Participants and Relatives**

Participant's Nickname	Gender	Age	Education	Marital Status	Number of Sessions Attended	Time of Diagnosis for the Participant's Relative	Number of Relative's Hospitalization
Beren	Female	25	M.A	Single	1	A few months	0
Canan	Female	24	University	Single	4	10 years	1
Hande	Female	32	University	Single	6	10 years	5
Hasan	Male	36	University	Married	1	7 years	0
Hazal	Female	32	University	Married	5	20 years	5
Meltem	Female	25	University	Single	3	A few months	1
Olcay	Female	32	University	Married	3	A few months	1
Sibel	Female	25	University	Single	6	A few months	0

years, with the youngest participant being 24 years old and the oldest being 39 years old.

The duration since the bipolar disorder diagnosis of their relatives varied, 4 participants' relatives had been diagnosed within the last few months, 1 participant's relative had been diagnosed 3 years ago, 1 participant's relative had been diagnosed 7 years ago, 2 participants' relatives had been diagnosed approximately 10 years ago, 1 participant's relative had been diagnosed about 20 years ago. The time elapsed since diagnosis ranged from 3 months to 22 years. Regarding hospitalization history of the patients, relatives of 3 participants had never been hospitalized, 4 relatives have been hospitalized once, 2 relatives had experienced five hospitalizations. The demographic and clinical characteristics of the participants are presented in Table 1.

## Measures

**Knowledge Scale on Bipolar Disorder** It is a 15-item self-report instrument developed specifically for this study. It was adapted from the *Knowledge Scale on Schizophrenia* (Mortan-Sevi, 2009) by the researcher in collaboration with her academic supervisor. Each item on the scale is rated using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The total score ranges from 15 to 75, with higher scores indicating a greater level of knowledge about bipolar disorder. The scale includes statements related to the symptoms, etiology, course, and treatment of bipolar disorder. To evaluate the psychometric properties of the scale, it was administered to a sample of 331 individuals prior to the current study. The sample included 200 females and 131 males, aged between 16 and 65 years. The scale demonstrated high internal consistency, with a Cronbach's alpha coefficient of .92. Exploratory factor analysis (EFA) revealed a two-factor structure, encompassing the dimensions of *symptoms* and *treatment*. These two dimensions together accounted for 53.67% of the total variance, indicating a satisfactory level of construct validity (see Supplementary Material for the items).

**Perceived Family Burden Scale** The Perceived Family Burden Scale is a self-report tool designed to measure the degree of burden experienced by family members over the past month. It consists of 24 items and was originally developed by Levene et al. (1996) to assess the burden experienced by family members of individuals with schizophrenia. Arslantas et al. (2011) conducted a study on the

validity and reliability of the Turkish version of the scale. The reliability coefficient for the Turkish version was found to be  $\alpha = 0.92$ .

The scale is evaluated in two steps: If a specified behavior is not observed in the patient, the family member rates the item 0 and moves on to the next item. If the specified behavior is observed, the family member rates the behavior on a scale from 1 to 4, based on the level of discomfort caused by the behavior: 1: Not at all, 2: A little, 3: Considerable, 4: A great deal. This scale captures the burden related to a variety of behaviors exhibited by the patient, allowing for a nuanced understanding of the impact on family members.

**Level of Expressed Emotion Scale** The Level of Expressed Emotion (EE) Scale was developed by Cole and Kazarian (1988) to measure the level of expressed emotion in family members of individuals with mental disorders. The Turkish standardization of the scale was carried out by Berksun et al. (1993), and its reliability coefficient in the Turkish context was found to be  $\alpha = 0.89$ . The internal consistency of the scale is 0.93, and its test-retest reliability is 0.84.

The scale consists of 41 items, which are answered by caregiving family members. These responses are used to determine the level of expressed emotion, with higher scores indicating higher levels of expressed emotion. The maximum possible score on the scale is 41 points. While the original version of the scale uses dichotomous responses, in this study, the original dichotomous (yes/no) response format of the Level of Expressed Emotion Scale was adapted into a Likert-type structure to facilitate more nuanced responses and improve the feasibility of statistical analyses. Although the internal consistency of the Turkish version (Cronbach's  $\alpha = .88$ ) was highly similar to that of the original study, suggesting no substantial superiority of the adapted format, the Likert-type structure provided greater flexibility for data analysis and ensured adequate variance across items. Prior to the study, the comprehensibility and appropriateness of the test items were assessed by applying the scale to a healthy sample of 100 individuals to ensure its suitability for the target population. The pilot study confirmed that the items were clear, comprehensible, and yielded satisfactory response distributions.

**Satisfaction Scale** The Satisfaction Scale was developed by Gledhill et al. (1998). It was later translated and first utilized by Mortan-Sevi (2009) in a study on cognitive-be-

**Table 2. Group Sessions**

Week	N	Content	Session Satisfaction Score
1	8	-Introduction -Identifying the aims of the psychoeducation program -Deciding the rules of the group sessions	
2	6	-Introduction to bipolar disorder (definition, episodes, treatment, importance of caregiver)	7.33(±0.81)
3	5	-5 communication skills -Problem solving techniques -Dos and don'ts in communication -Boundaries	
4	4	-Effective communication strategies -Early warning signs of episodes -Supporting the patient after episodes to keep well	8.0(±0.00)
5	3	-Personal rights as a caregiver -Saying no -Personal health plan -Body scan exercise -Breath exercise -Progressive muscle exercise -Visualization exercise -Ways to get better sleep	7.66(±0.58)
6	3	-General evaluation -Feedback -Covid-19 Pandemic	8.00(±0.00)

*Note.* N = Number of participants attended each session.

havioral therapy (CBT) with individuals diagnosed with schizophrenia. The scale consists of 8 items, each answered with either “yes” or “no.” The maximum possible score on the scale is 8, with higher scores indicating greater satisfaction. Items 3, 5, and 6 are scored in reverse. Example items from the scale include: “I found it fun to attend this session.”, “I think I benefit from getting to know people who have similar problems with me.”, “During my participation in this session, I felt that I could cope with my problems more.”

**Evaluation Questionnaire** The Evaluation Questionnaire was developed by Mortan-Sevi (2009) to gather group members' opinions on various aspects of the sessions, including structure, content, group principles, and the characteristics of the therapist. The questionnaire includes 11 items, with the first 8 items answered as “yes” or “no,” while the remaining 3 are open-ended questions. Sample items from the scale include: “Were the therapist caring and understanding towards you?”, “What did you like most in the sessions?”, “Why do you think you benefited most from what you learned?”

**Manual** A psychoeducation program for caregivers of patients with bipolar disorder was developed by researchers, and a manual for the program was created to guide the sessions. The manual consists of 6 weekly sessions. It was designed based on the manuals and treatment protocols

developed by Miklowitz (2010), Berk et al. (2011), Levinsky (2016), Lowe and Cohen (2010), and Fast and Preston (2012). The draft program was reviewed by an associate professor of clinical psychology with extensive experience working with individuals with bipolar disorder and their families, as well as by psychiatrists experienced in bipolar disorder. Necessary revisions were made to ensure the program’s content, appropriateness, and cultural relevance. Although none of the adapted programs previously examined all targeted variables together, this program was designed considering the Turkish healthcare system and the gaps in support for caregivers. Modules were developed to provide information about the disorder, enhance communication skills, and promote caregiver self-care. Additionally, to address the specific needs of caregivers in Turkey, each session was supplemented with visual presentations and worksheets tailored to the participants. With participants’ consent, session recordings were reviewed by the second author, who served as the supervisor, in order to provide feedback on the program’s implementation. The content was also adjusted flexibly based on the participants’ needs. The content of the manual is outlined in Table 2, and detailed explanations of the sessions are provided in the procedure section.

**Procedure**

Permissions to use the instruments were obtained from the researchers, and ethical approval was granted by the University Ethics Committee for Scientific Research and Publication of Bahçeşehir University (E1334-20021704-604.01.01) on May 21, 2019. The manual and the knowledge scale on bipolar disorder were developed by the authors. Connections with participants were made via Bipolar Life Association’s social media, and the study was conducted online due to the pandemic. A pre-interview form was distributed, and participants were selected based on the inclusion criteria. Instruments were sent to the chosen participants for pretesting.

Six weekly sessions were conducted by group leaders trained in Cognitive Behavioral Therapy (CBT) for severe mental illnesses, supervised by the advisor of the thesis. A psychiatrist with expertise in bipolar disorder evaluated the program and attended the second session. Sessions were held on Zoom and recorded (with participant consent) for supervision. Satisfaction scale measurements were taken after the second, fourth, and sixth sessions, while the evaluation questionnaire was completed at the end of the program. Sessions began in February 2021 and ended in March 2021.

Reaching caregivers through hospitals is often not feasible. Patients typically present to outpatient clinics or inpatient units during acute episodes of the disorder. It is challenging to reach individuals who maintain regular medication adherence and whose symptoms are stable through hospital channels. Therefore, contact was made with the most active association, the Bipolar Life Association, permissions were obtained, and announcements were made to recruit participants. Participants and their relatives were recruited from an association where individuals were already more familiar with and motivated to en-

gation in these processes, allowing them to systematically access information about the disorder while being under the supervision of a psychiatrist. Nine participants were expected, but only 8 attended the first session. Although group interventions offer temporal advantages and can foster positive effects such as instilling hope, promoting a sense of not being alone, and facilitating learning from others, participants in the initial stages may not yet be aware of these benefits and therefore may not prefer them as much as individual sessions. Factors such as difficulty in opening up in the presence of others, the need to coordinate a common schedule, and maintain regular attendance may also reduce willingness to participate. Although group members consisted of voluntary participants, their daily lives are often challenging and may be disrupted due to caregiving responsibilities.

Nicknames were used for the participants in this article. Two participants, Beren and Hasan, dropped out due to discomfort with the interactive format. By the second session, 6 participants remained, but Handan could not attend. In the third session, 5 participants attended, but Handan was excluded for missing the first module, and Hazal dropped out due to internet issues. By the fourth session, 4 participants were left. Meltem dropped out after her relative expressed discomfort, and Olcay left due to a family member's illness. By the end of the program, 3 participants—Hande, Hazal, and Sibel—attended the final two sessions. The number of sessions that the participants attended is also presented in Table 1.

## Data Analysis

Data analysis was conducted using IBM SPSS Statistics 26.0, with Wilcoxon Signed Rank Test employed to compare pre-test, post-test, and follow-up scores on the three scales to assess the effect of the psychoeducation program.

## RESULTS

### Quantitative Results

#### Knowledge Scale on Bipolar Disorder

The knowledge scale measures understanding of bipolar disorder, with higher scores indicating greater knowledge. Post-test scores were expected to be higher than pre-test scores. Results showed that the post-test score ( $M = 73.83$ ,  $SD = 1.17$ ) was slightly higher than the pre-test score ( $M = 72$ ,  $SD = 4.64$ ), but the difference was not statistically significant ( $z = -0.68$ ,  $p = 0.49$ ). Similarly, the follow-up score ( $M = 71.4$ ,  $SD = 5.13$ ) was not significantly higher than the pre-test score ( $M = 72$ ,  $SD = 4.64$ ), with minimal changes observed ( $z = -0.36$ ,  $p = 0.71$ ). These small changes were not statistically significant considering the scale's maximum score of 75.

#### Perceived Family Burden Scale

Higher scores on the Perceived Family Burden Scale indicate a higher level of burden. The post-test score ( $M =$

$49.5$ ,  $SD = 15.8$ ) showed a decrease compared to the pre-test score ( $M = 50$ ,  $SD = 19.81$ ), but the change was not statistically significant ( $z = -0.67$ ,  $p = 0.5$ ). Similarly, the follow-up score ( $M = 47.4$ ,  $SD = 15.57$ ) showed a decrease from the pre-test score ( $M = 50$ ,  $SD = 19.81$ ), but again, this change was not significant ( $z = -1.46$ ,  $p = 0.14$ ). The comparison between post-test and follow-up scores showed a continued reduction, but it remained statistically insignificant ( $z = -0.67$ ,  $p > 0.5$ ).

#### Expressed Emotion Scale

Lower scores on the Expressed Emotion Scale indicate a reduction in negative emotions towards patients. Post-test scores ( $M = 112.50$ ,  $SD = 11.43$ ) were lower than pre-test scores ( $M = 119.83$ ,  $SD = 21.74$ ), with a decrease detected in 4 out of 6 participants, though the change was not statistically significant ( $z = -1.15$ ,  $p = 0.25$ ). The follow-up score ( $M = 108.80$ ,  $SD = 10.25$ ) was lower than the pre-test score ( $M = 119.83$ ,  $SD = 21.74$ ), but again, the reduction was not statistically significant ( $z = -0.94$ ,  $p = 0.34$ ). The follow-up score was also lower than the post-test score ( $M = 112.5$ ,  $SD = 11.43$ ), indicating a continued decrease, but no statistically significant change was found ( $z = -0.68$ ,  $p = 0.49$ ).

### Qualitative Results

#### Participant-Based Assessment

Each participant's attendance and test scores were analyzed. The total number of sessions attended varied, with an average of 4.5 sessions attended, ranging from 3 to 6 sessions. The scores on the three scales for each participant were assessed, and the changes in scores were as follows:

Canan's knowledge score increased by 3 points from pre- to post-program, with a further 1-point increase at follow-up. Her perceived family burden and expressed emotion scores decreased by 3 and 21 points, respectively, at the end of the program, and continued to decrease at follow-up by 16 and 17 points, respectively.

Hande's knowledge score decreased by 3 points pre- to post-program and further decreased by 8 points at follow-up. Her perceived family burden decreased by 1 point pre- to post-program but increased by 13 points at follow-up. Expressed emotion decreased by 5 points pre- to post-program but increased by 17 points at follow-up.

Hazal's knowledge score remained unchanged across all time points. Her perceived family burden decreased by 5 points pre- to post-program and by 6 points at follow-up. Expressed emotion decreased by 15 points pre- to post-program but increased by 6 points at follow-up.

Meltem's knowledge decreased by 1 point pre- to post-program, with follow-up data missing. Perceived family burden increased by 13 points pre- to post-program, follow-up missing. Expressed emotion increased by 6 points pre- to post-program, follow-up missing.

Olcay's knowledge score increased by 11 points pre- to post-program but decreased by 6 points at follow-up. Perceived family burden decreased by 2 points pre- to post-

**Table 3. Participant Based Assessment**

Participant	Total Session	K1	K2	K3	B1	B2	B3	E1	E2	E3
CANAN	4	71	74	75	84	81	65	152	131	114
HANDE	6	75	72	64	49	48	61	102	97	114
HAZAL	5	75	75	75	43	38	32	129	114	120
MELTEM	3	74	73	-	32	45	-	104	110	-
OLCAY	3	63	74	68	46	44	47	98	106	100
SİBEL	6	74	75	75	45	41	32	134	117	96

**Note.** K: Knowledge (Knowledge Scale on Bipolar Disorder), B: Burden (Perceived Family Burden Scale), E: Expressed Emotion (Expressed Emotion Scale), 1: pre-test, 2: post-test, 3: follow-up.

program and increased by 3 points at follow-up. Expressed emotion increased by 8 points pre- to post-program but decreased by 6 points at follow-up.

Sibel's knowledge increased by 1 point pre- to post-program and remained stable at follow-up. Perceived family burden decreased by 4 points pre- to post-program and further decreased by 9 points at follow-up. Expressed emotion decreased by 17 points pre- to post-program and by 21 points at follow-up. The scores on the three scales for each participant were presented in Table 3.

### Session-Based Assessment

Feedback was collected from participants after the 2nd, 4th, 5th, and 6th sessions, which covered various content areas. Each session included a Satisfactory Inventory, which consisted of 8 Yes/No items, with a maximum score of 8 indicating the highest satisfaction. The mean satisfaction scores across sessions were close to each other, with the lowest mean score being 7.33 and the highest being 8. The least satisfying session was the second session, which covered general information about bipolar disorder. The most satisfying sessions were the third and fourth, which focused on communication skills with patients, and the fifth session, which focused on personal care. Session satisfaction scores were also presented in Table 2.

## DISCUSSION

This pilot study explored the feasibility and potential benefits of a manualized psychoeducation program for caregivers of patients with bipolar disorder, with the expectation that it might contribute to improvements in knowledge, perceived burden, and expressed emotion. The results indicated that while knowledge scores increased, and burden and expressed emotion scores decreased by the end of the sessions, these changes did not reach statistical significance. Since some flexibility is also required for members, such as day, time and adaptation to other participants, participation in such group work is generally very low, thus our sample was very small. This prevented parametric analyses and may have even affected the significance level of some results. In fact, since the participants' burnout and negative emotional expression scores were not very high at the beginning and were at average values, even if the study had an effect, a significant difference may not have been observed. In the knowledge scale, it is seen that the participants also had high scores at the beginning, which may have affected the finding of a difference.

In the literature, the number of studies on caregivers in bipolar disorder is limited, and as there are no studies directly addressing these variables for caregivers, it seems difficult to compare the results. Trials that include a family-oriented psychoeducation program in their name are most likely to be aimed at the patient (Berk et al., 2011; Fayyazi Bordbar et al., 2009; Özerdem et al., 2009; Steele et al., 2010). In addition, the literature on caregivers of people with chronic mental health problems is very limited, not only in bipolar disorder but also in psychiatry (Caqueo-Urizar et al., 2009). However, our findings are consistent with a study by Baysan Arabacı et al. (2018), who found no statistically significant results regarding the reduction in caregiver burden after psychoeducation and only observed slight improvements in caregiver burden in their experimental post-intervention group.

Although self-report measures are not sufficient to assess caregiver outcomes, quantitative methods may be a good choice to assess outcomes. Both verbal and written feedback from participants provided additional insight into our program's effectiveness. Satisfaction ratings collected at the 2nd, 4th, 5th, and 6th sessions showed that participants were highly satisfied with the program. The average satisfaction score across all sessions was consistently high, with a minimum of 7.33 and a maximum of 8, indicating that participants found the sessions beneficial. The most satisfying sessions focused on communication skills with patients and personal care, while the second session, which covered general information about bipolar disorders, was rated the least satisfying. Participants provided specific reasons for their satisfaction such as *feeling understood and supported by others who shared similar caregiving experiences was highly valued; the opportunity to verbalize their feelings and discuss caregiving challenges was seen as therapeutic; sharing experiences and solutions for caregiving challenges was helpful; the increased awareness gained from the program was deemed valuable, particularly in understanding the caregiving process and prioritizing their own mental and physical health; group dynamics, including the sense of community and mutual support*, were described as healing, and participants appreciated the diversity within the group. Participant-based evaluations also reveal positive changes. The positive impact of communication and social support on caregivers' burden is also emphasized in the literature (Arguvanlı & Taşçı, 2013).

Participants' responses to the General Evaluation Survey indicated overall positive perceptions of the group sessions. All participants reported that confidentiality and group rules were adhered to, and that the therapists were attentive, understanding, and followed the group rules. Sessions were rated as both informative and enjoyable, and none of the participants found the sessions boring.

Open-ended responses highlighted several strengths of the program, including the opportunity to feel understood, share experiences with others facing similar challenges, and gain insight into caregiving through discussion and observation of other participants. Participants also appreciated having a structured space for dialogue and the chance to reflect on their own experiences. Some challenges were noted, such as limited interaction due to small group size, participants being hesitant or unwilling to speak, and occasional technical issues with Zoom audio and video connections. Participants reported benefiting most from learning about the experiences of other caregivers, gaining knowledge about bipolar disorder, improving communication skills, and increasing self-awareness regarding caregiving. None of the participants identified any aspect of the sessions as unhelpful; all aspects were perceived as beneficial.

This pilot study is important as it explores the feasibility and preliminary effects of an online, manualized psychoeducation program for caregivers of patients with bipolar disorder, contributing to the scarce evidence-based resources available for this population in Turkey. The online format was particularly important given the pandemic, and the study contributes to understanding the potential of online psychoeducation for clinical populations. The involvement of experienced CBT therapists and supervision by an expert CBT therapist ensured the quality and fidelity of the sessions, which are key strengths of this study. This study also seems important in terms of taking both qualitative and quantitative measurements.

However, the study had several limitations. The fact that participants were primarily selected on a voluntary basis through a social media announcement by the Bipolar Life Association may have led to sampling bias. This group, consisting of association followers and volunteers, is likely more informed and motivated than the general caregiving population. The small sample size limited the ability to detect statistically significant changes, and the lack of a control group prevented comparisons with a waiting list group. During the group process, drop-outs and low session attendance were also observed. Handan was excluded from the first three sessions due to a scheduling conflict with her own shift hours. Participants Hasan and Beren attended the initial introduction session briefly but subsequently did not return for further sessions without providing any reasons. Attempts to contact them afterwards were unsuccessful, and therefore no confirmed information regarding their drop-out is available. Regarding Hasan, it is speculated that several factors may have contributed to his discontinuation: he had requested an earlier session time prior to the start of the program; he expressed some discomfort due to the program being part of a thesis study and the recording of sessions, although he wanted to give it a try; he was reluctant to turn on the camera or speak actively, fearing that the patient at home might overhear; and technical difficulties with audio and video connections affected most participants during the initial session, causing significant time loss. Any of these factors may have contributed to Hasan's drop-out. Meltem discontinued participation after three sessions because her relative felt uncomfortable with her attendance.

Similarly, Olcay could not continue after three sessions due to a relapse in the patient's illness.

Additionally, the pandemic may have influenced the content participants shared due to heightened stress levels or other environmental factors. A more reliable clinician-rated measurement was not used due to a gap in available tools for this population, and the absence of a blind assessor also presents a limitation. Although the Exploratory Factor Analysis (EFA) conducted for the Knowledge Scale on Bipolar Disorder represents an important step in examining the scale's construct validity, confirmatory factor analysis (CFA) would be necessary to more robustly establish the scale's construct validity and the application of CFA in future studies has been recommended. Participants also provided recommendations about improving the group size to allow more diverse caregiving experiences to be shared and extending the program's weeks to allow for deeper connection and more time to discuss caregiving issues, especially more opportunities for participants to share their caregiving experiences and a more detailed focus on communication skills.

## Conclusions

The difficulty of reaching families in psychiatric samples is well known. While in the Western literature such studies are part of routine treatment, the reality of treatment in Turkey is that it is usually limited to treating patients with medication. Perhaps, to meet the needs, these studies should become part of routine care and evaluations should be based on qualitative as well as quantitative measures. For future research, it is recommended to conduct the study with a larger sample to increase generalizability. A longitudinal study would also provide a more thorough understanding of the long-term effects of the psychoeducation program on caregivers of patients with bipolar disorder. In addition, the program content could be slightly extended in terms of the number and duration of sessions, and the communication skills module could be given more space.

## DECLARATIONS

**Ethics Committee Approval:** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The authors obtained the requisite permission from the Ethics Committee for Scientific Research and Publication of Bahçeşehir University (E1334-20021704-604.01.01) on May 21, 2019.

**Conflict of Interest:** The authors have no conflicts of interest that are pertinent to the content of this article.

**Informed Consent:** Informed consent was obtained from all individual participants included in the study.

**Project/Funding:** No funding was received for this study.

**Data Sharing/Availability:** The data are not publicly available due to privacy or ethical restrictions. Data used in the present study is available from the corresponding author upon reasonable request.

**Authors' Contributions:** Methodology, Formal Analysis, Resources, Data Curation, Writing – Original Draft: MI, Methodology, Conceptualization, Writing – Review & Editing, Supervision: OMS.

**Use of Artificial Intelligence:** The authors declare that no artificial intelligence tools were used in the preparation of this manuscript.

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## SUPPLEMENTARY MATERIAL

### THE KNOWLEDGE SCALE ON BIPOLAR DISORDER

Aşağıda bipolar bozukluğa dair bazı cümleler yer almaktadır. Lütfen her cümleye ayrı ayrı ne kadar katıldığınızı belirtiniz.

1. Kesinlikle katılmıyorum.
2. Pek katılmıyorum.
3. Biraz katılıyorum.
4. Oldukça katılıyorum.
5. Tümüyle katılıyorum.

#### Ne kadar katılıyorsunuz?

	1	2	3	4	5
1. Bipolar bozukluk mani, depresyon ya da hipomani dönemleriyle seyreden psikiyatrik bir rahatsızlıktır.					
2. Bipolar bozukluk düzenli ilaç kullanımını gerektirir.					
3. Mani ve hipomani dönemlerinde uyku ihtiyacında azalma, düşünce ve konuşmada hızlanma, enerjide artış ve dikkat dağınıklığı görülebilir.					
4. Uykusuzluk manik atağı tetikleyebilir.					
5. Bipolar bozukluğun tedavisi için rahatsızlık belirtilerini tanımak ve baş etme yöntemlerini öğrenmek etkili olabilir.					
6. Hiçbir tedavi yöntemi bipolar bozukluk belirtilerini azaltmaz.					
7. Bipolar bozuklukta duygusal çökkünlükten coşku haline doğru değişen duygular görülebilir.					
8. Belirtiler üzerinde kontrol sağlayabilmek tedaviyle mümkündür.					
9. Bipolar bozuklukta psikolojik tedavi faydasızdır.					
10. Mutsuzluk, karamsarlık, isteksizlik ve enerji kaybı depresyonun habercileridir.					
11. Belirtiler kaybolduğunda ilaç tedavisini sürdürmek gereksizdir.					
12. İlaçları doktor söylemeden bırakmak sorun olmaz.					
13. Belirtilerin ortaya çıkmasında bazı dönemler (mevsimler, önceki yaşam olaylarının yıl dönümü, stres, vs.) etkili olabilir.					
14. Madde ve alkol kullanımı beyin kimyasallarını değiştirdiğinden bipolar bozukluğu tetikleyebilir.					
15. Bipolar bozukluk genetik, biyolojik ve psikososyal etmenlerin tümüyle birlikte açıklanabilir.					