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The effect of solution-focused psychoeducation on self-efficacy, functioning and internalized stigma in bipolar disorder: A quasi-experimental study☆

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ABSTRACT

Objective: This study was conducted to examine the effect of solution-focused psychoeducation on self-efficacy, functioning and internalized stigma in bipolar disorder.
Method: The study, designed in a quasi-experimental, control-group, pretest-posttest design, was conducted between April 2024 and October 2024 with 70 patients with bipolar disorder (35 treatment, 35 control). Participant Information Form, Internalized Stigma Scale in Mental Illness (ISMI), Functional Assessment Short Test (FAST), General Self-Efficacy Scale (GSES) were used to collect the data. A semi-structured, 6-session psychoeducation program was applied to the individuals. Descriptive statistics, normality test, correlation analysis, and paired sample test were used to analyze the data.
Results: The total score of internalized stigma in mental illness showed more change in the experimental group (23.20 ± 10.39) than in the control group (3.34 ± 2.81) ($F = 212.707$ $p < 0.001$). The mean total score of internalized stigma in mental illness in the post-test in the experimental group was statistically lower than the pre- test ($p < 0.05$). The mean total score of the functionality assessment in the post-test in the experimental group was statistically lower than the pre-test ($p < 0.05$). Self-efficacy scale total score scores changed more in the experimental group (9.31 ± 4.53) than in the control group (0.89 ± 2.22) ($F = 143.116$ $p < 0.001$). In the experimental group, the mean total score of the self- efficacy scale in the posttest was statistically higher than in the pretest ($p < 0.05$).
Conclusion: This study demonstrated that solution-focused psychoeducation in bipolar disorder showed high and significant improvements in self-efficacy and internalized stigma.

Introduction

Solution-focused therapy is a short-term, goal-oriented, evidence-based therapeutic approach that builds solutions rather than focusing on problems. This approach focuses on people's abilities and achievements rather than their flaws and disabilities. Moreover, instead of dealing with difficult and unchangeable problems, it focuses on problems that are likely to change (De Shazer et al., 2021). Psychoeducation is a method that uses systematic and psychosocial techniques to create the desired behavioral change in a person. Solution-oriented psychoeducational interventions provide opportunities for gaining knowledge, expressing emotions, instilling hope, developing self-awareness strategies, learning and problem-solving skills. It also aims for the individual to understand the problem, determine his/her own interventions to cope with the problem and actively participate in the solution process (Fenwick et al., 2018). Psychoeducation can be group, individual or family-oriented, face-to-face or online (López et al., 2022). The duration of implementation usually ranges from 4 to 16 weeks and group members consist of 8–10 people on average. The duration of psychoeducation group sessions ranges from 6 to 20 sessions on average (Colom & Vieta, 2006).

Psychoeducation in patients with bipolar disorder helps patients to better understand their illness and offers practical methods to improve their quality of life. By focusing on individuals' strengths, this approach offers concrete solutions to cope with emotional fluctuations and allows individuals to improve their coping skills (Miklowitz et al., 2021). In

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addition, by helping individuals gain more in-depth knowledge about their illness, they are supported to integrate this knowledge into their daily lives and improve their quality of life (Geddes & Miklowitz, 2020).

Self-efficacy refers to an individual's belief in their capacity to achieve their goals in a particular area. This belief shapes individuals' thought patterns, emotional responses, motivation levels, and behaviours (Bandura, 1989). For example, individuals with bipolar disorder and low self-efficacy have weak beliefs about their ability to make lifestyle adjustments that could help stabilise their moods. This can both prevent them from initiating necessary changes and make it difficult for them to sustain these changes despite the challenges they face (Smith et al., 2020). Although research on self-efficacy in individuals with bipolar disorder is limited in the literature, studies indicate that self-efficacy in bipolar disorder is associated with coping with symptoms of the illness and quality of life. Furthermore, lack of self-efficacy is also associated with low physical activity and poor functional outcomes (Cutler, 2005; Vancampfort et al., 2013).

Psychoeducation creates significant and positive changes in terms of both functionality and self-efficacy in patients with bipolar disorder (Harmancı & Yıldız, 2023). Psychoeducational interventions help patients with bipolar disorder to manage their mental health, improve their functionality and make it easier for them to cope with emotional fluctuations (Miklowitz et al., 2021). It also increases the treatment compliance of people with bipolar disorder and strengthens their self-esteem and self-efficacy by reducing the stigma associated with the disease (Harmancı & Yıldız, 2023). In addition, the solution-oriented approach strengthens individuals' self-efficacy perceptions by enabling them to be more involved in treatment processes. Such programs help participants learn more effective coping methods and manage crisis situations better by increasing their compliance with treatment. Internalized stigma in bipolar disorder is a situation in which individuals are exposed to negative labels related to their illness in society, leading them to define themselves in a negative way. Internalized stigma in bipolar disorder and many mental illnesses exacerbates the symptoms of the illness, increases relapses, complicates treatment compliance, and affects quality of life (Drapalski et al., 2013; Levy et al., 2015). Research has shown that psychoeducation interventions in bipolar disorder have positive effects on internalized stigma (Çuhadar & Çam, 2014; Keshavarzpir et al., 2021).

The solution-focused approach can reduce the effects of internalized stigma by helping individuals develop a stronger resistance to social labels (Folkman, 2021). The solution-focused approach improves individuals' ability to regulate their emotional reactions and thus makes them more resistant to negative social labels (Perry et al., 2022). In addition, psychoeducation helps patients to define themselves more strongly and question negative beliefs about the disease, which can reduce internalized stigma (Folkman, 2021). In conclusion, solution-focused psychoeducation can significantly improve both the functioning and self-efficacy perceptions of people with bipolar disorder and reduce the negative effects of internalized stigma on individuals.

This study aims to evaluate the effect of solution-focused psychoeducation on self- efficacy, functioning and internalized stigma in individuals diagnosed with bipolar disorder. The hypotheses of the study are as follows:

H 1. Solution-focused psychoeducation affects the self-efficacy level of bipolar disorder patients.

H 2. Solution-focused psychoeducation affects the functioning of bipolar disorder patients.

H 3. Solution-focused psychoeducation affects the level of internalized stigma in bipolar disorder patients.

Methods

Study design

The research was conducted at the Community Mental Health Center (CMHC) and Education and Research Hospital Psychiatric Polyclinic (ERHPP) between April 2024 and October 2024 using quasi-experimental research design from quantitative research methods.

Population and sample

The population of the study consisted of individuals diagnosed with bipolar disorder who were registered and actively followed at the Community Mental Health Center (CMHC) and the Education and Research Hospital Psychiatric Polyclinic (ERHPP). A priori power analysis based on the findings of Harmancı and Yıldız (2023) indicated that a minimum of 64 participants (32 per group) would be required to achieve 80 % power with a 5 % error margin at a 95 % confidence level (Harmancı & Yıldız, 2023). To account for potential attrition, a total of 70 patients were recruited, with 35 participants allocated to the intervention group and 35 to the control group (Fig. 1).

Participants

Participants were required to have a diagnosis of bipolar I or bipolar II disorder in remission, confirmed by a psychiatrist according to DSM-5 criteria (bipolar I: $n = 30$; bipolar II: $n = 40$). The intervention group consisted of patients registered and routinely followed at the CMHC, while the control group included outpatients applying to the ERHPP for routine psychiatric follow-up. Although both groups were initially planned to be selected from the CMHC, the absence of a second CMHC in the city required recruitment of the control group from the psychiatric polyclinic. Inclusion criteria were: volunteering to participate, age 18 years or older, literacy, diagnosis of bipolar disorder for at least six months, currently in remission (absence of acute symptoms), no current alcohol or psychoactive substance use, no diagnosis of mental retardation or dementia, and no additional psychiatric condition that would prevent cooperation.

Data collection tools

Participant information form

It included self-reported demographic and psychosocial items such as age, gender, marital status, educational level, occupational status, perceived economic status (good, moderate, poor), and perceived social support from family (adequate, inadequate).

The Internalized Stigma Scale in Mental Illness (ISMI)

It was developed by Ritsher et al. (2003) and assesses 'internalized stigmatization' reflecting the internal experiences of those with mental disorders regarding stigmatization. It is a self-report scale consisting of twenty- nine items and assessing internal stigmatization (Ritsher et al., 2003). The Turkish validity and reliability study of the Internalized Stigma of Mental Illness Scale (ISMI) was conducted by Ersoy and Varan (2007) in individuals diagnosed with severe mental disorders, including bipolar disorder, and demonstrated strong psychometric properties. Subsequent research also confirmed its reliability in bipolar populations (Çuhadar & Çam, 2014; Keshavarzpir et al., 2021). The scale consists of 29 items rated on a 4-point Likert scale and includes five subscales, with the "resistance to stigmatization" items reverse coded. Higher total scores indicate higher levels of internalized stigma. In the original Turkish adaptation, Cronbach's alpha coefficients ranged between 0.63 and 0.93 for the subscales, and 0.93 for the entire scale. In the present study, the Cronbach's alpha value for the overall scale was 0.79, indicating acceptable internal consistency reliability.

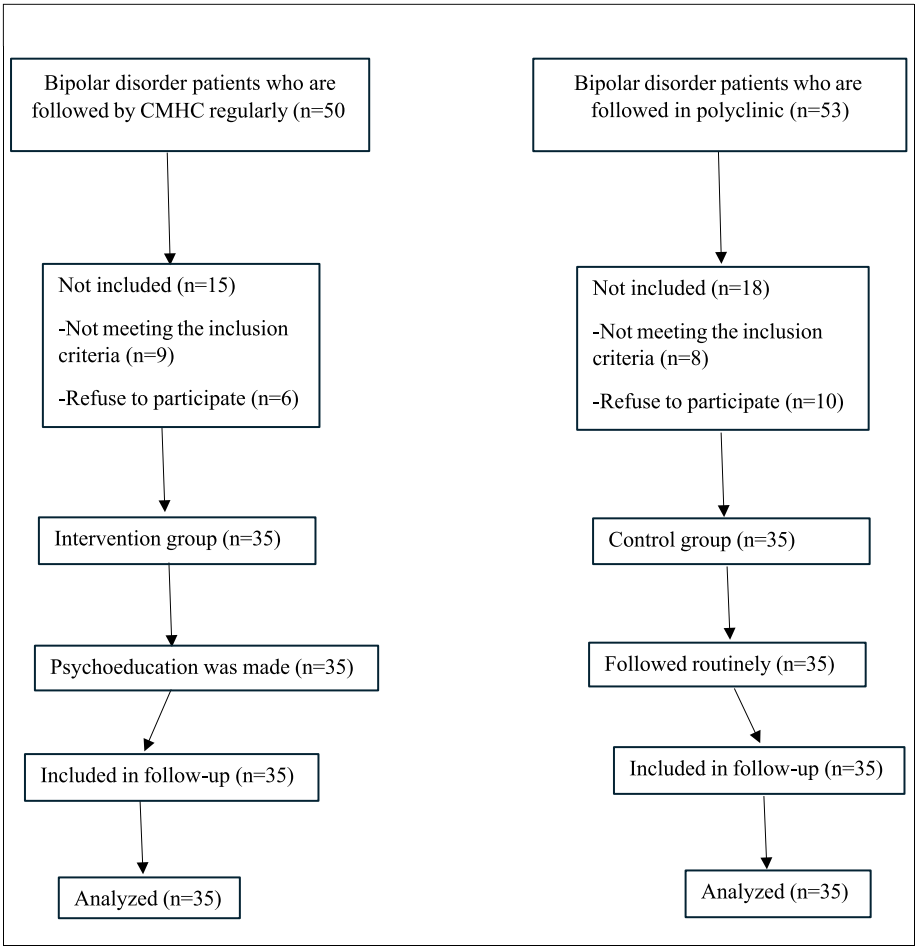


Fig. 1. Flow of participants in the study.

Functional Assessment Short Test (FAST)

Developed specifically to assess functional impairment associated with bipolar disorder (Rosa et al., 2007). The Turkish adaptation confirmed excellent internal consistency and construct validity in bipolar samples (Aydemir & Uykur, 2012). In the reliability analysis, Cronbach's alpha internal consistency coefficient was 0.960 and test-retest reliability coefficient was 0.945. It is a 24-item self-report scale that provides a four-point Likert-type assessment and consists of six dimensions: Autonomy, occupational functioning, cognitive functioning, financial matters, interpersonal relationships and leisure activities. High scores indicate impaired functioning. The Turkish reliability and validity study of the scale was conducted by Aydemir and Uykur in 2012. In the reliability analysis, Cronbach's alpha internal consistency coefficient was 0.960 and test-retest reliability coefficient was 0.945 (Aydemir & Uykur, 2012).

General Self-Efficacy Scale (GSES)

Originally developed by Schwarzer and Jerusalem (1981), the Turkish adaptation has been widely used in bipolar disorder research with confirmed validity in this population (Aypay, 2010; Smith et al., 2020; Yılmaz, 2019). The scale, which initially consisted of 20 items, was reduced to 10 items in 1981 by the researchers who created the scale and continued to be applied. The scale was then applied as a four-point Likert-type scale (false = 1, completely true = 4) and translated into many languages and validity and reliability studies were conducted (Scholz et al., 2002). Afterwards, the Turkish adaptation and validity and reliability studies of the scale finalized by Schwarzer and Jerusalem (1995) were conducted by Aypay (2010) as the General Self-Efficacy Scale, which is a 4-point Likert-type scale organized according to a 6-point rating system. The construct validity of the scale, which was translated into Turkish using the translation-retranslation method, was carried out using Principal Component Analysis and Verimax Rotation techniques. As a result of the component analysis, a two-component structure with eigenvalues greater than 1 emerged. Alpha internal consistency coefficients of the scale components were recorded as 0.79 and 0.63, and the overall Cronbach alpha internal consistency of the GSES was found 0.83. Testretest reliability scales was found to be $r = 0.80$, $p < 0.001$ (Aypay, 2010).

In the present study, internal consistency reliability analyses revealed Cronbach's alpha coefficients above acceptable thresholds for all instruments, supporting their suitability for this sample.

The solution-focused group psychoeducation program

The solution-focused group psychoeducation program consisted of six structured sessions delivered twice weekly over three consecutive weeks, with each session lasting approximately 60 min. In each session, core principles of Solution-Focused Brief Therapy were incorporated (e.g., scaling questions, exception exploration, strengths-based dialogue, future-focused goal setting, and solution-building homework), differentiating this protocol from generic psychoeducation programs (Table 1).

The solution-focused group psychoeducation program was prepared by the researcher in line with the relevant literature (Ajibade et al., 2017; Bavelas et al., 2013; Jerome et al., 2023; Rabelo et al., 2021; Walker et al., 2022). Expert opinion was obtained from five academic nurse researchers using the Content Validity Index (CVI) for the scope validity of the psychoeducation program. The level of intelligibility of

Table 1
Content of solution-focused group psychoeducation program.

Sessions	Contents	Solution-focused techniques
1. Preparation & Orientation	- Meeting in the members - Setting group rules - Introduction of the psychoeducation program - Sharing the expectations of the group members	- Strengths exploration, goal-setting, group contract, future-focused questions
2. How well do I know my disease?	- Bipolar disorder and disease process - Identifying emotions associated with bipolar disorder - Symptoms specific to bipolar disorder - Emotional change - Role playing: coping with bipolar disorders problems - Sharing experiences - Homework: identifying emotions	- Exception finding (moments with less symptom burden), resource activation, coping successes
3. Self-efficacy	- Sharing experiences about homework - What is self-efficacy? - The importance of self-efficacy in bipolar patients - How to develop self-efficacy? - The role of self-efficacy in the treatment of bipolar patients - Homework: create a list of achievements	- Scaling questions (0–10 ratings), acknowledgment of strengths, highlight past achievements, miracle question
4. Functionality	- Sharing experiences about homework - What is functionality? - Factors affecting functionality - Effects of depressive and manic episodes on functioning - Functionality in social relationships - Occupational functioning - Functionality in activities of daily living - How can we increase our functionality? - - Homework: positive expression exercise (positive self-expression)	- - Goal-focused planning, small-step solutions, task-setting with future gains, positive reframing
5. Internalized Stigma	- Sharing experiences about homework - Sharing experiences about stigma - Sharing stigma experiences and coping methods - Developing a positive thinking style - Role playing: coping with internalized stigma - Case study: Sharing lived experiences - Homework: internalized stigma/conversation with family about stigma	- Reauthoring narrative, reinforcing personal values, exception questions on identity beyond illness
6. Evaluation of psychoeducation program	- Sharing experiences about homework - Summarizing the psychoeducation program - Get feedback from group members about the program - Sharing expectations about the future - Congratulation of the band members	- Progress scaling, positive feedback loops, future orientation, relapse-prevention plan

the substances was determined according to the analysis conducted using the Content Validity Index. A minimum value of 0.99 was determined by Veneziano and Hooper (1997) from the table of minimum values for content validity rates at the level of significance $\alpha = 0.05$. As a result of the arrangements made in line with the recommendations of the experts, the psychoeducation program has been finalized (Veneziano & Hooper, 1997). As a result of the analyses conducted for this study, the content validity of the vehicle was 1 and it was above the maximum value determined.

Intervention

As a pilot application, the first three sessions of the psychoeducation program were implemented in a small group to refine the session structure. Based on this preliminary feedback, each session was delivered in two 30-minute parts with a 10-minute break in between to enhance concentration and participation.

To increase feasibility, participant retention, and group cohesion, the program was administered twice weekly over three consecutive weeks, with a total of six group sessions, each lasting approximately 60 min. This structure was adapted from the principles of Solution-Focused Brief Therapy, which supports short-term, goal-oriented intervention models in mental health settings (De Shazer et al., 2021; Ajibade et al., 2017; Erdoğan & Demir, 2022).

To the experimental and control group, before the psychoeducation (pretest), after the psychoeducation (post-test) "Participant Information Form", "Internalized Stigma Scale in Mental Illness (ISMI)", "Functional Assessment Short Test (FAST)" and "General Self-Efficacy Scale (GSES)" was applied. The scales were applied by face to face interview method. The experimental group was given six sessions "solution focused group psychoeducation" in the meeting room of the CMHC by one of the researchers, a specialist psychiatric nurse, in the week following the first measurement. The intervention sessions were conducted in three subgroups: two groups of 12 participants and one group of 11 participants.

Each session included a structured homework assignment intended to support the generalization of session content into daily life. Homework tasks required approximately 15–20 min to complete and were documented in written form. At the beginning of each subsequent session, participants discussed their homework experiences within the group, allowing shared reflection and reinforcing therapeutic gains. Educational techniques included PowerPoint-supported lecture, question–answer, group discussion, repetition, role-playing, video presentations, reinforcement, and experience sharing. Participants were reminded via phone one day before the session to promote adherence. Session handouts were provided as printed materials, and light refreshments were served to maintain comfort and engagement.

No structured psychoeducation was provided to the control group, and routine outpatient follow-up continued. Two weeks after the final assessment, participants in the control group were contacted by phone once or twice for supportive counseling based on individual needs.

Data analysis

Data were analyzed using the statistical package program IBM SPSS Statistics Standard Concurrent User V 26 (IBM Corp., Armonk, New York, USA). Descriptive statistics were given as number of units (*n*),

percentage (%), mean (*X*), standard deviation (*SD*), median (*M*), and interquartile range (IQR) values. Reliability for the scales was analyzed by Cronbach's Alpha coefficient. Scales with Cronbach's Alpha coefficient above 0.60 were considered reliable.

At the decision stage, if the absolute skewness (Skewness) value is below ±2.0 and kurtosis (Kurtosis) value is below 7.0, it is decided that the data are normally distributed (Kim, 2013). Accordingly, the skewness and kurtosis values of the variables used in the study are given in Table 2 and it is found that the data are suitable for normal distribution.

Chi-square tests (Pearson chi-square/Fisher exact test) were used to compare the descriptive characteristics of the patients between groups. Mixed-order analysis of variance (ANOVA) was used to compare the variables in the groups according to follow-up times. In η2 value, 0.01 to 0.05 is considered as low effect size, 0.06 to 0.013 is considered as medium effect size, and 0.14 and above is considered as large effect size. $p < 0.05$ value was considered statistically significant.

Ethical considerations

The present study was conducted in compliance with the 2013 Helsinki Declaration and the ethical standards of the National Research Committee. Written and verbal permissions were obtained from the research centre before starting the study. This study was approved by Gümüşhane University Scientific Research and Publication Ethics Board (Approval No: 2024/1, Date: 24/01/2024). During data collection, individuals signed the 'Informed Consent Form' regarding the study. The study was registered as a clinical trial (Registration Number: E-95674917-108.99-233819).

Results

Table 3 shows the distribution of the descriptive characteristics of the participants according to the groups. There were a total of 70 participants in the study, 35 in the experimental group and 35 in the control group. There were 5 (14 %) people between the ages of 18–35 in the experimental and control groups. There were 19 (54 %) males in the experimental and control groups. There were 7 (20 %) in the experimental group and 12 (34 %) in the control group. There were 28 (80 %) people in the experimental group and 23 (66 %) people in the control group with good economic status. There were 10 (29 %) university graduates in the experimental group and 9 (26 %) in the control group. The descriptive characteristics of the participants in the experimental and control groups had a similar distribution (p > 0.05).

Table 4 shows the comparison of the total scale scores of the participants according to the groups at the follow-up times.

At baseline, there were no statistically significant differences between the experimental and control groups in ISMI, FAST, or GSES scores ($p > 0.05$ for all indicators). The mean total score of internalized stigma in mental illness at the time of the pre-test measurement of the participants did not show a statistically significant difference between the groups ($p > 0.05$). In the experimental group, the mean total score of internalized stigma in mental illness in the posttest was statistically lower than the pre-test ($p < 0.05$). In the control group, the mean total score of internalized stigma in mental illness in the post-test was statistically higher than the pre-test ($p < 0.05$). The total score of internalized stigma in mental illness showed a statistically significant decrease of 23.20 ± 10.39 units in the experimental group and an increase of 3.34 ± 2.81 in the control group. The total score of internalized

Table 2
Normality analysis for the measurements ($N = 70$).

	Skewness	Kurtosis
Internalized Stigma Scale in Mental Illness (ISMI)	−0,533	−1116
Functional Assessment Short Test (FAST)	−0,674	−0,595
General Self-Efficacy Scale (GSES)	0,510	−0,662

Table 3
Comparison of descriptive characteristics of participants according to groups ($N = 70$).

	Groups		Total ($n = 70$)	$\chi(2)$ (p)
	Experiment ($n = 35$)	Control ($n = 35$)		
Age, *n* (%)				
18–35 years old	5 (14 %)	5 (14 %)	10 (14 %)	
36–45 years old	12 (34 %)	12 (34 %)	24 (34 %)	0,001 (0,999)
46–55 years old	14 (40 %)	14 (40 %)	28 (40 %)	
55 years and older	4 (11 %)	4 (11 %)	8 (11 %)	
Gender, *n* (%)				
Male	19 (54 %)	19 (54 %)	38 (54 %)	0,001 (0,999)
Woman	16 (46 %)	16 (46 %)	32 (46 %)	
Employment status, *n* (%)				
Working	7 (20 %)	12 (34 %)	19 (27 %)	1,806 (0,179)
Not working	28 (80 %)	23 (66 %)	51 (73 %)	
Economic status, *n* (%)				
Good.	5 (14 %)	2 (6 %)	7 (10 %)	4,789
Middle	22 (63 %)	30 (86 %)	52 (74 %)	(0,091)
Bad	8 (23 %)	3 (9 %)	11 (16 %)	
Education level, *n* (%)				
Primary school	10 (29 %)	11 (31 %)	21 (30 %)	
Secondary education	5 (14 %)	5 (14 %)	10 (14 %)	0,100 (0,992)
High school	10 (29 %)	10 (29 %)	20 (29 %)	
University	10 (29 %)	9 (26 %)	19 (27 %)	
Number of disease recurrences, *n* (%)				3,660 (0,056)
1–5 times	13 (37 %)	21 (60 %)	34 (49 %)	
6–10 times	22 (63 %)	14 (40 %)	36 (51 %)	
Hospitalization, *n* (%)				
1–2 times	8 (23 %)	14 (40 %)	22 (31 %)	5,065 (0,079)
3–4 times	9 (26 %)	12 (34 %)	21 (30 %)	
5 times or more	18 (51 %)	9 (26 %)	27 (39 %)	
Duration of treatment, *n* (%)				
Less than 5 years	9 (26 %)	15 (43 %)	24 (34 %)	3,136 (0,208)
6–10 years	14 (40 %)	8 (23 %)	22 (31 %)	
11 years and above	12 (34 %)	12 (34 %)	24 (34 %)	
Social support from family, *n* (%)				2,917 (0,088)
Adequate	24 (69 %)	30 (86 %)	54 (77 %)	
Inadequate	11 (31 %)	5 (14 %)	16 (23 %)	
Social environment support, *n* (%)				0,254 (0,615)
Adequate	22 (63 %)	24 (69 %)	46 (66 %)	
Inadequate	13 (37 %)	11 (31 %)	24 (34 %)	

Chi-square test (χ^2); Descriptive statistics are given as number (*n*) and percentage (%) values.

Table 4
Comparison of scale scores by groups at follow-up times ($N = 70$).

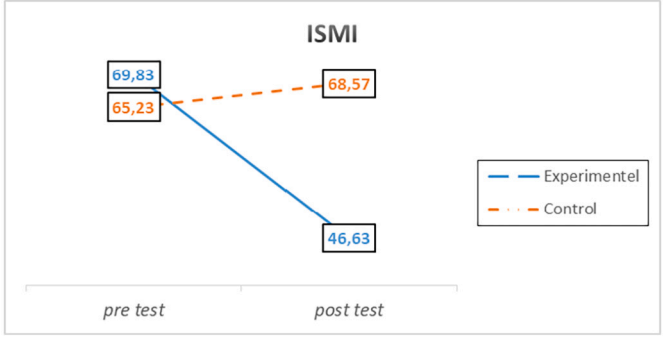
	Group		Test statistics[a]	η2 (95 % *CI*)	Group × time effect	η2 (95 % *CI*)	Power
	Experiment ($n = 35$)	Control ($n = 35$)					
ISMI					**F = 212,707 p < 0,001**	**0,758 (0,651; 0,817)**	**0,999**
Pre test	69,83 ± 13,40	65,23 ± 11,48	F = 2,377 p = 0,128	0,034 (0,000; 0,116)			
Post test	46,63 ± 8,73	68,57 ± 12,35	**F = 73,716 p < 0,001**	**0,52 (0,349; 0,633)**			
Mean difference	−23,2 ± 10,39	3,34 ± 2,81					
Test statistics	**F = 325,007 p < 0,001**	**F = 6,748 p = 0,011**					
η2 (95 % *CI*)	**0,827 (0,748; 0,87)**	**0,09 (0,004; 0,212)**					
FAST					**F = 137,752 p < 0,001**	**0,670 (0,534; 0,75)**	**0,999**
Pre test	36,66 ± 13,21	40,89 ± 14,98	F = 1,570 p = 0,215	0,023 (0,000; 0,091)			
Post test	23,94 ± 9,93	43,37 ± 14,11	**F = 44,36 p < 0,001**	**0,395 (0,216; 0,531)**			
Mean difference	−12,71 ± 7,23	2,49 ± 2,52					
Test statistics	**F = 192,764 p < 0,001**	**F = 7,368 p = 0,008**					
η2 (95 % *CI*)	**0,739 (0,625; 0,803)**	**0,098 (0,007; 0,224)**					
GSES					**F = 143,116 p < 0,001**	**0,678 (0,544; 0,757)**	**0,999**
Pre test	23,74 ± 6,86	24,14 ± 6,46	F = 0,063 p = 0,802	0,001 (0,000; 0,016)			
Post test	33,06 ± 4,34	23,26 ± 5,24	**F = 72,676 p < 0,001**	**0,517 (0,346; 0,631)**			
Mean difference	9,31 ± 4,53	−0,89 ± 2,22					
Test statistics	**F = 238,68 p < 0,001**	F = 2,158 p = 0,146					
η2 (95 % *CI*)	**0,778 (0,679; 0,833)**	0,031 (0,000; 0,109)					

Mixed design ANOVA (*F*), effect size (η^2), confidence interval (*CI*), within-group comparison. Descriptive statistics are given as mean (*X*), standard deviation (*SD*). Bolded sections are statistically significant ($p < 0.05$).
[a] Between-group comparison.

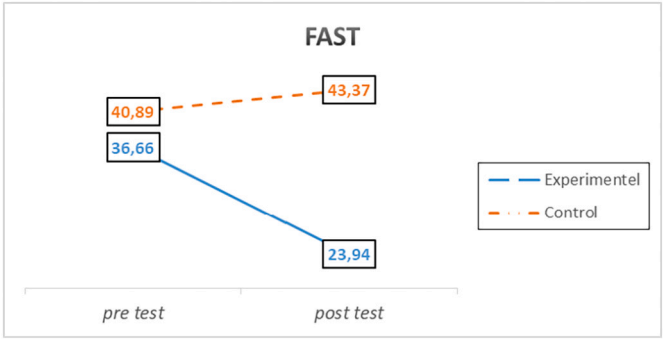
stigma in mental illnesses changed more in the experimental group than in the control group (F = 212.707 $p < 0.001$) (Graph 1).

The mean total score of the participants at the time of the pre-test measurement did not show a statistically significant difference between the groups ($p > 0.05$). In the experimental group, the mean total score of functionality assessment in the post-test was statistically lower than the pre- test ($p < 0.05$). In the control group, the mean total score of the functionality assessment in the post-test was statistically higher than the pretest ($p < 0.05$). The total score of the functionality assessment showed a statistically significant decrease of 12.71 ± 7.23 units in the experimental group and an increase of 2.49 ± 2.52 in the control group. Functioning assessment total score scores changed more in the experimental group than in the control group (F = 137.752 $p < 0.001$) (Graph 2).

The mean total score of the self-efficacy scale at the time of the pre-test measurement of the participants did not show a statistically



Graph 1. Internalized Stigma Scale experimental and control group comparison.

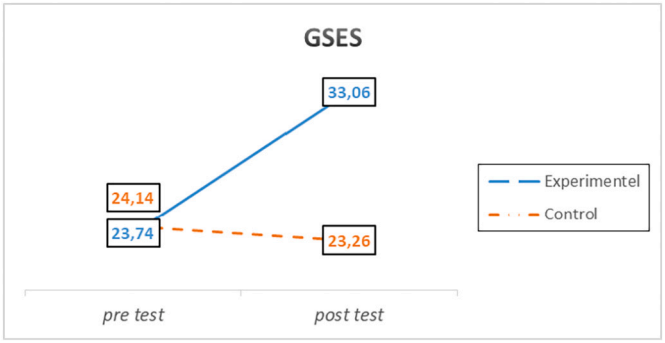


Graph 2. Functioning Scale experimental and control group comparison.

significant difference between the groups ($p > 0.05$). In the experimental group, the mean total score of the self-efficacy scale in the posttest was statistically higher than in the pretest ($p < 0.05$). In the control group, the mean total score of the self-efficacy scale did not show a statistically significant difference between the groups ($p > 0.05$). The self-efficacy scale total score showed a statistically significant increase of 9.31 ± 4.53 units in the experimental group, while the change of 0.89 ± 2.22 units in the control group was not statistically significant. Self-efficacy scale total score scores changed more in the experimental group than in the control group (F = 143,116 p < 0.001) (Graph 3).

Discussion

This study was conducted to examine the effect of solution-focused psychoeducation on self- efficacy, functioning and internalized stigma in bipolar disorder.



Graph 3. General Self-Efficacy Scale experimental and control groups.

A total of 70 people, 35 in the experimental group and 35 in the control group, took part in the study. There were 5 (14 %) people between the ages of 18–35 in the experimental and control groups. There were 28 (80 %) people in the experimental group and 23 (66 %) people in the control group with good economic status. There were 10 (29 %) university graduates in the experimental group and 9 (26 %) in the control group. In a study by Fırıncıoğulları (2020) with similar demographic characteristics to our study in which psychoeducation was given to patients with bipolar disorder, 45.2 % of the patients were female, 54.8 % were male and the mean age was 34.06 ± 10.2 years. The mean duration of the disease was 10.26 ± 9.44, the mean age at onset of the disease was 23.81 ± 7.71 and the mean duration of psychiatric treatment was 8.10 ± 6.47 years (Fırıncıoğulları, 2020).

As a result of the study, internalized stigma total score scores of individuals with bipolar disorder showed more change in the experimental group than in the control group. Yılmaz (2019) stated that at the end of the psychoeducation program, improvement was found in the stigmatization, introversion and daily functionality scores of the patients (Yılmaz et al., 2020). In the study conducted by Yılmaz (2024), it was found that there was a statistically significant decrease in the stigmatization feeling sub-dimension score in the intervention group compared to the control group (Yılmaz, 2024). Psychoeducation is thought to play an important role in helping both patients diagnosed with bipolar disorder and patients with other mental health disorders to lead a better quality of life and achieve their rightful place in society, just like other members of society.

Çuhadar (2011) found that the mean internalized stigma score of the patients in the experimental group who participated in psychoeducation was significantly lower than the patients in the control group (Çuhadar, 2011). It has been observed that individuals diagnosed with bipolar disorder benefit significantly from non-pharmacological treatments such as psychoeducation, psychosocial treatments and cognition-based treatments in terms of stigmatization (Latalova et al., 2013; Velligan et al., 2014). The results of this study are very important in terms of showing that psychoeducation leads to significant improvements in terms of internalized stigma.

The results of the analysis show a statistically significant decrease in the total functional assessment score in the experimental group and an increase in the control group. Functioning assessment total score scores changed more in the experimental group than in the control group. In contrast to the study, in the study of Fırıncıoğulları (2020), in which psychoeducation was provided to patients with bipolar disorder, it was found that the functionality levels of patients after psychoeducation were significantly higher than before psychoeducation (Fırıncıoğulları, 2020). Altun Dikyar (2014) stated that an increase was found in the functionality of patients (feeling of stigmatization, introversion, domestic relations) (Altun Dikyar, 2014). Yalcinkaya (2020) stated that psychoeducation provided to individuals with bipolar disorder increased the functionality of individuals (Yalcinkaya, 2020). This situation may be considered an indication that psychoeducation programs can play an effective role in the functionality of bipolar patients.

Contrary to our findings Gümüş Camuz (2013) found that there was no statistically significant difference between the total mean scores of the Functioning Scale after psychoeducation between the experimental and control groups (Gümüş Camuz, 2013). Yılmaz (2019) reported that patients' stigmatization, introversion and daily functionality scores improved at the end of the psychoeducation program (Yılmaz, 2019). In a randomized controlled study in which MG and psychoeducation were given to individuals with bipolar disorder, it was reported that treatment compliance and functionality levels increased in the intervention group (Harmancı & Yıldız, 2023). This result is important because it suggests that motivational interviewing may also play a significant role in improving functioning and stigma in individuals with bipolar disorder.

Başkaya and Demir (2022) found that treatment compliance training given to patients diagnosed with bipolar disorder increased treatment compliance, functionality and quality of life levels and may be effective in developing strategies to cope with stress (Başkaya & Demir, 2022). In another study, it was reported that MG applied to patients with bipolar disorder increased the total functionality levels of patients (Kararslan, 2014). Kararslan (2014) found a statistically significant increase in emotional functioning, social functioning, school functioning and total scale scores (Kararslan, 2014). In the light of these data, it can be said that psychoeducation provides improvement in multiple areas of functionality.

As a result of the study, the total score scores of the self-efficacy scale of individuals with bipolar disorder showed more change in the experimental group than in the control group. Yılmaz (2019) found that patients diagnosed with II Bipolar Disorder who participated in the 10-Seans Structured Art Therapy program had a significant positive change in self-esteem after the program (Yılmaz, 2019). The results of this study are very important in terms of showing that psychoeducation leads to significant improvements in terms of self-efficacy.

Interventions recommended to strengthen hope in psychiatric nursing include focusing on and paying attention to the quality of the relationship between healthcare professionals and the person receiving care; facilitating the individual's social relationships and strengthening their support networks; helping to increase personal qualities such as self-esteem and self-efficacy through empowerment; helping individuals take control and set and formulate realistic goals; and designing specific hope interventions that include the spiritual domain and well-being (Laranjeira & Querido, 2022). In their study, Hubbard et al. (2016) evaluated the effectiveness of a brief, two-session psychoeducational intervention for caregivers and reported that the treatment group showed significant reductions in caregiver burden and increases in bipolar disorder knowledge and bipolar disorder self-efficacy (Hubbard et al., 2016). In this context, it can be said that psychoeducation programs for patients with bipolar disorder and their caregivers should be planned to support self-efficacy.

Conclusion

In this study, it was revealed that solution-focused psychoeducation showed high and significant improvements in self-efficacy and internalized stigma in bipolar disorder. These results showed that psychoeducation is an important psychosocial intervention in supporting individuals' self-efficacy. It is recommended to expand psychosocial interventions for individuals with bipolar disorder and to investigate the effectiveness of different psychosocial interventions in larger sample groups. Ensuring the widespread adoption of such applications can also make significant contributions to the development of both the nursing profession and psychiatric nursing.

Limitations

This study has several limitations that should be acknowledged. First, although similar inclusion criteria were applied, the intervention

and control groups were recruited from different healthcare settings (CMHC vs. outpatient clinic), which may have introduced contextual differences and potential selection bias. Second, all data were obtained through self-report scales, creating the possibility of recall bias and socially desirable responses. Third, the sample size was relatively small and limited to individuals with bipolar disorder in remission who were willing to participate, which may reduce external validity and generalizability to broader clinical populations, including those with more severe symptomatology or different clinical courses. Additionally, the lack of random assignment limits causal inference and internal validity. Future studies should incorporate randomization, larger samples, and longer follow-up durations to provide stronger evidence for the effectiveness, stability, and applicability of solution-focused psychoeducation in bipolar disorder.

CRediT authorship contribution statement

Esma Özmaya: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Sakine Fırıncık:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Sevda Uzun:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Ethical dimension of the study

Ethical approval was obtained for this research from the Gümüşhane University Scientific Research and Publication Ethics Committee at the meeting dated 24/01/2024 and numbered 2024/1. The research was conducted in accordance with the Declaration of Helsinki.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data supporting the findings of this study are available from the corresponding researcher and raw data is available upon request.

References

Ajibade, B. L., Ogundele, S., Jubril, U., Akinpelu, A. A., & Makanjuola, J. (2017). Efficacy of a nurse-led solution-focused brief therapy (SFBT) in the management of bipolar disorders, in selected hospitals, Ondo State, Nigeria. *British Journal of Psychology Research, 5*(4), 1–11.

Altun Dikyar, F. (2014). *The effect of psychoeducation given in addition to the current treatment on treatment compliance, functionality, quality of life, patient's perception of social support and coping skills with life events in patients with bipolar disorder*. Antalya: Akdeniz University (Specialization thesis).

Aydemir, Ö., & Uykur, B. (2012). Reliability and validity study of the Turkish version of Functioning Assessment Short Test in bipolar disorder. *Turk Psikiyatr Derg, 23*(3).

Aypay, A. (2010). The adaptation study of General Self-Efficacy (GSE) Scale to Turkish. *Inonu University Journal of the Faculty of Education, 11*(2), 113–131. https://dergipark.org.tr/en/download/article-file/92265.

Bandura, A. (1989). Human agency in social theory. *The American Psychologist, 44*, 1175–1184.

Başkaya, E., & Demir, S. (2022). Effect of treatment adherence training given to patients with bipolar disorder on treatment adherence, social functioning and quality of life: A pilot study. *Complementary Therapies in Clinical Practice, 46*, Article 101504. https://doi.org/10.1016/j.ctcp.2021.101504

Bavelas, J., De Jong, P., Franklin, C., Froerer, A., Gingerick, W., & Kim, J. (2013). Solution focused therapy treatment manual for working with individuals (2nd version). Retrieved April 8, 2024, from. Solution Focused Brief Therapy Association. http://www.sfbta.org/PDFs/researchDownloads/fileDownloader.asp?fname=SFB.

Colom, F., & Vieta, E. (2006). *Psychoeducation manual for bipolar disorder*. Cambridge University Press. https://doi.org/10.1017/CBO9780511543685

Çuhadar, D. (2011). *The effectiveness of psychoeducation in reducing internalized stigma in patients diagnosed with bipolar disorder*. Izmir: Ege University / Institute of Health Sciences.

Çuhadar, D., & Çam, M. O. (2014, Feb). Effectiveness of psychoeducation in reducing internalized stigmatization in patients with bipolar disorder. *Archives of Psychiatric Nursing, 28*(1), 62–66. https://doi.org/10.1016/j.apnu.2013.10.008

Cutler, C. (2005). Self-efficacy and social adjustment of patients with mood disorder. *Journal of the American Psychiatric Nurses Association, 11*(5).

De Shazer, S., Dolan, Y., Korman, H., Trepper, T., McCollum, E., & Berg, I. K. (2021). *More than miracles: The state of the art of solution-focused brief therapy* (2nd ed.). Routledge.

Drapalski, A. L., Lucksted, A., Perrin, P. B., Aakre, J. M., Brown, C. H., DeForge, B. R., & Boyd, J. E. (2013). A model of internalized stigma and its effects on people with mental illness. *Psychiatric Services, 64*, 264–269. https://doi.org/10.1176/appi.ps.001322012

Erdoğan, E., & Demir, S. (2022). The effect of solution focused group psychoeducation applied to schizophrenia patients on self-esteem, perception of subjective recovery and internalized stigmatization. Issues in Mental Health. *Nursing, 43*(10), 944–954.

Ersoy, M. A., & Varan, A. (2007). Reliability and validity study of internalized stigma scale in mental illnesses Turkish form. *Türk Psikiyatri Dergisi, 18*, 1–9.

Fenwick, J., Toohill, J., Slavin, V., Creedy, D. K., & Gamble, J. (2018). Improving psychoeducation for women fearful of childbirth: Evaluation of a research translation project. *Women and Birth, 31*(1), 1–9. https://doi.org/10.1016/j.wombi.2017.06.004

Fırıncıoğulları, A. (2020). *Evaluation of quality of life and functionality after psychoeducation given to bipolar disorder patients*. Hatay: Hatay Mustafa Kemal University / Faculty of Medicine / Department of Mental Health and Diseases.

Folkman, S. (2021). Psychological resilience and coping in the context of stigma: The role of psychoeducation in bipolar disorder. *Clinical Psychology Review, 85*, Article 101976.

Geddes, J. R., & Miklowitz, D. J. (2020). The treatment of bipolar disorder. *The Lancet, 395*(10218), 1817–1830.

Gümüş Camuz, F. (2013). *The effects of individual psychoeducation applied to patients with bipolar disorder on relapse rate, functionality and quality of life*. Istanbul: Istanbul University (Doctoral thesis).

Harmancı, P., & Yıldız, E. (2023). The effects of psychoeducation and motivational interviewing on treatment adherence and functionality in individuals with bipolar disorder. *Archives of Psychiatric Nursing, 45*, 89–100. https://doi.org/10.1016/j.apnu.2023.04.026

Hubbard, A. A., McEvoy, P. M., Smith, L., & Kane, R. T. (2016). Brief group psychoeducation for caregivers of individuals with bipolar disorder: A randomized controlled trial. *Journal of Affective Disorders, 200*, 31–36.

Jerome, L., McNamee, P., Abdel-Halim, N., Elliot, K., & Woods, J. (2023). Solution-focused approaches in adult mental health research: A conceptual literature review and narrative synthesis. *Frontiers in Psychiatry, 30*(14), Article 1068006.

Kararslan, D. (2014). *Family-oriented psychosocial treatment practices in adolescents with bipolar disorder; the effect of family-oriented therapy on early symptoms and functionality*. Turkey: Dokuz Eylul Universitesi (Doctoral dissertation).

Keshavarzpir, Z., Seyedfatemi, N., Mardani-Hamooleh, M., Esmaeeli, N., & Boyd, J. E. (2021). The effect of psychoeducation on internalized stigma of the hospitalized patients with bipolar disorder: A quasi-experimental study. *Issues in Mental Health Nursing, 42*(1), 79–86. https://doi.org/10.1080/01612840.2020.1779881 (Epub 2020 Sep 3. PMID: 32881602).

Kim, H.-Y. (2013). Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics, 37*(44), 52–54.

Laranjeira, C., & Querido, A. (2022). Mental health status, hope and resilient coping in Portuguese higher education students during the COVID-19 pandemic. *European Psychiatry, 65*(S1), Article S379.

Latalova, K., Ociskova, M., Prasko, J., Kamaradova, D., Jelenova, D., & Sedlackova, Z. (2013). Self-stigmatization in patients with bipolar disorder. *Neuroendocrinology Letters, 34*(4), 265–272.

Levy, B., Tsoy, E., Brodt, M., Petrosyan, K., & Malloy, M. (2015). Stigma, social anxiety, and illness severity in bipolar disorder: Implications for treatment. *Annals of Clinical Psychiatry, 27*, 55–64.

López, A. M., Cuello, A. M. G., Chicano, M. T. R., Marín, C. C., Morales, A. M. C., & Hurtado, M. J. R. (2022). Face-to-face and online psychoeducational nursing interventions for anxiety management: An integrative review of the literatura. *Enfermería Global, 21*(4), 547–561 (2022).

Miklowitz, D. J., Efthimiou, O., Furukawa, T. A., Scott, J., McLaren, R., Geddes, J. R., & Cipriani, A. (2021). Adjunctive psychotherapy for bipolar disorder: A systematic review and component network meta-analysis. *JAMA Psychiatry, 78*(2), 141–150. https://doi.org/10.1001/jamapsychiatry.2020.2993

Perry, A., McMurran, M., & Brown, J. (2022). The impact of psychoeducation on stigma in bipolar disorder: A systematic review. *Journal of Affective Disorders, 282*, 192–200.

Rabelo, J. L., Cruz, B. F., Ferreira, J. D. R., Viana, B. M., & Barbosa, I. G. (2021, Dec 19). Psychoeducation in bipolar disorder: A systematic review. *World Journal of Psychiatry, 11*(12), 1407–1424.

Ritsher, J. B., Otilingam, P. G., & Grajales, M. (2003). Internalized stigma of mental illness. Psychometric properties of a new measure. *Psychiatry Research, 121*(25), 31–49.

Rosa, A. R., Sánchez-Moreno, J., Martínez-Aran, A., Salamero, M., Torrent, C., Reinares, M., … Vieta, E. (2007, Jun 7). Validity and reliability of the Functioning

Assessment Short Test (FAST) in bipolar disorder. *Clinical Practice and Epidemiology in Mental Health, 3*, Article 5. https://doi.org/10.1186/1745-0179-3-5 (PMID: 17555558).

Scholz, U., Gutiérrez-Doña, B., Sud, S., & Schwarzer, R. (2002). Is general self-efficacy a universal construct? Psychometric findings from 25 countries. *European Journal of Psychological Assessment, 18*, 242–251.

Schwarzer, R., & Jerusalem, M. (1981). General self-efficacy expectancy. In *Scales for well-being and personality*. Berlin: Freie Universität Berlin.

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35–37).

Smith, L. M., Erceg-Hurn, D. M., McEvoy, P. M., & Lim, L. (2020). Self-efficacy in bipolar disorder: Development and validation of a self-report scale. *Journal of Affective Disorders, 262*, 108–117.

Vancampfort, D., Correll, C. U., Probst, M., Sienaert, P., Wyckaert, S., De Herdt, A., … De Hert, M. (2013). A review of physical activity correlates in patients with bipolar disorder. *Journal of Affective Disorders, 145*(3), 285–291. https://doi.org/10.1016/j.jad.2012.07.020 (5).

Velligan, D., Maples, N., Roberts, D. L., & Medellin, E. M. (2014). Integrated psychosocial treatment for negative symptoms. *American Journal of Psychiatric Rehabilitation, 17*(1), 1–19.

Veneziano, L., & Hooper, J. (1997). A method for quantifying content validity of health-related questionnaires. *American Journal of Health Behavior, 21*(1), 67–70.

Walker, C. R., Froerer, A. S., & Gourlay-Fernandez, N. (2022, Jul). The value of using emotions in solution focused brief therapy. *Journal of Marital and Family Therapy, 48*(3), 812–826.

Yalcinkaya, S. M. (2020). *The effect of individual psychoeducation program on treatment adherence, functionality, internalized stigma and quality of life in bipolar patients and its effect on the burden of illness and depression level of families*. Istanbul Okan University / Institute of Social Sciences.

Yılmaz, G. T., Güriz, S. O., Kahiloğulları, A. K., Kokurcan, A., & Örsel, S. (2020). Effectiveness of group psychoeducation in bipolar disorder. *Journal of Cognitive Behavioral Psychotherapy and Research, 9*(2), 73–81.

Yılmaz, H. (2024). *The effect of motivational interviewing on coping, functionality, treatment compliance and quality of life in patients with bipolar disorder*. Pamukkale University Institute of Health Sciences.

Yılmaz, T. (2019). *The effect of structured art therapy group on self-esteem in patients diagnosed with bipolar disorder: Public hospital example*. Istanbul Gelisim University Institute of Social Sciences (Master's thesis).