Original Article

The Effect of Psychoeducation Applied Before Electroconvulsive Therapy on the Anxiety Levels of Psychiatric Patients

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Abstract

Objective: This study was planned to determine the effect of the psychoeducation program on the anxiety levels of the patients who received inpatient treatment in a psychiatry clinic of a hospital and were scheduled for electroconvulsive therapy.
Methods: The study was conducted as a parallel-group, randomized controlled design. The sample of the study consisted of 17 individuals who were randomly assigned to the experimental and control groups (control group n = 9; intervention group n = 8). Psychoeducation including knowledge about ECT and coping techniques with anxiety was applied to the intervention group. The data were collected through an introductory information form and the State-Trait Anxiety Inventory (STAI).
Results: The state anxiety mean scores of the group who were applied psychoeducation (pre-test before the first ECT session and post-test before the last ECT session) were found to be significantly lower than the control group mean scores (p = .000). Trait anxiety scores of the individuals were evaluated one day before ECT and no significant difference was found between the two groups (p = .277).
Conclusions: It was determined that psychoeducation applied before ECT was effective in reducing the anxiety level of the patients. It is recommended that psychoeducation provided by psychiatric nurses for anxiety should be added to the service routine before ECT.

Keywords: Electroconvulsive therapy, anxiety, psychiatry, patient.

Introduction

ECT (electroconvulsive therapy) began to be used in the clinic at the end of the 1930s before the development of psychopharmacology in the field of psychiatry. Since then, it has been a highly effective treatment option for various mental disorders such as psychotic depression, high suicide risk, treatment resistant bipolar disorder, schizophrenia. It is an effective treatment option that provides rapid response, especially in clinical emergencies (Kolar, 2017; Liang et al., 2018; Petrides et al., 2015).

Although the American Psychiatric Association(APA (American Psychiatric Association) Task Force on ECT, 2001) recommends ECT as a safe and priority treatment, there are differences of opinion and attitude among professionals of the subject. These differences of opinion are related to its side effects rather than its effectiveness(Balcioglu & Balcioglu, 2018). Anaesthetic and muscle relaxant agents were not used during the first periods when ECT was applied and some serious side effects such as fractures and dislocations could occur in patients. These side effects caused patients to perceive ECT as a frightening and traumatic treatment and to feel negative emotions associated with the thought that it caused punishment and torment.

Today, ECT is applied under general anaesthesia. After ECT, cardiovascular side effects such as sinus bradycardia or tachycardia and cognitive side effects such as headache, muscle pain, confusion memory impairment can be seen; however, complication rates such as prolonged, delayed or insufficient seizures have been reported to be lower(Asoğlu et al., 2018; Tomruk et al., 2007). Despite the solid evidence base of

clinical studies demonstrating the efficacy and safety of ECT in certain disorders,(Geddes et al., 2003) studies indicate that patients experience fear and anxiety associated with ECT (Biazar et al., 2020; Griffiths & O'Neill-Kerr, 2019; Obbels et al., 2017).

The need for general anaesthesia that causes ECT-related anxiety, cognitive side effects such as memory impairment(Gardner & O'Connor, 2008; Griffiths et al., 2018; Obbels et al., 2017) and factors such as stigmatization (Kring et al., 2018) limit the application. The predominantly negative portrayal in movies and television shows contributes to patients' prejudices and fears (Payne & Prudic, 2009; Sienaert, 2016). In the study investigating the fear associated with ECT, Chakrabarti et al (2010) reported that the patient and his family felt anxious or fearful before ECT and this fear did not decrease even after the end of the treatment (Chakrabarti et al., 2010).

The most common causes of fear and anxiety associated with ECT are the side effects such as memory impairment, disability and death and subsequent procedural factors, general anaesthesia and electric current (Biazar et al., 2020; Chakrabarti et al., 2010). The results of a recent study revealed that deep anxiety related to ECT still persists and a standard clinical guideline has not been yet reached to overcome the fear and anxiety of the patients (Gazdag & Ungvari, 2019).

Appropriate psychoeducation programs are needed in order to eliminate unrealistic opinions and false assumptions of patients related to ECT and to provide access to real/up-to-date information.(Payne & Prudic, 2009). In various studies conducted in our country, it has been concluded that patients have high anxiety due to lack of knowledge about the application before ECT (Asti, 1994; Atik, 2008). Therefore, considering the important role of nurses in patient education, increasing the knowledge and awareness of patients about ECT and enabling them to manage their fears and anxieties successfully can be one of the effective methods. When the literature was reviewed, it was determined that studies aimed at reducing anxiety before ECT are limited (Asti, 1994; Atik, 2008; Barker et al., 2003; Mahmoud et al., 2019; Vaghee et al., 2017). It is seen that the studies mostly focus on providing information about ECT, explaining the before and after care and preparing the patient for ECT. However, it is of great importance to inform patients about how to cope with the anxiety they experience and to teach the techniques in this regard (Videbeck, 2017).

Therefore, in this study, it was aimed to examine the effect of a psychoeducation that includes techniques to cope with anxiety and information about ECT on anxiety levels of the patients.

Research question: Does psychoeducation which is applied before ECT affect the anxiety levels of patients who receive inpatient treatment in a psychiatry clinic and will be treated with electroconvulsive therapy?

Materials and Methods

Research Design: This study was planned as a randomized controlled study in order to determine the effect of the psychoeducation program on the anxiety levels of the patients who received inpatient treatment in a psychiatry clinic of a hospital and were scheduled for electroconvulsive therapy.

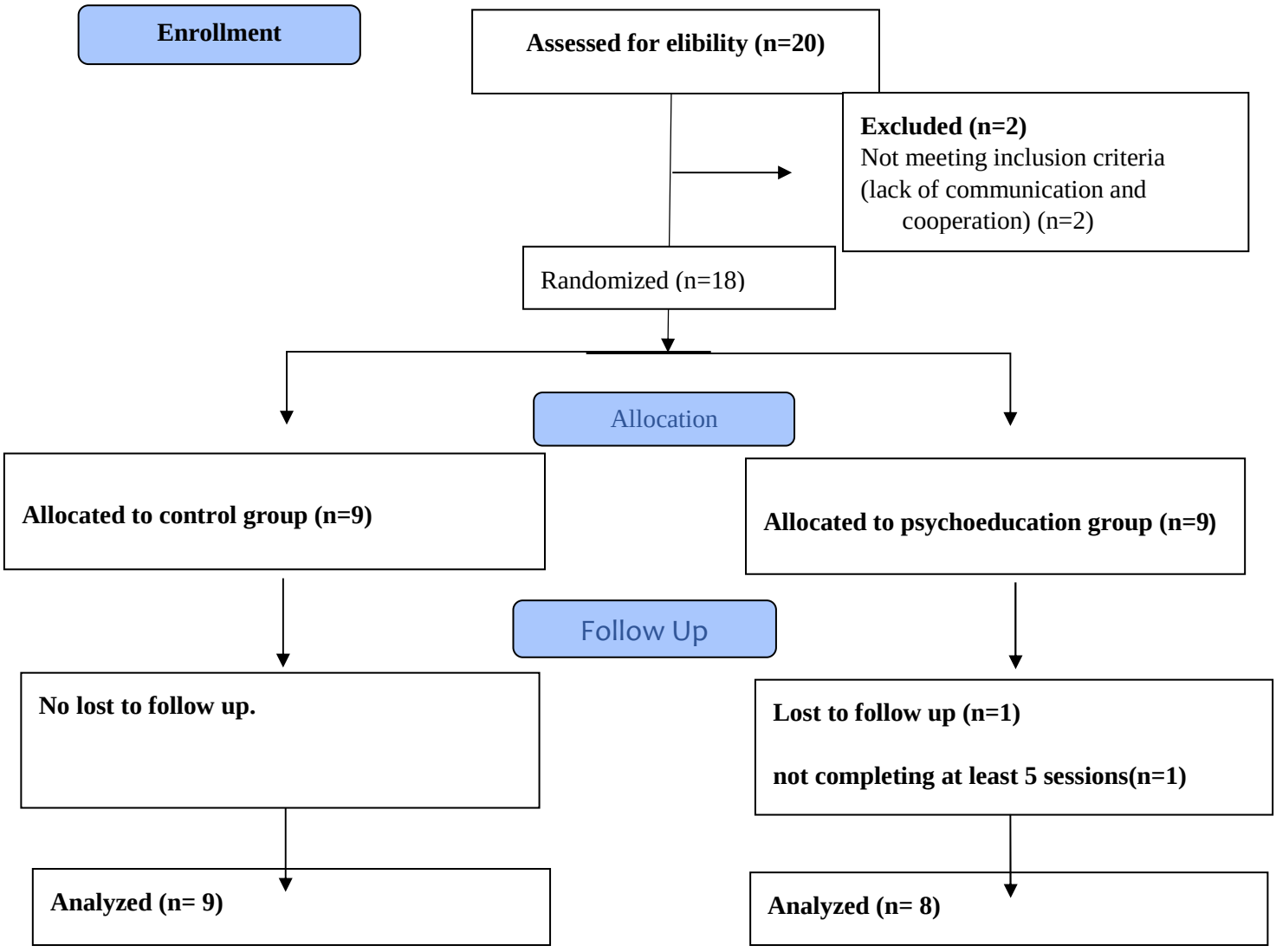
Participants: This study was carried out at a training and research hospital located in south-eastern region of Turkey between July 2019 and March 2020. The population of the study consisted of patients who received inpatient treatment in a psychiatry clinic and were scheduled for electroconvulsive therapy. All patients who underwent ECT between these dates and met the inclusion criteria were included in the sampling. Inclusion criteria in the study were receiving inpatient treatment in a psychiatry clinic at a hospital, receiving electroconvulsive therapy and volunteering to participate in the study.

The criteria for exclusion from the study were not wanting to participate in the study, not being able to communicate and cooperate, being diagnosed with mental retardation, presence of intense excitation and catatonia. Patients who did not complete at least 5 ECT sessions were excluded from the study. In the case of ECT planning, the patients who were included in the sampling were assigned to a psychoeducation group and a control group, respectively. Patients who did not meet the inclusion criteria were not included in the study (n = 2).

A patient from the psychoeducation group was not included in the evaluation process because the ECT sessions were not completed. As a result, 8 patients were included in the psychoeducation group and 9 patients were

included in the control group. Therefore, a total of 17 patients were included in the study (Figure 1). There was no statistically significant difference between the groups in terms of sociodemographic characteristics (see Table 1).

Figure 1. Study CONSORT flow diagram.



Measurements: Introductory information form prepared by the researchers in line with the literature and the State-Trait Anxiety Inventory were used for data collection process.

Introductory Information Form consists of questions for evaluating individuals' socio-demographic characteristics, psychiatric history and their feelings and thoughts about ECT.

State-Trait Anxiety Inventory (STAI): The inventory was developed by Spielberg et al. in 1970 to measure trait and state anxiety levels of individuals (Spielberg, 1971) . It was adapted into Turkish by Öner and Le Compte (Öner & Le Compte, 1982). State-Trait Anxiety Inventory includes a total of forty items which are the State Anxiety Scale consisting of 20 items and the Trait Anxiety Scale consisting of 20 items. The State Anxiety Sub-Scale (STAI-S) requires the individuals to describe how they feel at a certain time and under certain conditions while the Trait Anxiety Sub-Scale (STAI-T) requires the individuals to describe how they feel in general. In the State Anxiety Scale, the response choices

collected in four classes are (1) not at all, (2) somewhat, (3) moderately so and (4) very much so while the response choices for Trait Anxiety Scale are (1) almost never, (2) sometimes, (3) often and (4) almost always. The scores obtained from the scales vary between 20 and 80. High score indicates high level of anxiety while low score indicates low level of anxiety. Reliability coefficient of the scale was found between 0.94 and 0.96 for the "State Anxiety Scale" and between 0.83 and 0.87 for the "Trait Anxiety Scale". Based on these data, it is understood that Turkish scales have high item homogeneity and internal consistency (Savaşır and Şahin, 1997). For this study, Cronbach alpha coefficients for state and trait anxiety subscales were found to be 0.95 and 0.84, respectively.

Psychoeducation: In order to develop this program, national and international literature review was conducted. A booklet was prepared by creating the content and expert opinions were asked. The program was finalized in line with expert opinions. The sessions of the prepared program are briefly as follows:

Session 1: Providing informing about ECT (reasons for using ECT, its advantages and disadvantages, side effects, environment in which ECT is applied, preparation before ECT (not eating and drinking starting from the night, removing jewellery and metal ornaments, emptying the bladder), post-ECT care), expressing the feelings related to ECT, sharing strategies for coping with anxiety (breathing exercise, distracting attention, controlling thoughts, relaxation exercises) and demonstration, receiving feedback.

Session 2: Sharing emotions about the ECT experience, repeating the subjects that the patient wants to be repeated while information is provided and repeating the techniques to cope with anxiety.

Session 3: Sharing emotions about the ECT experience, repeating the subjects that the patient wants to be repeated while information is provided and repeating the techniques to cope with anxiety, evaluation.

In the psychiatry clinic where the study was planned, ECT application is repeated on average 7-12 times, 3 sessions per week (Monday-Wednesday-Friday) for the patients who are deemed suitable for treatment. Within the scope of this study, introductory information form and trait anxiety scale were administered to all patients in the control and psychoeducation groups the day before the first ECT was planned. Afterwards, the first session of psychoeducation was applied to the patients in the intervention group. This session lasted about 30 minutes. Only routine measures of the service were applied to the patients in the control group. These measures include information such as the onset of ECT, the number of expected sessions, not eating or drinking the night before ECT, emptying the bladder, removing ornaments and jewellery, physical examination and tests and necessary consultations. A pre-test-state anxiety scale was applied to all patients before the first ECT session. An average of 3 sessions were applied to the intervention group, one session per week during ECT. Post-test state anxiety scale was applied to patients in both groups before their last ECT sessions.

Data Analysis: IBM SPSS Statistics 22 program was used for the analysis of the research data. Percentage and mean were used to examine the distribution of sociodemographic characteristics and chi-square test was used to examine difference between the groups. The evaluation of scale averages according to some variables was made using the Mann Whitney U test. The Mann Whitney U test was used to compare the scale averages between the psychoeducation and control groups, and the Wilcoxon test was used to compare the pre-test and post-test scores in the same group. The confidence level was 95% and the significance level was accepted as .05. Cronbach alpha was used to evaluate the internal consistency of the scales.

Research Ethics: Ethical permission (date: 11.07.2019 and Decision No: 2019-14-1) was obtained from Adıyaman University Clinical Research Ethics Committee to conduct the study. The individuals participating in the research were informed about the research before the data was started to be collected, it was explained that they could withdraw from the study at any time, their identity information would be kept strictly confidential and not shared with third parties and their questions were answered. Verbal and written informed consent was obtained from the patients who voluntarily accepted to participate in the study.

Results

The sociodemographic characteristics and distribution of psychiatric diagnoses of the individuals participating in the study are presented in Table 1. The age average of the individuals participating in our study was 35.70 ± 12.64. 82.4% of the individuals were male,

35.3% were high school graduates, 58.8% were married and 82.4% were not working in any job. In addition, 52.9% were diagnosed with bipolar disorder. There was no statistically significant difference between psychoeducation and control groups in terms of these characteristics before the intervention (p> 0.05).

In Table 2, the average state and trait anxiety scores of the individuals participating in the study before ECT were analysed with respect to some variables. Accordingly, state anxiety scores of the individuals who did not have previous ECT experience and psychiatric history in the family were found to be higher. Trait anxiety scores of the individuals with ECT experience but no psychiatric history in the family were found to be higher; however, this difference was not statistically significant.

When the anxiety scores of the individuals were examined according to their feelings and thoughts about ECT, the average state anxiety scores of individuals who feel anxiety/fear, do not believe that it is therapeutic, see it as punishment and think it is harmful were found to be higher, but this difference was not statistically significant (p> 0.05). In addition, at least one ECT session of 23.5% of the individuals was cancelled and it was found that the average state anxiety score of the individuals whose session was cancelled was higher, but this difference was not statistically significant (p> 0.05). Mean trait anxiety scores did not show a significant difference according to all the variables examined (p>0.05).

When the ECT session cancellation was analysed according to the groups, it was determined that ECT session of 3 individuals in the control group was cancelled due to reasons such as smoking, eating and not wanting ECT and ECT session of 1 individual in the intervention group was cancelled due to respiratory system infection.

In Table 3, the effect of the psychoeducation program on the anxiety scores of the individuals who were applied ECT was examined. Trait anxiety scores of the individuals were evaluated one day before ECT and no significant difference was found between the two groups (p = .277). Just before the first ECT session, the average state anxiety (STAI-S) score of the control group was 57.66 ± 9.40 and the average score of the intervention group that were applied psychoeducation was 39.50 ± 4.92. It was determined that the difference between the total scores of the two groups was statistically significant (p = .000).

The average state anxiety (STAI-S) score assessed before the last ECT session was 54.66 ± 5.76 in the control group and 37.75 ± 4.59 in the intervention group and a statistically significant difference was found between the total scores of the two groups (p = .000). However, no statistically significant difference was found between the pre-test and post-test STAI-S total scores of both groups (p = .674; p = .062).

Table 1. Descriptive characteristics of participants

Characteristics	Intervention group		Control group		Total		Analysis*
	n	%	n	%	n	%	
Age							
18-40 years	7	87.5	5	55.6	12	70.6	X^2=2.082
41-65 years	1	12.5	4	44.4	5	29.4	p=.294
Gender							
Female	1	12.5	2	22.2	3	17.6	X^2=.275
Male	7	87.5	7	77.8	14	82.4	p=1.000
Education Level							
Primary School	1	12.5	1	11.1	7	11.8	
Middle school	2	25	3	33	14	29.4	X^2=1.814
High school	2	25	4	44.4	40	35.3	p=.612
Undergraduate	3	37.5	1	11.1	16	23.5	
Marital status							
Single	2	25	5	55.6	7	41.2	X^2=1.633
Married	6	75	4	44.4	10	58.8	p=.335

Employment status							
Unemployed	7	87.5	7	77.8	14	82.4	X^2=.944 p=.624
Student	1	12.5	1	11.1	2	11.8	
Employed	0	0	1	11.1	1	5.9	
Diagnosis							
Psychotic disorder	1	12.5	0	0	1	5.9	
Bipolar disorder	3	37.5	6	66.7	9	52.9	X^2=2.282
Depressive disorder	2	25	2	22.2	4	23.6	p=.516
Anxiety disorder	2	25	1	11.1	3	17.6	
Total	8	100	9	100	17	100	

p <0.05 * Pearson's chi-square test; Fisher chi-square test

Table 2. Evaluation of anxiety scores (STAI-S and STAI-T) before ECT according to some variables

Characteristics			**STAI-S**	**STAI-T**
	n	**%**	**Mean±SD**	**Mean±SD**
ECT experience				
Yes	6	35.3	51.83±9.53	48.90±6.48
No	11	64.7	55.18±8.32	50.33±7.08
U (p)			24.500 (.392)	27.500 (.577)
Psychiatric history in the family				
Yes	10	58.8	51.40±5.85	47.80±4.66
No	7	41.2	57.71±10.95	51.71±8.38
U (p)			25.500 (.353)	21.000 (.168)
Feelings & thoughts about ECT				
I have anxiety/fear.	11	64.7	55.27±8.23	49.27±6.35
I do not have anxiety/fear.	6	35.3	51.66±9.62	49.66±7.42
U (p)			22.500 (.290)	32.500 (.960)
I believe it is therapeutic.	13	76.5	51.53±7.49	50.92±6.03
I do not believe it is therapeutic.	4	23.5	62.00±7.83	44.50±6.24
U (p)			7.500 (.036)	12.500 (.123)
I see it as a punishment.	1	5.9	64.00	42.00
I do not see it as a punishment.	16	94.1	53.37±8.50	49.87±6.43
U (p)			2.000 (.220)	2.000 (.216)
I think it is harmful.	3	17.6	58.66±5.03	47.00±4.58
I don't think it's harmful.	14	82.4	53.00±9.03	49.92±6.88
U (p)			10.500 (.185)	15.500 (.484)
ECT session cancellation				
Yes	4	23.5	58.75±8.23	45.50±7.76
No	13	76.5	52.53±7.61	50.61±5.90
U (p)			14.500 (.192)	15.000 (.208)

p <0.05 * Mann Whitney U test.

Table 3. A comparison of total pretest and posttest STAI-S and STAI-T scores mean for patients in the psychoeducation group and the control group.

Scales		**Psychoeducation Group**	**Control Group**	**Statistics** U[a] **(p)**
		Mean± SD	**Mean± SD**	
STAI-S	Pre-test	50.87±10.36	56.77±10.36	48.000 (.276)
	Post-test	34.87±2.16	54.88±5.64	**72.000(.000)**
	Z[b] (p)	**-2.527 (.012)**	-1.057 (.291)	
STAI-T	Pre ECT	48.62±5.95	50.11±7.27	47.500 (.277)

[a]Mann Whitney U test. [b] Wilcoxon test.

Discussion

There are still concerns about ECT, which has been used for many years and accepted as a safe and effective treatment. These concerns both limit the use of ECT and cause anxiety for the patients (Biazar et al., 2020; Guruvaiah et al., 2017; Rajagopal et al., 2012). In this study, the effectiveness of a psychoeducational intervention which was expected to reduce anxiety levels of the patients who were planned to receive ECT was examined before ECT. As a result of the study, it was found that psychoeducation intervention, which included information about ECT and coping strategies for anxiety, was effective in reducing the anxiety levels of patients before ECT.

According to the results of the study, most of the patients stated that ECT was therapeutic (76.5%), not harmful (82.4%) and did not see it as a punishment (94.1%); however, the rate of patients who felt anxiety/fear was found to be higher (64.7%). In other studies, it was also reported that the rate of patients experiencing ECT-related anxiety was high (Biazar et al., 2020; Griffiths et al., 2018; Guruvaiah et al., 2017; Obbels et al., 2017; Rajagopal et al., 2012). In a study examining patients' knowledge, attitudes and experiences (2012), most of the patients expressed their dissatisfaction related to aspects such as fear of treatment and memory impairment, although they did not find ECT a sad experience.

Although the patients' opinions about ECT were mostly positive, unstable attitudes were also common(Rajagopal et al., 2012). In another study, most of the patients reported fear and distressing side effects associated with ECT, but stated that they found the treatment beneficial and had positive views(Chakrabarti et al., 2010). These findings are similar to the results of the study.

In order to reduce the anxiety level, it is important to examine the patients' situation, thoughts and perceptions related to ECT. In our study, some variables that could be associated with anxiety before ECT were examined. Accordingly, pre-ECT anxiety levels of individuals who did not have previous ECT experience and psychiatric history in the family were found to be higher. In addition, pre-ECT anxiety levels of individuals who feel anxiety/fear, do not believe that it is therapeutic, see it as punishment and think it is harmful were found to be higher, but this difference was not statistically significant. Similarly, in another study, (Biazar et al., 2020) anxiety levels of patients who had ECT experience were lower.

In studies investigating anxiety associated with ECT, anxiety was mostly associated with side effects such as application of ECT, exposure to electric current, need for general anaesthesia, memory impairment(Biazar et al., 2020; Chakrabarti et al., 2010; Gardner & O'Connor, 2008; Griffiths et al., 2018; Obbels et al., 2017). It is an expected result that patients who perceive ECT as fearful, punishment and torment have higher anxiety before ECT.

In our study, the anxiety score averages of the individuals whose at least one ECT session was cancelled were found to be higher. Failure to comply with fasting before ECT can be interpreted as an attempt to avoid ECT due to lack of information or high anxiety. Due to the lack of knowledge about ECT, it is not uncommon to delay or even prevent necessary treatments, which adversely affect the patient's treatment process and harm the patient biologically and psychologically as a result (Grozinger et al., 2015).

It was determined that psychoeducation applied before ECT was effective in reducing the anxiety level of the patients.

It was found that psychoeducation intervention, which included information about ECT and coping strategies for anxiety, was effective in reducing the anxiety levels of patients before ECT. In a conducted study,(Vaghee et al., 2017) it was determined that both face-to-face and multimedia training were effective in reducing total and state anxiety before the first ECT session. Navidian et al (2015) stated in their study that the supportive care of nurses, such as communicating with patients and providing them with information about the advantages and disadvantages of ECT, was effective in reducing state and trait anxiety in patients receiving ECT (Navidian et al., 2015).

Tasai et al. (2020) also stated in their study that video psychoeducation applied to patients provided positive changes in patients' perceptions (e.g. ECT can be lifesaving, fears that ECT can be painful) and an increase in correct information about ECT (e.g. ECT is one of the safest procedures performed) and willingness to receive ECT(Tsai et al., 2020). In other studies, it was stated that the progressive relaxation technique (Sobhy Mahmoud et al., 2019) and animal-assisted therapy were effective in reducing the anxiety of patients before ECT(Barker et al., 2003).

Although different education and training methods were evaluated in the studies, it is consistent with the findings of this study in terms of the effectiveness of increasing the awareness and knowledge of patients in reducing ECT associated anxiety.

Limitations: ECT procedures were suspended in the clinic where the study was carried out due to the pandemic that emerged during the planning of our study and affected the whole world. For this reason, our study was terminated earlier and the sample size was limited.

Conclusion and recommendations: In our study, most of the patients who received ECT stated that ECT was therapeutic, not harmful and they did not see it as a punishment, but the rate of patients who had anxiety/fear was higher. The effectiveness of psychoeducation applied before ECT in order to reduce the anxiety level of psychiatric patients before ECT was evaluated. Psychoeducation included information about ECT and strategies for coping with anxiety. According to the results of the study, the state anxiety levels of the patient group who received psychoeducation were found to be significantly lower than the control group. In future studies, it is recommended to conduct studies to understand and reduce anxiety before ECT and add psychoeducation that will be provided by psychiatric nurses to the service routine.

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