

Research Article

Effectiveness of Psychoeducation for Parents of Children with Epilepsy on Epilepsy-Related Knowledge and Anxiety, State-Trait Anxiety Levels

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Abstract

This research was carried out quasi-experimentally for families of children with epilepsy to assess the impact of psychoeducation to parents' knowledge, anxiety for epilepsy and State-Trait Anxiety levels. The population of the investigation covers, 560 parents of children with epilepsy followed by a University Research Center of Child Neurology. The study sample constituted 68 participants including 35 test and 33 control parents. Research data, the form determines the parent and child descriptive characteristics, Epilepsy Information Scale for Parents (EISP), Parental Concerns Against the Seizure Scale (PCASS), State-Trait Anxiety Inventory (STAI), collected by applying as a parent to pretest and posttest. The experimental group psychoeducation applied 2 hours per week for 6 weeks, the control group did not receive any intervention. In the dependent group to analyze the data, t-test and student test was used. As a result, the experimental group parents pretest Epilepsy Information Scale for Parents (EISP) score $X = 12.4 \pm 2.44$, while the final test EISP score $X = 17.5 \pm 1.96$, respectively. Experimental group of parents EISP points has increased after psychoeducation. EISP points between experimental and control groups of parents were found to be statistically highly significant ($t = 9.441$ $p < 0.01$). There were no changes in the control group ($p > 0.05$). Experimental and control groups, there was no statistically significant difference in trait anxiety scores ($p > 0.05$); in the experimental group of parents Trait Anxiety Inventory (TAI) at $X = 40.9 \pm 6.10$ while pretest scores, It decreased markedly after psychoeducation $X = 38.8 \pm 4.94$ and this difference was found to be statistically significant ($t = 2.029$ $p < 0.05$). Experimental and control groups of parents, there was no significant difference in trait anxiety scores ($p > 0.05$). In line with these results, it is proposed to apply psychoeducational program to parents with epilepsy children by nurses.

Keywords: Anxiety; Epilepsy; Nursing; Psychoeducation

Background

Chronic disease is defined as a continuous, slow-progressing condition that lacks a complete recovery and often causes permanent disabilities, disabilities and has serious effects on the general lifestyle of the patient. These conditions often require special training for patient rehabilitation and generally require care and supervision for many years [1,2]. Chronic diseases in childhood place heavy responsibilities on families to manage symptoms and treatment methods and guide the course of the disease; long-term effects and limitation of daily activity are constant concerns [3]. Diagnosis of chronic disease in childhood may lead to eventual mental and psychosocial harm to parents and other family members [4]. Parents of children with chronic illnesses face many challenges, including stress, tension, social isolation, stigma, economic problems, confusion of family roles and others [5]. In fact, chronic diseases in children lead to functional and communication disorders in the family, increased stress and economic

problems [2]. Epilepsy ranks second among the chronic childhood diseases after insulin-dependent diabetes mellitus. The incidence of epilepsy in many countries such as the United States, Europe, Nigeria, India and China is 5-8 per thousand. The incidence of epilepsy in our country is 7-8.5 per thousand, this rate is 1-2 per thousand in children [6,7]. Epilepsy is the most common chronic neurological disease of childhood and adolescence. It is caused by congenital or acquired disorders and characterized by recurrent seizures; it is also accompanied by central nervous system dysfunction. Seizures are the main symptom of the disease [8,9]. As with all other chronic diseases, the patient and family may experience adjustment problems in epilepsy. Even if seizures are brought under control, families' fears about the disease and concerns that the seizures will recur may affect the adaptation process of the family [10]. There have been many studies showing that parents of children with epilepsy have high anxiety levels, as is the case with parents of children with other chronic diseases. It was found that parents of children with epilepsy have higher anxiety levels than parents who have healthy children, with coping levels that are lower than healthy parents, and high anxiety levels due to their uncertainty of about epilepsy, seizures and the needs of their epileptic children [4,11]. According to American Nurses Association; "Mental health and psychiatric nursing is the purposeful use of the self as an art, and the use of psychosocial and neurobiological theories, research findings, and various roles of nursing as a science" [12]. Nurses are healthcare personnel who are easily accessible in helping the family adapt to the disease, and therefore are particularly effective support to parents learning to cope with anxiety. Mental health nurses can identify at-risk groups and help them take precautions. For this, the education and psychoeducation nurses give to parents are important

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for the family's adaptation to epilepsy [12]. Psychoeducation, a term used for education in psychiatry, describes structured cognitive, behavioral and psychosocial treatment approaches for patients and parents. Its purpose is to provide information to patients and families, reduce stress, provide emotional support and improve quality of life and coping skills. Recently, psychoeducation programs have been developed to teach problem-solving approaches to patients with schizophrenia, affective disorders, substance addiction, and depression; and to their families [13]. Studies of the effect of epilepsy on family members are limited. When one member of a family is diagnosed with epilepsy, measures should be taken and developed to protect the mental health of all family members. The family should be approached in a holistic manner instead of focusing only on the patient and his/her problems [6]. This study was conducted to examine the effect of psychoeducation on parents of children with epilepsy who were followed in a pediatric neurology outpatient clinic of a university hospital. The study focused on the level of knowledge about epilepsy and how it affected anxiety towards seizures.

Methods

Study design

The study was semi-experimental in design and followed a control group pre-test-post-test order.

Population and sample

To determine the sample of the study, researchers examined pediatric neurology outpatient records of a university hospital to access contact information of parents of children with epilepsy who applied to the outpatient clinic between February 2014 and April 2014 was accessed. Information about the study and the psychoeducation program to be carried out within the scope of this study was given to selected candidates for the study. The intervention and control groups each included 35 parents. Three parents in the experimental group did not attend the training program regularly and two parents did not have time to participate in the psychoeducation program; and five parents in the control group could not be reached for the post-test; the study excluded all of these. The research sample consisted of 63 participants, 30 in the experimental group and 33 controls.

Instruments

Before and after the psychoeducation program, an introductory information form and four scale forms were used to collect data from parents in the experimental and control groups

- **Introductory Information Form:** A data collection forms was consisting of total of 19 questions including about the parent characteristics of the children.
- **State Anxiety Inventory (SAI):** an inventory developed by Spielberg et al. [14] to determine how a person feels at a specific moment, under specific conditions, and in general. The scale was adapted to Turkish by Öner and Le Compte (1985) as the State-Trait Anxiety Inventory. The invariance coefficients for the State Anxiety Scale were 0.26, 0.68; 0.71 and 0.86 for the Trait Anxiety Scale. State Anxiety Scale consists of 20 questions about how the individual feels at a specific time and under specific conditions. State Anxiety Scale consists of 10 positive (numbers 3, 4, 6, 7, 9, 12, 13, 14, 17, 18) and 10 negative statements (numbers 1, 2, 5, 8, 10, 11, 15, 16, 19, 20). To calculate "inverse" expressions expressing positive emotions, those with a weight of 1 are converted into 4, and

those with a weight of 4 are converted into 1. Answers with a value of 4 in direct expressions of negative feelings indicate the highest anxiety. Total score is calculated by subtracting the total score of negative expressions is from the total score of positive expressions and adding the invariant number 50. Scale scores range from 20 to 80. High scores indicate high anxiety, small scores indicate low anxiety.

- **Trait Anxiety Inventory (TAI):** Trait Anxiety Scale determines how an individual generally feels independent of the current situation and conditions. This 20-item scale consists of 13 positive (numbers 2, 3, 4, 5, 8, 9, 11, 12, 14, 15, 17, 18, 20) and 7 negative statements (numbers 1, 6, 7, 10, 13, 16, 19). Total score is calculated by subtracting the sum of negative expressions from the total of positive expressions and adding the number 35, which is the constant value for this scale. In score calculations, high scores indicate high anxiety levels and low scores indicate low anxiety levels. Anxiety levels increase as scale scores increase [14].
- **Parent Anxiety about Seizures Scale (PASS):** Developed by Austin et al. [15] to determine the anxiety of families of children with seizures, the scale consists of 9 items. Each item in the scale is scored between 1 and 5. For all items, (1) means always, (2) means often, (3) means sometimes, (4) means hardly ever, and (5) means never. Score totals fall between 9 and 45, with increasing totals indicating increasing anxiety.
- **Epilepsy Knowledge Test for Parents (EKTP):** Epilepsy Knowledge Scale was developed by Austin et al. [11,15] to measure the general knowledge level of families. Consisting of 20 questions covering the cause of seizures, emergency care, complications of seizures, and cognitive and psychosocial consequences and limitations, the scale such that (0) means false, (1) means true and scores between 0 and 20 can be obtained. A high total score indicates that families have a high level of knowledge.

Setting

The researcher reached candidates for the study at the outpatient clinics and some of by phone and gave them information about the program. Interviews followed; candidates were told that participants who did not attend at least two meetings would be excluded from the program and were given information about program content, start-end dates, and location. Three psychoeducation groups were formed, with 12 participants in the first group, 10 participants in the second group and 11 participants in the third group. The sessions within the scope of the psychoeducation program were held in the educational hall of the medical school after obtaining the necessary permissions. There was a blackboard and a projection device in the meeting room to be used in the psychoeducation program. After the psychoeducation groups were formed, the sessions started. The first session began with an introduction to the purpose and general structure of the psychoeducation program; the other sessions each began with summarizing the previous session and evaluating homework. The psychoeducation program consisted of 6 sessions, each lasting 90-120 minutes per week. The content of each session of the psychoeducation program was structured as follows:

Session 1: Questionnaires were completed by those participating in the epilepsy psychoeducation program and participants were pre-evaluated. Psychoeducation was defined and the goals of these

psychoeducation sessions were described.

Session 2: Participants were given the definition of epilepsy and basic information about the disease and its causes. Participants shared feelings about and experiences with the disease.

Session 3: Participants were informed about the diagnostic tests for epilepsy. Participants shared feelings and experiences coping methods.

Session 4: Participants were informed about about the treatment methods of epilepsy, the importance of adherence to treatment, drug therapy, and the practices that families should do in epileptic seizures, and shared their experiences.

Session 5: Participants were informed about the difficulties experienced by epileptic children and their families of children. Participants shared the difficulties and emotions they experienced as parents of children with epilepsy.

Session 6: Mechanisms for coping with stress and problem-solving skills were introduced, session were evaluationed and the program was closed.

Ethical considerations

Ethical Aspect of the Research: The clinical research ethics committee of a university hospital granted written permission to conduct the research (date 25.04.2013, number 23625361) as did the hospital's management.

Statistical analysis

The study data entry used the SPSS 20.0 package program. Data was analyzed using the dependent groups t-test and student t-test. The results were evaluated at 95% confidence interval and $p < 0.05$ significance level.

Limitation

Sample size of the study was our main limitation. In the psychoeducation session we used mainly didactic educational material and time for sharing emotions and experiences were low.

Results

The descriptive characteristics of the parents are presented in Table 1 with the comparison of parents in the experimental and control groups according to their characteristics. Most of the parents are women (67.6%), married (95.6%), and recipients of a primary education (76.5%). The majority of the parents are unemployed (51.5%) and the majority perceive themselves at a medium+ socioeconomic level (79.4%). The average age of the parents participating in the study is 36.8 ± 6.04 (min: 23-max: 53). Comparing the parents in the experimental and control groups by age, gender, marital status, educational status and socioeconomic status determined no statistically significant difference between the groups ($p > 0.05$). A significant difference was found between parents in the experimental and control groups in working status, and the experimental group (68.6%) mostly included non-working parents ($\chi^2 = 8.44$, $sd = 1$ $p < 0.05$). Table 2 presents pre-test-post-test score comparisons of scores of Epilepsy Knowledge Test for Parents in the experimental and control groups. The table shows there was no statistically significant difference between the knowledge score averages of the parents in the experimental and control groups prior to psychoeducation, while the knowledge scores of the experimental group after the psychoeducation were higher ($X = 17.5 \pm 1.96$) than

the control group ($X = 13.0 \pm 2.03$), and the difference between the groups was determined to be highly statistically significant ($t = 7.606$ $p < 0.01$). When the knowledge scores of the experimental and control groups on epilepsy were compared separately, there was no significant difference in the control group after psychoeducation compared to the pre-psychoeducation group, while the knowledge score of $X = 12.4 \pm 2.44$ in the pretest increased to $X = 17.5 \pm 1.96$ in the posttest, a difference determined highly statistically significant ($t = 9.441$ $p < 0.01$). Table 3 presents the comparison of Parent Anxiety about Seizures Scale pretest - posttest scores of the parents in the experimental and control groups included in the scope of the study. The table shows there was no statistically significant difference in the anxiety scores of the experimental and control groups before and after psychoeducation ($p > 0.05$), while the Parent Anxiety about Seizure Scale scores of the experimental group were $X = 33.4 \pm 6.50$ in the pretest and significantly decreased after the psychoeducation ($X = 28.5 \pm 5.04$) a difference that was highly statistically significant ($t = 9.355$, $p < 0.01$). Table 4 presents the comparison of parents' State Anxiety Scale (SAI) pre-test and post-test scores in the experimental and control groups. As the table shows, there was no statistically significant difference in the anxiety scores of the experimental and control groups before and after psychoeducation ($p > 0.05$). While the State Anxiety Scale (SAI) scores of the parents in the experimental group were $X = 40.9 \pm 6.10$ in the pretest, they significantly decreased after psychoeducation. $X = 38.8 \pm 4.94$ and the difference was found to be statistically significant ($t = 2.029$, $p < 0.05$). Table 5 presents parents' pre-test-post-test comparisons of the Trait Anxiety Scale scores in the experimental and control groups. The table shows no statistically significant difference found between Trait Anxiety scores of parents in the experimental and control groups before and after psychoeducation ($t = 1.613$, $t = 1.912$ $p > 0.05$). In addition, separate comparison of scores of the experimental and control groups before and after psychoeducation showed there was no statistically significant difference in trait anxiety scores in the posttest ($t = 1.342$, $t = 0.233$, $p > 0.05$).

Discussion

This study applied a psychoeducation program on epilepsy to parents of children with epilepsy. When the knowledge scores of the parents in the experimental and control groups were compared before and after psychoeducation, the control group showed no statistically significant difference in ($p > 0.05$), while the experimental group showed pre-test knowledge scores ($X = 12.4 \pm 2.44$) in the experimental group to increase ($X = 17.5 \pm 1.9$) in the posttest. This was highly significant ($t = 9.441$ $p < 0.01$). In a study of mothers ($n = 52$) of children with epilepsy that used the interactive education method, Avcı (2010) determined that before the training the mean epilepsy knowledge scale score of mothers in the study group was 10.23 ± 4.77 and in the control group was 9.48 ± 4.85 ; and after the training, the average knowledge scores in the study group increased by 13.75 ± 3.61 and in the control group decreased by 8.59 ± 9.02 ($p < 0.001$) [11]. The studies show that parents are not effective in controlling the disease and need information [16-19]. Many studies state that not only parents but also society, students and teachers need information about epilepsy to improve their knowledge of and attitudes toward the disease [15,17,20-24]. There are studies showing that teachers, students and parents educated on epilepsy demonstrate improved knowledge after the education [19,25]. A study conducted with teachers determined that short-term education about the disease given to teachers increased the knowledge and had a positive effect on

Table 1: Characteristics of parents.

FEATURES	Experimental Group		Control Group		Total		Significance Level
	number	%	number	%	number	%	
Gender							$\chi^2=2.971$
Female	27	77.1	19	57.6	46	67.6	sd=1
Male	8	22.9	14	42.4	22	32.4	p>0.05
Age Group							
20-30 years old	4	11.4	5	15.2	9	13.2	$\chi^2=1.234$
31-40 years old	22	62.9	23	69.7	45	66.2	sd=1
40 years and older	9	25.7	5	15.2	14	20.6	p>0.05
Marital Status							$\chi^2=0.268$
Married	33	94.3	32	97	65	95.6	sd=1
Widowed and divorced	2	5.7	1	3	3	4.4	p>0.05
Education Status							$\chi^2=0.499$
Primary Education	28	80	24	72.7	52	76.5	sd=1
High School and higher education	7	20	9	27.3	16	23.5	p>0.05
Working Status							$\chi^2=8.44$
Working/employees	11	31.4	22	66.7	33	48.5	sd=1
Not working	24	68.6	11	33.3	35	51.5	p<0.05
Perceived socioeconomic level							$\chi^2=1.752$
low (less than income)	5	14.3	9	27.3	14	20.6	sd=1
Middle and above (income meets the expense)	30	85.7	24	72.7	54	79.4	p>0.05
TOTAL	35	100	33	100	68	100	

Table 2: Comparison of Epilepsy Knowledge Test for Parents Scores in experimental and control groups before and after psychoeducation.

Groups pre-test-post-test	Experimental group (n:35) X±SS	Control Group (n:30) X±SS	Student's t test and p value
Before psychoeducation	12.4±2.44	13.0±2.03	t=1.052 p>0.05
After psychoeducation	17.5±1.96	13.3±2.29	t=7.606 p<0.01
Dependent-sample T test and p values	t=9.441 p<0.01	t=1.574 p>0.05	

Table 3: Comparison of Parent Anxiety About Seizure Scale pre-test and post-test scores in experimental and control groups.

Groups Pre-test-post-test	Experimental group (n:35) X±SS	Control Group (n:30) X±SS	Student's t test and p value
Before Psychoeducation	33.4±6.50	31.7±9.10	t=0.727 p>0.05
After Psychoeducation	28.5±5.04	31.4±8.56	t=1.665 p>0.05
Dependent-sample T test and p values	t=9.355 p<0.01	t=0.849 p>0.05	

Table 4: Comparison of parent State Anxiety Scale pretest-posttest scores in experimental and control groups

Groups Pre-test-post-test	Experimental group (n:35) X±SS	Control Group (n:30) X±SS	Student's t test and p value
Before psychoeducation	40.9±6.10	38.2±4.93	t=1.468 p>0.05
After psychoeducation	38.8±4.94	37.7±3.46	t=0.988 p>0.05
Dependent-sample T test and p value	t=2.029 P<0.05	t=0.676 p>0.05	

their perception of epilepsy [25]. A study that educated elementary school students about epilepsy determined their knowledge scores at the end of the education to have increased [21]. A study determined that education regarding safety in the context of epilepsy that was given to epileptic children aged 9-18 years and their parents resulted in a significant increase in knowledge scores [19]. Examination of the literature regarding this study shows similar results have. A study conducted with mothers of children with epilepsy regarding drug incompatibility found that the knowledge level of the mothers in the

Table 5: Comparison of parent Trait Anxiety Scale Pretest-Posttest Scores in experimental and control groups

Groups Pre-test-post-test	Experimental group (n:35) X±SS	Control Group (n:30) X±SS	Student's t test and p value
Before psychoeducation	47.4±5.22	45.5±4.66	t=1.613 p>0.05
After psychoeducation	47.5±5.37	45.2±3.96	t=1.912 p>0.05
Dependent sample T test and p value	t=1.342 p>0.05	t=0.233 p>0.05	

experimental group about the treatment of the disease and seizure significantly increased [17]. In the psychoeducation program FAMOSES modeled in many studies, especially the child and parents are together and group interaction takes place, determined that as parents' knowledge about epilepsy increases, their fears and anxieties specific to epilepsy decrease [17,23]. When this study examined the epilepsy knowledge levels of the parents were examined, it found that the difference between the pre-test and post-test epilepsy knowledge scores increased in the parents who received psychoeducation concluded that psychoeducation was effective to increase the level of knowledge about epilepsy. Over all, the research support the findings of these studies. Examination of the literature shows that parents of children with epilepsy experience depression, anxiety and psychological problems and need information about the disease and support in managing the disease [26-29]. In epilepsy, responsibility for the child's care, psychological problems experienced by the child (anxiety, depression, guilt, fear of seizure, future anxiety, etc.), economic burdens due to medical costs of the disease and, most importantly, the uncertainty surrounding continued or recurrent seizures make coping with the disease difficult and increase anxiety in the child and parents [30,31]. Our study applied the Parent Anxiety about Seizures Scale (PASS) to assess seizure-specific anxiety in experimental and control groups of parents of children with epilepsy. PASS score of the parents of the experimental group before psychoeducation was found to be 33.4 ± 6.50 , while the PASS score of the parents in the pre-psychoeducation control group was 31.7 ± 9.10 . After the psychoeducation, the PASS scores of the parents in the experimental group decreased to 28.5 ± 5.04 . In the control group, the

post-test PASS was 31.4 ± 8.56 with no decrease. After the psychoeducation on epilepsy, there was no change in the parental anxiety scores towards epilepsy in the control group, where the anxiety scores decreased in the experimental group; and the difference between the groups was statistically significant ($p < 0.01$). We concluded that the decreased anxiety in the experimental group was affected by the psychoeducation program given. In a study similar to ours, Avci (2010) worked with mothers of children with epilepsy in experimental and control groups, using the same scale though different interactive training methods. Avci found that the parental anxiety scores of the experimental group mothers before the training were $X = 30.31 \pm 7.21$ and $X = 17.67 \pm 5.93$ ($p < 0.01$) after the training; and the control group's anxiety surrounding seizure increased [11]. There are many studies abroad on children with epilepsy and the anxiety of their parents. One, involving parents of 200 children between the ages of 6 and 12 treated for epilepsy for at least one year, found that parents' beliefs and attitudes with epilepsy can affect the adjustment and quality of life of the child and the whole family. This study found that the quality of life of the parents of children with a high level of anxiety and uncontrollable seizures and accompanying physical or psychological problems decreased, and their anxiety and need for information were high [32]. A study by Camfield et al. [33] found that the parents of children with epilepsy were more stressed and other family members also had emotional problems. Examination of study results shows that epilepsy education programs increase the knowledge of epilepsy patients and their parents; they also reduce anxiety specific to the occurrence of seizure. These findings support the results of our study. Chronic diseases of any kind in children, especially neurological diseases, are a source of stress and anxiety for families [34]. This study investigates and discusses the effect of psychoeducation on anxiety in parents of children with epilepsy. The State Anxiety Scale (SAI) scores of the parents in this study's experimental group were $X = 40.9 \pm 6.10$; after psychoeducation they significantly decreased to $X = 38.8 \pm 4.94$, a statistically significant ($t = 2.029$ $p < 0.05$) difference. The mean State Anxiety Scale scores of the control group were $X = 38.2 \pm 4.93$ in the pretest and $X = 37.7 \pm 3.46$ in the posttest. There was no statistically significant difference in the anxiety level of the parents in the control group in the pretest-posttest scores ($p > 0.05$). Psychoeducation is thought to be effective in decreasing state anxiety levels in the experimental group. A study investigating parents of epileptic children and parents of healthy children regarding family function, anxiety and coping ability found state anxiety of parents with epileptic children to be 38.8 ± 6.73 higher than parents with 45.0 ± 8.67 healthy children [32]. A similar study using the interactive education method determined that the state anxiety mean scores in the experimental group were 42.71 ± 4.56 before the training and in the control group were 43.03 ± 5.12 ; after the training, the state anxiety mean scores in the experimental group decreased to 37.44 ± 9.26 , and was 43.80 ± 7.57 in the control group, indicating no reduction in anxiety. A statistically significant difference was found in the pre-test and post-test state anxiety scores of the experimental group ($p < 0.05$). Examination of the literature reveals many studies of state anxiety in the parents of children with chronic diseases other than epilepsy, including parents of disabled children and parents with mentally disabled children [5,35-37]. A study of the anxiety, parental attitudes and coping abilities of parents of mentally retarded children found the state anxiety of parents to be high at 43.7 ± 5.9 [37]. A study of with parents with diabetic and healthy children [38] found the state anxiety scores of parents of diabetic children to be high at 50.10 ± 15.86 , while the state anxiety scores of parents with

healthy children were 35.80 ± 10.70 . These findings were similar to the state anxiety scores we found. A study has shown that as parents with asthmatic children were educated about asthma, the number of asthma attacks decreased, parents' satisfaction increased and state anxiety levels decreased [5]. Another study of parents of mentally retarded children and the effect of information on their anxiety found that initially the anxiety scores of fathers were lower than those of mothers; after information was given, mothers' state and trait anxiety scores decreased, while fathers' trait anxiety scores decreased [39]. Research by Flury et al. [40] on febrile seizures and parental anxiety found anxiety to be present in 69% of the parents with sick children and found a relationship between lack of information and anxiety. The study found 79% of the parents to possess no information about febrile seizures and parents with a low education level to be more anxious than parents with a higher education. Jantzen et al. [20] study of parents of children with epilepsy found that after introducing child and family-centered education (FLIP&FLAP), communication skills of parents in the experimental group improved, knowledge increased and anxiety decreased in both parents and children. It is known that psychoeducation (FAMOSSES) programs, which facilitate group interaction and bring children and parents together, reduce mothers' anxiety [23]. These findings are similar to those of this study that psychoeducation reduces the state anxiety of parents. In this study, Trait Anxiety scores of the parents in the experimental group were 47.4 ± 5.22 and 47.5 ± 5.37 after psychoeducation, reflecting no change. The Trait Anxiety scores of the parents in the control group were 45.5 ± 4.66 and 45.2 ± 3.96 before and after psychoeducation, again reflecting no change. Overall there was no statistically significant difference between the Trait Anxiety scores experimental and control groups before and after psychoeducation ($p > 0.05$). In the absence of a decrease in Trait Anxiety scores, we think that the number of psychoeducation sessions and the content of the sessions prepared for the experimental group is not sufficient. Studies of mothers of epileptic children and adolescents between the ages of 7-19 and healthy children between the ages of 8-17 found no difference in anxiety scores between mothers of epileptic children and mothers of healthy children [41]. Chapiński et al. [42] conducted a study by parents with 56 mothers evaluating the effects of overprotection and adaptation functions of a child with epilepsy on maternal anxiety, and the first application was performed six months after the diagnosis of the disease, and the second one year later. The study reported that there was no significant difference between the two applications in terms of anxiety. There have been limited studies of epileptic children and their parents and the effects of seizure anxiety, disease knowledge/understanding, and psychoeducation on them [42]. Our study investigated the effect of psychoeducation on parents' knowledge about epilepsy, anxiety about seizures, and state and trait anxiety. We think our study is a resource for continued studies on psychoeducation and parents.

Conclusion and Recommendations

In the study, scores on the knowledge scale for epilepsy in the experimental group were low before psychoeducation but increased after psychoeducation. This shows that psychoeducation increased the knowledge score of parents ($p < 0.01$). The study found that after psychoeducation the mean anxiety scores for seizures in the experimental group decreased significantly compared to before psychoeducation. This shows that psychoeducation reduced parents' anxiety about seizures. ($p < 0.01$). Before psychoeducation there was no significant difference between the PASS mean scores of the parents

in experimental and control groups ($p < 0.001$). State Anxiety scores of parents in the experimental group were high before psychoeducation and decreased significantly after psychoeducation. ($p < 0.05$). The study found no change in Trait Anxiety scores of the experimental group and control groups before and after psychoeducation ($p > 0.05$). This study supports the current literature in its findings that giving psychoeducation to the experimental group parents increased epilepsy knowledge scores, decreased seizure anxiety, and decreased state anxiety; and that without psychoeducation epilepsy knowledge scores, seizure anxiety, state and trait anxiety did not change in the control group parents. The study found no change in Trait Anxiety scores of the parents in the experimental and control groups before and after the psychoeducation. It is thought that the reason for the lack of change in the trait anxiety score may be that the number of sessions and content of the psychoeducation program were insufficient. The study shows that as the knowledge level of the parents of children with epilepsy increases and the anxiety levels decrease. Therefore we, the researchers, recommend psychoeducation be given to the parents of children with epilepsy in the form of a regular and continuous 6-week psychoeducation program. The anxiety of parents included in such a psychoeducation program should be evaluated at regular intervals, and the psychoeducation program for epilepsy should be applied to other family members and caregivers. We recommend planning and implementation of similar trainings for parents of children with other chronic diseases. To reduce parents' constant anxiety, reduce their constant anxiety and increase their quality of life, we also recommend that educators rely on proven communication paths; utilize teleconferencing and technology; and organize social projects.

References

- Baykan Z, Baykan A, Nacar M. Investigation of the life satisfaction of families with children with chronic diseases. *New Med J*. 2010;27:174-7.
- Cavusoglu H. *Child Health Nursing 1*. (8th. ed). 2008; Ankara: Sistem Ofset Printing House; 2008.
- Er M. Child, illness, parents and siblings. *J Child Health Dis*. 2006;49:155-68.
- Fazlioglu K, Hocaoglu C, Sonmez FM, Cansu A. Family functions, anxiety and coping attitudes of parents of children diagnosed with epilepsy. *New / New Symposium J*. 2010;48(3):198-206.
- Cevik Ü, Keles S, Keser M, Reisli I. The effect of nursing education given to parents with asthmatic children on their anxiety levels. *General Med J*. 2006;16 (2):53-59.
- Coskun Y. Quality of life of parents with children with epilepsy (Master's thesis). 2005; Kayseri: Erciyes University, Institute of Health Sciences.
- Serdaroglu A, Ozkan S, Aydin K, Gucuyener K, Tezcan S, Aycan S. Prevalence of epilepsy in Turkish children between the ages of 0 and 16 years. *J Child Neurol*. 2004;19 (4):271-4.
- Fazlioglu K. Family functions of children with epilepsy, anxiety and coping attitudes in their parents (Master's thesis). 2008; Trabzon: Karadeniz Technical University, Institute of Health Sciences.
- Rodenburg R, Meijer AM, Dekovic M, Aldenkamp AP. Family factors and psychopathology in children with epilepsy: A literature review. *Epilepsy Behav*. 2005;6:488-503.
- Baybek H, Turasay N, Eksen M, Bozyer I, Tunc O. Determining the knowledge level of patients with epilepsy about their disease. *Int J Human Sci*. 2004;1-9.
- Avci O. The effect of education on the management of illness, anxiety and quality of life of children and their mothers with epilepsy (Phd thesis). 2010; Kayseri: Erciyes University, Institute of Health Sciences.
- Ozbas D, Buzlu S. *Psychiatric Nursing from Past to Present Day*. I.U.F.N. Nursing J. 2011;19(3):187-93.
- Yurtsever UE, Kutlar T, Tarlaci N, Kamberyan K, Yaman M. A psychosocial dimension in the treatment of mental illness: a psychoeducational model. *Thinking Man*. 2001;14 (1):33-40.
- Aydemir O, Koroglu E. *Clinical Scales Used in Psychiatry*. (3rd Ed) 2007, Ankara: Physicians Publishing Union.
- Austin JK, Mcleod J, Dunn DW, Shen J, Perkins SM. Measuring stigma in children with epilepsy and their parents: instrument development and testing. *Epilepsy Behav*. 2004;472-82.
- Alci E. Difficulties encountered in the school life of children with epilepsy (Master's thesis). 1996; Sivas: Cumhuriyet University, Institute of Health Sciences.
- Mittan RJ. Psychosocial treatment programs in epilepsy: a review. *Epilepsy Behav*. 2009;371-80.
- Theodor WM, Pfafflin M. Psychoeducational Programs for Patients with Epilepsy. *Dis Manage Health Outcomes*. 2005;13(3):185-99.
- Zararsiz M. Evaluation of the effectiveness of the education given to the child and parents regarding the provision of safety in epilepsy (Master's thesis). 2009; Mersin: Mersin University, Institute of Health Sciences, Department of Nursing.
- Jantzen S, Muller-Godeffroy E, Hallfahrt-Krisl T, Aksu F, Pust B, Kohl B. FLIP&FLAP-A training programme for children and adolescents with epilepsy, and their parents. *Seizure*. 2009;18:478-86.
- Ok Bozkaya I. Approach to epilepsy and knowledge levels of three primary school students in Ankara province (Master's thesis). 2006; Ankara: Gazi University, Department of Child Health and Diseases.
- Shore CP, Buelow JM, Austin JK, Johnson CS. Continuing psychosocial care needs in children with new-onset epilepsy and their parents. *Epilepsy Behav*. 2008;12(1):157-64.
- Wohlrab GC, Rinnert S, Bettendorf U, Fischech H, Heinen G, Klein P, et al. Famoses; A modular educational program for children with epilepsy and their parents. *Epilepsy Behav*. 2007;10:44-48.
- Yildirim F, Conk Z. The effect of planned education on the way parents cope with stress and depression levels of mentally disabled children. *C.U. J Nursing School*. 2005;9(2):1-9.
- Yildiz H. Primary school teachers' perceptions of epilepsy and asthma and the effect of brief information on epilepsy perception (Master's thesis). 2003, Konya: Selçuk University, Institute of Health Sciences, Department of Nursing.
- Avaci, CM. The impact of a new pediatric epilepsy diagnosis on parents: parenting stress and activity patterns. *Epilepsy Behav*. 2009;14(1):237-42.
- Snead K, Ackerson J, Bailey K, Schmitt MM, Maden Swain A, Martin RC. Taking charge of Epilepsy; the development of a structured psychoeducational group intervention for adolescents with epilepsy and their parents. *Epilepsy Behav*. 2004;5(4):547-56.
- Toros F, Tot S, Duzovali O. The levels of depression and anxiety in children with chronic illness, their parents. *Clin Psychiatry*. 2002;5:240-7.
- Uguz Ş, Toros F, Yazgan İnanç B, Colakkadioglu O. Determining the anxiety, depression and stress levels of the mothers of mentally and / or physically disabled children. *Clin Psychiatry*. 2004;7:42-47.
- Ried S, Specht U, Thorbecke R, Goecke K., Wohlfarth, R. MOSES: An educational program for patients with epilepsy and their relatives. *Epilepsia*. 2002;42(5):539-49.
- Yildirim Dogru SS, Arslan E. Comparison of trait anxiety levels and state anxiety levels of mothers with disabled children. *Selcuk University Social Sciences Institute J*. 2006;19:543-53.
- Yapici A, Guvenc C. *Psychiatric Disorders in Epilepsy Patients*. *Thinking Man*. 2003;16(4):240-8.
- Camfield C, Breau L, Camfield P. Impact of pediatric epilepsy on the family: A new scale for clinical and research use. *Epilepsia*. 2001;42(1):104-12.
- Akman S. Investigation of burnout levels of mothers with healthy children with epileptic seizures in terms of different variables (Master's thesis). 2006; Ankara:

- Ankara University, Institute of Social Sciences.
35. Deniz ME, Dilmac B, Arıcağ OT. Investigation of state trait anxiety and life satisfaction of parents with disabled children. *Int J Human Sci.* 2009;6(1):953-68.
 36. Karadağ, G. Difficulties experienced by mothers with disabled children and their perceived social support and hopelessness levels from the family. *TAF Prev Med Bull.* 2009;8(4):315-22.
 37. Keskin G, Bilge A, Engin E, Dulgerler S. Evaluation of parents of mentally retarded children in terms of anxiety, parental attitudes and coping strategies. *Anatolian J Psychiatry.* 2010;11:30-37.
 38. Tutuncuoğlu C, Balkan HR. Investigation of family functions and state-trait anxiety levels of mothers with children with diabetes. *J Psychol.* 2013;33:17-39.
 39. Kocak Uyaroğlu A, Bodur S. The anxiety level of the parents of the mentally disabled children and the effect of informing on the anxiety level. *TAF Prev Med Bull.* 2009;8(5):405-12.
 40. Flury T, Aebi C, Donati F. Febrile seizures and parental anxiety: does information help? *Swiss Med Wkly.* 2001;131:556-60.
 41. Baki O, Erdogan A, Kantarci O, Akisik G, Kayaalp L, Yalcinkaya C. Anxiety and depression in children with epilepsy and their mothers. *Epilepsy Behav.* 2004;5(6):958-64.
 42. Chapiński L, Brewer V, Evankovich K, Culhane Shelburne K, Zelman K, Alexander A. Adaptive functioning in children with seizures: Impact of maternal anxiety about epilepsy. *Epilepsy Behav.* 2005;7:246-51.
 43. Fazlıoğlu K, Hocaoğlu C, Sonmez FM. The effects of childhood epilepsy on the family. *Current Approaches Psychiatry.* 2010;2(2):190-205.