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Comparison of Parents' Anxiety Levels During Febrile Seizure and Epileptic Convulsion

Febril Nöbet ve Epileptik Konvülziyonda Ebeveyn Kaygı Düzeylerinin Karşılaştırılması

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Abstract

Introduction: In childhood, convulsions are common neurological conditions in pediatric emergency service and cause stress in both families and healthcare professionals. The aim of this study was comparison of parents' anxiety level during febrile seizure and epileptic convulsion in pediatric emergency service.

Methods: A questionnaire which included socio-demographic-clinical data form and state-trait anxiety inventory was applied to the parents in the first 24 hours of convulsions. Comparisons were made between the febrile seizure and epileptic convulsion group and between the same group's mother and father.

Results: Total 133 patients included the study, 69 patient was febrile seizures and 64 patient was epileptic convulsions. A total of 183 parents agreed to participate in the study: 64 mothers and 33 fathers in the febrile seizure group, and 58 mothers and 28 fathers in the epileptic convulsion group. Parents' anxiety level was similar between febrile seizure and epileptic convulsion groups. The parents' state and trait anxiety scores were compared to determine the anxiety levels of before and during the convulsion, the differences were statistically significant. The state anxiety scores of the parents increased in both febrile seizure and epileptic convulsion group. The state and trait anxiety scores of the mothers were significantly higher than the fathers, regardless type, and repetition numbers of convulsion.

Conclusion: In our study, it was shown that all convulsions cause parental anxiety. Information and psychological support about convulsion should be equally given to all parents.

Keywords: Child, convulsion, parent, state anxiety, trait anxiety

Öz

Giriş: Çocukluk çağı konvülziyonları çocuk acil servisinde sık görülen nörolojik durumlardır ve hem ailelerde hem de sağlık çalışanlarında strese neden olmaktadır. Bu çalışmanın amacı çocuk acil servisinde febril nöbet ve epileptik konvülziyon sırasında ebeveynlerin kaygı düzeylerinin karşılaştırılmasıdır.

Yöntemler: Ebeveynlere, nöbetlerin ilk 24 saatinde sosyo-demografik-klinik veri formu ve durumluk-sürekli kaygı envanterini içeren anket uygulandı. Febril nöbet ve epileptik konvülziyon grubu arasında ve aynı grubun anne ve babası arasında karşılaştırmalar yapıldı.

Bulgular: Çalışmaya 69'u ateşli nöbet, 64'ü epileptik konvülziyon olmak üzere toplam 133 hasta dahil edildi. Febril konvülziyon grubunda 64 anne, 33 baba, epileptik konvülziyon grubunda 58 anne, 28 baba olmak üzere toplam 183 ebeveyn çalışmaya katılmayı kabul etti. Ebeveynlerin kaygı düzeyleri febril nöbet ve epileptik konvülziyon grupları arasında benzerdi. Konvülziyon öncesi ve sırasındaki kaygı düzeylerini belirlemek için ebeveynlerin durumluk ve sürekli kaygı puanları karşılaştırıldığında, aradaki fark istatistiksel olarak anlamlıydı. Ebeveynlerin durumluk kaygı puanları hem febril nöbet hem de epileptik konvülziyon grubunda artmıştı. Annelerin durumluk ve sürekli kaygı puanları, nöbetin türü ve tekrarlama sayısı ne olursa olsun babalara göre anlamlı derecede yüksekti.

Sonuç: Çalışmamızda tüm konvülziyonların ebeveyn kaygısına neden olduğu gösterilmiştir. Konvülziyonla ilgili bilgi ve psikolojik destek tüm ebeveynlere eşit şekilde verilmelidir.

Anahtar Kelimeler: Çocuk, konvülsiyon, ebeveyn, durumluk kaygı, sürekli kaygı

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Introduction

A seizure consists of temporarily abnormal and excessive brain neuronal activity. Convulsions involving motor activity are common neurological conditions in childhood and constitute an important part of pediatric emergency service admission. In childhood, the incidence of febrile seizure is 2-5%,[1] and that of epilepsy is 0.8%.[2] Febrile seizures are the most common and benign forms of convulsions in childhood.[3] There are no long-term adverse effects associated with having one or two simple febrile seizures.[4] Although it is usually self-limiting, it can be terrifying for parents to witness seizures in their children.[5,6] Although the condition is not perceived as a serious illness by healthcare professionals, parents believe that their child will be damaged or will die in the current clinical situation due to changes in consciousness. In addition, there is increasing concern about the recurrence of febrile seizures in children with febrile illnesses.[7,8] The coexistence of psychiatric and neurodevelopmental disorders, such as intellectual disability, attention deficit/hyperactivity, depression, and anxiety, in children with epilepsy affects their quality of life negatively.[9] The anxiety level of parents of children with epilepsy is higher than that of the general population, which is explained by the adaptation of the parents to the chronic disease in their children and its effects on the quality of life.[10,11] This study aimed to evaluate the parent's anxiety levels and factors affecting febrile seizures and epilepsy in patients with convulsions who applied to the pediatric emergency service.

Materials and Methods

Participants

The study was planned as a multicenter cross-sectional study with patients and their parents who applied to Pediatric Emergency Services, Yıldırım Beyazıt University Yenimahalle Training and Research Hospital and University of Health Sciences Türkiye, Ankara Dr. Sami Ulus Child Health and Diseases Training and Research Hospital between June 1, 2018 and October 1, 2018.

Individuals who were admitted to the pediatric emergency service due to convulsions in their children, who agreed to participate in the study, who were over 18 years of age, and who could read, write, and speak Turkish were included in the study. Exclusion criteria of the study; parents who refused to participate in the study, those with a chronic disease other than epilepsy in their children, and individuals who did not know how to read, write, or speak Turkish.

Ethical approval for this study was obtained from the Yıldırım Beyazıt University Yenimahalle Training and Research Hospital Clinical Research Ethics Committee (approval no: 2018/05/13, date: 15.05.2018). All participants were informed about the study and written consent was obtained.

Data Collection Tools

- **Socio-demographic and Clinical Data Form:** This form, which was developed by the researchers, included the socio-demographic information of the cases and parents and the patient's history, family history, and clinical information about convulsions. Forms were filled in within 24 hours of convulsion.
- **State trait anxiety inventory:** This scale was developed by Spielberger[12] to assess the state and trait anxiety levels of individuals. In translating this scale into Turkish texts, reliability and validity studies were conducted by Öner and Le Compte.[13] The scale includes 40 items from self-reporting. The four-point Likert scale consists of two parts: the 20-item "state anxiety form" created to determine the sense at that moment and the 20-item "trait anxiety form" to determine the sense in general.

Research Process

The number of patients admitted to the pediatric emergency service with febrile or epileptic convulsions between the study period was 151. The parents of the 133 patients agreed to participate in the study. Only the mother in 72 cases, only the father in 11 cases, and both parents in 50 cases completed the given forms. A total of 122 mothers and 61 fathers participated in the study.

Statistical Analysis

Data analyses were performed using SPSS software version 21.0 (Statistical Package for Social Sciences software for Windows). Socio-demographic and clinical data were used for descriptive analysis (mean and standard deviation). The frequency data are expressed as numbers and percentages. The Kolmogorov-Smirnov test was used to determine whether the cases and parents matched normal distribution variables, such as mean age and state and trait anxiety scores. A Student t-test was used to compare variables that provided parametric conditions. The paired t-test was used for the dependent variables. Nominal data, such as gender, parental education level, and convulsion type, were compared using the chi-squared test. Statistical significance was set as $p<0.05$.

Results

The mean age of the patients was 51.9±51.2 months and 55% of the patients were males. A total of 133 patients were included in the study; 69 patients had febrile seizures, and 64 patients had epileptic convulsions. A total of 121 convulsions

(91%) were generalized. Approximately half (49.6%) of the patients experienced convulsions for the first time. Thirty (22.5%) patients experienced convulsions at night (between 00.00-08.00). The duration of fever was less than 24 hours in 83.5% of 79 patients with fever. Intellectual and motor disability was present in 14 patients. Forty three patients were the only children of the family. Sixteen patients with epilepsy were taking antiepileptic drugs. A family history of convulsions was noted in siblings of 7 patients and parents of 27 patients.

A total of 183 parents agreed to participate in the study: 64 mothers and 33 fathers in the febrile seizure group and 58 mothers and 28 fathers in the epileptic convulsion group. The mean ages of the parents was 31.9±6.8 years in mothers and 35.6±6.2 years, respectively. The education level of 50% of the mothers and 33% of the fathers was high school and above. 25% of the mothers and 10% of the fathers had seen patients who had convulsions before. Furthermore, 20% of the mothers and 10% of the fathers stated that they had previous knowledge about convulsions.

The mothers' state anxiety score was 52.0±9.7 and the trait anxiety score was 43.8±7.9. The fathers' state anxiety score was 46.4±9.5 and the trait anxiety score was 38.4±7.1. The state and trait anxiety scores of the mothers were significantly higher than those of the fathers ($p<0.0001$). When the parents' own states and trait anxiety scores were compared, the differences were statistically significant ($p<0.0001$). The state anxiety scores of the parents did not differ significantly according to the gender of the patient, the age of the single child, and the time of convulsion.

First, the patients were divided into two groups: febrile seizure and epileptic convulsion. The socio-demographic and clinical characteristics and parental anxiety scores of the patients are presented in Table 1. The trait anxiety scores of mothers of children with epilepsy were higher than those of the other mothers. The state anxiety scores of the parents in both the febrile seizure and epilepsy groups increased during convulsions ($p<0.0001$) (Figure 1).

Second, patients were grouped according to first and recurrent convulsions. In the first convulsion group, the mean age was low, the duration of the convulsion was short, and the state anxiety score of the fathers was high (Table 2). The state anxiety scores of the parents increased in both the first and recurrent convulsions ($p<0.0001$) (Figure 2).

When comparing the parents of 50 patients whose both mothers and fathers participated in the study, it was seen that mothers' state and trait anxiety scores were higher than fathers' state and trait anxiety scores, regardless of the type and repetition number of convulsions ($p<0.01$).

Discussion

We investigated parental anxiety levels and factors affecting pediatric patients admitted to the pediatric emergency service with febrile seizures versus epileptic convulsions. This is the first study in the literature to analyze parents' anxiety levels by convulsion type and number of repetitions. There were no significant differences in parents' anxiety caused by febrile seizure or epileptic convulsion. The mothers' state and trait anxiety scores were higher than the fathers'

Table 1. Socio-demographic and clinical characteristics and parental anxiety scores of patients diagnosed with febrile seizure or epilepsy

	Febrile seizure (n=69)	Epilepsy (n=64)	t or X^2	p
Gender, male	38 (55.1%)	35 (54.7%)	0.002	0.904
Age (months)	**26.6±14.3**	**79.2±61.8**	**-6.869**	**<0.0001**
Age at first convulsion (months)	**19.2±13.0**	**59.1±60.7**	**-5.329**	**<0.0001**
Convulsion type*	**67 (97.1%)**	**54 (84.4%)**	**6.551**	**0.010**
Convulsion duration (minutes)	7.26±8.7	10.4±17.2	-1.364	0.175
Convulsion time (%)**	16 (23.2%)	14 (21.9%)	0.033	0.856
Being the only child in the family	27 (39.1%)	16 (25.0%)	3.030	0.082
Mother's age (years)	**30.1±5.1**	**33.8±7.8**	**-3.139**	**0.002**
Father's age (years)	34.7±5.3	36.8±7.0	-1.364	0.178
Mother's education level***	39 (56.5%)	28 (43.8%)	1.970	0.160
Father's education level***	26 (36.7%)	18 (28.1%)	1.585	0.208
State anxiety score	50.6±9.9	53.5±9.4	-1.598	0.113
Trait anxiety score	**42.0±7.1**	**45.7±8.4**	**-2.677**	**0.008**
State anxiety score of father	45.6±8.6	47.3±10.6	-0.670	0.505
Trait anxiety score father	37.9±6.6	39.0±7.6	-0.597	0.553

*: Generalized, **: Between hours 24.00-08.00, ***: High school and above

anxiety scores in all cases, which was similar to previous studies.[10,14,15]

Epilepsy is not limited to convulsions in children; it can also affect cognitive and behavioral changes at different levels and affect school success. As with other chronic diseases of childhood, the effects of epilepsy can affect all family members psychosocially.[16] A previous study showed that the quality of life and psychological health of parents of children with epilepsy were severely affected, and anxiety and depression levels were increased.[17] In a systematic review by Jones and Reilly,[10] the anxiety level of parents with epileptic children was reported to be between 9% and 58%. The presence of depression symptoms among primary caregivers may lead to a decline in health-related quality of life in children.[18] Pekcanlar Akay et al. [14] showed that the depression and anxiety levels of mothers with children with epilepsy increased, and they failed to develop supportive and friendly relationships with their children. The results of our study revealed that state anxiety scores were high in both mothers and fathers with epileptic children. Moreover, trait anxiety scores were higher in mothers.

Anxiety symptoms increase in parents of children with febrile seizures. In the face-to-face meetings conducted by the pediatric emergency department nurses, it was stated that the families were worried that they were inadequate in terms of perception of the event and how to behave.[19] In a study involving mothers of 102 children with febrile seizures, increased anxiety levels were associated with uncertainty, frequency of febrile seizures, low income, and lack of knowledge.[20] The anxiety level of families who do not know about convulsions is higher than that of those who have prior experience.[21] If it is accepted that parents were

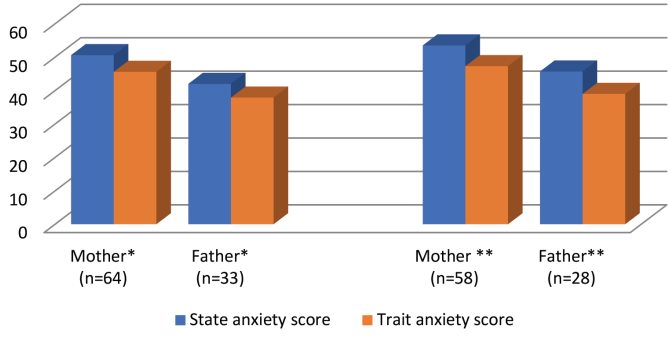

Figure 1. Comparison of state and trait anxiety scores of parents of patients diagnosed with febrile seizure or epilepsy

*: Febrile seizure group, **: Epilepsy group, p<0.0001

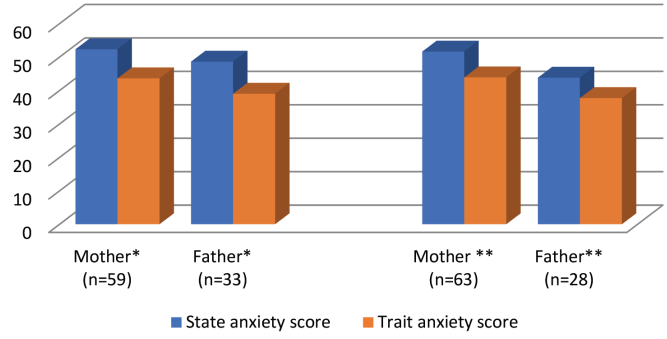

Figure 2. Comparison of state and trait anxiety scores of parents during first- or recurrent convulsions

*: First convulsion group, **: Recurrent convulsion group, p<0.0001

Table 2. Socio-demographic and clinical characteristics and parental anxiety scores of patients with first or recurrent convulsions

	First convulsion (n=65)	Recurrent convulsion (n=68)	t or X^2	p
Gender, male	39 (59.1%)	34 (50.7%)	0.935	0.334
Age (months)	**41.8±48.3**	**61.9±52.5**	**-2.188**	**0.023**
Age at first convulsion (months)	41.8±48.3	35.1±46.6	0.812	0.418
Convulsion type*	60 (90.9%)	61 (91.0%)	0.001	0.978
Convulsion duration (minutes)	**6.2±5.8**	**11.3±17.9**	**-2.188**	**0.030**
Convulsion time (%)**	14 (21.2%)	16 (23.9%)	0.136	0.836
Being the only child in the family	22 (33.3%)	21 (31.3%)	0.060	0.806
Mother's age (years)	31.6±6.8	32.1±6.8	-0.402	0.688
Father's age (years)	35.5±5.8	35.8±6.6	-0.235	0.815
Mother's education level***	40 (60.6%)	27 (40.3%)	7.654	0.006
Father's education level***	25 (37.9%)	19 (28.4%)	0.470	0.493
State anxiety score	52.3±9.6	51.6±9.9	0.398	0.691
Trait anxiety score	43.6±8.3	43.9±7.6	-0.223	0.824
State anxiety score of father	**48.6±10.0**	**43.8±8.4**	**2.009**	**0.049**
Trait anxiety score father	39.0±7.2	37.7±6.9	0.705	0.484

*: Generalized, **: Between hours 24.00-08.00, ***: High school and above

informed during the first convulsion, it could be expected that the anxiety level would decrease in recurrent convulsions. However, no significant change was observed in the parental trait anxiety level in the first and recurrent convulsions. For these reasons, it is stated that information about the disease can be obtained during the follow-up of healthy children, such as during pregnancy or vaccination. Higher levels of anxiety, especially among mothers, can be explained by the fact that mothers are responsible for the primary care of children, feel guilty due to illness, and have a responsibility toward other individuals in the family. In the present study, anxiety levels were high in both the mothers and fathers of patients who had febrile seizures.

The level of parent anxiety begins to increase in the first episode of febrile seizures.[22] Huang et al.[23] reported that when the number of repeats increased in febrile seizures, parents' anxiety levels increased further, and they believed their prognosis would be poor. The increase in the number of repetitions in the first three convulsions did not increase the risk of death, serious injury, brain damage, or learning disability.[24] Therefore, families should be informed about the recurrence and prognosis of febrile seizures. A previous study showed that the anxiety level of parents of patients who had convulsions for the first time was higher than that of parents of children with epilepsy.[25] In our study, state anxiety scores were similarly high in mothers during both the first and recurrent convulsions, whereas state anxiety scores were higher in fathers during the first convulsion. Compared to the anxiety of parents of patients with febrile and epileptic convulsions at the time of the event, both parents were found to have similar levels of anxiety. In our study, it was seen that the parents did not know enough about convulsions before the convulsions occurred, and there was no decrease in anxiety with the recurrence of the convulsions. Therefore, it is impossible to avoid the anxiety caused by inadequate parental knowledge.

Study Limitations

No comparison was made with the healthy control group.

Conclusion

Although febrile seizures have a good prognosis, they cause as much anxiety as epilepsy in parents. Because there was no difference between parents' education levels and anxiety scores, information and psychological support regarding convulsions should be given equally to all parents. Considering the intensive workload of emergency services in our country, we believe that easily accessible computers, brochures, or Internet-based training can be used to inform families about convulsions.

Ethics

Ethics Committee Approval: Ethical approval for this study was obtained from the Yıldırım Beyazıt University Yenimahalle Training and Research Hospital Clinical Research Ethics Committee (approval no: 2018/05/13, date: 15.05.2018).

Informed Consent: All participants were informed about the study and written consent was obtained.

Footnotes

Authorship Contributions

Surgical and Medical Practices: H.A., A.Ç.K., Concept: H.A., A.T., A.A.Ç., S.T.H., A.Ç.K., C.D.K., Design: H.A., A.T., A.A.Ç., S.T.H., A.Ç.K., C.D.K., Data Collection or Processing: H.A., A.T., A.A.Ç., Analysis or Interpretation: H.A., A.T., S.T.H., A.Ç.K., C.D.K., Literature Search: H.A., A.T., A.A.Ç. Writing: H.A., A.T., A.A.Ç., A.Ç.K.

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