

Dissociation and childhood abuse history in epileptic and pseudoseizure patients

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ABSTRACT – The aim of this study was to examine dissociative experiences, childhood abuse and anxiety in epileptic and pseudoseizure female patients. Thirty-three patients with pseudoseizures and thirty patients with epilepsy were recruited from Cumhuriyet University Hospital Psychiatry and Neurology Units. We assessed each participant using the Dissociative Experiences Scale, the Clinician-Administered Dissociative States Scale and the Childhood Abuse and Neglect Questionnaire. The female patients with pseudoseizures showed significantly higher levels of dissociative experiences and childhood trauma. Epileptic female patients showed higher levels of anxiety. The significantly higher incidence of dissociative experiences and childhood trauma in the patients with pseudoseizures makes a case for dissociation in the pathogenesis of these seizures.

KEY WORDS: Epilepsy, Pseudoseizure, Dissociation, Childhood abuse

Pseudoseizures are paroxysmal attacks or sudden changes in behaviour that resemble epileptic seizures without measurable electroencephalographic changes [1]. It has been estimated that between 9% and 50% of patients referred to specialist epilepsy centres have paroxysmal events that, despite resembling true epileptic episodes, are actually non-epileptic [2]. Although some non-epileptic seizures may be attributable to physical causes other than epilepsy, a demonstrable organic basis is absent in many such patients, suggesting psychological causes are instrumental in their pathogenesis [3]. These seizures are frequently misdiagnosed, partly because diagnosis of pseudoseizures is based on procedures that may provide inconclusive findings (e.g. VEEG), which then require additional diag-

nostic procedures [4]. As a result, many pseudoseizures patients received the erroneous diagnosis of epilepsy. The latter may lead to iatrogenic symptom persistence and increasing health costs.

Pseudoseizures are classified in the DSM-IV as somatoform disorders, most often conversion type [5]. In the ICD-10, pseudoseizures belong to the group of dissociative disorders and are called dissociative seizures [6].

Some investigators found higher rates of depression [7] and personality disorders [8] in pseudoseizures patients. Currently, pseudoseizures belong to the group of conversion disorders and have been associated with histories of early trauma and dissociation [9].

Dissociation has been described as a disruption of normally integrated function of consciousness, memory,



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identity or perception of environment or the body [5]. Many reports have pointed to the role of sexual abuse in producing pseudoseizures [10, 11].

Within the psychiatric disorders, conversion (somatoform) disorders and pseudoseizures are disorders that are frequently seen in Turkey. Current publications show that conversion symptoms are seen frequently, particularly in rural areas, and in some screenings have been present in 25-33%. Among these symptoms it has been reported that pseudoseizures are more prevalent in women [12]. Pseudoseizures are very seldom reported in men, as culturally they are thought of as a sign of weakness in Turkey, although epileptic seizures are seen equally both women and men. In the present study, we investigated the presence of dissociative experiences, childhood abuse and anxiety in a group of patients with epilepsy and pseudoseizures.

Methods and patients

Participants

Female patients who came to the Cumhuriyet University Hospital Psychiatric and Neurology Units and were diagnosed by psychiatry and neurology specialists as having epilepsy and conversion disorders according to the International Epilepsy Classification [13] and DSM-IV diagnostic criteria were enrolled into the study. The study took place between January 2002 and January 2003. Before accepting patients for the study, all of the subjects were given detailed information about the study and written permission was obtained.

During the study, a total of 71 patients (33 with epilepsy and 38 with pseudoseizures) were registered. The study was completed by 63 (88.7%) of them. Eight patients were excluded from the study for the following reasons: refusal to participate (n=5), and the presence of comorbid medical or psychiatric disorders with epilepsy and pseudoseizures (n=3). We excluded three patients with comorbid diagnosis because we have not focused on comorbidity. In conclusion, 30 epilepsy patients and 33 pseudoseizures disorder patients were included in the study.

Assessment Tools

1. Sociodemographic history form: this questionnaire gathered data on the age, marital status, education, income, and family type in the epilepsy and pseudoseizures patients.

2. Dissociative experiences scale (DES): The DES, which is a 28-item, self-reporting questionnaire, designed to assess dissociative experiences, including disturbances in memory, identity, awareness, and cognition, not occurring under the influence of alcohol or drugs [14]. The possible response options increase by increments of 10% ("this never happens") to 100% ("this always happens"). The

participant was asked to circle the corresponding percentage of time she had had the particular experience described in each item. The DES has been found to be a reliable and valid instrument with good test-retest (0.84) and internal consistency reliability coefficients (generally 0.90 or greater) and demonstrable construct validity [15]. It has been demonstrated that the scale differentiates between patients with a chronic dissociative disorder and those with other psychiatric disorders [16]. The Turkish version of the scale has a reliability and validity equal to the original form [17, 18].

3. The clinician-administered dissociative states scale (CADSS): CADSS measures dissociative states, while the DES measures general dissociative symptomatology. It is a reliable and valid instrument for the measurement of present-state, dissociative symptomatology. This scale involved 19 self-reporting questions and eight observer ratings scored from 0 ("not at all") to 4 ("extremely"). The CADSS was shown to have a high level of sensitivity in its ability to discriminate between patients with post-traumatic stress disorder (PTSD) and comorbid dissociative disorders, and patients with schizophrenia and affective disorders, as well as normal healthy controls and Vietnam combat veterans without PTSD [19]. The Turkish version of the scale has reliability and validity [20].

4. Childhood abuse and neglect questionnaire (CANQ): this self-reporting history form for childhood abuse and neglect consisted of five items [21] based on definitions by Walker, Bonner, and Kaufmann [22]. This questionnaire consists of questions about childhood physical, sexual and emotional abuse, and neglect. After each question, information regarding the identity and age of the perpetrator, and the age of the subject during the abuse is requested. For physical and sexual abuse, the respondent indicated on a four-point scale how frequently some particular events or situations occurred during childhood and adolescence. Childhood physical abuse is defined as physical violence against a person under 16 years old, by someone at least five years older or by a family member at least two years older than the victim. Close confinement, such as being locked in a closet is also included. Quarrels between friends that do not include any physical contact are not accepted as physical abuse. Childhood sexual abuse is defined as involvement of a person younger than 16 years old in any kind of sexual activities, such as genital fondling, an adult exhibiting his or her genitalia to a child, forcing the child to exhibit himself or herself to the adult or the child having sexual intercourse with someone at least five years older, or with a family member (incest) at least two years older than the victim. All questions about physical and sexual abuse were based on Brown and Anderson's descriptions [23]. Emotional abuse involves the use of excessive verbal threats, personally demeaning comments, derogatory statements and threats against the young person, to the extent that a child's emotional and

mental well-being will be jeopardized. Neglect refers to acts of omission in which the child is not properly cared for physically (nutrition, safety, education, medical care etc.) or emotionally (failure to bond, lack of affection, love, support, nurturing or concern). Questions about emotional abuse and neglect were based on the descriptions of Walker *et al.* [22]

5. State-trait anxiety inventory (STAI): anxiety was measured with the State-trait anxiety inventory, Form Y [24], that consists of two sets of 20 statements that the respondent rates according to how she feels at the present time (state) and how the respondent generally feels (trait). Anxiety state is described as a situational experience and anxiety trait is thought to be a general disposition to respond with anxiety across a range of situations. Items are given a weighted score of one to four, with one indicating the absence of anxiety and four indicating the presence of a high level of anxiety. The items are then added to obtain scores for anxiety state and for anxiety trait, with a range of possible scores from 20 to 80 for each measure of anxiety. Because this study investigated anxiety as an enduring symptom rather than as a reaction to a specific situation, only the anxiety Trait score was used in data analysis. Adequate reliability data are reported for the STAI including test-retest reliabilities ranging from 0.73 to 0.86, and a median alpha coefficient of 0.90. Validity coefficients of 0.75 and 0.80, respectively, were obtained by correlating the STAI with the IPAT anxiety scale and the Taylor manifest anxiety scale [24]. The Turkish version of the scale has been shown to have acceptable reliability and validity [25].

Procedure

The study was conducted in two phases. In the first phase, those cases diagnosed with epilepsy and pseudoseizure

disorder by neurology and psychiatry specialists, who had been admitted to the Neurology and Psychiatry clinics during the study period, were identified. As we did not have video-telemetry, at least three EEG and video EEG were performed for all study participants. In the second phase, another psychiatrist who was blinded to the diagnoses, evaluated these cases. In this phase, the sociodemographic information form, the CANQ, DES, CADSS and STAI were completed for all cases.

Analysis

Student's t test and Chi-square tests were used in the statistical analysis of the groups' data.

Results

Sample description

The sample characteristics of the epilepsy and conversion disorder cases are given in *Table 1*. The age range for both groups was between 17-39 years and the mean age was 27.63 ± 5.53 years for the epilepsy group and 27.78 ± 7.35 for the conversion disorder group. The majority of cases in both groups were married, primary school graduates, and at a middle economic level. There were no significant differences between the two groups based on sample characteristics ($p > 0.05$).

DES, CADSS, and STAI

The DES, CADSS and STAI results for the groups are given in *Table 2*. In the epilepsy and pseudoseizures cases, the mean DES scores were, respectively, 17.63 ± 15.57 and 29.87 ± 20.06 and the mean CADSS scores were 22.10 ± 3.67 and 20.24 ± 9.87 . The mean DES score was significantly higher in the pseudoseizure disorder cases

Table 1. Demographic characteristics.

Characteristics	Pseudoseizures group (n=33)		Epilepsy group (n=30)		p
	n	%	n	%	
Age (mean \pm SD)	27.7 \pm 7.3		27.6 \pm 5.5		NS ^a
<i>Marital status</i>					NS ^b
Married	21	63.6	13	43.3	
Single	12	36.4	10	33.3	
Widowed	0	0	1	3.3	
Divorced/separated	0	0	6	20.0	
<i>Educational level</i>					NS ^b
Primary school	23	69.7	18	60.0	
High school	6	18.2	12	40.0	
<i>Economic status</i>					NS ^b
Low	8	24.2	5	16.7	
Middle	25	75.8	25	83.3	

^a t test, $p > 0.05$

^b Chi-square test, $p > 0.05$

Table 2. Results of DES, CADSS, and STAI.

Scores	Pseudoseizures group (n=33)		Epilepsy group (n=30)		p
	n	%	n	%	
DES scores					
0-10 score	1	3.0	7	23.3	
10-20 score	17	51.5	14	46.7	
20 and over	15	45.5	9	30.0	0.040 ^a
Total score (mean ± SD)	29.8 ± 20.0		17.6 ± 15.5		0.009 ^b
CADSS total score (mean ± SD)	20.2 ± 9.8		22.10 ± 3.6		0.336 ^c
STAI-state (mean ± SD)	30.5 ± 1.4		41.3 ± 1.6		0.0001 ^d
STAI-trait (mean ± SD)	32.3 ± 1.5		44.1 ± 2.2		0.0001 ^e

^a $\chi^2 = 6.16$, df = 2, $p < 0.05$

^b $t = 2.68$, df = 61, $p < 0.01$;

^c $t = -0.97$, df = 61, $p > 0.05$;

^d $t = -27.63$, df = 61, $p < 0.0001$;

^e $t = -24.18$, df = 61, $p < 0.0001$.

than the epilepsy cases ($P=0.009$). However, the mean CADSS score was not found to be significantly different, but they were higher in the epilepsy cases than in the conversion disorder cases ($p > 0.05$). Fifteen patients in the conversion group obtained DES scores above 20, and nine patients obtained DES scores of above 20 in the epilepsy group. The DES scores above 20 in the conversion group were significantly higher than those of the epilepsy group ($P=0.04$). Both the STAI state and anxiety trait scores were significantly higher in the epilepsy group than in the conversion group ($p < 0.0001$).

CANQ

The data related to CANQ for both groups is given in Table 3. A history of physical, emotional and sexual abuse in childhood was significantly more frequent in the conversion disorder cases than in the epilepsy cases ($p < 0.001$). There was also a significantly higher incidence of history of past suicide attempts and self-harm behaviours with the conversion disorder cases compared to the epilepsy cases ($p < 0.05$).

Discussion

Our investigation clearly has some methodological limitations, particularly the small number of study participants and inclusion of only the female gender. Also our results are limited by the exclusive use of self-evaluation tools and the lack of standardized diagnostic interviews to obtain psychiatric diagnoses. However, the tests with modern questionnaires take only individual aspects of complex psychological processes into consideration [26,27]. The results of this study show that DES, STAI and Childhood Traumas are different between clinical groups with pseudoseizures and epilepsy. The greatest statistical difference was noted on the DES, STAI and Childhood Trauma Scales.

Both pseudoseizure and epileptic seizure groups had DES scores greater than those of normal adult subjects [28]. In addition, DES scores of the pseudoseizure group were statistically significantly higher than the epileptic group. Although in two publications that compared DES results in patients with pseudoseizures and epileptic seizures, there were no significant differences in the mean total DES

Table 3. Childhood abuse and Neglect Questionnaire.

Abuse and neglect	Pseudoseizures group (n=33)		Epilepsy group (n=30)		p
	n	%	n	%	
Neglect	14	42.4	8	26.7	0.190
Physical abuse	26	78.8	5	16.7	0.0001 ^a
Emotional abuse	20	60.6	4	13.3	0.0001 ^b
Sexual abuse	11	33.3	2	6.7	0.009 ^c
Incest	1	3.0	0	0	0.336

^a $\chi^2 = 24.26$, df = 1, $p < 0.001$;

^b $\chi^2 = 14.89$, df = 1, $p < 0.0001$;

^c $\chi^2 = 6.82$, df = 1, $p < 0.01$.

scores between the two groups [29,30], some studies show a significantly increased incidence of dissociative symptoms in patients with pseudoseizures as compared with epileptic patients [6,31]. Taking into consideration 20 and above as the accepted cut-off score for dissociative disorder, 15 patients were identified in the pseudoseizures group and one patient in the epileptic group, and the difference between the two was statistically significant. When the score of 10 and under, which is representative of the normal population, is taken into consideration however, seven patients were identified in the epilepsy group and one patient in the pseudoseizures group. Patients with epileptic seizures may experience blackouts, depersonalisation, derealisation and unusual somatic sensations, therefore it is important to compare dissociative experiences frequency with DES between epileptic and pseudoseizures patients. Our investigation showed a significantly increased incidence of dissociative symptoms in patients with pseudoseizures as compared with epileptic seizures. Abuse in childhood was found to be significantly more frequent in the pseudoseizures group: 78.8% of the patients in this group reported physical abuse and 33.3% sexual abuse. However, 16.7% of the epilepsy group reported physical abuse and 6.7% sexual abuse. The difference between the two groups was found to be statistically significant. A growing number of reports connect pseudoseizures with sexual conflicts and sexual abuse [28]. One study showed high rates of sexual abuse and physical victimization in pseudoseizures patients [28]. Our findings support previous reports of an association between pseudoseizures and sexual abuse, and suggest that the rate of childhood trauma in pseudoseizures subjects may be higher than previously suspected. Although the CADDSS scores in this study were not statistically higher, they were found to be higher than the epilepsy group. This result that the epilepsy patients have dissociative periods should be interpreted not as a chronic condition but as occasional. According to this result, the etiological basis of dissociation is different in the two groups. In the pseudoseizures group, dissociation may be due to the correlation of dissociation with childhood abuse. In the epileptic group, dissociation has been suggested to have a pathophysiological relationship to limbic epileptic discharges in a subset of patients [32]. We know that STAI scores of 40 or higher indicate anxiety states. In our study the STAI scores were found to be statistically higher in the epilepsy group (STAI state 41.33, trait 44.16 in epilepsy group; STAI state 30.51, trait 32.33 in the conversion group; $p < 0.0001$). Most investigations point to a close relationship between epilepsy and anxiety in adults [33]. Repeated seizure involvement of limbic tissue may lead to kindling-like processes that alter limbic function interictally, and thus it has been suggested that limbic activation during seizures is related to interictal pathology [34]. Non-physiological mechanisms may also play a role (e.g. anxiety resulting from fear of social stigma). Pseudosei-

zures patients may minimize their anxiety by using conversion.

Our study has some limitations: 1. we had no video-telemetry, 2. CADSS is not entirely efficient for properly distinguishing between pseudoseizure and epilepsy groups. 3. psychiatric comorbidity was not examined. Despite these limitations, our results indicate that subjects with pseudoseizures have significantly higher levels of childhood abuse, and DES scores that resemble dissociative disorders.

Many studies on pseudoseizures to date, concern developed western societies, however, pseudoseizures are more frequent in non-western cultures. The present study, which is the first in this field in Turkey, determines the relationship between dissociation and childhood abuse in epileptic and pseudoseizure female patients.

However, it is not possible to determine with the methods we used, the exact neuropsychiatric process that causes dissociation in the pseudoseizure group. □

Abbreviations

CADSS: Clinician-administered dissociative states scale
 CANQ: Childhood abuse and neglect questionnaire
 DES: Dissociative experience scale
 STAI: State-trait anxiety inventory

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