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Sexual Abuse, Post-Traumatic Stress Disorder and Psychopathological Characteristics in Women with Functional/Dissociative Seizures

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Abstract

Background: Functional/dissociative seizures (FDS), also known as psychogenic non-epileptic seizures (PNES), are sudden, transient, and involuntary events that include motor, sensory, cognitive or autonomic function alterations. In this work we analyzed the psychopathological characteristics of a subgroup of women who suffer from FDS with the aim to analyze the role of psychological trauma, with special emphasis on trauma due to sexual abuse (SA).

Methods: Forty-five women diagnosed with FDS were included in the study (age range 18 to 64 years, mean = 34.7, standard deviation (SD) = 13.1). Clinical and psychopathological characteristics were reviewed. All patients have completed the clinical interviews, the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID II) and the Global Assessment of Functioning (GAF) according to a special protocol for mental health assessment. Also, the history of sexual abuse trauma, the history of other non-sexual traumas and absence of history of trauma were reviewed.

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Results: Eighty percent of the cases reported a history of trauma, and 40% reported a history of SA. Patients with a history of SA presented a significantly lower average age of seizure onset than patients with a history of other non-sexual traumas ($p = 0.021$). Significant associations were found between SA and post-traumatic stress disorder (PTSD) ($p = 0.031$), and SA and history of suicide attempts ($p = 0.037$).

Conclusions: SA carries serious implications for the mental health of women suffering from FDS. Mental health professionals must consider the history of this type of trauma to provide the necessary care for this patient population.

Keywords

functional/dissociative seizures; psychogenic non-epileptic seizures; trauma; sexual abuse; women; post-traumatic stress disorder; psychopathological characteristics

Introduction

Functional/dissociative seizures (FDS), also known as psychogenic non-epileptic seizures (PNES), are sudden, transient, and involuntary events that involve motor, sensory, cognitive, or autonomic function disturbances. During FDS, the normal functioning of the central nervous system is disrupted in the absence of a neurological disease and/or abnormal neuronal discharge. Clinically, they resemble epileptic seizures but lack electrophysiological correlates or other clinical evidence of epilepsy [1–3]. The gold standard diagnosis for FDS is the mon-

itoring of the patient's typical episodes through video-electroencephalogram (V-EEG). These episodes are diagnosed when they happen without any associated epileptiform activity during the seizure [4].

The incidence of FDS is estimated to be between 1.4 and 4.9 per 100,000 inhabitants per year. However, data from epilepsy centers estimate a higher rate, approximately 20 to 30% [5]. Patients with FDS are often misdiagnosed with drug-resistant epilepsy (DRE) and referred to tertiary epilepsy centers, leading to delayed diagnosis, inappropriate treatment, and increased iatrogenic risks [6]. The average delay in the correct diagnosis of FDS is seven to nine years [7], due to limited awareness and the high cost and limited access to diagnostic tests. Additionally, 5 to 40% of patients with FDS have comorbid epilepsy [6], complicating therapeutic management. Regarding gender, it has consistently been found that women have a higher prevalence of FDS compared to men [2,8,9]. As for the age of onset, FDS usually occur in adolescence or early adulthood, although it can begin at any stage of life [10].

The etiology of FDS is not yet well understood, although some findings suggest both neurobiological and psychological bases. Previous studies have found significant modifications in various functional networks during FDS, particularly between areas of emotional regulation and motor areas [11–13], as well as in certain structures such as the amygdala, orbitofrontal cortex, and cingulate cortex [14–16]. Other studies have found that a history of psychological trauma, stressful life events, and an insecure attachment style in interpersonal relationships are frequently associated with this condition [2,17–20]. Moreover, individuals with FDS exhibit increased employment of avoidant coping strategies, along with elevated levels of emotional dysregulation and alexithymia [21,22]. Currently, FDS are considered a biopsychosocial disorder with a multifactorial etiology [17,23].

From a psychiatric perspective, patients with FDS constitute a heterogeneous group [2,24]. Among the comorbidities, depressive disorders are the most frequently observed, followed by post-traumatic stress disorder (PTSD) and anxiety disorders [18,23,25]. In some patients, these psychiatric comorbidities may be the underlying causes of FDS, while in others, a psychiatric comorbidity may be a consequence of FDS [23,26]. Furthermore, patients with FDS frequently exhibit personality disorders, leading to a more complex clinical presentation when they are present. While Cluster B disorders are the most prevalent in these patients, various studies have also found the presence of Cluster C disorders [2,23,27].

Though the causes of FDS are multifactorial and may result from a combination of biological, psychological, environmental, and social factors, patients commonly report high rates of psychological trauma [18]. Experiences such as histories of sexual abuse (SA) and other significant events, including exposure to physical violence, accidents with risk of death, and unexpected death of relatives, can be traumatic, with severe consequences for mental health [28–30]. Some authors suggest that traumatic experiences could serve as predisposing, precipitating, or perpetuating factors for FDS [17,31]. Several studies have found that around 90% of patients with FDS have a history of general trauma and traumatic experiences of physical and sexual abuse [18,32–34]. For instance, Fiszman *et al.* [18] reported that between 23 and 77% of patients with FDS acknowledged experiences of physical and sexual abuse. Elevated rates of sexual, physical, and psychological abuse during childhood have also been found in these patients [18,33,34]. Additionally, a history of trauma was more prevalent in patients with more severe FDS symptoms and greater psychiatric comorbidities [23]. Although it is not fully understood, FDS are frequently considered somatoform expressions of conversion disorder [35]. It has been suggested that they are based on dissociation as a defense against overwhelming trauma [36,37]. From this perspective, FDS could be seen as somatic representations arising from psychological distress, triggered by trauma memories or as an automatic reaction to the intrusion of unpleasant memories. FDS may manifest emotional distress from past adverse experiences through somatic symptoms, often without a conscious link to the affective component [38]. Currently, FDS is classified as a subtype of functional neurological symptom disorder (conversion disorder) [29] or as dissociative neurological symptom disorder [39]. Symptom modeling may be a factor explaining why symptoms take the form of an epileptic seizure rather than another condition [17].

Among traumatic experiences, SA is widely recognized as a significant stressor contributing to the development of PTSD [29]. SA constitutes a significant public health issue with severe physical and mental health consequences. In addition, childhood SA can alter the neurobiological structure and function of the brain in areas sensitive to stress, potentially leading to the deterioration of certain structures, and resulting in maladaptive responses to stress [40]. In a previous study conducted by our research group [41], we examined the psychopathological characteristics in a population of patients with FDS, and compared the psychiatric diagnoses, depression, and quality of life of patients diagnosed with DRE and FDS. While we found a high rate of trauma in the FDS group, we did not analyze the differential characteristics within this FDS subgroup in that

study. Therefore, in this study, our aim is to describe the psychopathological characteristics and subtypes of trauma, with special emphasis on trauma due to SA, in a subpopulation of female patients diagnosed with FDS. We focused exclusively on female patients due to their higher prevalence in epidemiological studies.

Materials and Methods

Procedure and Participants

We conducted a post-hoc data analysis on a subgroup of patients involved in a previous study [41]. This group of patients were consecutively admitted to the V-EEG unit of the Epilepsy Center of the Hospital de Agudos “J. M. Ramos Mejía” between 2010 and 2015. This cohort of patients underwent a standardized neurological and psychiatric evaluation protocol, the results of the comparative analysis between patients with FDS and patients with epilepsy were previously published [41]. In the present analysis we focused in the subgroup of female patients with pure FDS with the aim to describe the psychopathological characteristics related to trauma. The Epilepsy Center of the Hospital constitutes the main referral center in the public area for patients with epilepsy, attended by patients referred from neurology services of the City and Province of Buenos Aires and other regions of the country. The protocol consists of neurological evaluation, V-EEG and brain magnetic resonance imaging (MRI). Psychiatric evaluation was performed by trained psychiatrists and psychologists during monitoring in the V-EEG unit. For the diagnosis of psychiatric disorders, the DSM-IV-TR [28], which was current at the time of the assessment, was used. The diagnosis of FDS was determined by no evidence of epileptiform activity (epileptogenic electrographic discharges associated with the clinical event), seizure semiology during V-EEG, as well as clinical judgment by specialist professionals. The complete evaluation protocol is detailed in a previous publication mentioned above [41].

A group of female patients diagnosed with FDS confirmed by V-EEG and clinical criteria were included in this analysis. Male patients, individuals who did not complete the diagnostic steps required to confirm the type of seizures, patients with epilepsy or other neurological conditions, and those presenting with both epileptic seizures and FDS were excluded.

All patients included in the aforementioned protocol provided their agreement to participate and signed a written informed consent form at the moment of V-EEG. The protocol received approval from the Ethic Committee of the

Hospital de Agudos “J. M. Ramos Mejía” to conduct this research in accordance with the ethical standards outlined in the World Medical Association’s Declaration of Helsinki [42].

Instruments and Measures Considered

The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) [43] was used to diagnose current or past psychiatric disorders, enabling the collection of information on the main psychiatric disorders coded in Axis I. For this study, a categorical form (presence/absence) was considered for each disorder.

The Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II) [44] was used to diagnose personality disorders. This interview allows for obtaining information of both categorical and dimensional aspects (such as the number of criteria) for each personality disorder coded in Axis II. For this study, only the categorical form (presence/absence) was considered. While personality disorders were analyzed individually, they are presented in clusters in this study, due to the overlap between diagnoses within each cluster: Cluster A includes paranoid, schizoid, and schizotypal; Cluster B comprises antisocial, borderline, histrionic, and narcissistic; and Cluster C encompasses avoidant, dependent, obsessive-compulsive.

The Global Assessment of Functioning (GAF) [28], a scale ranging from 0 to 100 within Axis V of the DSM-IV, was used to evaluate the patient’s global functioning. This scale provides a single score along a health-illness continuum, reflecting the patient’s social, occupational and psychological functioning as assessed by professionals. This score is determined after an interview, considering the patient’s symptoms, activities, and social relationships. A higher score indicates better functioning.

In addition, sociodemographic and clinical data of the patients were reviewed, including age, marital status, occupation, education, age of seizure onset, monthly seizure frequency, history of psychological trauma (presence/absence), number and type of traumas, use of psychotropic medications (presence/absence), history of psychiatric hospitalization (presence/absence) and history of suicide attempts (presence/absence). The types of trauma were classified as sexual abuse (SA), physical violence or accident with risk of death (PVAR), unexpected death of relatives (UDR) and other traumas (OT) for further analysis.

Table 1. History, type, and number of trauma.

History of trauma		36 (80.0)
Type of trauma, n (%)	Sexual abuse	18 (40.0)
	Physical violence or accident with risk of death	7 (15.6)
	Unexpected death of relatives	8 (17.8)
	Other traumas	9 (20.0)
Number of traumas, n (%)	One	30 (66.7)
	Two	5 (11.1)
	Three	1 (2.2)

Statistical Analyses

The data were organized into a Microsoft Excel spreadsheet, and analysis was performed with IBM SPSS Statistics for Windows (version 26, IBM Corp., Armonk, NY, USA) [45]. Descriptive analysis of sociodemographic and clinical variables was performed, and three groups were formed for comparison: “No history of trauma”, “With a history of sexual abuse trauma” and “With a history of other non-sexual trauma”. Assignment to the ‘With a history of sexual abuse’ group was based on the presence of SA, either as the sole type of trauma or in conjunction with other types of trauma. Assignment to the “With a history of other non-sexual trauma” group was based on the presence of trauma by PVARD, UDR, and OT, excluding SA. To analyze quantitative variables across the three groups, one-way analysis of variance (ANOVA) and the post hoc Tukey test were used when the assumption of normality was met. When the normality assumption was not met (Shapiro-Wilk normality test, $p < 0.05$), the Kruskal-Wallis test followed by the post hoc Dunn test was applied. For comparing two groups, the Mann-Whitney test was used. Categorical variables were analyzed using Pearson’s chi-square test or Fisher’s exact test when more than 20% of cells had expected frequencies less than 5. For all tests, a level of statistical significance of $p < 0.05$ was considered.

Results

Forty-five women diagnosed with FDS were included in this study. Patients ranged in age from 18 to 64 years (mean = 34.7; standard deviation (SD) = 13.1). Most were married (55.6%), unemployed (42.2%) or engaged in housework (26.7%), with an educational level of more than 12 years (55.6%). The mean age of onset of attacks was 22.2 years (SD = 13.6), and the mean monthly frequency was 14.8 attacks (SD = 11.5). The mean time between seizure onset and V-EEG was 12.2 years (SD = 10.6). The mean global functioning score for patients according to GAF was 61.9 (SD = 9.1). The use of psychotropic medi-

cation was recorded in 55.6% of the patients, while history of psychiatric hospitalization was observed in 11.1%. The history of suicide attempts was recorded in 28.9% of the patients. Three cases presented more than one attempt.

History of psychological trauma was recorded in 80% of the cases. SA was reported by 40% of patients. PVARD was recorded in 15.6% of the cases, and UDR was recorded in 17.8%. OT was observed in 20% of the cases. Regarding the number of traumas, 66.7% reported only one type of trauma, 11.1% reported two types (SA and PVARD in 3 cases, SA and UDR in 1 case, PVARD and UDR in 1 case), and 2.2% reported three types (SA, PVARD and UDR in 1 case; see Table 1).

Regarding psychiatric diagnoses according to SCID-I, all patients presented at least one current or antecedent disorder. Depressive disorders were observed in 68.9% of the patients. Conversion disorder and dissociative disorders were observed in 48.9% and 46.7% of patients, respectively, and somatization disorder in 17.8% of patients, according to DSM-IV-TR criteria [28]. Anxiety disorders were found in 33.3%, and PTSD was present in 20% of the patients. Other disorders observed in smaller proportions included bipolar disorders (8.9%), psychotic disorders (4.4%), impulse-control disorders (2.2%), and substance-related disorders (2.2%).

Regarding the diagnosis of personality disorders according to SCID-II, Cluster A disorders were observed in 22.2% of the patients, Cluster B disorders in 53.3%, and Cluster C disorders in 20%.

We compared the psychopathological and clinical variables based on the type of trauma history: SA, OT-non-sexual and no history of trauma. Patients with a history of SA had a lower median age of seizure onset than those with a history of OT-non-sexual, although the lowest median age was reported by patients without a history of trauma ($p = 0.021$). In addition, significant associations were found between the presence of PTSD and the history of suicide

Table 2. Sociodemographic and clinical characteristics according to trauma history.

		No history of trauma (n = 9)	With a history of sexual abuse trauma (n = 18)	With a history of other non-sexual traumas (n = 18)	
Marital status, n (%)	Married	7 (77.8)	9 (50.0)	9 (50.0)	Fisher's exact test, <i>p</i> = 0.673
	Single	2 (22.2)	8 (44.4)	7 (38.9)	
	Divorced/widowed	0 (0.0)	1 (5.6)	2 (11.1)	
Occupation, n (%)	Unemployed	3 (33.3)	7 (38.9)	9 (50.0)	Fisher's exact test, <i>p</i> = 0.384
	Housekeeper/underemployed	3 (33.3)	6 (33.3)	3 (16.7)	
	Employed	3 (33.3)	2 (11.1)	1 (5.6)	
	Student	0 (0.0)	3 (16.7)	3 (16.7)	
	Disability pension	0 (0.0)	0 (0.0)	2 (11.1)	
Education, n (%)	Less than 12 years	5 (55.6)	6 (33.3)	9 (50.0)	$\chi^2 = 1.57, p = 0.455$
	More than 12 years	4 (44.4)	12 (66.7)	9 (50.0)	
Age, median (P25, P75)		30.0 (26.0, 39.0)	30.0 (20.5, 43.0)	35.5 (25.7, 51.5)	H = 1.51, <i>p</i> = 0.471
Age of seizure onset, median (P25, P75)		14.0 (8.8, 26.0)	18.0 (11.0, 26.0)	28.0 (16.2, 38.2)	H = 7.29, <i>p</i> = 0.026
Age of trauma, median (P25, P75)		-	13.5 (8.0, 17.0)	17.0 (12.5, 37.5)	Z = -1.70, <i>p</i> = 0.089
Frequency (monthly), median (P25, P75)		9.5 (3.2, 30.0)	8.0 (3.0, 16.0)	(7.0, 30.0)	H = 2.27, <i>p</i> = 0.321
Global Assessment of Functioning (GAF), mean (SD)		63.3 (9.3)	62.2 (7.9)	60.8 (10.2)	Fisher's exact test, <i>p</i> = 0.786
Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), n (%)	Depressive disorders	7 (77.8)	12 (66.7)	12 (66.7)	$\chi^2 = 0.41, p = 0.813$
	Anxiety disorders	3 (33.3)	6 (33.3)	6 (33.3)	$\chi^2 = 0.00, p = 0.999$
	Conversion disorder	2 (22.2)	10 (55.6)	10 (55.6)	Fisher's exact test, <i>p</i> = 0.251
	Dissociative disorders	3 (33.3)	9 (50.0)	9 (50.0)	Fisher's exact test, <i>p</i> = 0.794
	Psychotic disorders	1 (11.1)	1 (5.6)	0 (0.0)	Fisher's exact test, <i>p</i> = 0.673
	Post-traumatic stress disorder	0 (0.0)	7 (38.9)	2 (11.1)	Fisher's exact test, <i>p</i> = 0.031
	Somatization disorder	2 (22.2)	1 (5.6)	5 (27.8)	Fisher's exact test, <i>p</i> = 0.209
	Impulse-control disorders	0 (0.0)	0 (0.0)	1 (5.6)	Fisher's exact test, <i>p</i> = 0.999
	Bipolar disorders	0 (0.0)	2 (11.1)	2 (11.1)	Fisher's exact test, <i>p</i> = 0.667
Substance-related disorders	0 (0.0)	1 (5.6)	0 (0.0)	Fisher's exact test, <i>p</i> = 0.999	
Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID II), n (%)	Cluster A personality disorder	1 (11.1)	4 (22.2)	5 (27.8)	Fisher's exact test, <i>p</i> = 0.737
	Cluster B personality disorder	4 (44.4)	11 (61.1)	9 (50.0)	Fisher's exact test, <i>p</i> = 0.741
	Cluster C personality disorder	3 (33.3)	3 (16.7)	3 (16.7)	Fisher's exact test, <i>p</i> = 0.560
Use of psychotropic medications, n (%)		4 (44.4)	10 (55.6)	11 (61.1)	$\chi^2 = 0.67, p = 0.714$
History of psychiatric hospitalization, n (%)		1 (11.1)	3 (16.7)	1 (5.6)	Fisher's exact test, <i>p</i> = 0.828
History of suicide attempts, n (%)		1 (11.1)	9 (50.0) (*)	3 (16.7)	$\chi^2 = 6.59, p = 0.037$

(*) Three cases presented more than one suicide attempt.

attempts. PTSD was diagnosed in 38.9% of patients with a history of SA compared to 11.1% of those with a history of OT-non-sexual trauma ($p = 0.031$). Furthermore, a history of suicide attempts was observed in half of the patients with a history of SA (50%), 16.7% of the patients with a history of OT-non-sexual trauma, and 11.1% of the patients without a history of trauma ($p = 0.037$). No differences or associations were found for other variables (Table 2).

Discussion

The aim of this study was to describe the psychopathological characteristics of a subpopulation of women diagnosed with FDS confirmed by V-EEG and to analyze the prevalence of psychological trauma, with special emphasis on SA trauma.

We found that four out of five women had a history of trauma, with SA being the most prevalent. SA was found in half of the cases with a history of trauma and in more than one-third of the total sample. These results align with findings from other works [18,32–34]. In this study we analyzed the female population due to their higher prevalence of FDS. Some authors have proposed possible explanations for this phenomenon. For example, Rosenbaum [46] attributes this gender difference to psychosocial factors, referring to higher rates of physical and sexual aggression experienced by women in different cultures. This author also proposed FDS as attacks that reflect feelings of rage, fear, and helplessness in response to domination or abuse in oppressive male societies. On the other hand, Reuber and Elger [6] have suggested that FDS may reflect the greater social acceptability of overt emotional expression in women. These aspects underscore the importance of considering cultural factors that may be associated with FDS. However, other authors propose that the prevalence of FDS in women could be explained by intrinsic differences between men and women in the connectivity of brain areas responsible for emotional and cognitive processing. These neurobiological aspects could explain a differential vulnerability by sex to emotional trauma [47]. In women, trauma is associated to a greater extent with intrapsychic defense mechanisms such as dissociation, somatization, and conversion, while in men, affect deprivation and emotional repression are more common [48,49]. However, the predominance of females among patients with FDS is not yet fully explained, and further study of this issue is needed.

In terms of clinical characteristics, we found a significant difference in the age of seizure onset when comparing groups according to the history of SA, history of OT-non-sexual, and absence of trauma history. Patients with a

history of SA had a lower median age compared with patients with a history of OT-non-sexual. These results are in agreement with those of Selkirk *et al.* [50], who found that patients reporting SA had an earlier onset of FDS. Various studies suggest that childhood SA may lead to a disorganized emotional behavior and poorer cognitive, behavioral, and psychological health outcomes in adulthood [34,40,51], although in our sample we did not observe a significant difference in the age of trauma when comparing groups according to the history of SA. The age at which SA occurs in patients with FDS is an important issue that would need to be further explored in depth. Another noteworthy finding is that patients without a history of trauma reported a lower median age of seizure onset compared to those reported by patients with a history of SA and non-sexual OT. This could suggest that other neurobiological or genetic risk factors might influence the vulnerability to develop FDS early. While trauma is often considered an etiopathogenic factor in FDS, not all patients with this condition have a history of trauma, nor do all patients with trauma develop FDS. As mentioned before, the etiology of FDS is not yet well understood, so further investigation is needed.

Consistent with other studies, we found that the patients in our sample presented psychiatric comorbidities, with at least one current or past disorder. Depressive disorders were the most prevalent comorbidity, observed in more than two-thirds of the patients, while anxiety disorders were found in one-third of them, and 20% met criteria for PTSD. Furthermore, more than half of the patients had Cluster B disorders. These findings are consistent with those reported in other studies [2,23–25] and suggest that FDS constitutes a complex neuropsychiatric condition. While we did not find a high proportion of patients with a history of psychiatric hospitalization, more than half of them used psychotropic medications. In addition, over a quarter of the patients had a history of suicide attempts, which may be associated with the severity of depressive symptoms observed in a high proportion of them. Regarding the high prevalence of depressive disorders, it should be noted that they may either be a comorbid disorder or may develop as a result of prolonged suffering from FDS. The descriptive and cross-sectional nature of our study precludes us from drawing definitive conclusions on this matter. However, our analysis of the history of suicide attempts among women without a history of trauma, with a history of OT-non-sexual, and with a history of SA revealed a significant association, with half of the women in the latter group reporting engagement in self-injurious behavior. In this regard, it has been found that patients with FDS and a history of SA were four times more likely to engage in deliberate self-harm than those without a history of SA [50].

Although the exact mechanism remains unclear, childhood SA may contribute to an earlier onset of FDS and, consequently, more severe depressive symptoms. Furthermore, depression may act as a mediator, explaining the association between FDS and abuse [20]. Some researchers have suggested that childhood trauma could represent a common psychological mechanism underlying both FDS and its frequently occurring comorbid disorders [33,52], given the high comorbidity between them. Future analyses may provide further insights into this complex interplay.

In our study, a higher prevalence of PTSD among patients with a history of SA compared to those with a history of OT-non-sexual was observed. The association between SA and PTSD is well documented, even in populations without FDS [29,53]. Comparative studies between patients with epilepsy and those with FDS have shown higher rates of PTSD in the latter [18,27,33]. Given that the trauma-related etiology of FDS, there has been speculation regarding whether FDS may stem from an underlying diagnosis of more severe PTSD with dissociative symptoms [18]. As mentioned above, trauma might predispose previously vulnerable individual to develop FDS.

Although our findings are similar to those reported in other countries, we consider it crucial to verify in our context the severe consequences of SA on the mental health of women with FDS. Studies in developing countries and Spanish-speaking populations are limited, and FDS are often underdiagnosed due to the lack of resources in the healthcare system. Our results could help professionals provide an appropriate therapeutic approach, especially in regions with limited resources. Finally, it is important to acknowledge some limitations of this study. The size and composition of the sample warrant caution in generalizing the results. As the study focused on patients receiving specialized medical care in an epilepsy center, there is a risk of underrepresentation of those not attending to such centers. Additionally, the cross-sectional design limits the generalizability of findings. Moreover, the sensitive nature of traumatic events under assessment, particularly sexual violence, may lead to underreporting due to feelings of shame or stigma. In addition, patients may exhibit recall bias as a psychological defense mechanism, potentially resulting in underreporting of traumatic experiences. Lastly, this study did not explore other potential mediating variables between trauma and psychopathological and clinical outcomes. Future research should aim to address these aspects for a more comprehensive understanding.

Conclusions

The findings of this study shed light on the impact of SA on the psychopathological characteristics of women with FDS, particularly in the development of PTSD and elevated suicide risk. This underscores the importance of proactive social action to prevent such crimes and aberrant behaviors against women. In addition, this study highlights the significance of comprehensive clinical evaluations that include screening for a history of SA trauma, enabling the implementation of specific therapeutic strategies for this patient population. Given the serious mental health implications of SA, a preventive approach is crucial for mitigating its associated conditions.

Availability of Data and Materials

The data files corresponding to our analysis are available from the first author upon request.

Author Contributions

AIL, MS, LS, SO, GPK, and LD contributed to the conceptualization of the study. LS and SO contributed to data collection. AIL analyzed the data and drafted the manuscript. MS, GPK, and LD reviewed and corrected the manuscript. All authors contributed to important editorial changes in the manuscript. All authors read and approved the final manuscript. All authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

All patients included in the protocol provided their agreement to participate and signed a written informed consent form at the moment of V-EEG. The protocol received approval from the Ethic Committee of the Hospital de Agudos “J. M. Ramos Mejía” to conduct this research in accordance with the ethical standards outlined in the World Medical Association’s Declaration of Helsinki.

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Conflict of Interest

The authors declare no conflict of interest.

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