

Dissociation, Stressors, and Coping in Patients of Psychogenic Nonepileptic Seizures

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ABSTRACT

Background: Psychogenic nonepileptic seizures (PNES) commonly present both to neurologists and psychiatrists and include a wide range of psychopathology. In order to understand the demographics, dissociative experiences, stressful life events, abuse, and coping in these patients, this study was undertaken.

Methods: This was a cross-sectional, observational study. A total of 71 patients of PNES, referred from neurology, were assessed on Dissociative Experience Scale (DES), Scale For Trauma and Abuse, Presumptive Stressful Life Events Scale (PSLES), and Ways of Coping Questionnaire to ascertain the dissociative experiences; the prevalence of trauma, abuse, and stressful life events, and the coping mechanisms.

Results: Females predominated, with the duration of PNES up to 2 years. The mean \pm SD total DES score was 38.14 ± 14.1 , indicating high dissociation. On the PSLES, for the stressful life events in the last one year, the mean score was 98.28 ± 87.1 . Marital and family conflicts and death were reported more. History of childhood

or adult physical and sexual abuse was less reported. History of head trauma was present in 13 patients. Emotion-focused coping was used more than problem-solving strategies.

Conclusions: Very few Indian studies have looked into these nuances. This study has helped in improving the understanding of the various risk factors of PNES and the coping strategies, and in sensitizing psychiatrists and neurologists to enquire into trauma and abuse of these patients.

Keywords: PNES, dissociation, stressful life events, trauma, abuse, coping

Key Message: PNES is associated with high dissociability in patients. It is important to assess for history of trauma and physical or sexual abuse in these patients. Patients used more of emotion focused coping strategies.

Psychogenic nonepileptic seizures (PNES), also called as pseudoseizures, have been classified as “dissociative convulsions in the dissociative disorders” in ICD-10 and as “somatic symptom and related disorders—conversion disorder (functional neurological

symptom disorder)” in DSM-5,¹ PNES has a prevalence of 2–50/100,000 in the general population.² PNES resemble epileptic seizures; most of the cases follow-up in epilepsy clinics and are often treated as true seizures.²

Several researchers have found a variety of psychological factors, stressful life events, trauma, abuse, and psychiatric morbidity as causative factors for PNES.^{3–6} Dissociation has long been assumed as a mechanism for coping with severe trauma. Patients with PNES often respond to adverse life events in a somatic pattern, which may then become conditioned as the memory gets triggered in response to events that are reminders of the early stressors and trauma.^{1,6} Predominant among the stressors are a history of physical or sexual abuse, family dysfunction, and life events. The epidemiological variables do show a female preponderance and occurrence in lower socioeconomic class with lower education.⁷ Though it has been found that the patients resort more to emotion-focused coping, there is a dearth of studies on

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the ways of coping in PNES.⁸ Coping efforts have been differentiated based on whether their function is to modify the troubled person–environment relationship by acting on the environment or self (problem-focused or active coping) or to regulate one's response to those demands (emotion-focused or avoidance oriented coping). Planful problem-solving approach and positive reappraisal are related to a satisfactory outcome, whereas emotion-focused coping, like confrontative coping and distancing, are related to unsatisfactory outcomes. Emotion-focused coping comes into play when it is concluded that the conditions creating harm/threat cannot be modified. Usually, most coping efforts include both aspects.^{9–11}

Though there are several studies on the role of dissociation, trauma, and abuse in PNES, the literature from the South East Asian continent, and especially India, is scant. Hence, this study was an attempt to detect the various demographic and seizure characteristics, along with understanding the dissociative experiences, stressors and stressful life events, and the prevalence of trauma and abuse in this subset of patients, along with their methods of coping.

Materials and Methods

Patients attending the specialized epilepsy OPD of neurology department were diagnosed by the neurologist to be having psychogenic epileptic seizures after detailed clinical history and investigations. The video electroencephalogram (EEG) monitoring showed no epileptiform discharges, and the MRI brain was normal. All the patients were also given a suggestion by the neurologist by placing a tuning fork on the forehead to successfully provoke the seizure, whereby the current attack was considered to be nonepileptic, and the patients were referred to the psychiatry OPD for further assessment. The study was conducted in the psychiatry department of a general municipal hospital after obtaining approval from the Ethics Committee and written informed consent from the study participants. It was a cross-sectional observational study.

A total of 89 patients referred were screened. The inclusion criteria were pa-

tients in the age group 15–45 years (as it is more prevalent in this age group),¹ with the current episode showing no epileptiform activity on video EEG, having any seizure semiology or those with history of having mixed seizures (previous true seizures and currently having PNES). Patients with preexisting psychopathology, medical or surgical comorbidities, history of cognitive decline, seizures due to sequelae of drugs or infective pathology were excluded. The final sample size was 71.

All patients were explained about the nature of the study and its applications. Informed consent was obtained from the patients or the legal guardian with patient, and assent was obtained in case of minor subjects.

Tools

Pro Forma

A pro forma was designed in the form of a semistructured interview to obtain information on the sociodemographic profile; history of trauma; investigations; details of seizure semiology, type, and duration; along with closed-ended questions on various stressors and precipitating factors prior to the PNES.

Assessment of Dissociation

The Dissociative Experiences Scale (DES), devised by Carlson and Putnam, was used to assess the extent of dissociation. It is a 28-item self-report instrument used to screen for dissociation. The items are framed in a normative way that does not stigmatize the respondent for positive responses. The DES contains a variety of dissociative experiences, many of which are normal experiences. The responses are made by circling a percentage ranging from 0% to 100% at 10% intervals. The total score is the average of the 28 items.¹²

Assessment of Stressful Life Events

The Presumptive Stressful Life Event Scale (PSLES) was used to assess the stressful life events. It is the Indian adaptation of Holme's and Rahe's Social Adjustment Scale. It assesses various stressful life events experienced by the individual in the past one year and their presumptive stress score. The total score is the sum of the items.¹³

Assessment of Abuse and Trauma

Patients were assessed for the presence or absence of physical and sexual abuse and coercion as per the scale devised by Alper et al.¹⁴ Physical abuse, sexual abuse, and coercion were ascertained as present or absent. Physical abuse was rated on a 5-point Likert scale, with 0 = no abuse and 4 = injury requiring medical intervention. The history of sexual abuse given by the patient was rated on a 4-point Likert scale, with 0 = no abuse and 3 = oral, anal, or genital penetration. Coercion was rated on a 4-point Likert scale where 0 = no coercion and 3 = coercion involving the use of a weapon. All the patients were also asked about the presence or absence of head trauma.

Assessment of Coping

The Ways of Coping Questionnaire (WOCQ), devised by Folkman and Lazarus, having 50 items, was used to assess the coping styles on a 4-point Likert scale of 0 = not used, to 3 = used a great deal. It measures the styles of coping, whether emotion-focused or problem-solving, across eight dimensions of coping viz. confrontative, distancing, self-controlling, seeking social support, accepting responsibility, escape avoidance, planful problem-solving, and positive reappraisal. Eight subscale scores were obtained, which were averaged for each subscale.⁹

Results

In total, 65 (91.5%) patients were in the age range of 15–35 years, and 6 (8.4%) in the age range of 35–45 years. There were 55 (77%) females and 16 (22%) males. Only 6 (8.4%) patients had no formal education, whereas 18 (25%) patients had primary, 33 (46%) patients had secondary, and 12 (17%) patients had higher secondary education with 2 (3%) patients having a degree. Nearly 55 (77%) patients were unemployed, whereas 16 (23%) patients had some form of employment. As per the Kuppaswamy scale, 14 (19.7%) patients belonged to upper-middle and lower classes, 46 (65%) patients to upper-lower class and 11 (15.5%) patients to a lower class. In total, 62 (87%) patients were Hindus, and 9 (13%) belonged to minority religions. In total, 35 (49%) patients were married as opposed to

36 (51%) who were unmarried. In total, 48 (67%) patients were staying in joint and extended families, with 23 (32%) patients having nuclear families. In total, 16 (22.5%) patients said that they came from broken/dysfunctional families with interpersonal problems, marital discord, and addictions. In total, 59 (83%) patients had PNES for about two years, whereas only 12 (17%) patients had a longer duration of more than two years. The co-existence of true seizures was seen in only 11 (15.5%) of the patients, whereas it was absent in 60 (84.5%) patients. In total, 23 (32%) patients gave a positive history of witnessing a seizure, whereas 48 (68%) patients denied the same.

When the patients were assessed for their dissociation using the DES, the total mean score was 38.14 ± 14.1 . The higher the mean, more is the level of dissociation. Scores above 30 indicate high dissociation, whereas below 30 indicates low dissociation.

When the patients were assessed on the PSLES for the stressful life events in the last one year, the mean score was 98.28 ± 87.1 . The stressful life events commonly reported by our patients were marital and family conflicts, followed by death, due to which the mean scores were higher, indicating that the patients experienced highly stressful life events.

Experiencing stress has always been known to have a “cause” or “effect” relationship for any of the psychiatric disorders. The analysis of various stressors in occupational, marital, interpersonal, financial, social, and scholastic areas revealed that only 40% of patients experienced a stressor or a precipitating event prior to the PNES (Table 1).

The assessment for a history of abuse and trauma using Alpers scale revealed physical abuse in childhood in seven (10%) patients and sexual abuse in childhood in only one (1.4%) patient. Nine (12.6%) patients gave a history of being beaten physically, and six (8.5%) had been sexually abused as adults. In total, 11 (15.5%) patients gave a history of coercion, and 13 (18.3%) gave a history of head injury (Table 2).

When the patients were studied for the most frequently used coping strategies on WOCQ, there were higher means on self-controlling, distancing, escape

TABLE 1.

Stressors and Stressful Life Events

| Stressful Life Events and Stressors | Number of Patients (n = 71) |
|-------------------------------------|-----------------------------|
| PSLES score mean \pm SD | 98.28 ± 87.1 |
| Stressors/precipitating factors | |
| Present | 28 (39.4%) |
| Absent | 43 (60.6%) |

PSLES: Presumptive Stressful Life Event Scale.

TABLE 2.

Abuse and Trauma

| Domains | Number of Patients (n = 71) | |
|-------------------|-----------------------------|------------|
| | Present | Absent |
| Childhood abuse | | |
| a. Physical abuse | 7 (9.9%) | 64 (90.1%) |
| b. Sexual abuse | 1 (1.4%) | 70 (98.5%) |
| Adult abuse | | |
| a. Physical abuse | 9 (12.6%) | 62 (87.3%) |
| b. Sexual abuse | 6 (8.5%) | 65 (91.5%) |
| Coercion | 11 (15.5%) | 60 (84.5%) |
| Head injury | 13 (18.3%) | 58 (81.7%) |

TABLE 3.

Coping as per WOCQ

| Coping Subscales | Number of Patients (n = 71) | |
|--------------------------|-----------------------------|------|
| | Mean | SD |
| Confrontative | 6.5 | 3.8 |
| Distancing | 8.41 | 3.49 |
| Self-controlling | 9.36 | 3.54 |
| Seeking social support | 5.54 | 2.39 |
| Accepting responsibility | 4.29 | 3.63 |
| Escape avoidance | 8.05 | 2.62 |
| Problem-solving | 5.45 | 2.54 |
| Positive reappraisal | 5.14 | 2.61 |

WOCQ: Ways of Coping Questionnaire.

avoidance, and confrontative ways of coping. Seeking social support, problem-solving, and positive reappraisal were less used, and accepting responsibility had the lowest mean of all the eight subscales (Table 3).

Discussion

Several cohort studies on PNES have identified some socioeconomic and demographic risk factors for its development.^{6,15-18} It has a female preponderance in the ratio of 3:1, and occurs commonly between the second and fourth decades of life. The mean age of onset is around 28. PNES is more likely in those having intellectual disability^{17,18} or from lower socioeconomic groups. Unemployment has been reported in two-thirds of patients at the point of seeking treatment for PNES.

This gender difference has been speculated by authors as differences in vulnerability to physical or emotional trauma,^{17,18} whereas as per Rosenbaum the PNES attack is a reflection of “rage, fear, and helplessness” against domination or abuse.¹⁹

Family dynamics can perpetuate PNES. In families of those with PNES, a high prevalence of psychiatric disorders, epilepsy, and health problems have been seen as compared to families of patients with epileptic seizures.²⁰ The majority of our patients (n = 59, 83%) have had PNES for a duration of about 2 years. The mean latency from initial manifestation to diagnosis has been shown to be 5–7 years.¹⁵ Studies regarding PNES have reported an average duration of more than 3 years, which is higher than our findings.^{21,22} These studies had patients who were diagnosed as intractable epilepsy, and the diagnosis of pseudoseizure was considered later. However, in our sample, there was an early detection of a change in seizure semiology, confirmed by suggestion technique by the neurologist, which resulted in an early referral to the psychiatrist and hence the shorter duration.

The coexistence of epilepsy in PNES is also a well-known fact. Our findings were in keeping with those of several researchers who have found active co-existing epileptic seizures in 5%–40% of PNES patients.²³ Researchers have proposed an integrative cognitive model (ICM) for PNES, which acts as a seizure scaffold, and one of its elements includes personal illness (like epilepsy), which activates the seizure scaffold.²⁴

Identification of a symptom is often seen in patients having conversion

disorder, and 32% ($n = 23$) of our sample had witnessed an epileptic attack. Our findings are in keeping with those of researchers who found that 25%–44% of the patients having nonepileptic seizures had a role model or a relative who had epilepsy.^{1,3} Here also, the element of an illness belief of having seizures derived from witnessed seizures activates the seizure scaffold as per the ICM theory.²⁴

We had a higher mean on DES, indicating high dissociation among the patients. Most of our patients expressed dissociative experiences and scored high on items like “some people have the experience of finding themselves in a place and have no idea how they got there; some people find that they have no memory for some important events in their lives (for example, a wedding or graduation); some people have the experience of feeling that other people, objects, and the world around them are not real; some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time; some people sometimes feel as if they are looking at the world through a fog, so that people and objects appear far away or unclear; some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing,” etc. Some of these experiences could also be considered normal, and the scale is predominantly used as a screening tool for dissociative identity disorder. Goldstein et al.²² also reported in their study that the PNES patients had a higher mean of 22.6 ± 16.3 on the DES as compared to the control group who had a lower mean of 13.12 ± 11.81 .

Fischer and Elnitsky²⁵ reported that as DES measures disturbances in cognition control, it may lead to higher scores in PNES patients. Sigmund Freud had given dissociation as an unconscious defense against psychological distress associated with memories of trauma, which then get converted into somatic or cognitive symptoms.³ PNES are commonly associated with other dissociative and functional neurological (conversion) symptoms,⁵ and about 60%–80% of patients may also have “medically unexplained” symptoms.^{15,21,26}

Dissociation refers to the disruption of the normal, subjective integration

of one or more aspects of psychological or cognitive functioning.²⁷ Dissociative reactions can also be seen as protecting the individual from unacceptable psychological experiences, and can, therefore, be regarded as a coping strategy.¹⁸ Bowman and Markand²¹ reported that their PNES patients expressed dissociative distress associated with sexual abuse. Researchers have found that the “conversion V” profile on the MMPI-2 in the PNES patients was compatible with dissociative reactions seen commonly in these patients.^{28–30} It has been postulated that though DES helps us to understand the degree to which patients experience apparent disruptions in consciousness, memory, identity, or control, it does not provide a means for evaluating the psychological or neurological processes that underlie the episode of “dissociation.”

The onset of PNES is frequently related to a stressor. Keynejad et al.³¹ reported that there is variability in the trauma, stress history, and susceptibility in patients, based on the stress diathesis model. Hence, in individuals with high vulnerability, PNES can occur even with mild stressors, likewise patients undergoing a state of chronic stress can be predisposed to develop PNES. In our group of patients, the persistence of symptoms in the absence of a stressor would have implications on the outcome of PNES. Denial of a stressor has been found to be associated with a poorer outcome.^{32,33}

Many patients with PNES report more stressful life events experienced in one year prior to the onset and perceive these events as more negative.²¹ Similar findings were noted by us in our sample, which is in keeping with those of other authors who have reported life events such as an illness of self and family member,^{4,6,7} trauma, physical abuse during adulthood, and death of a close friend.²¹ Reuber and Rawlings³⁴ reported that several patients and caregivers had cited acute stress as a precipitating factor for PNES. Very often, patients of PNES have dysfunctional attachment and relationships with family and friends, leading to emotional distress, social avoidance, and feelings of insecurity.^{35,36}

Surprisingly, our study noted a very low prevalence of trauma or sexual and physical abuse as compared to other

studies. Bowman⁴ reported high rates of childhood maltreatment, which included physical, psychological, and sexual abuse. Only eight of our patients reported abuse in their childhood. One of the reasons could be that India being a religious and spiritual country, the stigma attached is more, and also, people are reticent to talk about sexual abuse. Besides, the patients were asked to retrospectively report about their childhood memories, which could have created a subjective bias. Alper et al. had noted the prevalence of physical abuse to be 15%.¹⁴ However, a higher prevalence of 30%–50% has been documented in other studies.^{4,21} Literature suggests the development of dissociative symptoms in relation to a history of childhood physical and sexual abuse, where the initial numbing response to trauma is often a strong predictor of development of dissociative symptoms and post-traumatic stress disorder. Our findings are contrary to the higher prevalence (24%–58%) of history of childhood sexual abuse in western literature.^{4,14,21} Sex being a taboo subject in India, an understanding of sexual behaviors and awareness of child-related sexual insults are usually not openly discussed or brought to awareness, which could result in an underreporting of the same. Childhood trauma is known to be associated with the development of dysfunctional attachment styles in adulthood. Our finding of adult sexual abuse is lower than that of Bowman and Markand,²¹ where 20% of spouse sexual abuse was noted. One study¹⁴ had reported coercion in 8.45% of PNES patients, whereas we found it in 15% of our patients. An Indian study by Patidar et al.³⁷ found physical abuse in 11/63 (17.46%) patients and sexual abuse in 5/63 (7.93%) patients, which is more or less keeping in with our findings.

Ludwig et al.,³⁸ in their meta-analysis, reported that the odds ratio of retrospective reports of stressors in childhood and adulthood was 3.1. They also found that in some studies, 14%–70% of patients reported no severely stressful life events or childhood maltreatment. Baldwin et al.³⁹ in their meta-analysis hypothesized that due to poor sensitivity of the instruments, the methodology used might not have been robust to capture the traumatic

events of childhood and also that if trauma has occurred too early in life, it may not be explicitly remembered. Trauma can have an impact on brain maturation.⁴⁰ Structural and functional changes have been noticed in the brains of adults who had a history of childhood trauma.⁴¹ Childhood maltreatment leads to increased levels of C reactive protein in adulthood.⁴² Seizures can be precipitated by trauma cues, and ictal experience can include reliving of trauma memories (flashbacks).³⁴ Several studies have documented a history of head injury in patients of PNES as well as patients with true seizures, and PNES has been considered as a sequela of head injury.^{4,6,18} A history of head injury has been reported in patients with PNES at rates of 16%–83%, with a pooled frequency of 42% among 1,039 adults across 17 studies.⁴³ Some studies found a stronger association between mild traumatic brain injury (TBI) and PNES than epileptic seizures.⁴⁴

Our sample of PNES showed more of emotion-focused or avoidance-oriented coping strategies like escape avoidance, distancing, confrontative, and seeking social support. Problem-solving and positive reappraisal were used but not to a great extent. Goldstein et al.⁴⁵ and Testa et al.⁸ also demonstrated significantly greater use of an escape-avoidant style of coping and significantly lower use of problem-solving in pseudoseizure patients than in healthy controls.

PNES may itself represent a dissociative coping mechanism in which the appearance of the pseudoseizure reduces anxiety. Goldstein et al.⁴⁵ found a higher mean for accepting responsibility as a coping style by PNES patients as compared to our findings. Myers et al.⁴⁶ also reported an elevated use of emotion-focused coping strategies (i.e., self-oriented stress reduction approaches that include fantasizing, self-blame, and angry outbursts) and diminished task-oriented coping strategies (i.e., purposeful task-oriented efforts aimed at solving or cognitively restructuring the problem or attempts to alter the situation) in their pseudoseizure patients, which is also keeping in with our findings. Avoidance strategies (i.e., activities and cognitive changes aimed at avoiding stress via distraction or social diversion) were reported

by only 15.9% of their respondents, which is in contrast to our findings.⁴⁶

To summarize, our study had a higher female preponderance with unemployed patients from lower socioeconomic group, which was in keeping with the western studies. We found a lesser duration of PNES as compared to other researchers. With regard to coexisting seizures, identification of symptoms, and stressors in various domains, our findings match that of existing literature. We found a much higher mean than western studies on DES. Stressful life events like marital and family conflicts and death were reported by our patients, which is in keeping with other studies. We found a very low prevalence of trauma and sexual and physical abuse, as compared to other researchers. Use of emotion-focused or avoidance-oriented coping was seen more, which is in keeping with other studies.

However, the study has a few limitations. It did not assess the psychiatric comorbidities and personality factors that are often associated with PNES. Large-scale prospective studies looking into these nuances would definitely help in improving understanding as well as the prognosis for the PNES patients.

Conclusions

This study helps in improving the understanding of the various risk factors of PNES and in sensitizing both the neurologists and the psychiatrists to enquire into the history of trauma and abuse.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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