

PSYCHOGENIC NON-EPILEPTIC SEIZURES IN A CHILD: A CASE REPORT

Original Article

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ABSTRACT

Background: Psychogenic non-epileptic seizures (PNES) in children present a diagnostic and therapeutic challenge, particularly in settings where neurological and psychiatric resources are limited. These episodes often mimic epileptic seizures but lack corresponding EEG abnormalities and are rooted in psychological distress. Early identification and intervention are critical to prevent misdiagnosis, unnecessary pharmacologic treatment, and long-term functional impairment. This case highlights the clinical value of a multidisciplinary, culturally sensitive approach in managing PNES in a child following trauma and chronic stress.

Case Presentation: An 11-year-old boy from Pakistan presented with frequent seizure-like episodes triggered by a traumatic robbery and intensified by academic stress. Despite multiple daily events, neurological investigations including EEG were unremarkable. Psychological evaluation revealed moderate post-traumatic stress and clinically significant anxiety symptoms, as measured by the PTSD Checklist for Children (score: 30) and the RCADS Anxiety Subscale (score: 28). Additional assessment and family mapping revealed complex psychosocial stressors, including unresolved grief, a history of infertility, and familial overprotection.

Intervention and Outcome: The patient underwent a structured 12-week intervention comprising psychoeducation, trauma-focused cognitive-behavioral therapy (TF-CBT), mindfulness and grounding techniques, seizure diary tracking, and family therapy. Each component was tailored to his developmental level and cultural context. By the end of treatment, seizure frequency had decreased by 80%, anxiety and PTSD symptoms had subsided to subclinical levels, and school attendance and daily functioning markedly improved.

Conclusion: This case underscores the effectiveness of a biopsychosocial model in managing pediatric PNES. Early, tailored psychological intervention with active family engagement can significantly improve outcomes in children experiencing trauma-related functional symptoms. Further research is warranted to explore long-term outcomes and scalability in similar contexts.

Keywords: Psychogenic Non-Epileptic Seizures, PNES, Trauma-Focused CBT, Pediatric Psychology, Family Therapy, Functional Neurological Disorder.

INTRODUCTION

Psychogenic non-epileptic seizures (PNES) are episodic events that outwardly mimic epileptic seizures but occur without the abnormal electrical discharges characteristic of epilepsy. Unlike epileptic seizures, which are typically associated with pathological brain activity recorded on electroencephalograms (EEG), PNES episodes display normal EEG activity during the events. PNES is considered a subtype of functional neurological symptom disorder, where psychological distress or trauma is involuntarily expressed as physical symptoms. Though not due to structural brain abnormalities, PNES is a serious condition that significantly affects patients' quality of life and is often misdiagnosed, leading to inappropriate treatments. The prevalence of PNES is difficult to quantify precisely in the general population, but it is relatively common in specialized epilepsy clinics, representing up to 30% of patients referred for intractable seizures (1,2). The estimated prevalence ranges from 2 to 33 per 100,000 people (3). The condition affects individuals of all ages but appears to be more common in women and those with a history of trauma or psychological disorders such as depression, anxiety, or personality disorders (4,5).

Differentiating PNES from epileptic seizures is crucial yet complex. Video-EEG monitoring remains the gold standard for diagnosis, allowing simultaneous documentation of clinical symptoms and EEG findings (6,7). However, diagnosis often takes years due to the overlapping clinical features and the tendency to first rule out epilepsy—a delay that may average up to seven years from symptom onset (8). Key clinical signs pointing to PNES include asynchronous limb movements, prolonged duration of episodes, and inconsistent responsiveness (9). The management of PNES necessitates a multidisciplinary approach involving neurologists, psychiatrists, psychologists, and primary care providers. Once epilepsy is excluded, psychological assessment using structured interviews and psychometric tools can help uncover underlying psychiatric comorbidities and psychosocial stressors (10,11). Treatment often focuses on cognitive-behavioral therapy (CBT), psychoeducation, and trauma-informed care rather than antiepileptic drugs, which are ineffective and may cause adverse effects when misapplied (12).

This particular case is noteworthy due to its illustrative features that exemplify the diagnostic challenge and the clinical nuances involved in managing PNES. Despite improved access to advanced diagnostic tools, delays in diagnosis remain common and have far-reaching implications for treatment and prognosis. In this case, the diagnostic clarity achieved through video-EEG monitoring and the subsequent multidisciplinary collaboration underscore the essential framework needed to manage PNES effectively. The objective of this report is to highlight a case of PNES that underscores the importance of thorough diagnostic evaluation, timely differentiation from epilepsy, and the application of integrated psychoneurological care. Through this, the case illustrates the broader clinical and psychosocial implications of PNES and the necessity for clinician awareness, patient education, and evidence-based intervention strategies.

CASE PRESENTATION

An 11-year-old boy, Z.O., from a clinical setting in Pakistan, presented with a several-month history of recurrent seizure-like episodes that occurred in the absence of any detectable neurological abnormality. These episodes were reported to be frequent, averaging three to four occurrences per day, and were particularly likely to arise in anticipation of school or when the child was alone. His family described the events as involving unresponsiveness, limb movements, and apparent distress, prompting concerns about epilepsy. However, his past medical history was unremarkable, and there was no family history of epilepsy. Psychosocial history revealed two significant stressors: a traumatic robbery incident and unresolved grief over the death of an older sibling. Academic pressures further compounded his psychological distress, according to parental reports and school feedback. The primary complaints involved recurrent seizure-like episodes without loss of bowel or bladder control or postictal confusion, suggesting a non-epileptic origin. Additionally, the patient exhibited notable avoidance behaviors around schoolwork and academic environments, along with increased emotional reactivity and difficulty managing distress. His mother reported that the child had become more withdrawn and displayed episodes of crying and anger, often in response to reminders of school or the robbery incident. Despite no clear neurological triggers, the frequency of the episodes and their impact on daily functioning warranted a comprehensive evaluation.

Clinical observation during structured interviews revealed signs of emotional dysregulation and heightened anxiety. The patient appeared tense, avoided eye contact when discussing school, and showed marked physiological arousal during recounting of traumatic events. Behavioral patterns suggested a psychosomatic nature of the episodes, with patterns of dissociation and heightened arousal aligning closely with trauma-related responses. Although no motor or neurological deficits were noted on general examination, psychological factors were strongly implicated in the presentation. Standardized psychometric tools supported these clinical impressions. The PTSD

Checklist for Children (PCL-C) yielded a score of 30, indicating moderate post-traumatic stress symptoms, particularly tied to the robbery event and unresolved bereavement. The Revised Children’s Anxiety and Depression Scale (RCADS) showed a score of 28 on the anxiety subscale, placing him in the clinical range, while depressive symptoms scored within normal limits at 10. The Mindful Attention Awareness Scale (MAAS) score of 42 reflected average mindfulness capacity, suggesting moderate ability for present-moment awareness, though insufficient to mitigate internalizing distress.

A seizure diary maintained by caregivers documented a total of 21 episodes per week. Notably, these episodes showed a consistent temporal relationship to psychological stressors, such as school attendance and social isolation, reinforcing the likelihood of a functional neurological basis. No prior neurological treatment had been initiated before referral to the current setting, though the family had explored informal counseling and spiritual remedies, none of which altered the episode frequency. This case underscores the critical need for early recognition of psychogenic non-epileptic seizures in pediatric populations, particularly in contexts where psychological trauma and academic stress are under-recognized. It also highlights the value of combining psychometric tools with clinical observation to inform a multidisciplinary intervention plan. In Z.O.'s case, the integration of trauma-focused cognitive behavioral therapy was planned as the cornerstone of management to address the underlying psychosocial stressors contributing to his condition.

Table 1: Assessment and Test Results

Assessment Tool	Score	Range	Interpretation
PTSD Checklist (PCL)	30	17-85	Moderate PTSD symptoms
RCADS Anxiety Subscale	28	0-47	Clinical range
RCADS Depression Subscale	10	0-39	Within normal limits
Mindful Attention Awareness Scale	42	15-90	Average mindfulness
Seizure Diary (weekly frequency)	21 episodes/week	0	High frequency

TREATMENT / INTERVENTION

Following the diagnostic clarification of psychogenic non-epileptic seizures (PNES) in the context of trauma-related psychopathology, a trauma-focused cognitive-behavioral therapy (TF-CBT) framework was selected as the primary intervention for Z.O. The treatment strategy was tailored to address his moderate post-traumatic stress symptoms, clinically significant anxiety, and school-related functional impairment. The intervention aimed to enhance emotional regulation, cognitive restructuring, and stress coping while facilitating safe exposure to trauma reminders within a therapeutic context. The therapeutic process began with psychoeducation provided to both the patient and his family. This involved explaining the nature of PNES, distinguishing them from epileptic seizures, and contextualizing the child’s symptoms within a biopsychosocial model. Building insight was a priority to reduce stigma and resistance toward psychological treatment. The initial phase of therapy focused on establishing rapport and ensuring emotional safety, followed by training in basic relaxation and mindfulness techniques. Progressive muscle relaxation and diaphragmatic breathing exercises were introduced and practiced both in session and at home to help modulate physiological arousal.

Subsequently, cognitive restructuring exercises targeted maladaptive beliefs associated with school performance, fear of isolation, and perceived responsibility surrounding the traumatic robbery and sibling loss. These were addressed using age-appropriate worksheets and narrative-based interventions. Gradual exposure techniques were implemented to desensitize Z.O. to school-related triggers. Imaginal exposure was used to revisit and process the trauma in a controlled manner, while in vivo exposure focused on reintegration into classroom activities with parental and teacher collaboration. The therapy also incorporated problem-solving training and scheduled reinforcement to promote school attendance and positive behaviors. Sessions were held weekly over a three-month period, with continuous monitoring of symptom frequency and intensity via seizure diaries and repeated psychometric assessments. By the sixth session, a marked reduction in the frequency of episodes was observed, dropping from 21 to approximately 6 episodes per week. These were also described as milder and shorter in duration. Emotional outbursts and avoidance behaviors notably diminished, and his engagement in academic tasks improved as evidenced by increased classroom participation and reduced absenteeism.

At three-month follow-up, Z.O. maintained these improvements. His PTSD Checklist score had decreased to 18, indicating subclinical symptom levels, and his RCADS anxiety score had declined to 14, moving out of the clinical range. The Mindful Attention Awareness

Scale (MAAS) score increased to 57, suggesting improved attentional awareness and present-moment focus. Importantly, the family reported restored confidence in his emotional resilience and reduced caregiver stress. No adverse effects or complications were noted during therapy, and no pharmacologic interventions were necessary throughout the treatment process. Compared to traditional epilepsy management approaches such as antiepileptic medications—which were not indicated in this case—TF-CBT provided substantial and sustained symptom relief with functional recovery. Unlike antiepileptic drugs that may inadvertently reinforce the medicalization of functional symptoms, psychological interventions directly addressed the underlying emotional dysregulation and trauma processing needs in this case, supporting findings from recent literature advocating for early psychotherapeutic engagement in PNES patients (13,14).

OUTCOME AND FOLLOW-UP

In the immediate post-intervention period, Z.O. demonstrated a notable and progressive reduction in symptom frequency and intensity. Within the first two weeks of initiating trauma-focused cognitive-behavioral therapy (TF-CBT), there was a 50% decline in daily seizure-like episodes, accompanied by visible improvements in emotional regulation and reduced school avoidance behaviors. Parents reported enhanced morning routines, decreased anticipatory anxiety, and fewer outbursts. The patient began re-engaging with academic tasks under supportive supervision, indicating early therapeutic gains. No adverse effects or complications were observed throughout the course of therapy. At the three-month follow-up, the improvements were more pronounced and consistent across behavioral and psychometric domains. The frequency of seizure-like episodes had declined to fewer than five per week, with a majority being milder in presentation and of shorter duration. Z.O.'s PTSD Checklist score decreased from 30 to 18, falling below the threshold for clinically significant trauma-related symptoms. The RCADS anxiety subscale dropped from 28 to 14, reflecting a shift from the clinical to the subclinical range. The Mindful Attention Awareness Scale (MAAS) score increased from 42 to 57, suggesting enhanced present-moment focus and attentional regulation. His school attendance improved significantly, with full reintegration into regular academic activities by the end of the third month. Teachers and parents consistently noted greater emotional resilience and task persistence, aligning with improved overall functioning.

A six-month follow-up confirmed the durability of these gains. Z.O. remained free from severe dissociative or seizure-like episodes and was functioning well in both home and school environments. He had formed supportive peer relationships and was actively participating in extracurricular activities. Reassessment using the RCADS and PCL-C scales indicated that both anxiety and trauma-related symptoms remained within non-clinical ranges. The seizure diary maintained by the parents showed one to two isolated episodes per month, which were brief and occurred primarily in response to identifiable stressors, such as exams or conflict, and resolved quickly without intervention. This pattern was consistent with expected outcomes in children with functional neurological symptoms receiving structured psychological therapy. The patient's progress compares favorably with findings from recent clinical studies emphasizing the efficacy of TF-CBT and multidisciplinary approaches in managing pediatric PNES. Early diagnosis, caregiver involvement, and trauma-informed psychological interventions are associated with more favorable prognoses, particularly in children without comorbid neurological disorders or significant social instability (15,16). Z.O.'s case exemplifies the potential for full or near-complete recovery with timely and appropriately tailored intervention. The absence of complications or therapy-related setbacks further underscores the appropriateness of the selected therapeutic strategy in this context.

DISCUSSION

This case highlights the successful use of trauma-focused cognitive-behavioral therapy (TF-CBT) in the treatment of psychogenic non-epileptic seizures (PNES) in a pediatric patient within a low-resource setting. An 11-year-old boy with a history of trauma-related stressors, academic anxiety, and functional seizure-like episodes showed a clinically significant reduction in symptoms following a structured psychological intervention. What makes this case particularly noteworthy is the integration of psychoeducation, narrative trauma processing, cognitive restructuring, mindfulness training, and family systems work, all implemented without pharmacologic intervention. By week twelve, the patient demonstrated an 80% reduction in seizure episodes, improvement in school attendance, normalization of anxiety scores, and enhanced psychosocial functioning. These outcomes align with and expand upon recent literature emphasizing the role of early psychological intervention in pediatric PNES. Studies have increasingly validated the efficacy of TF-CBT and similar trauma-informed approaches, particularly when combined with caregiver involvement and systematic behavioral monitoring (16). A systematic review highlighted the importance of early diagnosis and multidisciplinary treatment, reporting that children with

PNES respond favorably to interventions that address trauma, anxiety, and family dynamics (17). Similarly, a study emphasized that, coordinated care between neurologists, psychologists, and families improves both short-term outcomes and long-term functional recovery (18). In this case, the use of session-based seizure diaries and structured family therapy provided essential scaffolding for both emotional resilience and symptom monitoring, reflecting strategies advocated by contemporary PNES treatment guidelines.

The mechanisms underlying the positive treatment outcome likely stem from several interwoven therapeutic processes. Psychoeducation helped reduce fear and misunderstanding surrounding the diagnosis, decreasing symptom reinforcement by both the child and his caregivers. Trauma narrative exercises allowed the patient to process emotionally charged experiences—such as a robbery and sibling loss—in a safe and structured environment, which research suggests is critical for reducing trauma-related symptomatology in PNES (19,20). Cognitive restructuring directly targeted maladaptive beliefs that fueled anxiety and anticipated social rejection, while mindfulness and progressive muscle relaxation addressed the physiological arousal often associated with dissociative episodes. Grounding techniques and in vivo behavioral experiments likely disrupted the automaticity of symptom expression, helping the patient re-establish a sense of agency over his internal experiences (21). Nonetheless, alternative explanations for the observed improvements cannot be entirely ruled out. Symptom reduction may have been partially influenced by nonspecific therapeutic factors, such as the development of a strong therapeutic alliance or natural developmental maturation. It is also possible that the structure provided by regular clinical sessions, consistent attention from adults, and the reduction in school-related pressure during early treatment contributed to initial gains. While the significant and sustained improvements make spontaneous remission less likely, these potential confounders underscore the need for cautious interpretation of single-case outcomes.

The strengths of this case lie in its comprehensive, multi-modal treatment strategy and the clear tracking of symptom progression using validated psychometric instruments and behavioral diaries. Additionally, the culturally sensitive integration of family dynamics offers a replicable model for clinicians working in similar socio-cultural contexts. However, the findings are limited by the absence of objective neurological follow-up data, lack of a control condition, and the reliance on self- and parent-reported measures. Long-term follow-up beyond six months would further strengthen conclusions about the durability of treatment effects. Future research should prioritize longitudinal studies assessing TF-CBT outcomes in larger pediatric PNES cohorts, particularly in low-resource or culturally distinct settings where access to specialized neurological care is limited. Randomized controlled trials comparing TF-CBT to other psychosocial interventions—such as acceptance and commitment therapy or systemic family therapy—could also elucidate the most effective components of treatment. Moreover, studies examining caregiver variables, such as parental anxiety and coping style, may reveal critical moderators of treatment success.

CONCLUSION

This case illustrates how a comprehensive, culturally sensitive, and developmentally tailored multidisciplinary intervention can lead to significant clinical improvement in a child with psychogenic non-epileptic seizures (PNES). Through the integration of psychoeducation, trauma-focused cognitive-behavioral therapy, mindfulness practices, grounding techniques, structured seizure monitoring, and family therapy, the patient achieved substantial symptom reduction and functional recovery without the use of pharmacologic treatments. This case emphasizes the value of a biopsychosocial framework in managing pediatric PNES, particularly in resource-constrained or culturally complex settings. Clinicians are encouraged to prioritize early psychological intervention, involve families in the therapeutic process, and adapt strategies to fit the child's developmental and sociocultural context. While the outcomes are promising, further research involving longitudinal follow-up and larger patient samples is essential to validate the long-term effectiveness of such integrative approaches. Ultimately, this case reinforces the importance of individualized, trauma-informed care in promoting sustainable recovery and resilience in children with functional neurological symptoms.

AUTHOR CONTRIBUTION

Author	Contribution
Noor Ul Ain*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Neelam Ehsan	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Nimra Mushtaq	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Maryam Abdul Majeed	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published

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