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Emotional dysregulation, alexithymia, and attachment in psychogenic nonepileptic seizures

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ABSTRACT

Objectives: Psychogenic nonepileptic seizures (PNESs) are poorly understood and difficult to treat. Research and theory suggest that problems with recognizing, acknowledging, and regulating emotional states (i.e., emotional dysregulation) may contribute to the development and maintenance of PNESs. However, there is a lack of well-controlled studies using dedicated measures of emotional regulation with patients with PNESs. The current study sought to address this gap.

Methods: Forty-three patients with PNESs and 24 with epilepsy completed a postal survey comprising measures of emotional dysregulation (Difficulties in Emotion Regulation Scale), alexithymia (Toronto Alexithymia Scale), attachment (Relationship Scales Questionnaire), and psychopathology (Generalized Anxiety Disorder-7; Patient Health Questionnaire-9; Somatoform Dissociation Questionnaire-20). Cluster analysis was used to identify possible subgroups of patients with PNESs characterized by distinct patterns of emotional dysregulation.

Results: Two clusters of patients with PNESs were identified. The first ($n = 11$) was characterized by higher levels of psychopathology, somatization, alexithymia, and difficulties with most aspects of emotional regulation (including identifying, accepting, and describing feelings, accessing adaptive regulatory strategies, performing goal-directed behaviors, and controlling feelings and actions) compared with the group with epilepsy. The second ($n = 32$) was characterized by relatively high somatization and depression scores but comparatively normal levels of alexithymia and emotional regulation.

Conclusions: The findings suggest that patients with PNESs can be divided into at least two meaningful subgroups characterized by distinct psychological profiles, only one of which is characterized by significant problems with emotional dysregulation. Further research is needed to determine whether the relatively normal emotional dysregulation and high somatization scores of some patients with PNESs are due to emotional avoidance or more basic problems with perceptual and behavioral control.

1. Introduction

Psychogenic nonepileptic seizures (PNESs) superficially resemble epileptic seizures but result from psychological processes rather than abnormal electrical activity in the brain. Psychogenic nonepileptic seizures are common [1] and associated with considerable personal, economic, and social costs [2]; however, they remain poorly understood, and there is a lack of evidence-based treatments [3]. As such, there is a pressing need for research that further elucidates the psychological basis of PNESs.

Several studies using variants of the Minnesota Multiphasic Personality Inventory (MMPI) have suggested that patients with PNESs are characterized by a "conversion V" personality profile, associated with high scores on the hypochondriasis and hysteria subscales coupled with comparatively low (but still elevated) depression scores [4–8]. Following Freud [9], these findings have often been interpreted as evidence for a defensive process (i.e., conversion) in patients with PNESs, in which the distress associated with emotional conflict and/or traumatic memories is converted into physical symptoms to protect the individual. Others have suggested that this pattern reflects a general inability or unwillingness to perceive, process, and communicate emotional states (so-called *alexithymia*) [10], with the resulting buildup of tension

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leading to PNESs. Such difficulties are often thought to stem from maladaptive attachments with early caregivers, which undermine the development of appropriate ways of understanding and relating to emotional states in oneself and others [11].

Despite the apparent popularity of such concepts, several studies with groups with PNESs have failed to replicate the conversion V profile on the MMPI [12,13], and the few published studies on alexithymia in PNESs have not demonstrated higher levels of alexithymia in these patients compared with those with epilepsy [10,14]. One possibility is that these mixed findings reflect the heterogeneity of patients with PNESs in terms of etiology and comorbid psychopathology. While anxiety, affective, personality, somatoform, and dissociative disorders are all disproportionately common in samples with PNESs compared with those with epileptic seizures [15], the type and extent of psychopathology vary considerably between patients. In some cases, PNESs may be one aspect of a much wider set of psychiatric complaints; in others, PNESs may occur in seemingly well-adjusted individuals with minimal comorbidity. This interpretation would be in keeping with the observation that there is similar variation in the psychosocial histories of patients with PNESs, ranging from the apparently ordinary to a lifetime of serious adversity and potentially traumatizing events [16].

A small number of studies have addressed the problem of heterogeneity by using cluster analysis to identify subgroups of patients with PNESs with distinct psychological profiles. Cragar et al. [17], for example, clustered patients with PNESs ($n = 66$) according to their scores on a measure of normal personality then compared the clusters on the MMPI-2 and a neuropsychological battery. Three clusters of patients with PNESs emerged: two characterized by high levels of neuroticism, elevated scores on several MMPI dimensions, and low-average intellectual ability and a third (33% of the sample) characterized by average scores on the neuropsychological battery and an apparently normal personality. Only this third cluster exhibited a conversion V profile on the MMPI-2. Reuber et al. [18], in contrast, found that the majority of their sample with PNESs (80/85 patients) were classified within two clusters, the first characterized by elevated scores on all four of the higher order traits of personality pathology studied, insecure attachment, a greater likelihood of inpatient psychiatric treatment, and a relatively poor prognosis and the second (43.5% of the sample) characterized by a relatively good prognosis and normal scores on all personality measures apart from compulsivity. A similar pattern was found by Uliaszek et al. [19], who identified two clusters of patients with PNESs, one ($n = 14$) characterized by emotional dysregulation, poor quality of life, and high scores on measures of depression, anxiety, stress, somatization, and dissociation and a second ($n = 41$) characterized by low emotional dysregulation, higher quality of life, and minimal psychopathology.

These cluster analytic findings have been interpreted as confirmation that most patients with PNESs have problems in regulating their emotional states and that there are at least two different types of maladaptive emotional regulation that may predispose to PNESs. The first type appears to be characterized by emotional reactivity, poor arousal tolerance, and difficulties in controlling affect; this "undermodulation" of emotion [20] is akin to that seen in patients with borderline personality disorder [18], which is commonly comorbid with PNESs [21] and confers vulnerability to all types of psychopathology. In contrast, the apparently normal personality and minimal comorbidity of the second group have been interpreted as evidence of "overmodulated" affect in these individuals [20], resulting from a "somatic defense" [17] characterized by emotional avoidance, excessively controlled behavior, and a tendency to use physical symptoms as a way of expressing emotional conflicts [18].

Of the few studies in this area, only one [19] has studied emotional dysregulation in patients with PNESs using a dedicated measure of this construct, but no data from the cluster analysis are presented, making it difficult to judge its validity. Moreover, the emotional dysregulation scores of clusters with PNESs in this study were classified as low or high relative to normative scores on the Difficulties in Emotion Regulation Scale (DERS) obtained from undergraduate students. It is uncertain how these profiles compare with a more meaningful clinical control group, such as patients with epilepsy. This is particularly important given the results of Reuber et al. [18], who found that their seemingly overmodulated group with PNESs actually had scores that were very similar to those of a control group with epilepsy on two of the three facets of emotional dysregulation where they had scored lower than healthy controls. As such, we are some way from being able to draw firm conclusions regarding emotional dysregulation in patients with PNESs.

In order to shed light on these issues, we collected data concerning emotional dysregulation, alexithymia, attachment, and psychopathology in groups of patients with either PNESs or epilepsy and conducted cluster analysis to determine whether there are meaningful subgroups with PNESs characterized by different kinds of emotional dysregulation difficulties.

2. Methods

2.1. Design and procedure

The study was carried out in accordance with the *Declaration of Helsinki* concerning experiments with human participants. Patients with PNESs from neurology or neuropsychology services in the north or northwest of England (Salford Royal NHS Foundation Trust [Site 1]; The Walton Centre for Neurology and Neurosurgery NHS Trust [Liverpool; Site 2]; Sheffield Teaching Hospitals NHS Foundation Trust [Site 3]; The Leeds Teaching Hospitals NHS Trust [Site 4]) were approached to take part in a cross-sectional postal survey. Patients with epilepsy were recruited from a single neurology service (Sheffield Teaching Hospitals NHS Foundation Trust). Consultant neurologists or neuropsychologists identified potential participants from their existing caseloads (retrospective recruitment) and new patients as they came into the study sites (prospective recruitment). Secretarial staff sent potential participants a study pack, consisting of an invitation letter from the patient's consultant, an information sheet, a consent form, and a questionnaire booklet. Participants who wished to take part returned the completed questionnaires and consent form in the stamped addressed envelope provided. These participants were entered into a £150 prize draw.

2.1.1. Inclusion/exclusion criteria

The group with PNESs consisted of adult (≥18 years) patients with a diagnosis of PNESs made by an experienced consultant neurologist or consultant neuropsychologist based on clinical history/presentation and neurological examination in all cases, EEG recordings, brain imaging, and video-EEG telemetry findings when available. The group with epilepsy consisted of adult (≥18 years) patients with a diagnosis of epilepsy made by an experienced consultant neurologist on the same basis. Individuals with any form of epilepsy were included in order to maximize power. All diagnoses were verified by a consultant neurologist or neuropsychologist review of patients' medical records. Individuals still under investigation or without a clinically definite diagnosis of PNESs or epilepsy were excluded. Patients with likely mixed seizure disorders were excluded. Other exclusion criteria were inability to give informed consent, inability to read or speak English, and moderate to severe learning disabilities as indicated by patients' medical records or by the responsible clinician. We did not specifically exclude patients with a history of traumatic brain injury, other neurologic diseases, or comorbid psychiatric disorders.

2.1.2. Participants

Participants were recruited over eight months. During this time, a total of 273 possible patients with PNESs were identified and approached, of whom 51 returned completed questionnaire packs (response rate = 18.7%; Site 1 = 9/50 [18%]; Site 2 = 25/65 [38.5%]; Site 3 = 16/147