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Psychogenic seizures and psychogenic movement disorders: Are they the same patients?

J.L. Hopp [a,*], K.E. Anderson [a,b], A. Krumholz [a], A.L. Gruber-Baldini [c], L.M. Shulman [a]

[a] Department of Neurology, University of Maryland School of Medicine, Baltimore, MD, USA
[b] Department of Psychiatry, University of Maryland School of Medicine, Baltimore, MD, USA
[c] Division of Gerontology, Department of Epidemiology and Public Health, University of Maryland School of Medicine, Baltimore, MD, USA

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ABSTRACT

Psychogenic nonepileptic seizures (PNES) and psychogenic movement disorders (PMD) are common and disabling problems with abnormal psychological profiles, and they may have common features that could aid in better understanding and management. Since PNES and PMD are investigated and reported separately, comparisons are lacking. Psychogenic nonepileptic seizure and psychogenic movement disorder patients completed demographic, clinical, and psychological inventories including the Short Form (SF)-12 Health Status Survey (Physical and Mental Health Summary Scores), the Brief Symptom Inventory (BSI)-18 (somatization, depression, and anxiety subscales), and the Lorig Self-Efficacy Scale. Psychogenic nonepileptic seizure and psychogenic movement disorder patients had similar psychological profiles with reduced SF-12 Physical Health and Mental Health Summary Scores and increased BSI somatization, depression, and anxiety ratings. They varied slightly in age and gender, but their main distinguishing features were the presenting signs. These similar profiles suggest that PNES and PMD may not be distinct or separate entities and that collaborative investigative efforts and management are warranted.

1. Introduction

Psychogenic nonepileptic seizures (PNES) and psychogenic movement disorders (PMD) are relatively common and widely reported psychogenic disorders [1,2]. Despite major advances and improvements in technology and clinical standards for diagnosing these conditions, their etiology remains poorly understood, their management is difficult, and outcomes are disappointing [1–5]. It is well recognized that patients with PNES and PMD have similar psychiatric diagnoses, but since they are often diagnosed and managed by different neurologic subspecialists, studies comparing these disorders are scarce [6,7]. We compare demographic, clinical, and psychological profiles of patients with PNES and PMD to better characterize their similarities and differences.

Our hypothesis is that although patients with PNES and PMD have different clinical presentations, they may have similar psychosocial profiles. A diagnosis of conversion or somatoform disorder in PNES and PMD patients has been reported and well described in both groups [1,2,6], but there have been few studies that have compared these patients within the same outpatient population [7]. We hypothesize that these two patient groups may have similar self-assessment findings in mental health, physical health, quality of life, and self-efficacy, despite their different clinical presentations. Such information may result in a better understanding of these challenging psychogenic disorders, improve their management, and guide future research.

2. Methods

2.1. Standard protocol approvals, registrations, and patient consent

The institutional review board at the University of Maryland School of Medicine approved the study. Written informed consent for research was obtained from all patients participating in the study. Between January, 2006 and January, 2010, we identified and recruited subjects from the University of Maryland's outpatient epilepsy and movement disorder centers and the inpatient epilepsy monitoring unit. Eligible subjects had a well-established diagnosis of either PNES or PMD without evidence of co-existing epileptic seizures or organic movement disorders. The diagnosis of PNES was confirmed by video-EEG monitoring [2], and the diagnosis of PMD was established with clinical application of standard criteria [1,4]. All subjects were 18 or more years of age and had a Mini-Mental State Examination (MMSE) score greater than 23 [4].

Data collection included demographic information and clinical symptomatology. A demographic questionnaire assessed age, gender, marital status, employment, and education level. Clinical data focused on the presenting neurologic signs and symptoms. Descriptions of the

* Corresponding author at: Room S12C09, Department of Neurology, 22 South Greene Street, Baltimore, MD 21201-1595, USA. Fax: +1 410 328 0697.
E-mail address: jhopp@som.umaryland.edu (J.L. Hopp).

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events for the PNES patients were abstracted from the outpatient records or Epilepsy Monitoring Unit notes. Data for the PMD group were abstracted from clinical outpatient records. The specialist who evaluated the patient in the outpatient or inpatient setting made the diagnosis of PNES or PMD. The symptoms were classified as episodic or continuous, convulsive or not convulsive, and unilateral or bilateral. Consciousness was also described as altered or preserved and determined by patient report for PMD patients and by patient report and assessment in the Epilepsy Monitoring Unit for PNES patients as defined by lack of responsiveness to nurse and physician testing. The descriptions of the events in the PMD patients were categorized as mentioned above as well as by presenting symptom.

Measures of cognitive, psychological, and social function included the MMSE, SF-12 version 2 (Short Form) Health Status Survey, (12 item self-assessment of well-being yielding two summary scores: physical and mental health quality of life), Brief Symptom Inventory (BSI)-18 (an 18-item assessment of overall psychiatric symptoms including a Global Symptom Index [GSI] and somatization, depression, and anxiety subscales) [3], and Lorig Self-Efficacy Scale (measure of confidence for self-management of chronic disease including subscales: Manage Disease, Manage Symptoms, Do Chores, Exercise, and Social Activities) [8]. The Lorig Self-Efficacy Scale was modified in our study from the standard 10-point scale to a shorter 5-point scale for ease of use with other measures. When significant psychopathology was identified, psychiatric referral was provided.

The study was designed to have 80% power to detect effect size differences of .55 standard deviation that would be considered moderate effect sizes [9]. Demographic and clinical data comparisons between the PNES and PMD groups were conducted using unpaired 2-tailed t-tests (for continuous variables) and Chi-square statistics (for categorical variables). Psychological and functional measures were compared using unpaired 2-tailed t-tests.

3. Results

Demographic data are presented in the table. Patients with PMD were older (47.1 years vs. 41.8 years), and a greater proportion was male (33.0% vs. 14.3%). All other demographic measures including race, marital status, employment, education, and general health profiles were not significantly different. 65.7% of PNES patients were married compared with 69.6% of PMD patients. 45.7% of PNES patients were employed at the time of the study compared with 44.4% of PMD patients. Rates of college education as defined by at least 4 years of college studies were 42.9% in PNES patients compared with 41.4% in PMD patients. The duration of symptoms in the PNES group was 3.08 years, and the duration of symptoms in the PMD group was 2.94 years prior to diagnosis.

There were differences in the presenting neurological signs and symptoms between PNES and PMD (Table 1). All patients with PNES had episodic symptoms, while 66.7% of the PMD patients had episodic symptoms. 85.7% of the PNES patients had altered consciousness compared with 31.4% of the PMD group. 29 of the PNES patients (82.9%) had convulsive events compared with 32 (31.4%) of the PMD group. None of the PNES patients had unilateral symptoms, while 20.6% of the PMD patients had symptoms that were witnessed or described as unilateral. The most common motor symptom was tremor in 45.2% of the PMD patients. Other symptoms were categorized into the following groups: falls/gait disturbance, choreiform disorder, twitching (also inclusive of shaking, seizure, and jerking), postural or balance difficulty, weakness, tic disorder, torticollis, dystonia or spasms, and writing disorder.

The SF-12 and BSI-18 were administered to assess psychiatric symptoms and health-related quality of life. For both the SF-12 Health Status Survey and BSI-18, the scores are adjusted to the US normative population, where the average score is 50, and 10 points is one standard deviation. Both PNES and PMD groups scored low on the Physical Health Summary Score (38.47 and 34.82, respectively), indicating worse quality of life. The SF-12 Mental Health Summary Scores were 43.46 for the PNES group and 43.44 for the PMD group; both of which were more than 1/2 a standard deviation below the US normative means. The BSI-18 serves as a screen for psychological distress and psychiatric disorders, and a positive risk or "case" is defined if GSI T score is 63 or higher or if any two t-scores are 63 or higher. The PNES group had a mean GSI score of 59.00 compared with the PMD group which had a mean GSI score of 60.34. Brief Symptom Inventory somatization t-scores were 63.46 for the PNES patients and 63.08 for the PMD patients, while depression t-scores were 55.49 and 55.61, respectively. The somatization subscale was the highest mean score for both patient groups and was greater than 1 standard deviation above normative means.

Self-efficacy was measured by the Lorig. The Lorig has several subscales in which a higher score represents more confidence in being able to perform each activity. Psychogenic nonepileptic seizure and psychogenic movement disorder patients were not significantly different in their confidence to Manage Disease (11.82 vs. 11.54), Manage Symptoms (10.18 vs. 9.43), Do Chores (6.47 vs. 6.48), and Exercise (6.76 vs. 6.00) or participate in Social Activities (4.53 vs. 4.06).

Table 1
Selected measures used in comparison of psychogenic nonepileptic seizure (PNES) patients (n = 35) and psychogenic movement disorder (PMD) patients (n = 104).[a]

Variable	PNES (n = 35)	PMD (n = 104)	p Value
	Numbers (%) or mean[SD]	Numbers (%) or mean[SD]	
Demographics			
Gender (female)	30 (85.7%)	69 (67.0%)	0.034*
Age (years)	41.8 [SD = 14.8]	47.1 [SD = 12.5]	0.040*
Married	23 (65.7%)	72 (69.6%)	0.673
Employed	16 (45.7%)	44 (44.4%)	0.896
College educated (>4 years)	15 (42.9%)	41 (41.4%)	0.879
Clinical manifestations			
Episodic (vs. continuous)	35 (100%)	68 (66.7%)	<0.001**
Altered consciousness	30 (85.7%)	32 (31.4%)	<0.001**
Convulsive	29 (82.9%)	32 (31.4%)	<0.001**
Unilateral	0 (0%)	21 (20.6%)	<0.001**
Duration of symptoms (years)	3.08 [SD = 6.51]	2.94 [SD = 6.51]	0.887
Psychological and social measures			
SF-12v2 Health Survey			
SF12 Physical Health score	38.47 [13.62]	34.82 [14.88]	0.218
SF12 Mental Health score	43.46 [13.63]	43.44 [11.74]	0.994
BSI-18			
Global Symptom Index (GSI)	59.00 [9.32]	60.34 [9.72]	0.588
BSI Somatization t-score	63.46 [9.33]	63.08 [9.73]	0.846
BSI Depression t-score	55.49 [13.58]	55.61 [12.72]	0.964
Self-efficacy measures (Lorig)			
Lorig Manage Disease	11.82 [2.55]	11.54 [2.31]	0.568
Lorig Manage Symptoms	10.18 [2.67]	9.43 [2.84]	0.194
Lorig Do Chores	6.47 [2.14]	6.48 [2.11]	0.982
Lorig Exercise	6.76 [1.95]	6.00 [2.22]	0.086
Lorig Social Activities	4.53 [1.44]	4.06 [1.34]	0.097

SD = standard deviation. p-Values derived from Chi-square tests and unpaired 2-tailed t-tests.

[a] Some comparison measures reflect a few less subjects due to missing data points.

* $p<0.05$ statistically significant difference between PNES and PMD patients from Chi-square tests (1 df).

** $p<0.01$ statistically significant difference between PNES and PMD patients from Chi-square tests (1 df).

4. Discussion

Our study compared patients with PNES and PMD and demonstrated that despite differences in their semiology and presentations and small variations in demographics, these two patient groups