CLINICAL UTILITY OF THE PERSONALITY ASSESSMENT INVENTORY IN THE DIAGNOSIS OF NON-EPILEPTIC SEIZURES

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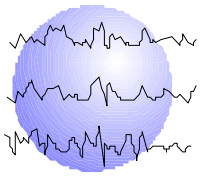

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REVISED ABSTRACT

RATIONALE: The Personality Assessment Inventory (PAI) is a relatively new self-administered, objective measure of adult personality that holds several practical and psychometric advantages over the MMPI-2. The use of the PAI to describe and differentiate non-epileptic seizures (NES) and epileptic seizure (ES) patients has not been established.

METHODS: PAI profiles of 17 NES patients were compared to the profiles of 23 ES patients. All profiles were judged to be valid based on the four PAI validity scales. The two groups were comparable in terms of age, education, gender, and received their respective diagnoses following a comprehensive inpatient video-EEG monitoring evaluation.

RESULTS: Composite PAI clinical scale profiles of NES patients approached a clinically significant elevation on the Somatic Complaints scale (SOM). The ES group showed no clinically significant elevations on the clinical scales. Univariate analyses revealed statistically higher mean T-scores for the NES group on the SOM scale ($p = .003$) and the Depression scale ($p = .018$) when compared to the ES group. A discriminant function analysis was also calculated using the three subscales from the SOM scale (Conversion, Somatization, and Health Concerns) as predictors to determine accuracy of classification between NES and ES patients. Results revealed sensitivity, specificity, and overall accuracy to be 96%, 65% and 83%, respectively.

CONCLUSION: According to these group data, the PAI appears to be a sensitive measure to discriminate NES from ES patients. Consistent with clinical observation and established research findings, the NES group evidences a pattern of somatization not replicated in the ES group. The PAI is likely a beneficial adjunct assessment tool in the diagnosis and treatment of NES.

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BACKGROUND

To date, the MMPI/MMPI-2 has been the most widely used personality measure in the field of epilepsy.

Although the MMPI-2 provides useful information about individual behavior which can direct treatment, it has a number of limitations including test length and a relatively high overall reading level (8th grade).

A recent meta-analysis on the ability of the MMPI/MMPI-2 to discriminate epilepsy and NES patients resulted in an overall correct classification rate of 71%[1].

The introduction of the PAI[2] in recent years provides clinicians with another viable option for assisting in diagnosis and treatment of NES.

METHODS

Subjects were 17 NES and 23 epilepsy patients. See table 1 for demographics and other patient characteristics. All patients were evaluated on the inpatient epilepsy unit at United Hospital in St. Paul, MN and were diagnosed either as NES, of psychogenic origin, or epilepsy based upon long-term video EEG monitoring and other clinical data.

All patients were administered the PAI as part of a routine inpatient psychological assessment. All profiles were judged to be valid based on the four PAI validity scales. The two groups were compared on each PAI clinical scale. See Table 2 for descriptions of each PAI scale used in the analyses. T-tests were used to compare average t-scores for each subject group. A discriminant function analysis was also calculated using the three subscales (conversion, somatization, and health concerns) from the somatic complaints scale (SOM) as predictors.

RESULTS

1. Composite PAI profiles of NES patients approached clinically significant elevations on the SOM scale (Mean T-score = 65.65), and the Depression (DEP) scale (Mean t-score = 59.71). The ES group showed no clinically significant elevations on the clinical scales (see Figure 1).
2. Statistically significant differences were found between NES and ES Mean t-scores on the SOM scale ($p = .003$), and DEP scale ($p = .018$).
3. The NES group scored significantly higher than the ES group on the SOM subscales SOM-C (Conversion) Mean t-score = 65.76, ($p = .004$); and SOM-S (Somatization) Mean t-score = 60.65, ($p = .000$), (see Figure 2).

4. A discriminant function analysis using the SOM subscales as predictors (SOM-C, SOM-S, and Health Concerns) resulted in an 83% overall correct classification rate (see Table 3).

CONCLUSIONS

Consistent with clinical observation and established research findings, the NES group in this study evidenced a pattern of somatization on the PAI not replicated in the ES group.

The NES group was noted to display more depressive symptoms than the ES group.

The SOM scale appears to classify both NES and ES patients with reasonable accuracy.

The PAI has some clear advantages over the MMPI/MMPI-2 including:

1) A lower overall reading level is required for understanding test items (4th grade vs. 8th grade)
2) Substantially shorter test length (344 items vs. 567 items)
3) Broader response possibilities (4 choices vs. "True-False")
4) PAI scales reflect current diagnostic nosology and thus appear to have more face validity
5) Less expensive based on 100 uses/year ($250 vs. $1,195)
6) Non-overlapping items between scales.
7) Better classification of NES and ES patients (83% vs. 71%) although different methodologies were used.

Future studies utilizing the PAI in this patient population is warranted.

Direct comparisons of the sensitivity of the PAI vs. MMPI-2 in discriminating NES and ES patients are currently underway.

REFERENCES

1. Dodrill CB, & Holmes MD (2000). Part summary: Psychological and neuropsychological evaluation of the patient with non-epileptic seizures. In J.R. Gates & A.J. Rowan (Eds.), Non-epileptic seizures (2nd Ed.) (pp.169-181). Boston, MA: Butterworth-Heinemann.
2. Morey LC (1996). Personality Assessment Inventory. Odessa, FL: Psychological Assessment Resources.

Table 1

PATIENT CHARACTERISTICS

	NES	EPILEPSY
n	17	23
Age[1]	39.8	35.8
Gender (% Male)	18%	39%
Education[1]	13.5	13.5
Age of Seizure Onset[1]*	31.9	19.3
WAIS-III FSIQ[1]	92.4	93.5

[1] = Mean
* p = .003

Table 2

PAI CLINICAL SCALE DESCRIPTIONS

SOM (Somatic Complaints)	Focuses on preoccupation with health matters and somatic complaints specific to somatization and conversion disorder.
ANX (Anxiety)	Focuses on phenomenology and observable signs of anxiety with an emphasis on assessment across different response modalities.
ARD (Anxiety-Related Disorders)	Focuses on symptoms and behaviors related to specific anxiety disorders.
DEP (Depression)	Focuses on symptoms and phenomenology of depression.
MAN (Mania)	Focuses on affective, cognitive, and behavioral symptoms of mania.
PAR (Paranoia)	Focuses on symptoms of paranoid disorders and more enduring characteristics of paranoid personality.
SCZ (Schizophrenia)	Focuses on symptoms relevant to the broad spectrum of schizophrenic disorders.
BOR (Borderline Features)	Focuses on attributes indicative of borderline level of personality functioning including unstable interpersonal relations, impulsivity, affective lability, and uncontrolled anger.
ANT (Antisocial Features)	Focuses on history of illegal acts and authority problems, egocentricism, excitement-seeking, lack of empathy and loyalty, and instability.
ALC (Alcohol Problems)	Focuses on problematic consequences of alcohol use and features of alcohol dependence.
DRG (Drug Problems)	Focuses on problematic consequences of drug use and features of drug dependence.

Figure 1

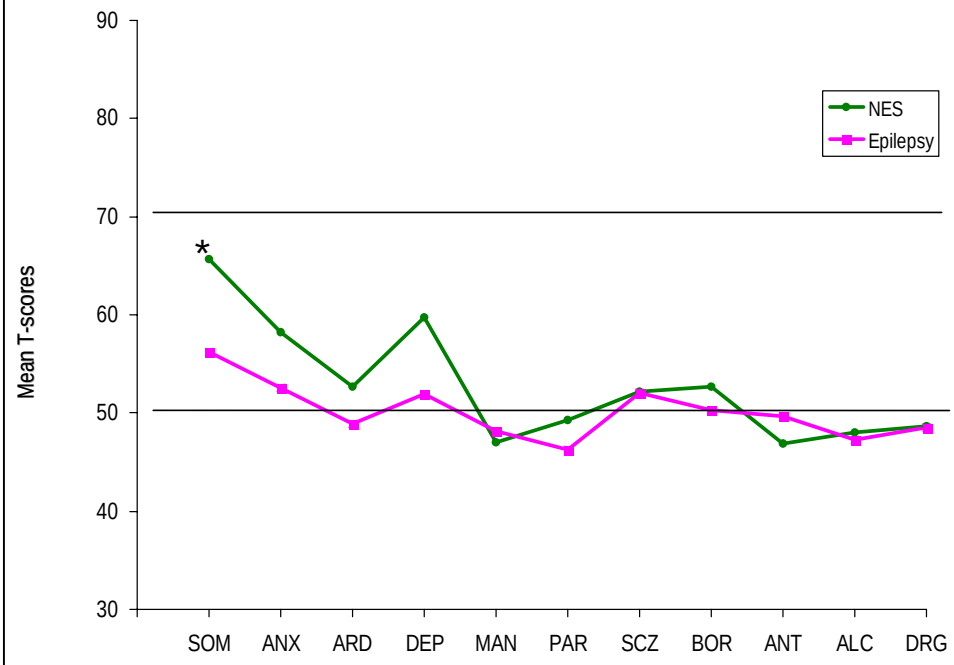

Figure 2

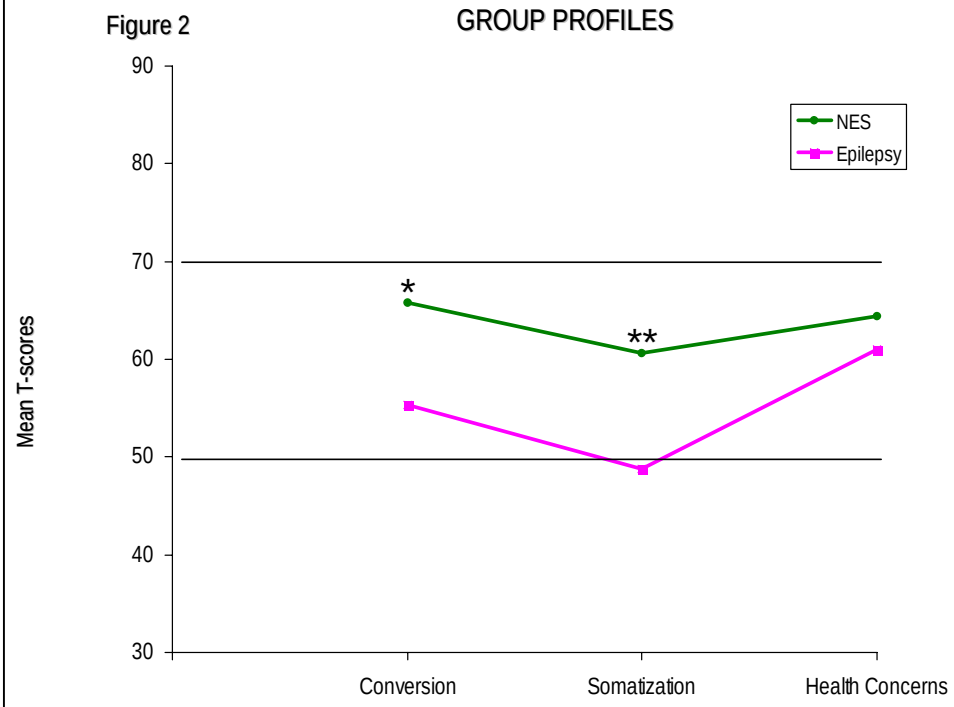

Table 3 CLASSIFICATION TABLE FROM DISCRIMINANT FUNCTION*

Actual Group Membership	Predicted Group Membership: NES	Predicted Group Membership: Epilepsy
NES	11	6
Epilepsy	1	22

Sensitivity = 96%
Specificity = 65%
Overall Correct Classification = 83%

***Based on Conversion Somatization and Health Complaints as Predictors.**
Wilks' Lambda = .64, $\chi^2(3, N=40) = 16.13$, p = .001