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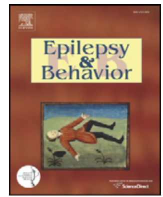

Specificity of psychopathology in temporal lobe epilepsy

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ABSTRACT

An investigation into the specificity of psychopathology in temporal lobe epilepsy was conducted using the Minnesota Multiphase Personality Inventory second edition (MMPI-2) profiles. Consecutive series of patients with left temporal lobe epilepsy (n = 49) and those with right temporal lobe epilepsy (n = 45) were compared with patients with other forms of epilepsy (n = 46) and other heterogeneous neurological conditions (n = 69). The investigation focused on the Clinical, Content, and Subscales scales that resembled descriptions of the Interictal Dysphoric Disorder symptoms and Temporal Lobe Epilepsy Personality Traits. Patients with right temporal lobe epilepsy and those with left temporal lobe epilepsy did not have different patterns of scale elevation, nor did they have clinical elevations compared with patients with other types of epilepsy or neurological controls. The MMPI-2 scales that resemble descriptions of the Interictal Dysphoric Disorder or Temporal Lobe Epilepsy Personality Syndrome were not elevated in either group of patients with temporal lobe epilepsy compared with the group of patients with non-temporal lobe epilepsy or heterogeneous neurological controls. This study adds to the mounting body of empirical research that has used standardized measures and matched groups, but failed to detect a special affinity between psychopathology and temporal lobe epilepsy.

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1. Introduction

The study of psychopathology in epilepsy, in particular, temporal lobe epilepsy (TLE), has a long and controversial history. The focus of the debate has changed over the years with issues of interest including the effect of laterality, the presence of personality traits, the development of questionnaires, and, currently, a trend towards developing diagnostic criteria. Recent papers have discussed the possibility of a bidirectional link between epilepsy and psychiatric disorders, which has rekindled a debate regarding the likelihood of an organic etiology for the psychopathology reported in patients with epilepsy [1–3]. It is well-known that persons with epilepsy have a higher incidence of psychological distress than the general population [4], as lifetime prevalence has been estimated at approximately 70% for DSM-III Axis I diagnoses [5] and 18% to 21% for Axis II diagnoses [6,7]. Evidence for a distinct relationship between TLE and psychopathology has been accumulating since Flor-Henry's (1969) paper on TLE and psychosis, and it remains a relationship of continuing interest [8,9]. Recently, it has been hypothesized that epilepsy and depression share pathogenic mechanisms which could account for the higher incidence of psychopathology in TLE [10]. A source of controversy remains as to whether there are distinctive patterns of psychological disturbance in TLE, namely the Interictal Dysphoric Disorder and TLE Personality Syndrome.

It has been suggested that the Interictal Dysphoric Disorder is the single most prevalent psychological complication in epilepsy [11]. Descriptions of the Interictal Dysphoric Disorder date to Kraeplin's early work in 1923. However, there are few systematic studies of Interictal Dysphoric Disorder [12], which is described as a pleomorphic affective disorder in which there are intermittent episodes involving at least three of the following symptoms: depressive mood, anergia, irritability, pain, insomnia, euphoric mood, fear, and anxiety [11]. Kanner and Nieto suggested that somatic symptoms should be added to the description of Interictal Dysphoric Disorder [13]. Others suggest that Interictal Dysphoric Disorder is a dysthymic or dysphoric mood condition [14]. Mula et al.'s recent study excluded patients on psychotropic medications or receiving psychotherapy in the last year but still found that 9.8% met the criteria for the Interictal Dysphoric Disorder. They noted, however, that the Interictal Dysphoric Disorder is a “homogeneous” construct that is not only observed in people with epilepsy, but also seen in other disorders such as migraine [15].

Another controversy relates to whether there are differences in the presentation of psychopathology in persons with left versus

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right TLE. Kalinin and Polyanskiy suggested that an organic affective disorder was seen more frequently in persons with right TLE, and organic anxiety disorder was more frequent in persons with left TLE, but the dysphoric disorder did not appear to have any particular association with laterality [16]. In addition, symptom overlap may make it hard to distinguish these subtypes of mood disorder. Studies that have used objective measures of psychopathology have been unable to identify differences in the psychological presentation of patients with left versus right TLE [14,17,18]. For example, Locke et al.'s 2010 study found no differences between patients with left TLE and those with right TLE on the Minnesota Multiphase Personality Inventory second edition (MMPI-2) Clinical Scales [18].

The related symptomatology of TLE Personality Syndrome (or the Gastaut–Geschwind syndrome [19]) also requires clarification. Waxman and Geschwind (1975) described the syndrome as featuring traits of deepened emotions, altered religiosity, sexual concerns, circumstantiality, and hypergraphia [20]. Pizzi et al. found that patients with TLE endorsed more symptoms of somatic complaints and depression on the Personality Assessment Inventory (PAI), but their scores were not elevated compared with those of patients with frontal lobe epilepsy [21]. The research with the Bear and Fedio Inventory, designed to assess TLE Personality Syndrome, has produced inconsistent results. People with TLE do not consistently score differently on the Inventory compared with people with other forms of epilepsy [22]. However, lateralization differences in TLE Personality Traits have been reported as patients with right TLE apparently have more emotional traits such as elation, obsessionality, viscosity, and sadness, and patients with left TLE being more prone to anger, paranoia, dependency, and passivity [23,24]. In contrast, Devinsky and Najjar's review noted no consistent differences between patients with left TLE and those with right TLE on the Bear and Fedio Inventory [25]. Locke et al. found no differences between patients with left TLE and those with right TLE on the Revised NEO Personality Inventory (NEO-PIR) [18].

One interpretation of the recent studies on the relationship between TLE, laterality of focus, mood, and personality is that application of objective and standardized measures of psychopathology, for example the PAI [21] and the NEO-PIR and MMPI-2 [18], has been unable to support the presence of a distinct pattern of psychopathology in temporal lobe epilepsy. Advocates of the Interictal Dysphoric Disorder and TLE Personality Syndrome would argue that a more tailored approach is required, such as specialized or targeted questionnaires and interviews. To date, however, no study has used detailed descriptions of the Interictal Dysphoric Disorder and TLE Personality Syndrome and systematically compared symptom endorsement from a validated inventory of psychopathology.

To evaluate the presence of the Interictal Dysphoric Disorder, MMPI-2 Clinical Scales were identified, in particular, the scales related to depression and anxiety. Mula et al. [15] reported a convergent validity correlation of .638 between their Interictal Dysphoric Disorder Inventory scores and scores on the Beck Depression Inventory. If the reliability of the Interictal Dysphoric Disorder Inventory is estimated at .7 and the reliability of the BDI is .837 [26], the disattenuated convergent validity correlation between these tests is approximately .84 [27]. This result suggests that the Interictal Dysphoric Disorder Inventory measures a similar trait as the Beck Depression Inventory and other well-validated measures of depression, including specific MMPI-2 scales. To investigate the TLE Personality Syndrome, 12 MMPI-2 scales were selected: two Clinical Scales and ten Subscales and Content scales. Table 1 provides a description of the TLE Personality Traits based on published descriptions [11,24,28] and the corresponding MMPI-2 scales measuring elements of the same traits. The focus on trait characteristics that is afforded by the MMPI-2 is a more comprehensive measure of the target constructs identified in diverse studies than the homogeneous measure with categorical diagnoses developed recently by Mula et al. These authors hypothesize that the psychopathology associated with epilepsy often has unique manifestations that are not reflected by conventional classification systems such as the DSM and ICD [15]. It has been shown that seizure symptoms do not alter the interpretation of MMPI-2 profiles [29], and the application of the MMPI-2 to the

Table 1
MMPI-2 scales related to the 'TLE Personality Syndrome' description and abbreviations.

Bear & Fedio Inventory traits and description	MMPI-2 scale	MMPI-2 Scale description
Emotionality: Emotions, sense of personal identity, for seriousness, writing tendency	D5	Irritability, ruminating, easily upset, angry and extrapunitive.
	Hy3	Functioning below par, distressed, need attention and reassurance.
	Mf	Sexual concerns, dimension of activity–passivity, breadth of the examinee's interest, conflict, sensitivity.
	Pa2	Emotional sensitivity, believing themselves as special and different from others, resentment.
	DEP3	Guilt, helplessness, negative self-concept, self-depreciation.
Conscience: Sense of law and order, feelings of guilt	D5	Irritability, ruminating, easily upset, angry and extrapunitive.
	Pa3	Ethically righteous, morally virtuous, naïve, hostile.
	ANG2	Irritability, dysphoric, inhibited, distress often accompanies these reactions.
Spirituality: Religious convictions	Pa3	Ethically righteous, morally virtuous, naïve, hostile.
	BIZ2	Unusual, odd and peculiar ideas.
Viscosity: Orderliness, interest in details, persistence and repetitiveness	Pt	Compulsivity, obsessiveness, dysphoria, anxiety, fear, worry, self-consciousness, agitation.
	OBS	Preoccupation with detail, indecision, worry.
Hyposexuality: Feelings about sex	Mf	Sexual concerns, dimension of activity/passivity, breadth of the examinee's interest, conflict, sensitivity.
	Pa3	Ethically righteous, morally virtuous, naïve, hostile.
Dependency:	Hy3	Functioning below par, distressed, need for attention and reassurance.
	LSE2	Dependence, submissive, passive.

Note: The Bear–Fedio Inventory consists of 100 true–false statements designed to sample interictal personality traits and behavior. The Bear–Fedio Inventory items have been grouped into 10 categories, six of which relate to personality traits rather than generally episodic states [28].

Descriptions of the MMPI-2 scales were derived from Nichols [41], Graham [56] and Butcher [53].

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