

## Personality profile in epileptic patient

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**Abstract: Objective:** The aim of the work was to study personality disorder in epileptic, finding out correlation between personality disorder and epilepsy. **Methods:** 86 participants in military psychiatric hospital are classified into two groups 43 of them had epilepsy (case), 43 no epilepsy (controls) by EEG finding & confirmed by clinical finding. **Result:** there's no significant difference in both groups (case, control) in demographics, there's statistically significantly younger age of presentation of epilepsy with longer duration of epilepsy than epileptic without personality  $p$  value 0.01. **Conclusion:** epilepsy is a neurological disorder may affect psychiatric state among epileptic patients and has more disordered psychiatric triad than healthy individuals.

[Ibrahim A. AlAfify, Hussein El.El-Shiekh, Mohammed R. El. Feky, Mohammed M. El. Hamady and Mohammed Abd. Alnaser A. Mourad. **Personality profile in epileptic patient.** *N Y Sci J* 2016;9(3):24-31]. ISSN 1554-0200 (print); ISSN 2375-723X (online). <http://www.sciencepub.net/newyork>. 5. doi:[10.7537/marsnys09031605](https://doi.org/10.7537/marsnys09031605).

**Keywords:** personality disorder, epileptic patient, EEG

### 1. Introduction:

Epilepsy is a central nervous system disorder in which nerve cell activity in the brain becomes disrupted causing seizures or periods of unusual behavior, sensation and sometime loss of consciousness<sup>(1)</sup>.

The prevalence of epilepsy varies substantially among different population in the united state, with estimates ranging from 5.0 to 11.5 cases of active epilepsy per 1000. While the method of identifying cases varies among these studies, the median estimate 9.1 cases per thousand. This estimate is nearly 30% higher than recent estimate of 7.1 per thousand derived from previous studies conducted in Europe and North America only<sup>(2)</sup>.

Epilepsy can have adverse effects on social and psychological well-being. These effects may include social isolation, stigmatization, or disability. They may result in lower educational achievement and worse employment outcomes. Learning difficulties are common in those with the condition, and especially among children with epilepsy. The stigma of epilepsy can also affect the families of those with the disease. Certain disorders occur more often in people with epilepsy, depending partly on the epilepsy syndrome present<sup>(3)</sup>.

Geschwind Syndrome, also known as Gastaut-Geschwind, is a group of behavioral phenomena evident in some temporal lobe epilepsy patients. It is named for one of the first individuals to categorize the symptoms, Norman Geschwind, who published prolifically on the topic from 1973 to 1984. There is controversy surrounding whether it is a true neuropsychiatric disorder. Temporal lobe epilepsy causes chronic, mild, interictal (i.e. between seizures)

changes in personality, which slowly intensify overtime<sup>(4)</sup>.

The patients fears and concerns regarding his or her seizures, perceived stigma and discrimination (particularly in the area of employment), and lack of social support are considered potential etiological (psychosocial) variables in the development of psychiatric disturbances<sup>(5,6)</sup>.

The relationship between epilepsy and personality disorders (PDs) is not often the subject of scientific investigation. Much research concentrates on psychiatric disorders, such as psychotic disorders, anxiety disorders and mood disorders, whereas PDS are less frequently studied in epilepsy. Most of the literature concerning psychopathology in epilepsy fails to make the distinction between psychiatric disorders and PDs. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)<sup>(7)</sup> an axis II PD is an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment. An axis I psychiatric disorder is an illness appearing any time in life, with its own characteristic features, course and prognosis, which usually can be treated successfully.

Only few studies exist assessing PDs by means of standardized diagnostic instruments based on objective diagnostic criteria. Lopez-Rodriguez *et. al.*<sup>(8)</sup> used the Structured Clinical Interview for DSM-III-R PDs (SCID-II) for investigating PDs in 52 epilepsy patients. They found PDs in 11 patients (21%), especially cluster C disorders (15%). Avoidant and dependent PDs were the most common diagnoses.

Also, Victoroff<sup>(9)</sup> found axis II PDs in 11 subjects out of 60 epilepsy patients by using the patient version of the SCID. Personality disorder Not Otherwise Specified (NOS) prevailed. Manchanda *et al.*<sup>(10)</sup> investigated both DSM-III-R axis I and II disorders in 300 epilepsy patient who were candidates for epilepsy surgery. They found PDs in 18% of the patients, especially dependent and avoidant PDs. Also, Arnold and Privitera<sup>17</sup> found axis II PDs in 18% of the epilepsy patients using the epilepsy version of the SCID. The most common diagnosis was the avoidant PD, which was present in all patients.

**Aim of the work:**

- Evaluate the personality profile in epileptic patient.
- Finding out correlation between personality disorder and epileptic patient.

**2. Subject and Methods:**

- This is across sectional study. 86 participating will be recruited from the psychiatric military hospital and classified into two group, epileptic & non epileptic, include case of epilepsy attending the outpatient clinic in the military psych. Hospital under the study.
- Consent from the patient and approval from the ethical committee was obtained.
- Patient with learning disabilities or patient with other neurological deficits, younger than 18

years, pt. refuse to participate in the study were excluded.

- All epileptic patient (group1) (case) subjected to semi structural interview (socio demographic, substance user, onset, duration), SCIDII, EEG (group 2) (control) subjected to semi structural interview. SCID II

**Statistical analysis:**

The collected data were tabulated and statistically analyzed to evaluate the difference between both groups under the study as regard different parameter, calculation were done using statistical software package for social science (spss). Continuous variable were expressed as mean and standard deviation  $\pm$ SD " Student t " test was used to compare two groups of data, significant variable on univariate analysis were tested in multivariate logistics regression.

**3. Result**

Study case/ control that enrolled 86 participating and they are divided into two groups were diagnosed to be epileptic (case) group 1, and other non epileptic (control) group 1 the mean age of studied population was  $22.9 \pm 3.25$ .

**Demographics**

Both groups were selected matching in their demographic data (age, sex, Occupation, marital state, educational level) with no significant difference between Both groups as shown in table (1):

**Table(1) Demographic data of case and control group**

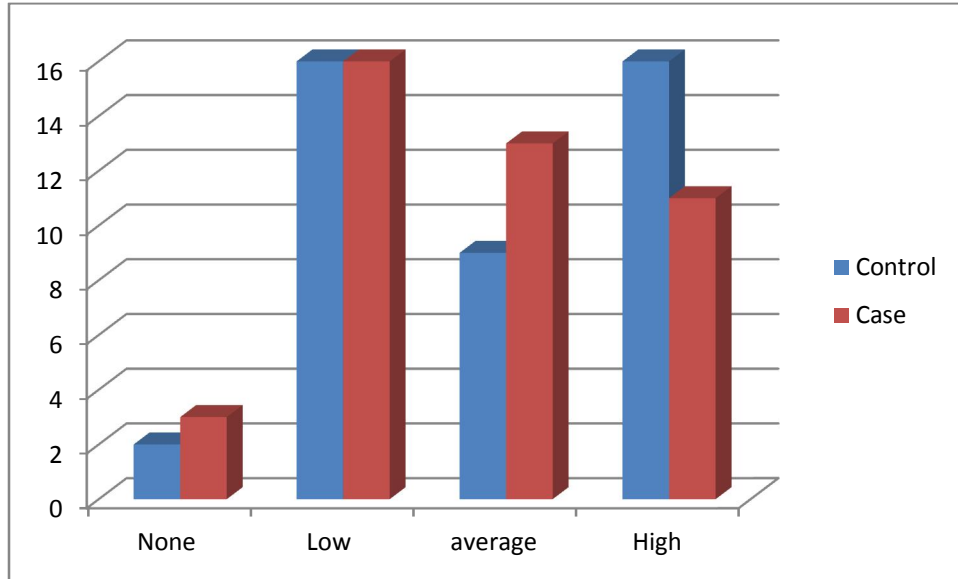
Demographic	Control (n=43)	Case (n=43)	P value
age	43	43	0.9
Male gender	43	43	1
Occupation	43	43	1
Married	28	27	0.5
Smoking	23	19	0.2
educational level (moderate)	9	13	0.6

**Educational level:**

Our study showed Educational level of our cases mostly of them were of low Educational level=16 equal to both groups followed by cases of moderate Education with no significant difference between both groups as shown in table (4) and figure (3).

**Table (4) Educational level among case and control (both groups.),(none= illiterate, low=primary school,moderate=secondary school, high= high Education).**

Educational level	Control (group 2)		Case (group 1)		P Value
	number	percent	number	Percent	
None	2	4.6	3	6.9	0.6
Low	16	37.2	16	37.2	
moderate	9	2	13	3	
High	16	37.2	11	25	



**Figure (3) Educational level among both groups**

**Epilepsy**

As regards the case group who were diagnosed clinically and confirmed by EEG to be epileptics. we studied their epilepsy by clinical history as regards age of onset of epileptic attack, duration of epilepsy, frequency of epileptic fits, EEG finding, receiving treatment or not. There were accompanying headach (as an aura or associated symptom) as well as family history of epilepsy.

**Age, duration of epilepsy**

Case (group1) shows mean age of onset of epilepsy was  $18.41 \pm 2$ , with mean duration value of illness =  $4.5 \pm 2.2$  years as shown in table (6).

**Frequency of epileptic fits**

Among our case group mostly of our cases were having more than one fit per month n=24 equal 55%

**Table (6) Onset and duration of epilepsy**

	N	Minimum	Maximum	Mean	Std. Deviation
Age at onset of epilepsy	43	15.00	23.00	18.4186	2.00860
Duration of epilepsy	43	2.00	9.00	4.5000	2.25832

**Table (7) Frequency of epileptic fits**

Frequency of epileptic fits	One or less fits per month		More than one fits per month	
	number	percent	number	percent
	19	45	24	55

**EEG**

We investigate our cases by doing EEG which was positive (pathological) for all cases and we

divided them according to EEG findings to cases with TLE n= 23 (53.5%), non TLE (generalized, focal, JME) n= 20 (46.5%) as shown in table(8).

**Table (8) TLE and non TLE**

EEG	TLE		Non TLE	
	number	percent	number	percent
	23	53.5	20	46.5

**Personality disorder:**

We assessed Personality disorder among both our cases and control groups using SCID 2 and confirmed by finding clinically and showed that 32 patient from our cases group were having Personality

in comparasion to only 11 patient of the control group werw having Personality disorder with significant statistical sign between both groups with P value of 0.0001 as shown in table (12), Figure (7).

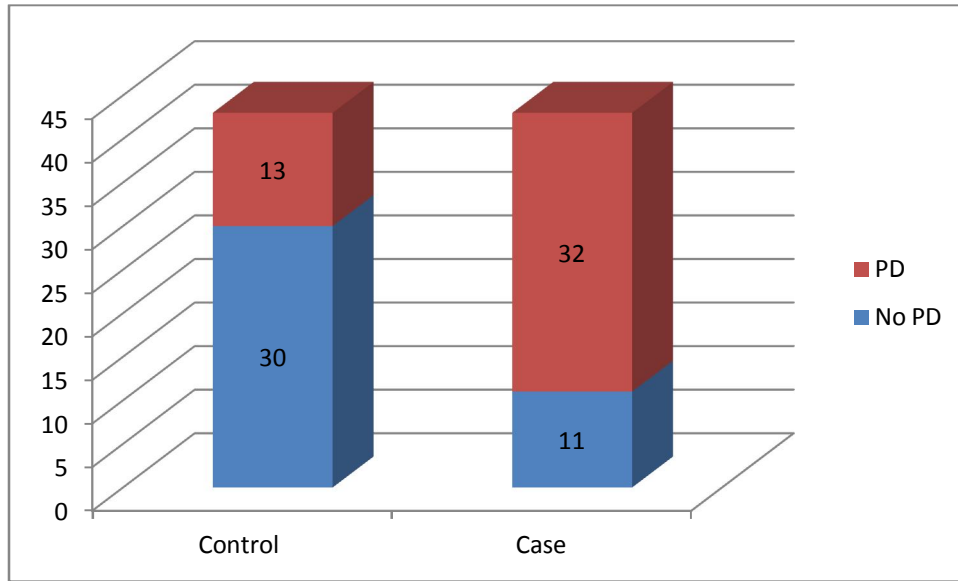


Figure (7) Higher number of Personality in case than in control group

Table (12) Higher number of Personality in case than in control group

	group		<i>P</i>
	Control	Case	
No PD	30	11	0.0001
PD	13	32	

Distribution of different Personality disorder found among case and control groups show 52% were categorized to have PDs and around 48% have

not PDs and that by SCID 2 as shown in table (13), Figure (8).

Table (13) Distribution of PDs among both groups

	Frequency	Percent
No PD	41	47.7
PD	45	52.3
<b>Total</b>	<b>86</b>	<b>100.0</b>

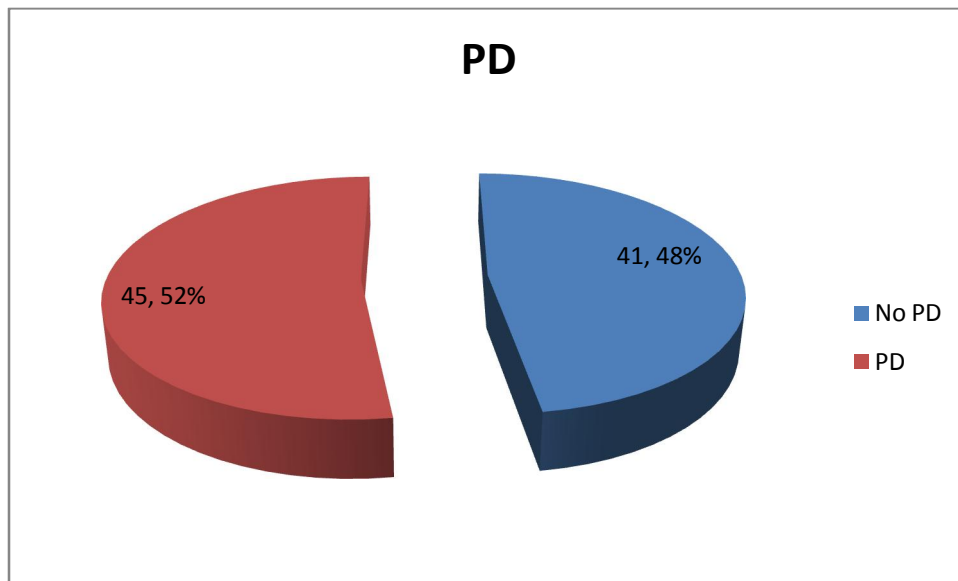


Figure (8) Distribution of PDs among both groups

The most common PDs found among our cases were depressive, paranoid, schizoid, narcissistic equal ratio 6 cases for each PDs and shown in table (14).

**Correlation between PDs**

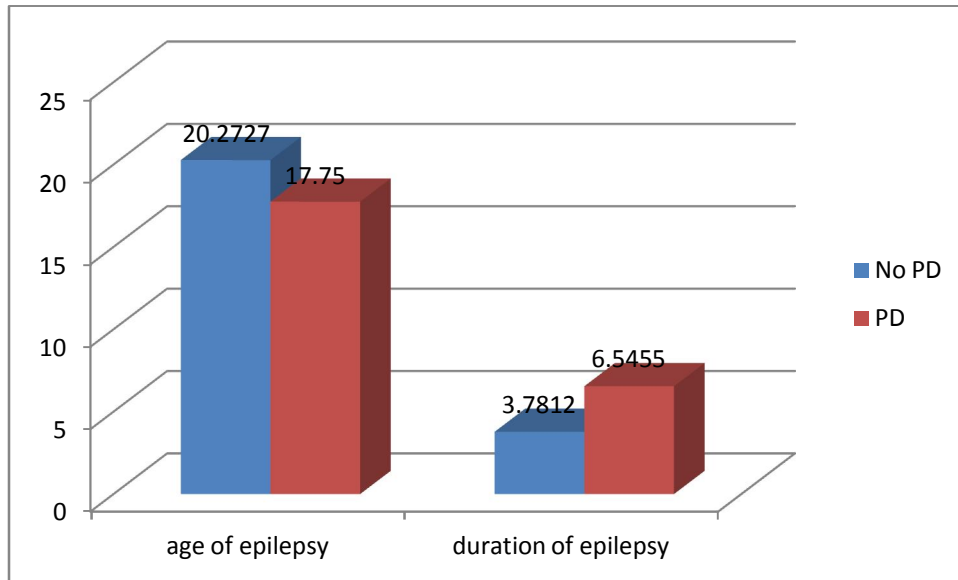
Found and other clinical profile of epilepsy. Epileptic group with PDs have shown a statistical significantly younger age of presentation of epilepsy with longer duration of epilepsy and more frequency of attack per month than epileptic patients without PDs as shown tables (15, 16) figures (9, 10).

**Table (14) Different types of personality in both groups With statistical high significant different between case and control groups as regards different PDs.**

	group		Total
	0	1	
No PD	30	11	41
Avoidant	0	1	1
Passive aggressive	0	1	1
Depressive	2	6	8
Paranoid	0	6	6
Schizotypal	0	5	5
Schizoid	0	6	6
Histrionic	5	1	6
Narcissistic	6	6	12

**Table (15) Statistical sign different as regard age of onset, duration among case in comparison to patient with no PDs**

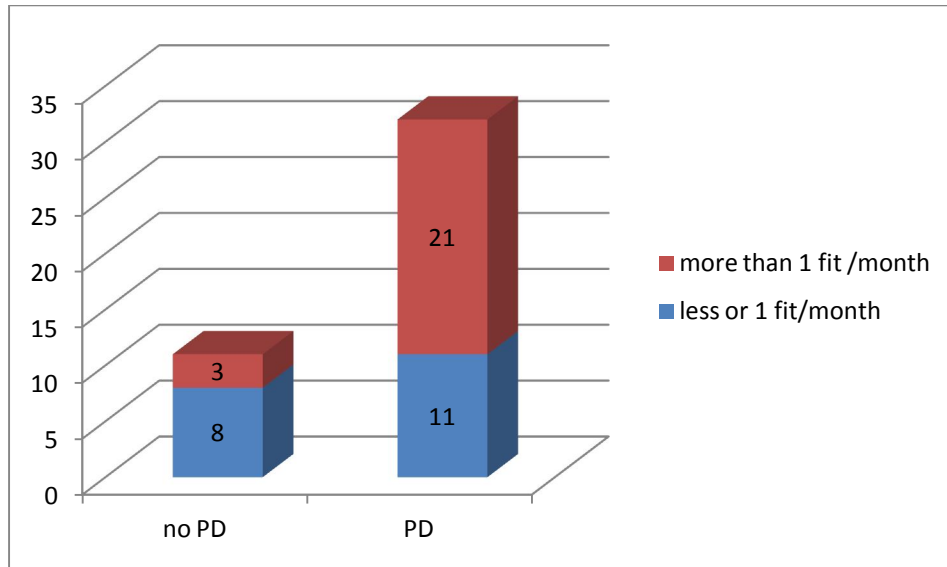
	PSD	N	Mean	Std. Deviation	P
Age of epilepsy	No PD	11	20.2727	1.90215	0.001
	PD	32	17.7500	1.45912	
Duration of epilepsy	No PD	11	3.7812	1.40814	0.014
	PD	32	6.5455	3.04512	



**Figure (9) Statistical sign different as regard age of onset, duration among case in comparison to patient with no PDs**

**Table (16) Frequency of attack per month with significant statistical sign.**

	PSD		P
	No PD (11)	PD (32)	
One or less fit per month	8	11	0.038
More than one fit per month	3	21	

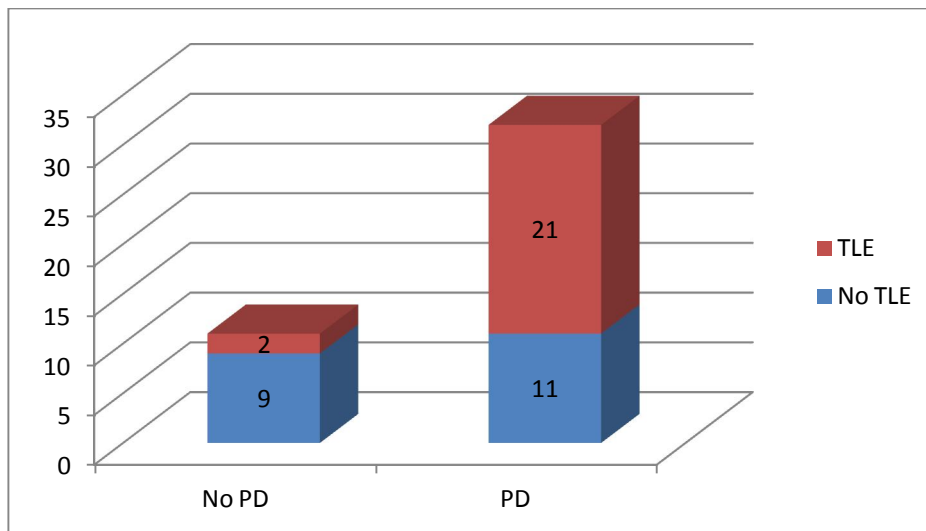


**Figure (10) Frequency of attack per month with significant statistical sign.**

By comparing the frequency of temporal lobe epilepsy (TLE) in patients with and without PD among epileptics; there was a significantly higher frequency in epileptic patients with PD for TLE than those who haven't PD as p value was 0.012 as shown in table (17) and figure (11):

**Table (17) Higher frequency in epileptic patient with PDs for TLE than who have not PDs**

	PSD		<i>p</i>
	No PD	PD	
No TLE	9	11	0.012
TLE	2	21	



**Figure (11) Higher frequency in epileptic patient with PDs for TLE than who have not PDs**

**4. Discussion**

The international League Against Epilepsy (ILAE) and the International Bureau for Epilepsy (IBE) definition of epilepsy that was updated by the year 2015 as a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures and by the biologic, cognitive, psychological, and social consequences of this condition. This

association may reflect the anatomical and neurobiological source of both epileptic seizures and the behavioral manifestations.

Indeed, there is a general agreement that the incidence of neurobehavioral disorders is higher in patients with epilepsy than in the general population, although some authors argue that this apparent overrepresentation is due to sampling errors or

inadequate control groups. Many, but not all, authors also accept the proposition that the link between neurobehavioral disorders and temporal lobe or complex partial epilepsy is particularly strong.

The risk of psychosis in patients with epilepsy may be 6-12 times that of the general population, with a prevalence of about 7-8%, in patients with treatment refractory temporal lobe epilepsy, the prevalence has been reported to range from 0-16%<sup>(11)</sup>. In other older reviews by Clinical Interview Schedule (CIS) Psychiatric disorders in 19% of epilepsy patients and 15% of controls and there was insignificant difference between both groups<sup>(12)</sup>.

The chronicity of epilepsy is an important factor in the predisposition of these patients to psychiatric disturbances, but that brain dysfunction can pose an additional hazard, probably related to the involvement of the limbic system<sup>(13)</sup>.

In our study there was a significantly higher frequency of personality disorders than control participants 74% vs 30% respectively that was concordant with many previous studies with variable percentage of agreement.

It is estimated that 20-30% of patients with epilepsy have psychiatric disturbances<sup>13</sup>. Of patients with intractable complex partial seizures, 70% may have 1 or more diagnoses consistent with the *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition (DSM-III-R)*; 58% of these 3 patients have a history of depressive episodes, 32% have agoraphobia without panic or other anxiety disorder, and 13% have psychoses<sup>(14)</sup>.

In our study, out of previously mentioned factors we found that personality disorders showed a significantly higher incidence among patients who had a longer duration of epilepsy, higher number of attacks per month, and presented with TLE at a younger age.

In our study we found the most common PDs among our cases were depressive, paranoid, schizoid, narcissistic in equal ration.

Epilepsy continues to be a common and important health issue, with a morbidity rate of 4% in China<sup>(15)</sup>. Although there has been rapid development in epilepsy drug therapy, the disease can still adversely affect patients' overall health. The disorder is similar to other chronic illnesses, in that medical management can often control but cannot always cure the disease. There have been other studies on the quality of life, psychosocial adjustment, and personality of patients with epilepsy in various countries<sup>(16)</sup>. In China, there have been studies about personality and psychosocial well-being<sup>(16,17)</sup>. But few have focused on the disorder's effects on patients' life events, social-support systems, general well being, and behavior patterns. This study, which includes

these aspects, aims to contribute to the developing body of research on the quality of life of patients with epilepsy in China.

In our study as well as found that the prevalence of TLE is much higher in patient with personality disorder than patient without personality disorder as value was 0.012.

The relationship between psychopathology and epilepsy has been extensively studied. Patients with epilepsy suffer from a high degree of mood and anxiety disorders<sup>(18)</sup>. The results of this study show that patients with epilepsy also exhibit more PD traits compared with a control group from the general population. The degree to which a patient exhibits the traits of a PD was determined by conceptualizing each PD as a continuum. Most other studies use categorical diagnoses, which are only assigned when a minimum number of criteria have been met.

These different approaches limit the comparison of the study results.

In concordance with studies by Lopez-Rodriguez *et al.*<sup>8</sup>, Manchanda<sup>10</sup>, and Arnold and Privitera<sup>9</sup>, we found higher dimensional scores for the epilepsy patients on the cluster C PDs dependent and avoidant. This corresponds with the clinical impression that patients with epilepsy are frequently seen as unstable, introvert and anxious people, who avoid personal contact for reasons of uncertainty. We also found higher dimensional scores for a number of other PDs that are not previously described in literature. If we compare the results of the epilepsy patients with data of psychiatric patients<sup>20</sup>, the mean dimensional scores for the epilepsy patients are low. On the other hand, when we compare our results with those found in asthma outpatients<sup>21</sup>, (also a chronic medical condition) patients with epilepsy score much higher. These results suggest that the higher scores found in epilepsy patients are not the consequence of a chronic medical condition *per se*. The significance of this outcome is not quite clear. Probably, a relationship exists between PD traits and epilepsy-related variables.

Besides the severity, also a longer duration of epilepsy is supposed to have an influence upon the development of maladaptive personality traits. For some PD traits we found a positive association with both a longer duration and a later age at onset of epilepsy. We expected, however, to find a negative association between the age at onset and the PD traits, because we think that onset of epilepsy in the early phase of personality development will be crucial. The contribution of age at onset of epilepsy in PD traits should be further investigated.

An important benefit of our study research is that it helps to present the many known suspected etiological variables in a manner that encourages new

and more empirical research. It should be kept in mind that these previously mentioned variables (age of presentation, refractoriness to treatment, TLE, chronicity) may not be independent of one another, but may instead be highly intercorrelated and reflect a more general factor for example, severity of epilepsy. The severity of epilepsy can be deduced from such variables as the presence of multiple seizure types, early age at onset, poor seizure control, and symptomatic etiology.

From the many studies that have been performed on psychiatric co morbidity in epilepsy, it can be learned that there is a need for well-controlled studies using representative patient groups and valid and standardized diagnostic instruments.

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