ASSESSMENT OF ANXIETY SENSITIVITY AND STRESSFUL LIFE EVENTS AMONG EPILEPTICS

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Introduction

Epilepsy is a serious neurological disorder and is a topic of major concern among researchers. It is a common clinical entity in neurology clinics. The understanding of the genetics of epilepsy has undergone a sea change prompting re-classification by the International league against epilepsy recently. Epilepsy is more likely to occur in young children or people over the age of 65 years; however, it can occur at any time. As a consequence of brain surgery, epileptic seizures may occur in recovering patients too. In developed countries, prevalence of epilepsy in those >65 years has been estimated to be >0.9%, higher than those in the first two decades of life, a pattern similar to that of incidence. For those >75 years, prevalence could be as high as 1.5 %. (Hauser, 1998). There are a number of biological causes of epilepsy. In young infants anoxia ischemia before or during birth, intracranial birth injury, metabolic disturbances (such as hypoglycemia, hypocacemia and hypomagnesemia), congenital malformation of the brain and infections; and in young adults, tumors, drug and alcohol abuse; and in elderly cerebrovascular disease are the most common causes of seizures. But over the years there has been much conjecture about the role of psychological factors of epilepsy. A number of researches resulted in an associated between epilepsy and a variety of psychological and social difficulties. Clinicians have observed that

epileptic seizures tend to become more frequent when the patients are confronted with challenges and problems which they do not feel competent to handle.

William and Caveness (1955) investigated emotional and psychological factors in epilepsy. It is noted that emotional stress may act as a precipitant to individual seizures. Psychosocial problems may be more disabling than the seizures themselves. There is another opinion that the emotional responses are associated with other ictal pleasures (Williams, 1956). A "see-saw" relationship between seizures and psychologic state was also observed (Liddell, 1953). It is also found that when the seizures are controlled by means of medication psychologic difficulties increase. With decreased medication and more seizures psychological difficulties diminish (Liddell, 1953). Another report on psychological factors involved in bizarre seizures. Results showed marked psychological difficulty existed before the onset of the disease (Chafetz and Schwab, 1959).

Anxiety Sensitivity among Epileptic Patients

The concept of anxiety sensitivity was first proposed by Reiss and McNally (1985). Anxiety sensitivity refers to the fear of anxiety as proposed by Goldstein and Chambless (1978) and by Reiss and McNally (1985) of Ohio University. It is the fear of anxiety related sensations arising from the belief that anxiety and anxiety related sensations have harmful somatic, social or psychological consequences. (Reiss, 1991; Reiss & McNally, 1985; Reiss, Peterson, Gursky & McNally, 1980). Fenichel (1945) observed that some people with anxiety disorders develop a ‘fear of anxiety’ and simultaneously ‘a readiness to become frightened easily’.

As epilepsy is characterized by uncertainty, often patients are caught unaware. The seizures are so unpredictable that it creates a fear in the patient’s mind. This nagging fear

makes the person anxiety prone which results in physical and mental tensions. There are so many researches evidencing the fact that anxiety is so common amongst epileptics also (Biraben, Taussig, Thomas, Even, Vignal, Scarabin, & Chauve, 2001; Kennar, 2002; Manchanda, 2002).

The symptoms of depression and anxiety are common among pediatric patients with epilepsy and appear to be overlooked by care providers (Ettinqer et al., 1998). Anxiety disorder was the most frequent diagnosis among patients with a diagnosis of affective or anxiety disorders (Caplan, Siddharth, Gurbanis, Hanson & Shields, 2005). Anxiety can occur at different phases of a seizure event and present with diverse clinical symptoms similar to those seen in panic, obsessive compulsive generalized anxiety disorder (Scicutella & Ettinger, 2002). Epileptics significantly differ with normals on anxiety and depression, as well as the make a strong association between perception of seizure control with depression and anxiety (de Souza & Salgodo, 2006). An increase in anxiety is significantly associated with a number of factors such as the presence of co morbid learning or behavioral difficulties, ethnicity and polytherapy (Oguz et al., 2002; Williams et al., 2003).

However some evidences suggest that the children and adolescents with epilepsy have higher frequency of depressive symptom in comparison to anxiety symptoms than the general population of healthy children and that this is independent of their mothers' symptoms (Baki et al., 2004). Another evidence suggests no significant difference in anxiety scores controlling for seizure frequency and epilepsy duration (Cramer, Brandebburg & Xu, 2005). The relationship between anxiety disorders and epilepsy is complex. Despite the high prevalence of anxiety disorders in patients with epilepsy, there are no systematic treatment studies or evidence base guidelines for best treatment practice. Nevertheless, a practical approach based

on the temporal relationship between anxiety and epileptic seizures allows clinicians to consider appropriate treatment strategies to reduce the psychiatric co-morbidity in patients with epilepsy (Beyenburg et al., 2005). On the other hand some researches indicate that the burden of self reported depression and anxiety among adults with self reported epilepsy or seizure disorder and suggest that health care providers should attempt to determine whether adult patients with epilepsy have any psychiatric co morbidity potentially to improve health outcomes (Kobau, Gilliam & Thurman, 2006). Therefore, recognition and treatment of comorbid depression and anxiety is an important consideration in improving quality of life in epilepsy (Johnson, 2004).

Stressful Life Events among Epileptic Patients

A life event or situation, favorable or unfavorable (Selye's distress, 1956), occurring by chance, generates challenges to which the person must adequately respond. Many stressors occur over a prolonged period of time or have long lasting repercussions. These stressful life events are those whose advent are either indicative of or require a significant change in the ongoing life patterns of the individual. These stressful events require us to adapt and to cope with them. Holmes and Rahe (1967) believed that the events that are not negative or adverse or stressful but positive and supportive also play the role of stressful life events. Some of these are births, getting married, civil partnerships, going to school, getting a job, moving home, etc. Such patterns my also influence physiological functioning.

The role of these stressful life events in the etiology of various illnesses has been a prominent field of investigations in the last decade, although the possibility of a connection between stress and illness has long been suspected (Kobasa, 1979). There is considerable disagreement among the researchers, however as to the nature of this role. Clustering of life

events are sufficient to be labeled as "crisis" and will have "etiologic" significance as a necessary but not sufficient cause of illness and accounts in part of the time of disease onset. Stress itself does not cause disorder but may decrease the efficiency of body immune system resulting in increase in the person's susceptibility to disease. In explaining the etiological role of life stress crisis, Homes and Masuda (1974) postulated that life change events, by evoking adaptive efforts by the human organism that are faulty in kind and duration, lower "bodily resistance and enhance the probability of disease occurrence".

It is widely accepted that stress can trigger seizures for many people with epilepsy. It may appear to play a precipitating role amongst epileptic patients. Evidences also suggest that seizures occur more frequently when the patients are stressed (Temkin & Davis, 1984; Webster & Mawer, 1989; Mattson, 1991; Haut, Vouyiouklis & Shinnar, 2003). Stress is the most frequent trigger of seizures, and is linked with sleep deprivation and fatigue (Frucht, Quigg, Schwaner & Fountain, 2000). Psychosocial predictors of psychopathology in epilepsy is associated with increased perceived stigma, elevated number of stressful life events, poor adjustment to epilepsy, financial stress, vocational problems, external locus of control and an earlier onset of epilepsy (Hermamm et al., 1990). Some gender based studies suggest that unpleasant events are significantly associated with seizure increase only in men (Neugebauer et al., 1994).

However there are evidences that epileptics with and without psychiatric diagnosis do not differ on the perception of presumptive life event and disability (Cyriac, Kumar, Kunhikoyamu, & Girija, 2002). But stress is commonly believed to precipitate seizures in some patients with epilepsy, but direct examination of this assumption is problematic because of the difficulty in defining vague factors such as 'emotional stress' (Neufeld et al., 2005).

Changes in arousal in the brain lead to changes in excitability, which may affect neuronal firing, particularly of those neurons that surround an epileptic focus and may affect further propagation of seizure discharge (Lockard, 1980). Other factors related to stress may be important-such as lack of sleep, consumption of alcohol, omitting drugs (deliberately or otherwise), and, most importantly, involuntary hyperventilation (Mattson, 1991). Epilepsy itself is stressful, and many patients become afraid of their seizures, so that a vicious circle of fear begetting seizures and seizures begetting fear is set up (Fenwick, 1991). Moreover, evidences also suggest that epileptic patients have more negative family-related problems, compared with the normals which they perceive as stressful life events. The patients with epilepsy are also more likely to lie, their emotions are more changeable, and their character more introverted (Zhu, Jin, Xie, & Xiao, 1998).

In view of this, the main objective of the study was to investigate the extent to which epileptic patients are anxiety sensitive in comparison to the normal population and to compare epileptic patients and normals with regard to stressful life events.

Hypotheses

The first hypothesis predicted that the level of anxiety sensitivity will be high amongst the epileptics in comparison to normal adults. The second hypothesis predicted that epileptic patients will experience more stress due to life events than normal adults.

Method

Sample

The study comprised of 300 respondents. Out of this total sample 150 were diagnosed patients of epilepsy (clinical group) and 150 were normal adults (control group). There were

86 males and 64 females in the clinical group and 57 males and 93 females in the control group. Purposive sampling design was used for data collection.

The clinical group was drawn from the neurology Out Patient Departments of different hospitals. The average age of the patients was (M=27.45) and for normals it was (M=31.55). Most of the patients belonged to the lower middle class and middle class families. Whereas control group was from middle class and higher middle class families. The average family income of the clinical group was (M=13088) per month, however, it was (M=39995) per month for normals. The average duration of illness was (M=80) months in case of clinical group. As far as educational profile is concerned the obtained information shows that among epileptics 12 patients (8.0%) were illiterates, 25 patients (16.7%) were educated upto primary level, 32 (21.3%) were educated upto high school, 48 patients (32%) were educated upto intermediate, 24 (16.0%) were graduates, 8 (5.3%) were postgraduates and 1 (.7) patient fell in the category other then these educational levels. However in the control group none fell in the category of illiterates. Of these 150 normal adults 1 respondent (.7%) was educated upto primary level, 2 (1.3%) were educated upto high school, 4 respondents (2.7%) were educated upto intermediate, 19 (12.7%) were graduates, 102 (68%) were postgraduates and 22 (14.7%) fell in the category other then these educational levels. The educational profile of the total sample shows that amongst the clinical group most of the patients were educated upto intermediate whereas in the control group most of the respondents were postgraduates.

Procedure

Prior to the data collection, visits of different neurology outpatient departments of various hospitals were done. After taking permission from the respective heads of the departments the neurologists were contacted to provide the information regarding the patients.

After the patients were identified they were approached for the study. After establishing rapport with them they were briefly told about the study. Once they gave their consent, they were made to relax and the questionnaires were administered. The patients were assured that the information given by them will be kept confidential and their responses would be used only for research purposes. Subjects were encouraged to give honest responses. The patients who were illiterate were administered the questionnaire orally and the responses were recorded by the researcher. On an average respondents took 30-35 minutes to respond on the questionnaire. When the respondents finished answering the items, the researcher thanked the respondents for their cooperation and for sparing their time for the study.

Measures

Anxiety Sensitivity Index (ASI)

The ASI (Reiss, Peterson, Gursky & McNallay, 1986) is an extensively developed, established and most widely used and tested instrument to measure the fear of autonomic nervous system and shown to have good psychometric properties (Peterson & Reiss, 1992). The age limit for ASI is 12 and more. The time taken in the administration of ASI is about 8-10 minutes. ASI is a 16 item self report questionnaire that taps content related to fears, worries and concerns about not only anxiety but also a person's fear of anxiety related to somatic sensations. Each item of ASI is rated on a five point scale ranging from "very little" to "very much". Very little (scored as 0), a little (scored as 1), some (scored as 2), much (scored as 3) and very much (scored as 4). The individual's ASI score is the summated score on all 16 items. The lowest possible ASI score is '0' and the highest score is '64'. The internal consistency of ASI is good with chronbach alpha ranging from .82 to .91 (Peterson & Phahm, 1999). Previously Peterson and Heilbronner (1987) obtained the alpha coefficient of .88 and

Guttman split half reliability of .85, for a sample of 119 college students who had identified themselves as being anxious. Alpha coefficient for this scale was reported .82 for a sample of 840 college students (Telch, Shermis & Lucas, 1989), .87 for combined sample of 275 college students and 52 patients with panic disorder or agoraphobia (Cox, Endler, Swinson & Norton, 1992); and .91 for 93 psychiatric out patients and .84 for 142 spider phobic college students (Taylor, Koch & McNallay, 1992). Test-retest reliability of the scale is reported to be .75. In the present study only 11 items from ASI were used and the chronbach alpha was .924.

The Schedule of Recent Experiences

Ten life events from the Schedule of Recent Experiences by Holmes and Rahe (1967) were used in this study with four response categories that are 6 months, 6-12 months, 1-1 ½ years and 1 ½ -2 years. The selected life events were- major changes in sleeping habits, death of a close family member, death of a close friend, major changes in health of a family member, new member in the family, major changes in financial state, major personal injury or illness, changes in social activities, trouble with colleagues or friends and serious illness of a friend. The life events were rated keeping in mind the experiences during the previous 2 years. The internal consistency of the scale was .85.

Results

Relationship between stressful life events and anxiety sensitivity among Epileptic Patients and Normal Adults

Table 1. ***Correlation between Stressful Life Events and Anxiety Sensitivity of epileptic patients and normals***

		Stressful Life Events	Anxiety Sensitivity
Stressful Life Events	1		.173*

Epileptics	Anxiety Sensitivity		1
	Stressful Life Events	1	.266**
Normals	Anxiety Sensitivity		1

Note. *p< .05 level, **p< .01 level

It is clear from table 1 that there is a significant positive correlation between stressful life events and anxiety sensitivity of epileptic patients (r=.173;p<.05). This indicates that greater stress due to life events results in an increase in anxiety sensitivity of epileptic patients.

The table further depicts a significant positive correlation between stressful life events and anxiety sensitivity of normal adults (r=.266;p<.01). This indicates when the stress due to life events increases anxiety sensitivity among normal adults also increases.

Table 2. ***Correlation between Demographic Variables, Stressful Life Events, and Anxiety Sensitivity of Epileptic Patients (n=150)***

	Gender	Marital Status	Age	Educational Status	Family Income	Onset of Illness
Stressful Life Events	.131	-.153	.098	.074	.031	-.102
Anxiety Sensitivity	.045	-.110	-.021	-.108	-.346**	.111

Note. ** P<.01

Table 2 shows that in case of epileptic patients family income is significantly and positively correlated with cohesion (r= .281; P<.01), expression (r= .299; P< .01), independence (r= .172; P< .05) which are dimensions of family environment. This indicates that as family

income increases it has a positive impact on feelings of cohesion, expression and independence in the family. Income was also positively related to subjective well being (r=.264; P<.01) but family income was significantly and negatively correlated with anxiety sensitivity (r= - .346; P< .01). This indicates that there is a strong but inverse relationship between these two variables. As family income increases, the person is likely to experience less anxiety sensitivity. Gender, marital status, age and educational status are found not significantly related to family environment. It appears that in epileptic patients these variables did not play much role in relation to family environment. These variables also found to be of no significant relation with stressful life events, anxiety sensitivity and subjective well-being.

Table 3. ***Correlation of Demographic Variables with Family Environment, Stressful Life Events, Anxiety Sensitivity, and Subjective Well-being of Normals***

	Gender	Marital Status	Age	Educational Status	Family Income
Stressful Life Events	-.009	-.095	.153	-.024	-.162*
Anxiety Sensitivity	-.065	-.045	-.012	-.052	-.159

Note. * P<.05

Table 3 depicts a significant positive correlation of gender with cognitive framework (r= .199; P< .05) and significant negative correlation subjective well being (r= -.180; P< .05). It shows that males and females differ on both, competitive framework an subjective well being. Marital status shows a significant negative correlation with family environment (r= -

.214; P< .01) and cohesion (r=.-.342; P<.01). It appears that unmarried respondents experience less cohesiveness and have less feelings of togetherness.

Family income has a significant negative correlation with stressful life events (r= -.162; P< .05). It indicates that there is a strong but inverse relationship between these two variables. It means when family income increases, the respondent is likely to experience less stressful life events.

Age and educational status are found to be of no significance in relation to family environment, competitive framework, cohesion, expression, independence, organization, stressful life events and anxiety sensitivity.

3.1 Intergroup Comparisons of Epileptics and Normal Adults

Table 4. ***Difference between Epileptics and Normal Adults on Anxiety Sensitivity and Stressful Life Events***

	Epileptics		Normals			
	Mean	SD	Mean	SD	*t*-value (*df*=298)	Significance
Anxiety Sensitivity	38.36	12.04	21.24	7.02	15.04	.000**
Stressful Life Events	15.80	7.63	4.50	6.95	13.40	.000**

Note. **p< .01 level

Table 4 shows that epileptic patients and normal adults significantly differ from each other on anxiety sensitivity (t=15.04; p<.01). It was found that epileptic patients were more anxiety sensitive (M=38.36) as compared to normal adults (M=21.24). Similarly both the

groups differ on the perception of stress due to life events also (t=13.40; p<.01). Epileptic patients were found to experience greater stress due to life events (M=15.80) in comparison to normal adults (M=4.50).

3.2 Intragroup Comparisons of Epileptics and Normal Adults

For a better understanding of how stressful life events impact the anxiety sensitivity of epileptic patients and normal adults, stressful life events was used for making groups. This was done to see whether both the groups showed difference in anxiety sensitivity on various levels of a particular variable, for example, whether epileptics from low income group differed in their well being in comparison to high income group.

Table 5. ***Impact of Stressful Life Events on Anxiety Sensitivity of Epileptic Patients and Normal Adults***

	Less Stressful Life Events (n=69)		High Stressful Life Events (n= 80)			
	Mean	SD	Mean	SD	*t*-value (*df*=148)	Significance
Epileptics	36.36	12	40.05	12.04	1.87	.451
Normals	1.58	.51	1.68	.47	.70	.276

It can be seen from table 5 that there is no significant difference between the epileptic patients perceiving less stress due to life events and those perceiving high stress due to life events on anxiety sensitivity. Similar findings were obtained in case of normal adults that is no significant difference was found between the normal adults experiencing less stress due to life events and those experiencing greater stress due to life events on anxiety sensitivity. This

implies that stressful life events have no impact on anxiety sensitivity of epileptic patients and normal adults.

Discussion

The present study attempted to see the impact of stressful life events on anxiety sensitivity of epileptic patients. On analyzing the relationship between anxiety sensitivity and stressful life events it was found that both epileptics and normals have a positive relationship between these two variables. It means that higher level of anxiety sensitivity increases the perception of stress due to the life events among both the groups but in this case the degree of the association between these two variables is stronger among normals (Table 2) as compared to epileptic patients (Table 1).

Results further indicated a significant difference between epileptics and normal adults on anxiety sensitivity amongst patients of epilepsy and normal adults reveals a significant difference with epileptics experiencing more anxiety sensitivity than normal adults (Table 3). This supports the hypothesis that the level of anxiety sensitivity will be high amongst patients of epilepsy in comparison to normal adults. Kimiskidis et al. (2007) reported that high seizure frequency, symptomatic focal epilepsy were independent determinants of trait anxiety. Ettinger, Weisbrot, and Nolan (1998) conducted a study on symptoms of depression and anxiety in pediatric epilepsy patients where no patients were identified with anxiety prior to the onset. However, 16% met criteria for significant anxiety symptomatology after the onset.

Anxiety is another common psychiatric comorbidity in chronic epilepsy (Manchanda 2002; Piazzini et al., 2001). Swinkels, Kuyk, DeGraaf et al. (2001) detected a 25% prevalence rate of anxiety in a Dutch sample of persons with epilepsy. Despite the frequency with which depression and anxiety occur among persons with chronic epilepsy, it has been shown

repeatedly that these and other psychiatric disorders are underrecognized and undertreated in both children and adults with epilepsy (Ettinger *et al., 1998*; Kanner & Palec, 2000). Oguz, Kurul and Dirik (2002) evaluated anxiety and depression in epileptic children and compared their results with that of a healthy control group to determine the relationship of anxiety and depression scores to epilepsy related factors. They reported that symptoms of depression and anxiety are common among epileptic children, especially during puberty.

In an evaluation of treatment of anxiety in epilepsy Scicutella and Ettinger (2002) found that the association of anxiety with epilepsy has been noted for centuries. Anxiety can occur at different phases of a seizure event and present with diverse clinical symptoms similar to those seen in panic, obsessive compulsive and generalized anxiety disorder. Johnson et al. (2004) conducted a study in the related impact of anxiety, depression and clinical seizure features on health related quality of life in epilepsy in which he found that the interictal anxiety and depression exert independent adverse effects on health related quality of life. Recognition and treatment of co morbid depression and anxiety is an important consideration in improving quality of life in epilepsy. Cramer and Brandebburg (2005) investigated differentiating anxiety and depression symptoms in patients with partial epilepsy and found that all health related quality of life domains worsen significantly with increasing levels of anxiety and depression. Regression analysis showed that anxiety and depression account for different properties of variance as predictors of health related quality of life. The data suggested that the patients may benefit from increased attention to the role of anxiety separately from depression.

In an examination of the symptoms of anxiety in pediatric epilepsy patients Ettinqer et al. (1998) administered the revised Child Manifest Anxiety Scale on 44 epileptic patients aged

7-18 years. 16% met the criterion for significant anxiety symptomatology. They concluded that the symptoms of anxiety are common among pediatric patients with epilepsy and appear to be overlooked by care providers. But some studies report that anxiety is more frequent compared with normal controls and patients with other chronic diseases (Perini et al., 1996; Kanner 2002; Gaitatzis et al. 2004). Researches reveal that epileptics suffer with greater anxiety (Astejada, Jamora, Ledesma & Bacsal, 2004). Beyenburg, Mitchell, Schmidt, Elger and Reuber (2005) also supported presence of anxiety among epileptics. Gomez et al. (2008) conducted a study on Clinical presentation of anxiety among patients with epilepsy and found that epileptics had a high score on anxious mood. The studies also show that in general, children with epilepsy display more anxiety symptoms than other problems such as acting out and conduct problems (Ott et al., 2001; Caplan et al., 2004). Adesina et al. (2007) found that the level of anxiety among younger epileptics was higher than among older epileptics and those who perceived the illness, as highly stigmatizing exhibit higher level of anxiety disorder than those who either perceives it as moderately or less stigmatizing. Goldstein and Harden (2000) concluded that co morbid anxiety and epilepsy offers a potentially rich nexus for theoretical and empiric investigation of the neurocircuitry and psychological mechanisms underlying each phenomenon.

Comparison on the perception of stress due to the life events reveals a significant difference between epileptic patients and normal adults (Table 3). Epileptics reported greater stress due to the life events than normal adults. This supports the hypothesis that epileptic patients will experience more stress due to the stressful life events than normal adults. Roth, Goode, Williams and Faught (1994) studied physical exercise, stressful life experience, and depression in adults with epilepsy. Structural equation analyses confirmed the fit of a path

model that included significant direct effects of exercise and stressful life experience on depression. These effects were independent of each other, and independent of the influence of other predictor variables, such as seizure frequency, age, and gender. Stressful life experience also had a direct unique effect on seizure frequency in the multivariate models. These results suggest that problems with depression, which are common in adults with epilepsy, are significantly lower among those who exercise regularly and avoid stressful life change.

In a comparative study of trauma-related phenomenon in subjects with pseudo seizures and subjects with epilepsy Fleisher et al. (2002) found that subjects with pseudo seizures exhibited trauma-related profiles that differed significantly from those of epileptic comparison subjects and closely resembled those individuals with a history of traumatic experiences. Haut, Vouyiouklis, and Shinnar (2003) investigated stress amongst epileptics and reported that 64% of their sample believed that stress increased the frequency of their seizures. This belief was significantly associated with a shorter duration of epilepsy. 32% of subjects had tried stress reduction modalities for epilepsy. Of those who had not, 53% were willing to try, and this willingness was significantly associated with seizures. Neufeld et al. (2005) studied stress and epilepsy in respect to the gulf war experience and found that stress is commonly believed to precipitate seizures in some patients with epilepsy. They concluded that epileptic seizures occurred weekly due to acute external emotional stress factor. In an investigation on seizure frequency and major life events in epilepsy in which group of 18 patients with chronic epilepsy were followed in an outpatient clinic for 1-6 years. Associations were found between life events and seizure frequency Most of the patients who showed an association experienced partial seizure (Webster & Mawer, 1989).

On the other hand Cyriac, Sureshkumar, Kunhikoyamu, and Girija (2002) reported that the difference in mean scores of presumptive stressful life events scale and disability assessment schedule between epileptics with and without psychiatric diagnosis was not statistically significant. But there are many anecdotal reports that stress increases the frequency of seizures (Mattson, 1991). Detailed studies of groups of patients with careful charting of life events and emotional states (Temkin & Davis, 1984, Webster & Mawer, 1989) show a definite relation between stress, emotional arousal, and frequency of seizures in some patients. For most patients greater stress leads to more seizures, although in a few the opposite is the case (Fenwick, 1991). In a study on psychosocial predictors of psychopathology in epilepsy it was found that stressful life events along with financial stress emerged as independent predictors (Hermann, Whitman, Wyler, Anton & Vanderzwagg, 1990).

Further when the epileptic patients and normal adults were divided on the grounds of the perception of lower and greater stress due to life events, the groups showed no significant difference in the experience of anxiety sensitivity. These findings are suggestive of no impact of stressful life events on anxiety sensitivity among both, patients with epilepsy and normal adults.

1. Conclusions

The findings of the study clearly highlight that the patients with epilepsy and normal adults differ on the level of anxiety sensitivity and the experience of stress due to life events. It appears from the results that the patients of epilepsy experience greater stress due to life events and are more anxiety sensitive. However, normal adults are supposed to perceive less stress due to life events and they are experience lower anxiety sensitivity.

2. Limitations of the Study

Though the present study brings about major information about epileptic patients, it has some boundaries. One major drawback of the study was that no attempt was made to distinguish the different types of epilepsy. The present study had 150 epileptic patients and 150 normal adults but on various demographic backgrounds they were not comparable as variations were seen in background details. Further it became difficult to explore the nature of linkages between variables due to the small sample. Epilepsy is a neurological disorder and it would be interesting to explore how the neurological functioning affects the psychological aspects of epileptics and in turn gets affected by it. In this study no attempt was made to address the neurological aspects. In order to get a holistic picture one needs to measure the neurological problems along with the psychological state of epileptic patients.

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