INTRODUCTION

Background of the Study

Epilepsy is a disorder clinically similar in developing and developed countries, but the extent to which patients with epilepsy are recognized, investigated, and managed is different. Etiology, socio cultural, psychological and economic factors etc. contribute to these differences. As India is a country with diverse socioeconomic groupings, medical treatment for wealthy patients in some large Indian cities is as advanced as that anywhere in the world, yet there remains a large rural population of patients with epilepsy whose illness is unrecognized and untreated by medical personnel.

Based on the total projected population of India in the year 2001, the estimated number of people with epilepsy would be 5.5 million. Based on a single study on the incidence of epilepsy, the number of new cases of epilepsy each year would be close to half a million. Because rural population constitutes 74% of the Indian population, the number of people with epilepsy in rural areas will be approximately 4.1 million, three fourths of whom will not be getting any specific treatment as per the present standard (Sridharan & Murthy, 1999).

Epilepsy 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. The prevalence rates of epilepsy in India are similar to those of developed nations. However, the large treatment gap is a major challenge to our public health system. Prenatal injuries are a major causative factor in pediatric group (Gadgil & Udani, 2011).
In 2004, the World Health Organization estimated that nearly 80% of the burden of epilepsy worldwide is borne by the resource-poor countries. According to a report on Epilepsy Awareness Program by Middle East Medical Information Center and Directory (2011) epilepsy affects 50 million people worldwide, and 80% of them live in the developing world. 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).

The word “epilepsy” is derived from the Greek word “epilambanein” meaning “to seize” or “take hold of”, indicating that the person having a seizure is “possessed” or at least out of control. Early treatments ranged from exorcism to bloodletting. Greeks believed that it is a sacred disease that was the result of the invasion of body by God. Though in Hippocrates opinion epilepsy was not sacred and human body could not be polluted by God rather the brain was the seat of this disease. The word ‘lunatic’ was first applied to sufferers of epilepsy and ‘maniacs’ for mad people. In its earliest usage in the English language, in the 14th century, “epilence” (or “falling sickness”) was used specifically to denote major motor seizures. However the distinction soon became blurred and epileptic patients were regarded as both lunatic and maniac. By the 19th century the term not only indicated major seizures but also implied that the condition was hereditary. The association of epilepsy with mental disturbance persisted in the public mind right up to the 19th century. In the last century the cumulative observations of many clinical investigators, along with adjunctive neurophysiologic imaging and genetic tools, created the well accepted concept that
epilepsy is not a single entity but rather a collection of different and often distinct disorders that have in common the occurrence of seizures.

In its modern usage the word “epilepsy” refers to a condition in which a patient experiences recurrent seizures. An epileptic seizure is a transient episode of neurological dysfunction due primary to the development of abnormal electrical discharges in the brain. The dysfunction may or may not involve overtly altered consciousness and/or convulsive movements. It may be confined to an alteration of thought processes, memory, perception and emotions. Seizures are of short duration, lasting for seconds or a few minutes only. A seizure can be defined as a sudden involuntary, time-limited alteration in behavior including change in motor activity or autonomic function, consciousness, or sensation, accompanied by an abnormal electrical discharge in the brain. Single seizures are not considered as epilepsy. Seizures occurring during the acute phase of meningitis, encephalitis, craniocerebral trauma or acute metabolic states, etc. are seizures, but not epilepsy.

In the epileptic focus, neurons in a small area of the cortex are activated for a brief period (50-100 ms) in a usually synchronized manner, and this produces a larger, sharper waveform in the EEG, the spike discharge. If the synchronous neuronal discharge occurs over several seconds, a focal seizure follows. If it spreads through the brain and lasts for many seconds or minutes, a complex partial or generalized seizure will occur and the EEG can have a variety of appearance, depending on which areas of brain are involved and how the primary discharging area project to the superficial cortex. During the discharge, extra cellular potassium concentration increases and extra cellular calcium concentration decreases. Neurotransmitters and neuropeptides are also released in usually large amounts during the seizure discharges. In addition to the ionic effects seizures increase in the cerebral blood flow
Figure I. Diagrammatic illustration of EEG patterns in partial and generalized epilepsy and normal brain. Adapted from “http://www.drugs.com/health-guide/images/205171.jpg”.
to the primary involved areas, increase the glucose utilization and alter the oxidative metabolism and local PH. It is possible that these events are not just the consequences of the seizures but actually contribute to the development of the seizure activity.

The definitions of epilepsy have been clearly specified in the form of guidelines by the Commission on Epidemiology and Prognosis of the International League against Epilepsy (ILAE). Epilepsy is defined as a condition characterized by recurrent (two or more) epileptic seizures, unprovoked by any immediate identified cause (Hauser & Kurland, 1975). This is always associated with an abnormal excessive neuronal discharge in the brain. Another way of defining epilepsy is as “more than one attack of a febrile seizure in any of its varied manifestation, unrelated to acute medical/surgical conditions, therapeutic drugs, and alcohol or drug abuse”. The seizures often present with motor phenomenon (in particular, repetitive, clonic twitching or changes of muscle tone) and sometimes with somatosensory, special sensory and/or autonomic manifestations. Depending on their type they may involve impairment or loss of consciousness or consciousness may be preserved during the seizure. The seizure may be preceded by premonitory symptoms of various kinds (auras, for example, nausea, ascending warmth or a feeling of unreality). In some patients, seizures occur in response to specific provocative and precipitating factors (sleep deprivation, alcohol withdrawal, medications, stroke lighting, hyperventilation and fever etc.).

Most forms of the epilepsy are not believed to be hereditary, but there seems to be a predisposition toward epilepsy in some families. The hallmark of the altered psychological state of epilepsy is that a rhythmical and repetitive hyper synchronous discharge can be observed in the electroencephalogram (EEG) of the epileptic patient.
Characteristics of Epileptic Seizures

Once the context of a seizure episode has been ascertained, and prior to its detailed description, one should confirm the presence of the core features that characterize almost all epileptic fits, such as an abrupt onset, a short duration of several seconds to a few minutes, and a stereotyped sequence of ictal signs and symptoms.

1. In patients aware of seizure onset, its abruptness is often compared with a switch-like change in mental state. However this impression may be blurred when repetitive auras precede the occurrence of a full blown seizure, requiring separate differentiation of the characteristics of aura and seizure. In patients unaware of seizure onset, witnesses usually testify to the abruptness of onset of abnormal ictal behavior.

2. The duration of epileptic seizures is typically several seconds for the shortest episodes, such as generalized atonic seizures or absences, to a few minutes in complex partial seizures of temporal lobe origin. There are exceptions. Myoclonic jerks that characterized juvenile myoclonic epilepsy can last less than a second. Conversely, occipital lobe seizures are prone to last 5 minutes or longer.

3. The spontaneous description of seizures provided by the patient is often far less informative. Patients can be unaware of the relevance of various symptoms. Thus the following symptoms should be specifically asked for: abnormal olfactory, gustatory, auditory or visual illusions or hallucinations, vertigo, paraesthesias or other somatosensory manifestations including changes in body perception, pelvic, abdominal, epigastic, thoracic or throat sensations, urinary
urge, thirst, tachycardia, breathing difficulties, involuntary muscle contractions and movements, perceptive or expressive language impairments, prolonged dreamy states, inappropriate emotions including fear, distress, joy or sadness and any other strange or bizarre symptoms.

4. Informative memories can be retrieved from the postictal period. After brief loss of awareness, patients will recover with a feeling of having been “disconnected” for a few seconds. This represents the only perception associated with absence seizures. Other patients notice a postictal deficit such as Todd’s paralysis, traces of urination or of tongue biting and can have headache or postconvulsion myalgia. However, non specific fatigue and sleepiness represent the most frequent postictal symptoms. When a generalized tonic clonic seizure is suspected, the first postictal memory is extremely helpful in determining the duration of postictal amnesia.

**Classification of Seizures**

An International Classification of Epileptic Seizures (ICES) was proposed in 1981. The classification broadly divides seizures into those that begin locally (partial seizure) and which may spread or evolve into secondary generalized seizures in which the onset is sudden and in which both cerebral hemispheres are involved in the discharge from a very early point in the seizure. The classification is as follows:

1. Partial or focal seizures (seizures beginning locally)
   
   A) Simple (consciousness not impaired)
      
      a) With motor symptoms
      
      b) With somatosensory or special sensory symptoms
      
      c) With psychic symptoms
B) Complex (with impairment of consciousness, temporal lobe or psychomotor seizures)
   a) With impairment of consciousness only
   b) With cognitive symptoms
   c) With affective symptoms
   d) With psycho sensory symptoms
   e) With automatisms

2. Generalized Seizures (primary)
   A) Tonic Clonic (grand mal)
   B) Tonic seizures
   C) Clonic Seizures
   D) Myoclonic seizures
   E) Atonic seizures
   F) Absence: typical (petit mal) and atypical
   G) Infantile Spasms.

1. Partial or Focal Seizures

   Partial or focal seizures begin with the activation of neurons in area of cortex. These seizures involve epileptiform activity in localized brain region. The specific clinical symptoms depend on the area of cortex involved and imply dysfunction in a limited area of the cortex. The lesion may be due to birth injury, postnatal trauma, tumor, abscess, infraction, vascular mal-formation or some other structural abnormality. Partial seizures are classified as ‘simple’, if there is no alteration of consciousness and ‘complex’ if there is an alteration regarding consciousness of awareness of environment. Simple Partial Seizure can occur with motor, sensory, autonomic or psychic symptoms. A Simple Partial Seizure with motor
signs consists of recurrent contractions of the muscles of one part of the body without loss of consciousness. Each muscular contraction is caused by the discharge of neurons in the corresponding area of the contralateral motor cortex. Clonic seizures most often involve the face or hand area. Somatosensory seizures usually arise in the post central area. They most commonly affect the face, hand and may occasionally spread. Primitive visual symptoms, including spots, flashes of light or patterns in one visual field are most commonly associated with occipital seizures. Although non specific dizziness is often described by patients of simple partial seizures. Visceral symptoms form one of the commonest components of simple partial seizures. They are most often associated with involvement of limbic structures of the temporal and frontal lobes. Most common is epigastic sensations (butterflies or nausea); rarely stomach pain, belching or even vomiting can occur. Autonomic symptoms can include pallor, flushing sweating, papillary dilation and increase in heart rate. Sexual arousal may also occur. Complicated psychic symptoms are not uncommon during simple partial seizure. Dysmnesic symptoms are perhaps the most common, with sensation of familiarity or strangeness. A variety of perceptual changes may occur during seizures with objects appearing larger or smaller or changing in shape. Emotional experiences are often reported; the most frequent being intense fear. Pleasurable sensations are much rarer but laughter can occur. Anger or rage is extremely rare as a true ictal disturbance.

Complex Partial Seizures are episodic changes in behavior, in which an individual looses conscious contact with the environment. Surgical approach to its treatment is likely to be most successful. The onset of the seizures may consist of any of a variety of auras or simple partial seizures, usually of a type associated with temporal lobe discharge. There is motionless face with stereotyped automatisms, most
commonly consisting lip smacking, chewing or swallowing, picking at clothes or fidgeting with objects. Stereotyped automatisms are usually followed by a phase of confusion, associated with reactive automatisms. Walking, running or verbal automatisms are less frequent. Complex partial seizures originate most commonly in the medical temporal lobes and the most common electrophysiological correlates is bilateral medical temporal discharge from the hippocampus. However they may also arise from fronto-orbital regions or more rarely from other extratemporal sites. Complex partial seizures arising from the fronto-orbital regions are more likely to exhibit some of the following phenomenon. The onset of seizures is sudden without any warning and with automatisms. They are usually frequent, brief and less commonly followed by postictal confusion. Automatisms tend to be bilateral and include thrashing, rolling, kicking or bicycling movements. Sexual automatism with pelvic thrusting may be more common with seizures of frontal onset and complex partial status seems to be more common with fronto-orbital seizure.

2. Generalized Seizures

Generalized Seizures involve the entire brain when the epileptiform activity occurs. Although typical absence, myoclonous and primary tonic clonic seizures may begin in adolescence and early adult life, other forms of generalized seizures, such as atypical absence, tonic and atonic seizures are features of age related childhood epilepsies and therefore while they may persist into adult life, they never commence in adult life. However many children with severe childhood epilepsies tend to develop more typical partial seizures (particularly complex partial seizures) or may expect remission when they enter adult life. Seizures that are generalized from the onset are presumed to arise in the diencephalon because the EEG paroxysms appear in a bilaterally symmetrical and synchronous fashion. Primarily generalized seizures
usually start without warning, although some individuals sense a vague, non-specific sense of the impending event (the aura). Tonic Clonic (Grand Mall Seizures) is the most common kind of epileptic paroxysms. The onset is heralded by a sudden loss of consciousness, tonic contractions of the muscles, loss of postural control, extreme spasms and a cry produced by forced expiration. The individual falls on the floor with opisthotonic posture, often sustaining injury and remains rigid for many seconds. During the seizure the body is in extended position, the eyes remain open, the pupils are dilated and the corneal and light reflexes are absent.

Soon after the tonic phase, clonic phase occurs which lasts for variable period of time in which rhythmic contractions of all four limbs occur. The individual remains unconscious and unarousable for a period of minutes or longer, followed by gradual return to consciousness and is characterized by a period of disorientation at the time of recovery. During the seizure, urinary or fecal incontinence and tongue biting may occur. Headaches, muscle aches and pains and drowsiness are common sequele and sometimes the patient may not return to baseline functioning for days. Many of these seizures have been termed ‘ideopathic’ for an organic defect cannot be found. However toxic and metabolic disturbances, and diffuse or scattered organic cerebral disease my cause generalized seizures. Tonic seizures are less common forms of primary generalized seizures, which consists of a sudden occurrence of a rigid posturing of the limbs or torso, often with deviation of the head and eyes towards one side. They are not followed by a clonic phase and are often of the shorter duration than tonic clonic seizures. Clonic Seizure is an involuntary violent muscular contraction or spasm in which the muscles alternately contract and relax. Bladder and bowel control gets affected. Myoclonic Seizures are sudden brief, single or repetitive muscle contraction involving one part of the body or the entire body. In the later case
the seizures are accompanied by a violent fall without loss of concentration. Myoclonic seizures often coexist with other seizure types but may also occur alone. Juvenile myoclonic epilepsy was first described by Janz and Christian. It is a genetic disorder and up to 25% of patients have a family history.

Absence Seizures (Typical and Atypical Seizures) almost always begin in younger children (6-14 years) of age and rarely appear for the first time in adults. It is probably genetic in origin. Typical absence (petitmal) seizures consist of sudden assertions of ongoing conscious activity, without convulsive muscular activity or loss of postural control. Such seizures may be so brief as to be unapparent. Usually they last for seconds and occasionally for as long as several minutes. The brief lapses of consciousness or awareness may be accompanied by minor motor manifestation such as eyelid fluttering, blank staring, and lack of responsiveness, small chewing movements of the mouth or mild shaking of the hands. During longer absences automatisms may occur which may be difficult to distinguish from complex partial seizures. At the end of the seizure the patient regains awareness of the environment very quickly and there is usually no period of post ictal confusion. These seizures may occur many times a day. Atypical absence seizures are similar to absence seizures but coexist with other forms of generalized seizures such as tonic seizures, myoclonic seizures or atonic seizures. These seizures tend to be resistant to medication and occur with other forms of underlying neurologic dysfunction. In the most severe form of this disorder, the Lenox Gastaut Syndrome children often have several kinds of generalized seizures and intellectual impairment.

Atonic Seizures are the brief loses of consciousness and postural tone associated with tonic muscular contractions. It usually occurs in children and most often accompanied by other forms of seizures. The EEG contains polyspikes and slow
waves. The ‘drop attacks’ of atonic seizures need to be distinguished from cataplexy seen in narcolepsy (where the patient remains conscious), transient brain ischemia, or sudden increases in intracranial pressure. Infantile spasms or hypserrhythmia is the primarily generalized seizures occur in infants between birth and approximately 12 months of age and consists of several types of brief synchronous contractions of the neck, torso and both arms(usually in flexion). Infantile spasms can rarely occur in otherwise apparently normal infant. Usually the underlying neurological disease, such as tuberous sclerosis, anoxia encephalopathy can precipitate the infantile spasms. The prognosis is poor, as about 90% develop mental retardation with seizures.

**Biological Causes of Epilepsy**

The likely cause of seizure depends on the age of the patient and the type of seizure. Almost all grey matter conditions can result in 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. Some other causes are as follows-

Disorders of fluid electrolyte balance, for example, hyponatremia, hypocalcemia, hypomagniemia and hypophosphalemia because of systematic disorder can cause acute symyomic seizures. mMetabolic disorders like hypoglycemia, hyperglycemia, hyperthyroidism, renal failure, liver disease and porphyria can cause seizure sometimes. Drugs and particularly alcohol are common causes of seizures and many different drugs have been associated with seizures, such as antibiotics, psychotropic drugs, radiographic contrast media, analgesics, oral contraceptives,
insulin, diperizine etc. On occasion, seizures do seem to occur in patients who are intoxicated with alcohol. This has been explained conventionally by suggesting a relative withdrawal of alcohol as being responsible.

It is well recognized that a number of cerebral injuries predispose the development of epilepsy. Mental and motor handicaps present from birth are commonly associated with seizure disorder. The more severe the mental and physical handicap is, the higher the risk of epilepsy. Seizures are common after severe head injury. The site of the injury may be important; wounds of the motor and premotor cortex have a high risk of epilepsy than wounds elsewhere. Epilepsy can occur after neurosurgical procedures. The chances of developing seizures depend on the nature and the site of the surgery, the underlying neurological condition and the presence or absence of focal brain destruction. Cerebral tumors are responsible for about 10% of causes of late onset epilepsy. The site of the tumor is an important factor in predicting epileptogenicity; tumors of cerebral cortex and especially the frontal or temporal cortex are most likely to result in seizures. The cerebrovascular and disease and stroke become an increasingly common cause of epilepsy in the later years of life. Epilepsy may be the initial or the only manifestation of cerebrovascular disease.

Epilepsy can occur in almost any infective disease with cerebral involvement, for example, infection with protozones (e.g. toxoplazma), funji (Cryptococcus, aspergillus), bacteria (bacterial meningitis or encephalitis, including sub acute infection with tuberculosis, brucella, listeria) and conditions of uncertain infectivity (e.g. sarcoidosis, cat scratch fever). HIV infection may also result in epilepsy. Neurodegenerative disorders like Alzheimer’s disease, Creutzfeldt-Jacob disease, Pick’s disease and multiple sclerosis can be associated with epilepsy.
Environment and Epilepsy

Seizure precipitating factors are not always reported by patients spontaneously and so must be specifically sought. Detailing patient activity prior to seizure onset offers the best opportunity for a physician to detect a seizure triggering factor. A variety of sensory or cognitive stimuli may occasionally precipitate partial or generalized seizures. These include sudden unexpected noise responsible for startle induced seizures, listening to specific pieces of music, playing chess, performing mental arithmetic, programming a particular gesture, and virtually any other mental process. There is an evidence of temporal lobe epilepsy in which a patient used to experience seizures when he heard of saw something related to the “past” like an old song or movies from 1950s, regardless of his relation to his personal memories. One general rule applies to epilepsy- The more odd the experiential or behavioral phenomenon, the more likely they are of epileptic origin provided the presence of core features of an epileptic seizure are present.

Post-Traumatic Epilepsy

Head trauma is associated with an increased susceptibility to subsequent seizures. The onset of seizures may be early (<1 week) or late (>1 week) after the injury. Factors that increase the risk of early seizures are the severity of the injury, frontoparietal location, and depression of the fractured bone (Chang & Lowenstein 2003). Intracranial hematoma increases the risk of early seizures independent of the duration of post traumatic amnesia or focal neurological signs. Age is also an important risk factor; young children have the highest of early post traumatic seizures, and the risk progressively decreases through adult life. Risk factors for late onset post
traumatic epilepsy are the type and severity of injury and the occurrence of early post traumatic seizures.

Infections

Neurocysticercosis is a leading cause of epilepsy in tropical countries, but it is not limited to countries with hot or tropical climates (Pal et al., 2000). In areas of poor sanitation, the causative organism, Taenia Solium, comes from a variety of contaminated foods, including vegetables and undercooked meat. With tuberculosis, seizures may occur with cerebral intraparenchymal involvement after systemic infection. Pyogenic meningitis contributes to late seizures in less than 10% of cases, but other focal neurological abnormalities usually are present (de Bittencourt et al., 1996a). Diseases like cerebral hydatidosis, congenital toxoplasmosis, filariasis etc. may also lead to seizures sometimes.

Psychological Factors of Epilepsy

Over the years there has been much conjecture about the role of psychological factors of epilepsy. Are epileptics helpless victims of their condition, or is it possible that the disease is a part of their psychological adjustment to some other aspect of their lives?

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. Research findings have shown that an increased number of stressful life events are associated with an increase in seizures (Hermann et al., 1990). From a psychological point of view the disease often creates an overwhelming stress for both epileptics and their families. Much of this stress is related to lack of knowledge about epilepsy, its causes and its treatment. Other important factors are the
role of general life stresses in bringing on seizures and the effect of the stress caused by the ever realization of a possible seizure, the need to lead a somewhat restricted life and the stigma that is associated with epileptics. Reason for psychological manifestations in epilepsy is epileptogenic excitation of a limited extent by a dual mechanism: (a) only partial decrease of awareness may be experienced by the patient as a threat of ego dissolution thus stirring his emotional reactions. (b) The involvement of certain specific areas (for instance the rhinencephalon) may be expressed by disturbances of the emotional control. Emotional stimuli may induce a convulsion through either (a) a creation of a general excitatory state with an excessive formation of either acetylcholine or insulin; or (b) a preliminary conditioning of certain stimuli which set up epileptogenic states in those areas of the brain which participate in the control of emotional processes ("affectogenic" epilepsy), (Liberson, 1955).

William and Caveness (1955) investigated emotional and psychological factors in epilepsy. In their study two cases are presented to illustrate the importance of emotional and psychological factors in epilepsy. Attention is directed to the personality changes that arise as a reaction to seizures. It is noted that emotional stress may act as a precipitant to individual seizures. Finally, it is pointed out that elements from past experience, of particular emotional significance, may be incorporated into the clinical pattern of seizures that arise from a discharging lesion in the temporal lobe of the brain. Seizure disorders are often associated with a variety of psychological and social difficulties. Psychosocial problems may be more disabling than the seizures themselves. It has been demonstrated that people with epilepsy are more strongly influenced by their self-perceptions of the stigma associated with epilepsy, not by the objective facts of their epilepsy. Another psychological effect of the stigma of
epilepsy is that people with it often restrict their activities to the home for fear of having a seizure in public. Participation in social and in employment activities relates more closely to perceptions of the disability than to seizure frequency and other more objective measures of epilepsy.

A significant proportion of people with epilepsy have misperceptions of epilepsy. They act on these misperceptions which results in greater psychosocial disability and increased behavioral and emotional problems. Keep in mind though, that not all people with epilepsy experience such emotional problems and the psychological adjustment to such difficulties varies from individual to individual. Bartemeier (1932) studied the relationship of personality disorders and epilepsy in children. He emphasized the great role of a proper environment in patients with both petit mal and grand mal seizures and the fact that psychotherapy alone was frequently inadequate in alleviating the seizures when the neurologic problems were neglected. Bartemeier (1943) further commented on the concept that a convulsion itself in some ways appears to discharge pent-up and inhibited energy, resulting in a state of comparative quiet and benefit that may last several weeks. Others have commented on the fact that in psychomotor epilepsy, in particular, periods of partial remission sometimes follow a severe group of seizures. Greenson (1944) reported a number of instances in which analysis had greatly reduced the severity and number of the spells. He used considerable psychophysiological explanation to correlate the structural discharges of the seizures with the dynamics of the neurosis.

Lennox (1941) has emphasized the relationship between migraine headaches and epilepsy, particularly in patients who have one or the other of these symptoms associated with a severe emotional disorder. Williams (1956) studied the structure of emotions reflected during an epileptic seizure, confining his interest to the "primary"
emotions (fear, depression, pleasure, etc.). He was of the opinion that the emotional response was associated with other ictal pleasures. Liddell (1953) observed a "see-saw" relationship between seizures and psychologic state. When the seizures were controlled by means of medication psychologic difficulties increased. With decreased medication and more seizures psychological difficulties diminished. Chafetz and Schwab (1959) presented a report on Psychological Factors Involved in Bizarre Seizures. Results showed marked psychological difficulty existed before the onset of the disease.

**Impact of Epilepsy**

One of the many reasons for prejudice against people who have epilepsy is the belief in an “epileptic personality”. Those with an epileptic personality were described as being ‘sticky’, ‘suspicious’, ‘quarrelsome’, ‘touchy’, ‘pedantic’, ‘egocentric’, circumstantial’ and ‘religiose’. Although some patients (4%) do undoubtedly show some of these characteristics, it is unlikely that they are due to the epilepsy alone (Pond & Bidwell, 1960). Chronic long term medication and, in a small proportion of patients, institutionalization will add to personality difficulties. Tizzard (1962) describes the difficulties in trying to define a specific personality type in patients with epilepsy and points out that selection of patients, multiple seizure types, differing degrees of brain damage, the site and location of the brain lesion, together with medication, make it an impossible task. The most recent contribution to a specific personality comes from the work of Gibbs (1951), Gastaut and Collomb (1954), Geschwind (1979) and others, who suggest that seizure discharges within the limbic system (temporal lobe epilepsy) showed alterations in sexual behavior and their religious view of life, and that they become compulsive writers (hypergraphia). Bear and Fedio (1977) developed a questionnaire to rate 18 personality traits for
patients with epilepsy. They found that compared to normal controls and patients with chronic neuromuscular disorder, the temporal lobe epilepsy patients display a distinctive patterns of traits namely, humorless sobriety, dependence, circumstantiality, obsessionality, undue preoccupation with religious and philosophic concerns, deepened emotions and irritability. They also found that when the patients were compared by external raters to their own views of themselves, those who had right temporal lesions exaggerated socially acceptable traits and denied undesirable traits (polishers) while those with left temporal foci showed the opposite pattern, over reporting those traits which shows them up in a bad light (tarnishers).

Hippocrates proposed a relationship between depression and epilepsy. ‘Melancholics ordinarily become epileptics and epileptics melancholics. Of these two states, what determines the performance is the direction the malady takes, if it bears upon the body, epilepsy, if upon the intelligence, melancholy’ (Lewis, 1934; Robertson & Trimble, 1983). Several rating scale studies, usually the MMPI, have shown raised depression scores in patients with epilepsy and these seem to be higher in those patients with late onset epilepsy (Guerrant et al., 1962; Meier & French, 1965; Mignon et al., 1970). Rodin et al. (1976) suggested that this was higher in patients with temporal lobe epilepsy, which was confirmed by Dikman et al. (1983), who again found higher rates in those suffering from complex partial seizures. Robertson (1986) found no relationship between depression and epilepsy. Trimble and Perez (1980) found high anxiety and depression scores in their epileptic population compared to normal controls, but could show no relationship between the depression and the type of epilepsy. Kogeorgos et al. (1982) found no relationship between the type of epilepsy and the characteristics of the depression. Anxiety states are also said to be associated with epilepsy, but the characteristics of these do not
differ significantly from those of a normal anxiety (Betts, 1981). It is not uncommon for patients to become fearful of their attacks and develop a true phobic state about going out or appearing in public.

If we look at the social aspect of epilepsy, it would be significant to mention that the misunderstanding and social stigma often cause more suffering to a person with epilepsy than the seizures themselves (McLin et al., 1995). Public attitudes to epilepsy in India, although improving slowly, have not kept pace with the growth in scientific and clinical understanding and treatment of the disorder. There is a high degree of awareness among the people of the developing world which may be related to closer living conditions and interpersonal relationships prevalent in these regions. However, the attitudes are far more negative and misconceptions abound, such as equating epilepsy with insanity and over emphasis on the role of heredity. For example, the percentage of the respondents who thought epilepsy was a form of mental illness, who objected their children playing with a child with epilepsy and who objected to employ a person with epilepsy among the highly literate population of Kerela were 27, 11 and 44%, respectively (Radhakrishnan et al., 2004) as compared to 3, 6 and 9 in United States (Caveness et al., 1980). Furthermore, a high proportion of Kerela respondents believed that persons with epilepsy could not be properly educated, employed or happily married. These aberrant concepts about epilepsy are mainly responsible for the sociocultural stig mata and resultant discrimination against persons with epilepsy.

**Anxiety Sensitivity among Epileptic Patients**

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.

According to Watt and Stewart (2008) we all experience fear in one and another situation of life. Fear is what we feel when we encounter a bear in the woods, sit through turbulence on an airplane or hear a strange noise late at night when we are all alone. Anxiety, on the other hand, is what we experience when we think about possibly encountering a bear in the woods, anticipate air turbulence on an upcoming flight or worry about being alone at night. Anxiety is a momentary emotional response to life situations. It is a feeling of uncertainty, helplessness and physiological arousal. A person who experiences anxiety complains of feeling nervous, tense, jumpy and irritable. Often he or she has difficulty falling asleep at night. An anxious person becomes fatigued easily and has “butterflies in his stomach”, diarrhea, loss of appetite, shortness of breath, dizziness, fainting etc. Anxiety is a feeling of tension, fear or dread that occurs in response to a real or imagined threat. Anxiety is a natural response to any danger, threat or stress. It is usually defined as a diffuse, vague, very unpleasant feeling of fear and apprehension. Anxiety helps to become alert and enables a person to respond actively when under pressure, but when it occurs out of context or in an exaggerated, it can interfere with our daily lives. It can also be said that anxiety is an alerting signal; it warns of threat, external or internal, and it is probably life saving more than once in a life time. Since it is beneficial for a person to respond with anxiety in certain threatening situations, one can speak of normal anxiety in contrast to abnormal or pathological anxiety.

Anxiety can result in other psychological states, such as, anxiety sensitivity etc. The construct of anxiety sensitivity has received considerable attention in research on the etiology, assessment and treatment of anxiety disorders over the past 2
decades (see Taylor 1999, for a review). 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……’. 

Anxiety sensitivity is a tendency to respond fearfully to the bodily sensations associated with fear and anxiety. It is a fear of sensations associated with being in an “aroused” state, such as being anxious or distressed. Fear of these sensations arises from the belief that these sensations signify that harmful consequences will follow. Such body sensations include a racing heartbeat, fast breathing and sweating. A Japanese proverb suggests, Anxiety sensitivity involve a particular way of thinking or a “cognitive style”. The cognitive style characterizing anxiety sensitivity involves catastrophizing (thinking the worst) about the consequences of anxiety sensations. For example, If you have anxiety sensitivity, you might fear a racing heartbeat, believing that it means you are about to have a heart attack. You might fear dizziness because you think you are having a mental breakdown (going crazy). You might fear the trembling sensations you have when anticipating being embarrassed in front of other people. Evans (1972) reported a case history of women who feared recurrent panic attacks whenever she had to eat in the presence of others.

Anxiety sensitivity refers to individual differences in what people think will happen to them when they actually experience anxiety. Anxiety sensitivity has been
reported as fear of anxiety related sensations or arousal based on beliefs in harmful consequences of bodily symptoms (Reiss & McNally, 1985). It has been characterized as a heightened anxious response to the perception of physiological sensations caused by a hyper vigilant self monitoring and attention focused on internal physical cues. It is primarily an associative learning process in which the individual has learned that a given stimulus arouses anxiety of fear. Anxiety sensitivity on the other hand is an individual difference variable consisting of beliefs that the experience of anxiety or fear causes illness, embarrassment or additional anxiety. For example, palpitations may be feared if the person believes that it will lead to cardiac arrest. Sweating or trembling is feared if the person believes these reactions will attract ridicule from others, shortness of breath is feared if the individual believes that is a sign of asthma. Anxiety sensitivity increases alertness to stimuli signaling the possibility of becoming anxious, and increase motivation to avoid anxiety provoking stimuli.

According to Schmidt (1998) anxiety sensitivity is a pattern of thinking that can affect health. Just having this type of thinking pattern puts a person at greater risk for developing mental and physical impairment. Schmidt and Lerew (1998) in their study evaluated two other psychological risk factors- body vigilance and discomfort intolerance that could lead to psychological or physical impairment, in addition to anxiety sensitivity (Science Daily, 1999). Body vigilance that is the attention people give to bodily changes/sensation provides a greater risk for identifying a benign internal symptom as dangerous. Schmidt (1998) was of the opinion that someone who does not tolerate unpleasant bodily sensations very well could be at risk for developing an anxiety disorder. So anxiety sensitivity may be conceptualized as a trait like cognitive vulnerability that amplifies preexisting anxiety levels such that those high in anxiety sensitivity may misinterpret physical sensations as danger signals and,
as result, experience elevated levels of anxiety. An individual with elevated anxiety sensitivity might, for example, fear palpitations because of concerns about a heart attack or fear sweating in public based on concerns about negative social evaluation. Individuals with elevated anxiety sensitivity also experience amplified fear in response to stimuli that elicit anxiety and find their own anxiety symptoms to be aversive (Reiss, 1991)

Anxiety experience is related primarily with an anxiety provoking stimulus situation, anxiety sensitivity is related to cognitive framework which one has acquired, and that can provoke a reaction of anxiety in absence of sufficiently powerful stimulus. Anxiety varies in intensity from mild to strong feelings of uneasiness and nervousness. Anxiety sensitivity is not the experience of anxiety; it is an increased alertness to stimuli (signaling the possibility of becoming anxious, increasing worry about his possibility of becoming anxious and increasing motivation to avoid anxiety provoking stimuli). Anxiety sensitivity is believed to increase reactivity to stressors and to facilitate fear conditioning (Reiss, 1991). Anxiety is associated with a wide range of physical illness. On the other hand, anxiety sensitivity may be a risk factor for the occurrence of anxiety disorders, particularly panic disorders. Therefore its relation to physical illness may be indirect.

When highly anxiety sensitive people experience bodily sensations associated with anxiety, they tend to amplify or “turn up the volume” on these sensations; they focus on the sensations, misinterpret their meaning and begin to catastrophize about what they mean. In contrast less anxiety sensitive individuals tend to reduce the volume, recognizing these sensations to be normal, temporary and unpleasant but otherwise harmless consequences of being in an anxious state (Reiss, 1991). High anxiety has also been discussed as a predisposing factor in the development and
maintenance of anxiety disorders and it has strong relationship especially to panic disorder (Schmidt, Lerew & Jackson, 1997; Taylor, Koch & McNally, 1992). Since individual with higher anxiety sensitivity seem to be more vigilant to subtle changes in physiological sensations, an induction of intense bodily sensations should cause more anxious response in people who are higher in this trait. Theoretical and empirical work over the past two decades accords anxiety sensitivity and closely related constructs (such as the fear of fear) a central role in the nature and etiology of anxiety disorders in general and panic disorders in particular (Goldstein & Chambless, 1978; Reiss, 1991; Reiss & McNally, 1985; Reiss, Peterson, Gurskey & McNally, 1986). Cross-sectional and longitudinal studies have suggested that anxiety sensitivity is central of development in the panic disorder, which has been repeatedly shown to be characterized by elevated anxiety sensitivity levels. As such, researchers see anxiety sensitivity as the cognitive vulnerability factor for panic attacks and panic disorders. A number of evidence shows fear of anxiety as a secondary consequence of panic attacks. For example, many researchers accepted the hypothesis of introspective conditioning, which holds that the fear of anxiety develops when people who have initial panic attacks and learn to fear the recurrence of those attacks (Goldstein & Chambless, 1978). The Reiss and McNally (1985) position was built upon the prior Goldstein & Chambless (1978) position with some difference. One difference concerns the role of panic experience in the fear of fear (Goldstein & Chambless, 1978) regard the fear of fear as the consequence of several factors, which include panic experiences but also other factors like biological constitution and personality needs to avoid embarrassment, to avoid illness and to maintain control. In contrast, Reiss and McNally (1985) proposed that the fear of anxiety (Anxiety sensitivity) might constitute a cognitive risk factor for the development of panic disorder.
Although there are overlapping similarities in the concept of anxiety sensitivity and panic disorder, and anxiety sensitivity and anxiety disorder, if we look at the picture critically, we find that anxiety sensitivity has certain distinctive features, which set it apart from panic disorder and anxiety disorder. It may be a predisposition for both. It may come into existence as part of anxiety and panic, but the cognitive component, which is so vitally related to anxiety sensitivity, sets it apart. It is possible that anxiety sensitivity is causally related to development of anxiety disorders. Anxiety sensitivity should increase the negative valance (aversiveness) of anxiety experiences. For example, anxiety is more likely to grow in magnitude for an individual who believes that anxiety causes heart attack in comparison to someone who does not share this belief. Beck and Emery (1979) observed that “as anxiety attacks recur, the victim comes to dread the unpleasant symptoms of anxiety almost as much as the precipitating causes……”.

Anxiety sensitivity or the idea that anxiety is not equally motivating to all people (Reiss & McNaly, 1985) is a cognitive, individual difference variable consisting of belief that the experience of anxiety and fear causes illness, embarrassment or additional anxiety and that these anxiety related sensations have harmful physical, psychological and social consequences. A small percentage of people however misinterpret the signs of anxious arousal as threatening or dangerous. Those people believe that a pounding of heart can lead to heart attack or that shortness of breath can lead to asthma attack or that shaking is a sign of mental illness. This group is said to have “high anxiety sensitivity”. People with high anxiety sensitivity scores respond with alarm and may interpret an inability to concentrate on a task as a sign of mental illness etc. And those with low anxiety sensitivity scores interpret the same symptoms as just unpleasant (Reiss & McNaly, 1985). Further some, those with
high anxiety sensitivity scores report more intense symptoms due to hyperventilation when the objective measure of heart rate are the same as for those with low anxiety sensitivity scores (Asmundson et al., 1994). Anxiety sensitivity also appears to play an important role in individual’s adjustment to several different medical conditions affecting condition associated distress (Asmundson, 1999, 2000; Schmidt & Cook, 1999). Anxiety sensitivity may broadly affect stress perceptions and appraisals (Isyanov & Calamari, 2004) and there is increasing evidence that anxiety sensitivity is an important factor in the exacerbation and maintenance of medical disorders. In anxiety sensitivity, the elevated anxiety and/or poor physiological arousal that all of us are prone to during stressful times become stimuli capable of triggering a vicious cycle of ever heightening anxiety and even panic for people high in anxiety. Anxiety sensitivity is also thought to arise from the combination of genetic predispositions (Stein, Jang, & Livesley, 1999) and learning experiences that result in the acquisition of beliefs about potential harmful effects of autonomic arousal (e.g., Stewart, Taylor, Jang, et al., 2001).

It is important to distinguish anxiety sensitivity from trait anxiety. There is disagreement as to whether anxiety sensitivity is conceptually distinct from trait anxiety, whether anxiety sensitivity adds predictive utility beyond trait anxiety regarding the development of anxious symptoms (Lillenfield, 1996). Anxiety sensitivity is distinct from trait anxiety (i.e., the tendency to respond with fear to a wide range of stressors) and describes a more specific tendency to fearfully respond to one’s own anxiety symptoms. Moreover, anxiety sensitivity explains reliable variance unrelated to trait anxiety. For example, laboratory studies have shown that anxiety sensitivity is a significant predictor of fear responses to inhalation of carbon dioxide-enriched air independent of trait anxiety among adults (Zinberg, Brown, Barlow, &
Rapee, 2001; Zvolensky, Feldner, Eifert, & Stewart, 2001) and youth (Leen Feldner, Feldner, Bernstein, McCormick, & Zvolensky, 2005) anxiety sensitivity and trait anxiety appear to be hierarchically organized with anxiety sensitivity operating as a lower order trait that is nested hierarchically within a higher order dimension of trait anxiety (Lilienfeld, Turner & Jacob, 1993). Reiss (1997) discussed the conceptual and theoretical difference between trait anxiety and anxiety sensitivity. He said that trait anxiety begins as a psychodynamic concept, poorly tied to observable and requiring Freudian defense mechanism to explain recurrent anxiety episodes. McNally (1989, 1996a, 1996b) and Taylor (1996) distinguish anxiety sensitivity from trait anxiety by noting that, trait anxiety predicts future anxiety generally, whereas anxiety sensitivity predicts future fear to anxiety sensations specifically. An important difference is that the two constructs use different indicators to predict future anxiety and fear.

Another difference is that anxiety sensitivity is defined as the tendency to respond fearfully to anxiety symptoms, whereas trait anxiety is a tendency to respond fearfully to stressor in general. The distinction becomes less marked if we see the new theory of trait anxiety given by Eyesenck (1997), which appears to be inspired by the concept of anxiety sensitivity. In fact it has tried to assimilate anxiety sensitivity in the new version of trait anxiety. Among adults, researchers have addressed the criticism by demonstrating that, anxiety sensitivity is factorially distinct from trait anxiety (Peterson & Heilbronner, 1987; Taylor, 1996). Anxiety sensitivity predicts conscious responding to challenge and stress beyond trait anxiety (for example, Rapee & Medoro, 1994) and anxiety sensitivity prospectively predicts the development of panic beyond trait anxiety (Schmidt et al., 1997).

Eyesenck (1997) proposed a new theory of trait anxiety, this being a four factor theory of anxiety. According to this unified theory there are four sources of
information, which influence the level of anxiety experienced. First, external stimulation, second, internal physiological activity, third, internal cognitions and fourth, one’s own behavior. The unified theory is essentially based on cognitive biases, and is more reflective of the concept of anxiety sensitivity (without actually using the term) than anxiety disorder as such. According to McNally (1994), anxiety is similar to catastrophic misinterpretation. However, anxiety sensitivity is different because the person does not have to misinterpret anxiety symptoms such as rapid heart rate as something else like heart attack for panic to occur. They simply must believe that their arousal from anxiety can lead to heart attacks or insanity. In addition, anxiety sensitivity is dispositional, while catastrophic misinterpretation is episodic (Fridhandler, 1986). The concept of anxiety sensitivity was established due in part to observations that intense bodily sensations do not always lead to panic attacks. This fact is demonstrated in studies that found hyperventilation challenges and cause inhalation to elicit responses from participants that ranged from terror to pleasure (Clark & Helmsley, 1985).

Reiss and McNally (1985) outlined an ‘expectancy model’ of fear based on the concept of anxiety sensitivity. Because anxiety sensitivity was defined as a personality factor that enhances the person’s conditionability for fear, the concept has similarities to Eysenck’s concept of neuroticism (Rachman, 1990). Because anxiety sensitivity was defined in terms of irrational beliefs, the concept has similarities to Ellis’s (1979) concept of discomfort anxiety and to Clark’s (1986) discomfort theory of panic. There is also some similarity between the concept of anxiety sensitivity and Rescarla and Wagner’s (1972) concept of ‘reinforcing effectiveness’ of an unconditioned stimulus (US). Specifically anxiety sensitivity is seen as enhancing the reinforcing effectiveness of the sensations of anxiety. Reiss and McNally (1985) have
analyzed the fear of fear into two component process called anxiety expectancy and anxiety sensitivity.

Reiss and McNally (1985) expectancy theory holds that human motivation to avoid a feared object is a function of two classes of variables, called expectation and sensitivity. Expectation refers to what the person thinks will happen when the feared object/situation is encountered (example, “I expect the plane will crash”, “I expect to have panic attack during flight”, “I expect other people will notice my fear flying”). Sensitivity refers to the reason that a person holds for fearing the anticipated events (example, “I can’t stand the thought of being handicapped”, “panic attacks cause heart attacks”). Expectations (what one thinks will happen) and sensitivities (why one is afraid of the anticipated event) theoretically provide a key for understanding human fears.

According to Reiss and McNally (1985) expectancy theory there are 3 fundamental fears (called sensitivities): the fear of injury, the fear of anxiety and the fear of negative evaluation. Thus this model has focused on the fear of anxiety (anxiety sensitivity). The model recognizes the wide range of individual differences in explanations regarding a particular object or situation (Gursky & Reiss, 1987; Rachman & Lopatka, 1986). For example, some people, boarding an airplane will think that there is a chance that the plane will crash, whereas others think there is virtually no chance of crash. Some people think there is a substantial likelihood that an airplane flight will cause them to have a panic attack, experience an upset stomach or vomit; others dismiss the probability of such events as negligible.

Chorpita and Deleiden (2000) examined anxiety sensitivity in context of the tripartite model of depression and anxiety. They noted that the tripartite model
conceptualizes fear as an index of arousal and trait anxiety as related to negative effect. In children, the anxiety sensitivity index was associated with autonomic arousal more so than with trait anxiety and fear. In adolescents, however, the anxiety sensitivity is related to trait anxiety more than to fear or arousal. Another concern involves the relation of anxiety sensitivity to depression among adults, anxiety sensitivity and depressive symptoms are correlated (Catanzaro, 1993; Otto, Pollack, Faxa, Uccello, & Rosenbaum, 1995; Schmidt et al., 1997; Taylor, Koch, Woody, & McLean, 1996), raising the question as to whether anxiety sensitivity is specific to anxiety, or is associated with emotional distress in general. In response to this concern Taylor et al. (1996) argued that two aspects of anxiety sensitivity - fear of bodily sensations and fear of publicly observable symptoms- are specific to anxiety. Also in response to this concern, Schmidt, Lerew, and Joiner, (1998) demonstrated that nophrenophobic aspects of anxiety sensitivity predicted future anxious symptoms controlling for depressive symptoms but the phrenophobia predicted both depressive symptoms, and anxious symptoms.

Anxiety sensitivity is also associated with depressive symptoms among youth Heyward et al., 1997). Kearney et al. (1997) and Weems et al. (1997) reported this association even after controlling for anxious symptoms. Few studies have examined the factors of anxiety sensitivity and their relation to anxious Vs depressive symptoms in children and adolescents (Chorpita & Daleiden, 2000; Laurent et al, 1998). Silverman, Ginsburg and Goehart (1999) have reported factors of anxiety sensitivity among youth.

Another set of group differences that have been observed but much less extensively examined are gender differences. Females typically score significantly higher than males on the full 16 item version of Anxiety Sensitivity Index (Peterson &
Phehm, 1999; Peterson & Reiss, 1992). It seems that gender moderates some of the effects of anxiety sensitivity. For example, women high in anxiety sensitivity have been found not only to be more susceptible to pain (Keogh & Birkby, 1999) but also exhibit different coping biases when compared to men high in anxiety sensitivity (Stewart, Conrod, Gignae & Pinl, 1998). The fact that anxiety affects women more than men may have something to do with how males and females interpret stress. Women are at greater risk for anxiety disorders than men and there is some evidence to suggest that gender differences in this particular type of thinking pattern (anxiety sensitivity) may be the part of the reason for Schmidt’s statement (Science Daily, 1999). Anxiety not only works as a comorbid diagnosis amongst the psychiatric patients but it is also common amongst the neurological patients. Focusing on the sample of the present study that is epileptic patients there are so many researches evidencing the fact that anxiety is so common amongst epileptics also (Altshuler, Devinsky, Post & Theodore, 1990; Biraben, Taussig, Thomas, Even, Vignal, Scarabin, & Chauve, 2001; Kennar, 2004; Manchanda, 2002).

Fiordelli et al. (1993) conducted a cross-sectional study on epilepsy and psychiatric disturbance in which 100 patients with cryptogenic epilepsy and normal intelligence and 100 age and sex matched controls were submitted to psychiatric interview using Clinical Interview Schedule. The results suggested that anxiety and depression were the predominating diagnosis in both groups.

Ettinger et al. (1998) examined the symptoms of depression and anxiety in pediatric epilepsy patients and administered the revised Child Manifest Anxiety Scale (RCMAS), and Child Depression Inventory (CDI) to 44 epileptic patients. They found that 25% had significantly increased depression scores and 16% met criterion for
significant anxiety symptoms. Thus the symptoms of depression and anxiety are common among pediatric patients with epilepsy.

Oquz, 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 among the epilepsy related factors, epilepsy duration, seizure frequency and polytherapy to increase anxiety and depression, while age of seizure onset, seizure types and electroencephalographic findings were not related to anxiety and depression. Symptoms of depression and anxiety are common among epileptic children, especially during puberty.

Scicutella and Ettinger (2002) investigated the treatment of anxiety in epilepsy and 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 and obsessive compulsive generalized anxiety disorder.

De Souza and Salgado (2006) investigated a psychological view of anxiety and depression in epilepsy and behavior. They reported a strong relationship between perception of seizure control with depression and anxiety. Epilepsy was associated with disease (63.4%), mental problems (11.6%), and feelings of shame, fear, worry and low self-esteem (56.6%) and perception of stigma (26.6%).

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. In addition frequent, severe and chronic
seizures reduce on health related quality of life but appear less powerful predictors of on health related quality of life than interictal psychiatric symptoms. Recognition and treatment of comorbid depression and anxiety is an important consideration in improving quality of life in epilepsy.

Baki et al. (2004) assessed anxiety and depression in children with epilepsy and found 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.

Caplan, Siddharth, Gurbanis, Hanson and Shields (2005) studied depression and anxiety disorders in pediatric epilepsy in which they compared 100 children with complex partial seizures (CPSs) and 71 children with childhood absence epilepsy (CAE), and 93 normal children aged 5-16 years and found that significantly more patients had affective and anxiety disorder diagnosis (33%) as well as suicidal ideation (20%) than did the normal group. Anxiety disorder was the most frequent diagnosis among patients with a diagnosis of affective or anxiety disorders, and combined affective/anxiety and disruptive disorder diagnosis, in those with suicidal ideation. Only 33% received some form of mental health service.

Cramer, Brandeburg and Xu (2005) tested differentiating anxiety and depression symptoms in patients with partial epilepsy and found that all health related QOL domains worsened significantly with increasing levels of anxiety and depression. No significant difference in anxiety scores was observed controlling for seizure frequency and epilepsy duration. Regression analysis showed that anxiety and depression account for different properties of variance as predictors of on health
related quality of life. The data suggested that the patients may benefit from increased attention to the role of anxiety separately from depression.

Beyenburg et al. (2005) also reported that 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.

Bilqic, Yilmaz, Tiras, Deda, and Kilic, (2006) evaluated depression and severity of anxiety symptoms in a group of children with epilepsy and related factors and found that state anxiety scores of epileptic group were significantly higher than girls. No significant relationships were found between patients and controls in terms of trait anxiety and depression scores. In all scales boys scored significantly higher than girls. No significant relationships were found between symptom severity, duration of epilepsy, age of seizure onset and depression and anxiety scores.

Swinkels et al. (2006) investigated interictal depression, anxiety, personality traits and psychological dissociation in patients with temporal lobe epilepsy (TLE) and extra TLE and did not find the hypothesized excess of psychiatric symptoms in patients with TLE in comparison with patients with extra TLE. They also found no differences in patients with the lateralization of epilepsy in the left vs. right hemisphere. They concluded that TLE per se cannot be considered a risk factor in developing more and more severe symptoms of psychopathology in patients with
partial epilepsy. Concomitant factors, such as, the duration of epilepsy, seizure frequency and frontal lobe dysfunction may play an additional role.

Kobau, Gilliam and Thurman (2006) explored prevalence of self reported epilepsy or seizure disorder and its associations with self reported depression and anxiety and the findings highlighted 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.

**Stressful Life Events among Epileptic Patients**

Stress is an unavoidable reality of life. A foundation of mankind progress in the process of pacing challenges, in turn generates stress. What makes ‘stress’ life threatening, is the element of negativism that human relationship and competitive situations endanger. Throughout our lives we experience many different things, both good and bad. Certain situations are unique or we may not have had previous experience of them and don't know what to do. Sometimes stressful events can become a crisis. What makes something a crisis is based on the nature of the event, the resources of the family, and how the family defines the event. The traditional view of a crisis is a stressful event in which the person or family’s usual means of problem solving does not work. It commonly involves a feeling of helplessness, cognitive confusion, and a sense of just being stuck. Crises develop when parents perceive extreme stress and generally fall into two main categories. In a “tragic” crisis, goals for the family are disrupted by uncontrollable events, usually a loss. In the more common crisis, called a “role organization crisis,” the family is unable to manage the stress using their usual roles and ways of coping.
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. For example, the loss of a spouse may be followed by months or years of loneliness and a violent sexual assault may be followed by years of apprehensions and worry. 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. A new baby may be a total joy, and much wanted but will require both parents to make great changes in their lives to accommodate the events. Changes cause stress, and stress can go on to cause mood shifts. Promotions may be exciting, but it also can be stressful. Other life events are more clearly stress provoking, such as, the loss of job or marital breakdown, the destructive interpersonal patterns- including marital unhappiness, divorce and bereavement. 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, deaths, getting married, civil partnerships, going to school, getting a job, moving home, choices at the age of 16 years, natural disasters, technological disasters, war and genocide, conjugal lose and bereavement, criminal victimization, migration etc. Such patterns my also influence physiological functioning. For example, in a study of widowers, Parkes, Benjamin, & Fitzgerald (1969) reported that during the 6 months period following the death of their wives, the widowers’ death rate was 40% above the expected rate. In fact the evidence of cardiac deaths among them was so high that the investigators referred to these findings as “the broken heart syndrome”.
Objective characteristics of a stressful encounter influence the way people appraise them cognitively as challenges, threat, harm, or loss. Severity, duration, and ambiguity of a stressor, among other characteristics, make a difference when it comes to appraisal, emotions, coping, and outcomes. Stressful life events that affect an entire community can be categorized along a number of dimensions, including predictability, controllability, suddenness, and strength of impact, etc. A common distinction is the one between normative and non-normative events. Normative refers to anticipating a certain class of events that naturally happen to many individuals at certain times during their lives and are expected, for example school transitions, marriage, childbirth, academic exams, retirement, death of parents and others. In contrast, non-normative events pertain to rare or unexpected events, such as disasters, accidents, or diseases. One can prepare in general for a broad array of potential harm, but one does not know when and if such events will occur.

Health reactions in the aftermath of a disaster are largely determined by the impact of an event, e.g., number of casualties or material damage. As a consequence, if those goods (resources) we value are threatened or lost, stress occurs (Hobfoll, 1989, in press). However, societal structures as well as cultural norms and values largely determine the way individuals respond to the incident. Although it is often believed that such valuable goods or resources are the same across cultures, we can assume that the weight given to each resource varies (Hobfoll, 1989, in press). On the other hand, certain resources and their impact are almost universal. For instance, in all societies, the loss of a loved one is regarded as extremely stressful for the individual. Nevertheless, reactions to the loss of a family member may be multifaceted due to different cultural traditions, religious beliefs, and attitudes toward family. For example, one might assume that in large multigenerational families with close ties
between individuals, family members are better able to support each other in the grief process, compared to small families where the deceased may have been the only confidant for those who are left behind.

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 is sufficient to be labeled as “crisis” and will have “etiologic” significance as a necessary but not sufficient cause of illness and accounts in part for the onset of disease. 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”. Hinkle (1973), on the contrary emphasized the primary role of predisposing factors and the secondary role of life events, at least with respect to certain types of illness. Studies have demonstrated that stressing psychological stimuli not only provoke observable behavioral reactions but also induce internal modifications in the homeostatic balance of the endocrine, immune and autonomic nervous system.

Events may be classified by the degree of undesirability. The quality of events is appraised as for the cognitive and emotional process which influences the perception of stress. Moderate to severely undesirable life events occurred twelve months before the onset of psychiatric disorder had been proved about 60% potentially causal factor (Goodyear et al., 1985). A major enquiry generated
concerning the effects of stressful life events is that why one individual become ill and other remain healthy after experiencing the same life event. Wiener (1982) formulated certain taxing questions for the same explanations of why different contents are associated with difference to illness risks. Individual difference to susceptibility to illness may be explained as difference in assessment of control with situations. Continuous rehearsal of stressful problems results in stress of pathological arousal and may enhance the consideration of previously encountered stressful experiences. Increased vulnerability to externally imposed stress brings into focus in susceptibility to life stress, the stress management capacity, the resistance resources and coping patterns of an individual. The impact of stressors changes according to the interpretations of the situations. A person who adapts to situation may reduce susceptibility to illness.

There is substantial evidence that stressful life events play an important role in causing physical and mental illness. There is a clear connection between stress and a number of different diseases, including heart attack, ulcers, arthritis, allergic reactions and psychiatric conditions such as anxiety neurosis and depression (Dohrenwend & Dohrenwend, 1974; Fisher & Reason, 1988). The impact of societal conditions such as economic change on personal life events and health has also been examined (Brenner, 1973). This revealed a strong association between aggregate level of unemployed and variety of health disorders. Schmalo amd Engel (1967), Holmes and Rahe (1967), Grant et al. (1974) has established this point beyond doubt that there exists a positive relationship between stressful life events and subsequent illness. It is important to study the life events between the onset of the illness and a recent increase in the number of stressful events that necessitate socially adaptive responses on the
part of the individual. The underlined assumption is that such events serve as predisposing and/or precipitating factors for the subsequent illness.

In short we can say that any event that markedly increase the stressfulness of living tend to play havoc with human organism and lead to an increase in psychosomatic disorders (like asthma, migraine, ulcers etc.) as well as other physical and mental problems. Individuals are confronted with a great number of taxing situations, for instance a noisy neighborhood, difficulties at work, time pressure, problems with a romantic partner, or financial constraints. This list might seem to be an arbitrary array of situations. In fact, probably not everyone would consider these situations as being stressful or of great personal importance. However, the cumulative exposure to a number of aggravating daily hassles or situations regarded as stressful over a long time period may have detrimental health effects. In contrast, there is no doubt about the personal significance of major life events and their potential impact on health. Extreme stressors can create both acute and prolonged psychological distress and bodily ailments.

Research is inconsistent when it comes to answering the question of whether the characteristics of the event itself (e.g., injury, threat, near-death experience) or the changes that occur in its aftermath (e.g., relocation, job loss) are responsible for adjustment difficulties. How does stress cause illness? It is a general assumption that stress leads to poor health in a number of different ways. Hinkle (1973) in accounting for the association between life events and patterns of illness, concludes, “changes in significant social or interpersonal relationships are very often accompanied by changes in habits, changes in patterns of activity, changes in the intake of food and medication, and changes in exposure to potential sources of infection or trauma. They are also frequently associated with changes in mood, and with physiological changes
directly mediated by the central nervous system. Any or all of these might affect the frequency or severity of illness.

According to Selye (1956), stress operates in three phases: alarm, resistance, and exhaustion. When the organism’s resistance breaks down, an ensuing long period of exhaustion can manifest itself in illness. In the 1950s, Selye did not have much evidence for his claim, but today there is a great deal of substantiation. However, a strong linear relationship cannot be expected since illness is obviously caused by many factors, and stress is only one of them, contributing to pathogenesis in one way or another. Most individuals who experience stress do not develop illness. Stressful life changes are usually temporary, whereas other risk factors for disease can be longer-lasting, for example smoking, alcohol consumption, a high-fat, low-fiber diet, and risky lifestyle in general. When comparing a single life event with these long-term behaviors, the latter seem to be more influential in developing illness. Moreover, the experience of a critical life event is related to coping and social support, whereby these two factors may moderate the stress illness connection.

One of the two central issues in research on stressful life events is suggested by an apparent paradox posed, for example, by Selye’s (1956) conclusion from his influential physiological research that “stress is part of life. It is a natural byproduct of all our activities”. Hinkle (1973) has also noted the resemblance between ordinary life activities and laboratory studies of stress-

“The ordinary activities of daily life- the ingestion of food, or the failure to ingest food; muscular activity, breathing or not breathing; sleeping or not sleeping- mall affect the dynamic steady state. Their effects are not qualitatively different from those of the “stressors” that are used in the laboratory. It has been aptly said that ‘to be alive
is to be under ‘stress’”. Although, investigators have assumed that life events vary in
stressfulness. One of the central issues that have guided research on stressful life
events is therefore: What are the properties or conditions that distinguish more
stressful from less stressful life events? The second issue in research on stressful life
events plays a role in the etiology of various somatic and psychological disorders.

The correlation between physical and emotional disturbances is well brought
out in the reports of Jacob et al. (1970, 1971) of their initial and follow-up
evaluations of 179 college students in the Boston area, 106 of whom sought help for
respiratory infections. The ill subjects were significantly more likely than the
“normals” to perceive the year preceding their illness as one characterize by failure
and disappointment; and the more severely ill they were the frequent and intense were
their reports of unpleasant and stressful events and emotions. A follow-up study
revealed recurrences of illness and repetition of treatment seeking behavior, while the
healthy controls tended to stay healthy. Grief associated with these stressful
experiences consists of or has different stages (Bowlby, 1960; Parkes, 1972). These
are shock, denial, depression, guilt, anxiety, aggression and reintegration.

Responses to extreme stress vary greatly in severity and length. Some
individuals and communities are paralyzed for a long time, whereas others are
affected only moderately and for a very short time period. When high magnitude
events occur, not only the individual, but also whole communities are challenged to
cope with them. Figley, Giel, Borgo, Briggs, and Haritos-Fatouros (1995) list five
criteria for the determination of a disaster's impact: (a) knowledge about the
magnitude of loss, (b) knowledge of the hazard, (c) knowledge of recurring risk,
degree of warning and preparedness at the individual as well as at the community
level, (d) scope of impact to community functioning, and, finally, (e) chance of escaping during or immediately after the disaster strikes.

It is widely accepted that stress can trigger seizures for many people with epilepsy. In one survey of 177 patients, 58% identified that seizures occurred more frequently when they were stressed, with seizures occurring sometimes days or weeks later (Mattson, 1991). Similar studies also indicate that stress is the most frequent trigger of seizures, and is linked with sleep deprivation and fatigue (Frucht, Quigg, Schwaner & Fountain, 2000). In a more recent survey of 89 patients, 64% of people with epilepsy reported that they believed stress increased the frequency of their seizures (Haut, Vouyiouklis & Shinnar, 2003). 32% had tried stress reduction techniques, and of those who hadn’t, 53% were willing to try. However, it is not just stress, but also life events that are reported to influence seizure frequency. Major life events identified by people interviewed in the study include death, abuse, financial crisis, divorce, job loss, marriage and pregnancy/birth. Minor life events which increased seizures included family tension, arguments, time pressure, debt and traffic/car related events.

The studies show that any of the techniques are used for the reduction of stress due to the life events have reported improved sleep, decreased aggravation and tension during the day, increased overall health, and reduced fear of seizures, indicating a greater sense of well being (Rosseau, Hermann & Whitman, 1985). But the question arises is there any scientific evidence that stress may influence the activation of seizures? Although this is an under researched topic, some evidence exists. It is reported in some studies that a substantial numbers of patients who believe that the frequency of their seizures increases if they are exposed to stress (that is, an increase in excitement, tension, sadness, or other emotions caused by change in the
patient's internal or external circumstances) (Fenwick, 1991; Mattson, 1991; Servit et al., 1963). 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).

Temkin and Davis (1984) undertook a study on stress as a risk factor for seizures among adults with epilepsy. This study examined the effects of major life events, daily hassles and uplifts, and daily stress levels as they increase or decrease the risks of having seizures and estimates risk ratios for specific stressors and perceived stress levels. The results showed that high stress levels and stressful events were associated with more frequent seizures for most participants. The association between higher stress levels and increased seizures was confirmed in group analyses. This study provides empirical evidence of the association between stress and seizures and describes the use of a statistical model that is useful for investigating risk factors as they influence physical and mental illness.

Webster and Mawer (1989) investigated seizure frequency and major life events in epileptic patients. Month by month seizure records were kept and the response to treatment was systematically explored. The seizure record was then compared with the parallel life events record and the associations were found between life events and seizure frequency in patients (total 6).
Hermann et al. (1990) studied psychosocial predictors of psychopathology in epilepsy in which psychopathology was found to be associated with increased perceived stigma, elevated number of stressful life events during the past year, poor adjustment to epilepsy, financial stress, vocational problems, external locus of control and an earlier onset of epilepsy. Multiple regression procedures reduced this list to 3 independent predictors of psychopathology: an increased number of stressful life events in the past year, poor adjustment to epilepsy and financial stress.

Neugebauer et al. (1994) evaluated stressful life events and seizure frequency in patients with epilepsy in which 46 subjects were asked to maintain daily dairies for 10-36 weeks in which they recorded seizures and life events. Events increased seizure frequency in 5 subjects and events decreased seizure frequency in 2 subjects. When individual risk ratios were aggregated across subjects, unpleasant events were significantly associated with seizure increase only in men. In other aggregate analysis, events and seizures were not associated in subjects grouped by seizure type, age of seizure onset, current age, ethnicity, educational level or marital status.

Zhu, Jin, Xie, and Xiao (1998) explored quality of life and personality in adults with epilepsy. They found that epileptic patients had higher negative scores in the family-related problem section of the Life Events Scale, compared with the control group. The patients with epilepsy were also more likely to lie, their emotions were more changeable, and their character more introverted, although their behavior patterns were similar to the controls.

Cyriac, Kumar, Kunhikoyamu and Girija (2002) investigated social factors and psychopathology in epilepsy in which 106 epileptic patients were assessed over a
period of 6 months for psychiatric morbidity, social support, and stressful life events in previous year and disability.

Fleisher et al. (2002) carried out a comparative study of trauma-related phenomenon in subjects with pseudo seizures and subjects with epilepsy and 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) illustrated stress and epilepsy in relation to the patient perception in which a questionnaire was administered to patients to assess perceptions about stress, seizures and stress reduction. 89 patients completed the questionnaire. Overall 64% of patients reported the belief that stress increased the frequency of their seizures. This belief was not significantly associated with gender, age, location of care, epilepsy classification or seizure control but 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. Both major and minor stressors were reported with equal frequency.

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.

Stressful life events do make adjutive demands on patients but its impact to a large extent can get mitigated by the family environment. A positive family environment can help an epileptic patient to make the necessary adjustments without getting hassled up.
Family Environment of Epileptic Patients

Family is an important social institution which provides not only security and support but is also responsible for overall development of the individual. It is the nucleus or primary environment of the individual. The individual begins his life history in the home in which he is born. It is the first primary group characterized by direct human relationships, where, with a very small minority of exceptions, every child lives for a considerable period of time. The family is the first and foremost agency in the “cultural conditioning” by providing the individual with “his earliest behavior pattern and standard of conduct”. The infant at birth is primarily a biological entity. The initial exposure in the journey of becoming a social and psychological being starts with the family.

The environment of the family is a critical force in the personality development. Intra familial relationships and child rearing practices in particular have a pervasive and lasting effect upon the child’s development. Internal family patterns during an individual’s childhood represent many of his crucial relationships with the “significant others” who influence his social and psychological adjustment (Duvell, 1946). Family environment as observed by Moos and Moos (1981) includes interpersonal relationship among family members, the direction of personal growth emphasized within the family and the basic organizational structure of the family. The main ideas that guide our thinking about family environment are these:

1. The family is the main setting for the experiences of the child, particularly the young child.
2. The family is a dynamic set of relationships among all the people who live in the family.
3. Children’s behavior, ideas, thoughts and fantasies affect the lives of those with whom they live.

4. The behavior, ideas, thoughts and fantasies of father and mother, affect the lives of their children.

5. This group has resources that are used to adjust in life.

The family environment is influenced by a numbers of factors like the nature of family constellation, number of children in the family, marital relationships between husband and wife, maternal or paternal employment and socio-economic and religious background of the family. It possesses a certain consistency so that the impact of the same basic values, individuals, material objects etc. is felt over and over. Parental influence may not be felt in a specific situation, but the attitudes and ideas expressed day after day inevitably leave their mark. It is the most important part of the child’s environment. When we speak of “family”, we are usually speaking of the group of adults (usually father and mother) and their children who live together in the same house for a long time. The family environment includes all the members and the physical conditions existing in it. The family environment has enormous influence on the development of different aspect of the child’s personality. The predominating quality of family environment has long lasting impact on child’s socio-psychological development. In this connection the personality of the parents, their attitudes and emotional behavior dispositions and the climate of the home environment all are crucial factors (Stott, 1940). During the course of development the child interacts with all such factors of his family environment and the nature of that interaction determines the nature of his behavior patterns and personality characteristics.

Many researchers have emphasized the importance of family and child rearing practices. Favorable family environment leads to the rich psychological
harvest for the individual. But a family that functions poorly cannot adjust to change because its mechanisms are either inflexible or ineffective. The family’s daily habits and internal communication—its transactional patterns, as they are called—affects its individual members. The pathology is in the system as a whole. In some families everyone is so over responsive to everyone else. They develop habits of intimate quarreling and complaining that become difficult to change. In other families, the family members have little mutual contact or concern; their boundaries are rigid. Family systems that are too closely build or enmeshed response too intensely to change; every disturbance may turn into a crisis. Systems in which family members are distant or disengaged, do not respond strongly enough, serious problems are ignored and issues are avoided. Good families build good people. A wholesome family life meets the requirements of a growing personality. Families that put their members first recognize the importance of human needs and see that they are satisfied. Such families not only meet the needs of children as they grow up, but they also build in them good habits of living that makes wholesome maturity possible.

Some families find it difficult to meet the needs of their members. They may be unable to supply the basic requirements for physical well beings. Families lacking basic amenities and those that are disorganized give rise to psychological dissatisfaction and constant mental pressure which may result in different physiological and psychological disorder. Even more difficult is the meeting of personality needs. Love, understanding and encouragement such as all of us need from each other do no “just come naturally”. It takes a mature well adjusted person to give enough of him to meet the everyday needs of the people he lives within. A nervous mother, a sick father, parents burdened with anxiety or pre occupied with their affairs often neglect the emotional needs of their children and of each other. That
is one reason why it is so important for each of us to grow as sturdy a personality as we can, so that we can help rather than hinder the growth of others around us.

The symptoms of defective family system are said to take different forms in different members of the system. A husband and wife, for example, may seem to have very different personalities but this may be due not to their intrinsic characteristics as individuals but rather to their functions within that system. The family also provides the emotional security to the child in his early years. The parents give their affection to the child as they require it most during this period. They try to solve all the problems of the child as best as they can. The ideal atmosphere in the family and healthy family relationship between the parents themselves, their cordial relations with other members in the family, have a great influence on the child. These ideal relations bring about the emotional adjustment of the child. Emotional immaturity of the parents also affects the maturity level of children. There is evidence of emotional quality of parents producing similar effects in children. The quality of one’s emotional adjustment is determined by the socialization of the individual who comes into the society with fundamental human needs (Hoffeditz, 1943). Relationships which provide opportunities for the satisfaction of the basic needs for affection, recognition, approval, freedom etc. and which enable the members to make responsible contribution, are the major determinants of child’s emotional and social development.

Critical experiences in the home such as deprivation of love, adoption into a foster home, neglect or experience of same may prove traumatic. Sudden traumatic events for new adjustments may occur when the child leaves the shelter of the home and finds himself in a different environment of the school and playground. Failure or ridicule may accentuate new traits and the sudden created feeling of inferiority may
profundely affect the subsequent course of life. If the family members enjoy each other company, spend a lot of time doing things together and have a positive attitude towards people at home and outside; the infants imbibes similar attitude. Conversely if the family interactions are restricted to the mundane business of day to day living or interaction takes place only when there is a conflicting situation, the child does not learn to look forward or interact with others in a positive frame of mind. If the child has enjoyed the companionship of his parents, he will not be awed when dealing with people outside the home who are in a position of authority. If he is accustomed to take orders passively, he is likely to continue to do so outside the home. If sibling interaction has been meaningful and enjoyable, he will look forward to the company of his peer group outside the home.

Several longitudinal studies have also demonstrated that parental coldness, passivity and neglect, lack of family cohesion and shared leisure time are associated with maladjustment (McCord, 1979). Communication and problem solving in families with maladjusted adolescent is characterized by lack of intimacy and give and take relationship and more by blaming, anger and defensiveness than normal families (West & Farrington, 1973). Research shows that rejection attitude towards children by their parents makes them fearful, insecure, attention seeking, jealous, aggressive, hostile and lonely (Pepitone & Wilpizeski, 1960; Bandura & Walters, 1959). Faulty discipline such over permissiveness in terms of total freedom to children develops a feeling of insecurity, antisocial aggressiveness, anxiety, friction in behavior, frustration (Blood, 1972; Antonvsky, 1959; Hurlock, 1964). Severe discipline leads to excessive condemnation of self for socially disapproved behavior, anxiety, over aggressive behavior makes children greater conformist to standards and role expectations and keep them to be possessed with less initiative, spontaneity and
friendly to others (Watson, 1957). Individual form non-cohesive families (distressed or disrupted) are more prone towards mal adjustment, frustration and behavioral problems (Beavers, 1981; Spigelman, Spigelman & Inglession, 1991). Thus, families as opined by Coleman (1988) not only predispose but also precipitate and maintain maladaptive behavior.

In adolescence “psychological weaning” from parents in order to pass college examinations, to earn a living, to conquer new worlds, as it were, after breaking the habits of childish obedience, dependence and protectedness, which is inevitably fostered by immaturity of childhood may produce traumatic experiences (Hollingworth, 1930). In adult years, shocks due to business failure, illness and bereavement may make profound alternatives in personality, leading sometimes even to disorders. The infant apparently has psychological needs which must be met if he is to develop into an emotionally mature adult. Just as nourishing food and appropriate hygienic conditions are essential to satisfactory physical health and development, suitable psychological experiences are imperative to adequate personality development for it is in the home that the child first meets the situations which may give rise to tension. Henery and Warson (1951) write “A household may be described and analyzed as a field of forces whose essential dynamic is derived from systems of interacting persons……. In each of these systems each person in the household functions in a somewhat different way. The exact character of each system is eventually determined by the personality configurations of the individuals. Meanwhile the systems they set up by the virtue of their personality configurations. React upon them to affect their behavior. The interactional systems operatives in complex households are forces that ultimately have an important determining effect on the fate of any endopsychic process”.
The infant’s family also is in a crucial position to support or threaten his feeling of personal worth. If the conditions of the infant’s home are such as to enable him to maintain adequate personality adjustment, he is on his way to satisfactory development. If, on the contrary, the home fails to provide the infant the appropriate affection responses and a secure sense of status, he is likely later to engage in certain defense mechanisms- in some instances those which are socially unacceptable - designed to overcome his feeling of insecurity. Fleming (1944) says- “Characteristics seem to be related to the attitudes of parents and to inner-familial experiences of rejection or favoritism rather than to order of birth”. Much stunting- psychological and physiological- occurs as a result of the cold (misnamed scientific) handling of a child.

If the infant receives adequate care, cuddling, attention and affection he would look upon people as sources of gratification and would later consider the world as a safe and interesting place to live in. In the absence of affection and approval, he would feel insecure and if he encounters too much rejection and deprivation of love, he would look upon the world as threatening and hazardous (Murphy, 1947). Studies on family environment of children with conduct problems (Tolahan & Lorian, 1998), eating disorders (Offner, 1997) has also reported their families as less cohesive, less emotionally expressive and more conflictional than normal families. Some researchers also investigated the impact of family support on rehabilitation program and found that patients with closer family ties did better during such programs indicating the role family environment had in not only as a risk factor, but also in maintenance of physical and psychological symptoms as well as prognosis of the disease (Freidl & Wolfgans, 1992).
Family environment also has its own impacts on the organic and neurological disorders, such as, epilepsy etc. People with epilepsy rely heavily on family, neighbors and health care providers and to a lesser extent draw upon friends, work associates and ministers of religion for support. Therefore people epilepsy appears to draw their support from sources that do not require them to go far away from home to use. Thus, their social support network is primarily restricted to their home. This social support network is extremely important, especially for people with epilepsy. People with epilepsy are more likely to experience various psychological and physical ailments. For these reasons, people with epilepsy are encouraged to form solid social relationships. When a teenager or child of any age develops seizures, the impact on the family can be enormous. Worries and fears may affect everyone, and left untreated, crises can occur too easily. The family is affected by the child’s condition and responds to the challenges. Continuous challenges tend to stress the family. Over time, patterns of responses emerge, and the family develops a style of functioning to respond to their stress. The worries of epilepsy begin early, commonly after the first seizure, and often continue to exist beyond the cessation of seizures.

The intrusion or invasion of epilepsy can shake up the family system and how families are organized and managed. In families, usually relationships or coalitions are established, roles develop, and members establish a social system as they join together to manage and balance everyone’s needs. As part of a family, children have their first opportunity to gain a sense of self worth. The importance of the family system on an individual’s development is without question. Families provide the foundation for children to learn how to behave, communicate, and interact with other people. Family behavior can also be viewed in terms of roles and relationships. One person may serve in many different roles, such as a mother, wife, professional, and
friend, all at the same time. Each role carries with it responsibilities and expectations. As one role begins to require more time and effort than previously expected, time is taken away from other roles, and there is the potential for stress and frustration. If two people have different expectations of their roles and responsibilities, the tension and stress will increase. Sibling relationships can also become an issue as parents’ attention is focused on their child with epilepsy. Over time, the increased supervision of the child with seizures can lead to unhealthy overprotection.

Some families have difficulty communicating and adapting to the continuous and stressful changes required and is not able to be both stable and flexible at the same time. Many factors should be considered when looking at the effect of stress on family functioning. These include at what point the stress occurs, the duration and amount of stress, and the limit to which a family can accommodate the stress. In effective family systems, the parent(s) are able to maintain boundaries between themselves and their children, utilize appropriate power, and develop strong supportive relationships. Also, effective families have consistent rules for all children, although accommodations may need to be implemented for the child with epilepsy to achieve success. All feelings are acknowledged, and members join together during crises to solve problems. In spite of the intrusion of epilepsy, when families work well together, clear roles are promoted and independence is encouraged; for example, children are allowed to attend sleepovers and camps. The family communicates with honesty and acceptance and tries to find positive meaning for their struggles. As a result, families who cope successfully often become stronger from their experience. In these resilient families, support networks and peer relationships are encouraged within and outside of the family. In time, parents and their children learn to establish relationships with doctors and professionals and become strong self-advocates.
Austin (1988) explained in their study that children with epilepsy have significantly lower self-concepts, more behavior problems at school, and more depression than children with asthma. In the epilepsy sample, family resources and adaptation were significantly lower for children with poor psychosocial adaptation when compared with children with good psychosocial adaptation.

Austin, Risinger and Beckett (1992) discussed correlates of behavior problems in children with epilepsy. They found that five variables that contributed significantly to prediction of behavior problems—female gender, family stress, family mastery, extended family social support, and seizure frequency. These factors accounted for 29% of the variation in behavioral problems. Their findings suggest that family variables are important correlates of behavior problems and should be considered in clinical management of children with epilepsy.

Krawetz et al. (2001) investigated family functioning in subjects with pseudo seizures and epilepsy. They found no differences between subjects with both pseudo seizures and epilepsy and subjects with pseudo seizures alone. The families of subjects with pseudo seizures displayed comparatively statistically significant elevations in their responses on the roles scale of Family Functioning Device and the responses did not differ in regard to the role they assumed within the family unit. In summary, individuals with pseudo seizures view their families as being more dysfunctional, particularly in the area of communication, whereas their family members perceived difficulties in defining roles.

McCusker, Kennedy, Anderson, Hicks and Hanrahan (2002) examined adjustment in children with intractable epilepsy in relation to importance of seizure duration and family factors. They found that intra familial relations (degree of
conflict/cohesion and so on) were not only associated with adjustment difficulties in the child, but also with the frequency of seizures themselves.

Fastenau, Shen, Dunn, Perkins, Hermann, and Austin (2004) described neuropsychological predictors of academic underachievement in pediatric epilepsy. They found that a subgroup of children with epilepsy (those who have not only neuropsychological deficits but also disorganized/unsupportive home environments) are particularly at risk for adverse academic outcomes.

Austin, Dunn, Johnson and Perkins (2004) studied the behavioral issues involving children and adolescents with epilepsy and the impact of their families. Deficient family mastery and parents’ confidence in managing their child’s discipline were associated with behavior problems at baseline and at 24 months; they also predict child behavior problems over time. Decreasing parent confidence in disciplining their child was associated with increasing child behavior problems. Decrease in the parent emotional support of the child was associated with increase in child internalizing problems.

Rodenburg, Meijer, Decovic and Aldenkamp (2005) investigated family factors and psychopathology in children with epilepsy. It was found that as compared with the control groups, families that had an epileptic child generally fare worse on the whole range of family factors, indicating lower parent-child relationship quality, more depression in mothers and problems in family functioning. Significant associations were apparent between distinct family factors, especially parental psychological control, parental attributions about epilepsy, and family members’ satisfaction with family relationships and psychopathology in children with epilepsy.
Baun et al. (2007) conducted a study on temperament, family environment and behavior problems in children with new onset seizures. They found that family adaptive resources moderated the relationships between temperament and internalizing and externalizing behavior problems at school. Children with a difficult early temperament who live in a family environment with low family mastery are at the greatest risk for behavior problems.

Thornton et al. (2008) carried out a study on family function in cognitively normal children with epilepsy in relation to impact on competence and problem behavior. Moderate correlations were found between competence and behavior function and family function in both children with epilepsy and their siblings. In families functioning at the highest level, both cohorts did well. In those at the lowest level, approximately half of the children in either cohort had problems. For average functioning families, behavior and competence issues were more frequent in children with epilepsy than their siblings.

Upton, Dominic and Ellis and Thompson (2008) in their study on epilepsy and family concluded that the family environment may be an important intervening factor between the condition and the outcome for the family unit, and a number of factors are reviewed which have been suggested to mediate this relationship.

**Subjective Well-being of Epileptic Patients**

Well-being is a general term denoting feelings of high self-esteem, life satisfaction and lack of negative symptoms. Well-being or positive health can be defined as consisting of those physical, mental and social attributes that permit the individual to cope successfully with the challenges of life. All living being, human or
animal, yearns for happiness and bliss. Well-being is harmonious adjustment and an integrated living that is free from internal conflicts. It is a complex construct that concerns optimal psychological functioning and experience. In part, this reflects the increasing awareness that just as positive affect is not the opposite of negative affect (Cacioppo, Gardner & Bernston, 1999), well-being too is not the absence of mental illness. It is a condition, which is a characteristic of the average person who meets the demands of life on the basis of his own capacities and limitations. It denotes a quality of wholeness or soundness. It is not a mere absence of illness but an active quality of individual’s daily living. It governs how an individual feels about others, how he is able to face the realities of life. It is routed in his ability to balance feelings, desires, ambitions, ideas and competence. The individual’s condition or state of well-being is continuously changing depending upon his own actions and the factors and forces acting upon him.

Researchers have used Subjective “Well-being” (subjective well being) as a psychological term for happiness. The term subjective well being refers to people’s evaluations of their lives including cognitive judgments such as life satisfaction and effective evaluations (moods and emotions) such as positive and negative emotional feeling. Words like contentment, well-being (subjective well being), bliss, harmony etc. are synonymous of happiness. People perceive many pleasant things, engage in interesting activities and are satisfied with their life in general- that contributes to happiness.

Subjective well being can be simply defined as the individual’s current evaluation of her happiness. Such an evaluation is often expressed in affective terms. When asked about subjective well being participants will often say ‘I feel good” (Schwartz & Strack, 1991). Subjective well-being is thus at least in part, a proxy for
global affective evaluations. So well-being is the development of our natural strengths as individuals and human beings plus endorsement in the form of autonomous choice to develop these strengths.

According to Diener and Diener (1995) “subjective well being refers to people’s evaluations of their lives-evaluations that are both, affective and cognitive. People experience abundant subjective well being when they feel many pleasant and few unpleasant emotions, when they are engaged in interesting activities, when they are satisfied with their lives.” For example, a person might be said to have high subjective well being if he or she experiences life satisfaction, frequently experiences positive emotions and infrequently experiences debilitating sadness or depression. Thus Diener (1995) suggested that these definitions can be grouped into three categories – the first involved the assessment of qualities of individual (for example, virtuousness success) by others, hence it can’t be thought as a subjective state. The second encompasses the individual’s assessment of satisfaction with life. Shin and Johnson (1978) have defined this form of happiness as a “global assessment of a person’s quality of life according to his own chosen criterion”. Finally, the third meaning of well being is defined as “devoting a preponderance of positive affect over negative affect (Bradburn, 1969).

For Diener, Suh and Oishi (1997) the idea of Subjective well being or happiness has intrigued thinkers for millennia, although it is only in recent years that it has been measured and studied in a systematic way. A person's evaluation of his or her life may be in the form of cognitions (e.g., when a person gives conscious evaluative judgments about his or her satisfaction with life as a whole, or evaluative judgments about specific aspects of his or life such as recreation). However, an evaluation of one's life also may be in the form of affect (people experiencing
unpleasant or pleasant moods and emotions in reaction to their lives). Thus, a person
is said to have high subjective well being if she or he experiences life satisfaction and
frequent joy, and only infrequently experience unpleasant emotions such as sadness
and anger. Contrariwise, a person is said to have low subjective well being if he or she
is dissatisfied with life, experiences little joy and affection, and frequently feels
negative emotions such as anger or anxiety. The cognitive and affective components
of subjective well being are highly interrelated, and only recently are we beginning to
understand the relations between various types of subjective well being. Most people
evaluate what is happening to them as either good or bad, so they are normally able to
offer judgments about their lives. Furthermore, people virtually always experience
moods and emotions, which have a hedonic component that is pleasant, signaling a
positive reaction, or unpleasant, signaling a negative reaction. Thus, people have a
level of subjective well being even if they do not often consciously think about it, and
the psychological system offers virtually a constant evaluation of what is happening to
the person. There are three primary components of Subjective well being: satisfaction,
pleasant affect, and low levels of unpleasant affect. Subjective well being is structured
such that these three components form a global factor of interrelated variables. Each
of the three major facets of subjective well being can in turn be broken into
subdivisions. Global satisfaction can be divided into satisfaction with the various
domains of life such as recreation, love, marriage, friendship, and so forth, and these
domains can in turn be divided into facets. Pleasant affect can be divided into specific
emotions such as joy, affection, and pride. Finally, unpleasant or unpleasant affect can
be separated into specific emotions and moods such as shame, guilt, sadness, anger,
and anxiety. Each of the subdivisions of affect can also be subdivided even further.
Subjective well being can be assessed at the most global level, or at progressively
narrower levels, depending on one’s purposes. For example, one researcher might study life satisfaction, whereas another might study the narrower topic of marital satisfaction. The justification for studying more global levels (rather than just focusing on the most molecular concepts) is that the narrower levels tend to co-occur. In other words, there is a tendency for people to experience similar levels of well being across different aspects of their lives, and the study of molar levels can help us understand the general influences on subjective well being that cause these co variations. A justification for studying narrower definitions of subjective well being is that we can gain a greater understanding of specific conditions that might influence well being in particular domains. Furthermore, narrower types of measures are often more sensitive to causal variables.

According to Diener (1984), there are three characteristics in the study of subjective well being. First, it is subjective. According to Campbell (1976) it resides within the experience of the individual. Second, subjective well being includes positive measure. It is not just the absence of negative factors, as is true of most measures of mental health. However, the relationship between positive and negative indices is not completely understood. Third, subjective well being measures typically include a global assessment of all aspects of a person’s life.

Argyle, Martin and Crosland (1989) believed that happiness (subjective well being) is composed of three related components: positive affect (pleasant mood and emotions), absence of negative affect (unpleasant mood or emotions) and satisfaction with life as a whole. Although these three components often co-occur to some degree within the same individual, that is separable. Someone who experiences a great deal of pleasant effect, for example, may also experience very little unpleasant effect and
be labeled “happy”, whereas someone who experiences high level of both pleasant and unpleasant affect may be labeled as “highly emotional”.

Subjective well-being especially life satisfaction is likely to reflect the person’s fulfillment of his/her values and goals, and involves the search for meaningfulness in one’s life. Subjective well-being becomes a broader measure of quality of life because it reflects deeper values beyond physical pleasure and ephemeral emotions. Costa and McCrae (1988) further posited that extraversion influence positive affect whereas neuroticism influences negative effect. They have shown that these two personality traits can account for a significant variance in subjective well-being. The general tendency towards positive thoughts would explain why the majority of people report positive levels of subjective well-being (Diener & Diener, 1996). Perhaps more importantly for the current topic individual differences exist in Pollyannaism. Those who are able to recall more pleasant stimuli are more likely to report that they are happy. It is possible that differences in accuracy and efficacy of possessing pleasant information versus unpleasant information may lead to differential levels of subjective well-being.

According to Verma (1998), a mind which is free from conflicts and hence is clear about its duties that are performed with a spiritual mission is a mind which enjoys wellbeing. General wellbeing implies hope, optimism, happiness and faith in the normal absolutes of truth, beauty and goodness, a proper perception of the means and ends related to the purpose of life and more than all a realization of the value of life. According to Verma and Verma (1989) general well-being refers to ‘the subjective feelings of contentment, happiness, satisfaction with life, experience of one’s role in the world of work, sense of achievement, utility, belongingness with no distress, dissatisfaction and worry etc.’.
While talking about epilepsy it is clear that seizures can strike at any time. They're unpredictable. It can affect life in many ways. Holding down a job, driving and different daily activities become difficult and life becomes more compromised. This results in a decreased sense of well being within the individual.

Collings (1990a) in their empirical study on psychosocial well being and epilepsy examined the self-esteem, life fulfillments, social and interpersonal difficulties, general physical health, worries and happiness of 392 adults with epilepsy using various psychometric instruments. The findings indicated general low well being amongst the epilepsy patients compared to non-epilepsy sample.

Collings (1990b) investigated correlates of well being in a New Zealand epilepsy sample where he examined the association between social, psychological and physical well being and a range of epilepsy related and socio-demographic variables in sample of 138 people with epilepsy. Significant correlates of well being identified were- employment status (+0.37) seizure control (-0.30) certainty over diagnosis (-0.25), and age (+0.19).

Collings (1990c) examined the associations between social, psychological and physical well being in a sample of people with epilepsy. The findings revealed that people’s perceptions of themselves and of their epilepsy were the variables most strongly related to overall well being and that seizure frequency, time since, a diagnosis of absence seizures and being employed full time also seemed of some importance.

Collings (1994) carried out a comparative study on adults with epilepsy in three countries. The findings revealed that the American with epilepsy reported significantly lower levels of well being then both the New Zealanders and British.
Using the multivariate statistical methods of discriminant and cluster analysis, the scales which were especially predictive of nationality were shown to be life fulfillment, worries, negative and (to a lesser extent) general physical health.

Suh, Diener and Fujita (1996) investigated events and well being on 115 patients. They found that only life event during the previous three months influenced. Well being and life events both showed a substantial degree of temporal stability. It was also found that good and bad lives events tend to co vary, both between individuals and across periods of the lives of individuals. Also, when events of the opposites valance were controlled, events correlated more strongly with well being.

Baker, Jacoby, Buck, Brooks, Potts, and Chadwick (2001) undertook a study on quality of life of older people with epilepsy. There were few differences between older and younger people with regard to their reported quality of life, though younger people were more likely to report feeling stigmatized by their condition. Older people with epilepsy perceived quality of life more negatively. They also emphasize that older people do not necessarily experience poorer quality of life than younger people, but those first diagnosed in later life do appear to have a quality of life which is more impaired.

Gilliam (2003) explored the impact of epilepsy on subjective health status. Studies that have included measures of quality of life, patient preferences, and disability in epilepsy have shown that the magnitude of the adverse effects of recurrent seizures on many aspects of subjective health status is as large as that seen with diabetes, mellitus and active cardiovascular disease. Studies of patient oriented, comprehensive outcomes after epilepsy indicate positive treatment effects in broad areas of function and well being. Although few trials of epilepsy drugs have included
health outcome instruments, available studies suggest that greater than 50% seizure reduction is associated with improved quality of life. Adverse medication effects and depression appear to have a strong association with subjective health status in epilepsy, independent of seizure frequency.

Birbeck, Hays, Cui, and Vickrey (2002) carried out a study on seizure reduction and quality of life improvements in people with epilepsy. Subjects who became seizure free reported significantly more positive change than those who did not. Changes over time in overall quality of life scores were significantly more positive for subjects who achieved seizure freedom (i.e., 100% reduction in seizure frequency) than for those who did not. No significant change in quality of life instrument -31 and quality of life instrument -89 overall scores was observed for subjects who did not achieve seizure freedom.

Norrby (2003) investigated self assessment of well being in a group of children with epilepsy. The results showed that the group of children with controlled epilepsy did not differ significantly from the age matched controlled groups. There was no significant difference between the sexes except for the dimension of vitality, where the boys scored better than girls. Thus the well being of children with controlled epilepsy seems to be similar to that of children from the controlled populations.

Davies, Heyman, and Goodman (2003) conducted a population survey of mental health problems in children with epilepsy where obtained parental reports of well being showed more problems. They further reported that emotional, behavioural, and relationship difficulties were common in children with epilepsy, and constitute a
significant burden to the children and their families, indicating the need for effective mental health services for these children.

Guekht, Mitrokhina, Lebedeva, Dzugaeva, Milchakova, Lokshina, Feygina, and Gusev (2007) investigated factors influencing on quality of life in people with epilepsy. They found that in patients with epilepsy in Russia the total score of quality of life instrument-31 was rather low. Relationship of quality of life (total score) and frequency of seizures and duration of disease was analyzed. Frequency of seizures was the most significant parameter related to quality of life. Duration of disease also correlated with quality of life total score). Significant but rather weak association (link) between frequency of seizures and almost all of subscales of quality of life was noticed.

**Rationale of the Study**

The above review highlights the fact that a person suffering from epilepsy not only has to confront the stigma associated with it but also experiences greater stress due to life events. As epileptic seizures involve bodily sensations, it arouses the patient and often results in a feeling of fear. This makes the epileptic patient anxiety sensitive. Anxiety sensitivity is a tendency to respond fearfully to bodily sensations associated with fear and anxiety. It appears that stressful life events and anxiety sensitivity adversely affects the subjective well being of patients. Previous researches on well being have shown that this adverse impact can be moderated by the nature of family environment. If patients perceive their family environment as more supportive and conducive then stress and anxiety will not have adverse impact on well being in comparison to less supportive family environment. It was with this objective in mind that the present study was planned to investigate the role anxiety sensitivity and life
events along with family environment had on subjective well-being of epileptic patients. To get a clearer picture a normal group was also taken to see whether there was any difference in the nature of relationships between variables between the groups. With this aim the following research objectives were made.

**Objectives of the Study**

1. The main objective of the study was to investigate the extent to which epileptic patients are anxiety sensitive in comparison to the normal adults.
2. The study aims to see whether epileptic patients and normals differ on nature of family environment.
3. To see the extent to which epileptic patients and normals differed on life event experiences.
4. Another objective was to explore the impact of anxiety sensitivity, stressful life events, and family environment on subjective well-being of epileptic patients.

**Research Questions**

1. Is there a significant difference between the mean scores of epilepsy and normal adults on anxiety sensitivity, family environment, stressful life events and subjective well-being?
2. Do the epileptics and normal adults significantly differ on the dimensions of family environment (cognitive framework, cohesion, expression, independence and organization)?
3. Do both the groups show any relationship between anxiety and sensitivity, family environment?
4. What are the significant predictors of the subjective well-being amongst epileptics and normal adults?
Hypotheses

1. The level of anxiety sensitivity will be high amongst the epileptics in comparison to normal adults.

2. Epileptic patients will experience more stress due to stressful life events than normal adults.

3. It is further hypothesized that on various dimensions of family environment the patients of epilepsy will perceive it less supportive than normal adults.

4. The subjective well being of epileptic patients will be low in comparison to normal adults.