CHAPTER VI
DISCUSSION

Epilepsy although neurological in nature has severe psycho-social implications. This impact not only affects the individual living with epilepsy but also impacts the immediate family in more ways than one. Findings of the current study are clearly indicative of this detrimental psycho-social impact of epilepsy which has been illustrated in the previous chapter focussing on results. The following chapter discusses these results in a comprehensive manner. To enhance the understanding of the interplay of various variables the following chapter has been again categorised into three sections namely socio-demographic variables, seizure related variables and hypotheses related variables.

6.1 Socio-demographic Variables:

As studies have illustrated (Cowan et al., 1989; Brown et al., 1996; Sridharan & Murthy, 1999) the focus of various epidemiological studies conducted in the past has been to research the prevalence rates of epilepsy for particular religious communities, gender ratios, the impact of epilepsy on educational and social development e.g. marriage etc.
Therefore the research presented here also explored these demographic variables (namely age, gender, education, occupation, religion and marital status) to investigate whether there was any conformity between the current data obtained and the scientific literature that was already available.

With reference to the gender ratio, results of the current study indicated that the male female ratio of the participant group was that of 28:16 respectively. The percentage of representation of either gender i.e. 63.6% for males and 36.4% for females, in the current study conforms to the known epidemiological fact that epilepsy is more prevalent in males than it is in females. It has been researched that certain kinds of epilepsies are more common in males when compared to their female counterparts. Janszky et al (2004) investigated gender differences in medial temporal lobe epilepsy which is a commonly found diagnosis that is chronic in nature. The findings of the study indicated that men more often had secondary generalized seizures and that the seizure spread in the brain occurred more frequently in men than it did in women.
According to another study commissioned by the International League against Epilepsy (ILAE, 1997) localisation related symptomatic epilepsies were more common in men than they were in women therefore indicative of a gender susceptibility to certain kinds of epilepsy subtypes (Christensen et al, 2005).

According to a comprehensive meta analysis of epidemiological studies conducted in India, the rates of men having epilepsy were higher than those for women although these were not found to be statistically significant (Sridharan & Murthy, 1999). This kind of dominant male representation in an epidemiological study could be possible as epilepsy in women is often concealed because of the stigma associated with it (Shah, 2000). A recent study conducted in Kerela researched that the stigma attached to epilepsy often restricts early diagnosis and optimal care and this occurs more so amongst the underprivileged population and women in particular (Thomas et al, 2006).
Therefore gender differences found in epidemiological studies can be attributed to both neurological factors where certain kinds of epilepsy are more common in males and the social factors which are related to the stigma associated with it. Since the sample size of the study is relative small and localised the results cannot be generalised but nevertheless they do conform to the empirical evidence already available.

With regards to the educational qualifications of the participant group, 43.2% were below 10th Std., 34.1% were SSC pass, 20.5% of the participant group went to college and obtained a degree and only 2.3% obtained a postgraduate degree. It is important to highlight the fact that this particular participant group was representative of the urban population as the study was conducted in the city of Mumbai. Therefore it can be estimated that in smaller townships and villages the percentage of people with epilepsy obtaining formal education would only be significantly lower.
In the current study majority of the population had not completed their basic education that is (S.S.C level) again conforming to the scientific literature available that suggests a relationship between educational underachievement and epilepsy (Williamson, 2001).

It has also been researched that children with epilepsy are often retained in school at a higher rate than expected when compared with matched controls (Farwell et al., 1985; Huberty et al., 1992). The increased academic risk may be related to both the effects of having a chronic illness and the effects of a central nervous system (CNS) disorder. It is also interesting to note that children with epilepsy have been found to be at a greater academic risk than children with other chronic illnesses, such as diabetes and asthma, as well as compared to children in the general population (Freeman & Hagen, 1990). There are various questions that remain unanswered about the underlying mechanisms and factors associated with academic vulnerability among children with epilepsy. Multiple factors other than the impact of seizures and medications may influence academic performance.
The findings of the current study suggest that these factors could be psychological in nature such as an individual's level of self esteem, clinical depression or social factors such as family environment and relationship with parents.

With regards to educational underachievement, learning disability has also been associated with epilepsy. It has been scientifically researched that individuals with learning difficulties commonly suffer from various concomitant conditions, and epilepsy constitutes up to 35% of them (Staufenberg & Brown, 1994).

With reference to the occupation level of the participant group in the current study; the results indicate that 13.6% of the participant group were students, 38.6% were self employed, 15.9% were holding jobs and 31.8% were unemployed. It can be inferred from the data obtained that a large proportion of the participant group was unemployed which is not uncommon amongst people with epilepsy and it gravely affects their quality of life.
People with epilepsy often face the dilemma of whether they should or should not disclose that they have epilepsy in fear of losing their job or getting a job in the first place. A recent research conducted in the United Kingdom surveyed employers attitudes towards people with epilepsy and highlighted the employment problems that they encounter (Jacoby et al. 2005). It is interesting to note that in spite of the changing legal, medical and social context of epilepsy, employers continue to be sceptical when it comes to employing a person with epilepsy. According to the findings of the study; seizure severity, frequency and controllability were all considered important features of epilepsy in the context of employment. Also it was noted that there were concerns linked to work related accidents and that employers were uniformly of the view that even if the epilepsy was treated and the person was in remission, the individual should disclose their condition to the prospective employer. The only positive finding was that employers were willing to make accommodations like job sharing, temporary reassignments of duties and flexible working hours although this was influenced by company size and
type and previous experience of employing people with epilepsy.

In India, unfortunately the employment scenario for people with epilepsy is very grim. With no legal backing, the person with epilepsy is most often left at the mercy of the family and relatives to employ them and when this is not possible they are treated as any other financially dependent member of the family. Also there are no structured guidelines for organisations to hire people with epilepsy and therefore this complicates matters even more when people with epilepsy have struggled to educate themselves and then again face frustrating uphill battles to find suitable employment.

People crusading for epilepsy in India are lobbying for the inclusion of certain kinds of epilepsies in the disability act of India hoping to ease the struggle related to employment for people living with chronic epilepsy.
Amongst the participant group of the current study 38.6% claim to be self employed. It would be interesting to investigate further whether the income generated from these small entrepreneurial ventures is sustainable or whether it is only carried out to keep the person with epilepsy functionally occupied.

In the current study majority of the participating population was that of Hindus; although communities such as Muslims and Parsis' were also represented where it has been researched that because of factors such as consanguineous marriages, members of these communities are more vulnerable to developing seizures. As mentioned earlier majority of the participating population in the current study was that of Hindus' but it is interesting to highlight that while the researcher was contacting groups of patients at the epilepsy out patient clinics prior to intervention, there was a large number of patients with epilepsy who were Muslim attending these clinics; but this finding is only experientially based and needs further investigation. Therefore, for a country like India whose population is so vast it is important to study the prevalence rates of epilepsy in the different communities which might have a certain genetic
predisposition towards developing seizures. Although community based surveys have been carried out; more detailed studies need to be conducted to highlight which communities experience a greater risk because of a certain genetic predisposition towards developing epilepsy (Bharucha et al., 1988; Mani et al., 1998).

Since epilepsy is a chronic illnesses that is heavily stigmatised it is not uncommon for family members of people with epilepsy to hide their epileptic status at the time of marriage. At the same time it is not uncommon for people to experience humiliation and rejection when they are honest about disclosing their status of having epilepsy. Therefore epilepsy not only has a detrimental effect on ones educational and occupational development but also impacts ones social development greatly. It the current study this detrimental impact has been highlighted clearly where in 84.1 % of the participants were unmarried followed by 11.5 % who were married and 4.5 % were divorced.
With regards to marriage it is more common that women experience greater discrimination as compared to men. In India it is not uncommon to find men who in spite of their epilepsy status can manage to find a marriage partner by marrying somebody from a lower socio-economic status as compared to his own or from a lower caste. Where as important aspects such as marriage, family and reproduction which are a normal part of any woman’s life are seen as abnormal when she discloses here status of living with epilepsy. Women with epilepsy are often denied this privilege in many parts of the world. This is often due to the stigma associated with epilepsy and the consequent marginalization (Chary, 2000; Shah, 2000). It might be interesting to point out that during the interview sessions with the participating group it was revealed that all the individuals who were married experienced discrimination at some point or the other and for one it resulted in divorce although he had disclosed his status of having epilepsy before marriage. For one of the participants, both the husband and wife had epilepsy but for the husband it was controlled and although one can assume that the family would be sensitized to the issues of epilepsy, they discriminated against the ‘to be’ daughter in law.
In this particular case the woman with epilepsy was looked upon as an additional burden and according to the husband’s family members the boy could have found someone without epilepsy since he was ‘cured of it’. Therefore one can infer from experiences such as these that for people with epilepsy the struggle begins as soon as they are diagnosed with the condition and unfortunately it continues into all spheres of their personal and social development.

In India till the late 90’s the law also rendered a marriage null and void and this could be used as grounds for divorce if either spouse had epilepsy. It is a known fact that this law was used more against women than men as marriage and childbirth were not an easily available option for several women with epilepsy in India (Singhal, 2000). To contribute to this problem there are doubts about the sexual adequacy of a woman to conceive children, fear of inheritance of epilepsy, issues related to breast feeding and antiepileptic medication and the consequent malformations in the child further complicating the issue.
Therefore we can see how demographic variables and the fact that a person has epilepsy can influence an individual's quality of life and consequently affect their social development with respect to education, occupation and marriage.
6.2 Seizure Related Variables:

Various epilepsy related variables were also included in the study e.g. age of onset, number of years of epilepsy, number of years of medication, mono therapy vs. poly therapy and type of seizure i.e. major fits, minor fits or both. According to empirical evidence available these variables not only have neurological implications but also severe psychosocial implications and therefore the researcher found it critical to study these variables and the impact they have on the life of a person living with epilepsy.

With regards to the age of onset, for majority of the participants i.e. 61.4% the age of onset was below five years; followed by 31.8% for whom the age of onset was between 16 to 20 years and there were only three participants for whom age of onset was between 16 to 20 years. The fact that for majority of the participant group the age of onset was below 5 years, this is supported by empirical evidence that epilepsy occurs most often in infants and children. In the UK there are an estimated 350,000 people living with a diagnosis of epilepsy (Brown & Betts, 1994).
New cases keep getting reported with the highest rates occurring in infants and young children and in the elderly (Brown et al., 1993). It is important to point out that the geriatric population was not a part of the sample group for the current study but it has been well documented that after the age group of infancy and early childhood the highest concentration of people with epilepsy is above 50 years (Cull & Goldstein, 1997).

In a comprehensive meta analysis conducted in India the findings indicated that age-specific rates of epilepsy were higher in the first three years of life as compared to other age groups (Sridharan & Murthy, 1999).

The findings of the current study also indicate that for individuals for whom age of onset was below five years, their scores on the index of self esteem were above the clinical cut off score of 30 i.e. 33.65 indicating low self esteem. The scores on parental attitudes were also close to the cut off score i.e. 29.96.
Adjusting to the diagnosis of having epilepsy and living with a chronic illness that is so heavily stigmatised, together negatively conditions the person with epilepsy and their immediate family. The person with epilepsy is made to feel that he or she is not normal and the financial burden of cost of medication, adjustment at school, disclosure to other family members etc; all of these factors put together affect an individuals self esteem and alters how they are perceived by their own parents. It has been well documented that low self esteem is also recognised as a clinical component of several psychiatric conditions and self esteem has found to be significantly lower in people with epilepsy compared to those without (Collings, 1990).

For individuals for whom age of onset was in the range of 6 to 15 years, their scores were high i.e. 31.49 for the variable of self esteem and it is interesting to note that the scores on the depression inventory were also close to the cut off score i.e. 18.11 (the cut off being 19).
There are a number of reasons as to why people with epilepsy may develop behavioural and emotional problems and they can be summarised as follows (Baker, 1997):

a) the effects of a damaged brain
b) the adverse effects of anti-epileptic medication
c) the effects of living with a stigmatising disorder

The relatively higher scores on depression for people for whom age of onset was between 6 to 15 years can be attributed mainly to the perceived stigma associated with epilepsy. Individuals being diagnosed with juvenile diabetes or asthma or any other allergy may not necessarily be as greatly impacted as they are with epilepsy as they attract sympathy due to social acceptance. Epilepsy because of its association with lunacy or madness and supernatural phenomena since historical times is more socially stigmatised as compared to any other illness (Temkin, 1971; Trimble & Reynolds, 1976). In recent times one can only compare such a negative societal stigma associated with HIV/AIDS.
For the variable of number of years of epilepsy that the participant has lived with; the descriptive statistics indicated that 52.5% of the participant population fell in the age range of 11-20 years and 43.2% fell into the age range of 20 years and above. There were only 2 participants who had epilepsy for less than ten years. As one can infer from the results more than 85% of the participant population had been living with epilepsy for over ten years consequently living with problems associated with any chronic illness. In the case of epilepsy this unfortunately only gets complicated further due to the stigma associated the illness.

The results for the year range of 11-20 years, indicated that mean scores for self esteem and parental attitudes were above the clinical cut off scores of 30 therefore indicative of a consequential effect of the number of years of epilepsy on one’s self esteem and parental attitudes towards the person with epilepsy. This data was also analysed using the correlation method to investigate whether there was any relationship between number of years of epilepsy and the four major psychological variables under study.
The results of the analysis suggested that number of years of epilepsy appeared to have a significant correlation with higher scores on the index of self esteem i.e. .436, significant at the 0.05 level. This suggests that as the progression of the disease in terms of years increases, the self esteem of the individual with epilepsy gradually deteriorates. It is important to highlight that number of years of epilepsy that a person has lived with is an estimate of how chronic the illness is. It has been well researched that the experience of chronic illness dramatically changes an individual's life and the life of the immediate family, which is often the primary care giver (Berer & Ray, 1993). In addition to a physical or cognitive disability, which could be an outcome, a chronic illness impact's ones emotional well being, financial status and interpersonal relationships amongst other things. People experiencing a chronic illness often question, “Why me?” or as in the case of the family ‘Why my family member?’ Therefore emotions such as anxiety, sadness, guilt and anger are not uncommon in people and families where someone suffers from a chronic illness.
These emotions therefore not only impact one's perception of oneself where in one questions whether he/she is normal but also impacts how parents or family members perceives the person who is chronically ill.

For the range of 20 years and above; the mean scores for self esteem were again above the clinical cut off scores of 30, therefore indicative of a detrimental effect of the number of years of epilepsy on one's self esteem. A correlation analysis was also conducted for year range of 20 years and above and the four psychological variables under study and it is interesting to observe that for this particular group there appeared to be a negative correlation with scores on index of parental attitudes i.e. the results were indicative of a negative correlation between these two variables i.e. higher the number of years of epilepsy resulted in lower scores on the index of parental attitudes, -.648, significant at the 0.01 level. This kind of negative correlation between more number of years of epilepsy and lower scores on parental attitudes which indicate a healthy relationship between the parents and the person with epilepsy; can be attributed to a number of factors mainly that of more knowledge
about the illness consequently less stigma and
secondly appropriate intervention. When a person
with epilepsy and their family has lived with the
illness for over 20 years, it can be hypothesised that
they have lived through the initial trial and tribulations
of the diagnosis of the illness, initial treatment
hurdles, dilemmas of disclosing the status to the rest
of the family etc and therefore have dealt with the
emotional hurdles in the past and now coping with the
illness is more about managing the treatment aspect of
the illness as opposed to the psychosocial aspect of it.
Also when all other efforts turn out futile, this results
in acceptance of the condition and people relate to it
as 'God's wish' which is beyond human control and a
certain sense of fatalistic acceptance sets in.

For the variable of number of years of
medication that the entire participant group had been
on; descriptive statistics indicated that 40.9 % of the
participant population was on anti epileptic
medication for more than ten years followed by 47.7
% who were on medication for over twenty years and
only a miniscule 11.4 % were on medication for less
than 10 years.
Inferential statistics performed on the variable of number of years of antiepileptic medication indicated that there is a significant relationship between number of years of antiepileptic medication and higher scores on the specific variables of depression, parental attitudes and self esteem. There appears to be a significant relationship between number of years of medication and higher scores on depression i.e. for participants who were on antiepileptic medication for 10 years and below; their scores on the depression inventory were significantly higher when compared to the participants who were on medication for above 20 and between 11 to 20 years. The results also indicate a significant relation between people who have been on medication between 11 to 20 year and higher scores on parental attitudes indicating a negative attitude of parents and this could be a result of the financial burden that the cost of medication imposes on the parents. For those who were on medication for above 20 years there appears to be a significant relationship with reference to the variable of self esteem.
Discussions with the participant group revealed that taking medication for such a long period of time instils a feeling of not being normal, and that the person is ill consequently affecting one's self esteem.

With reference to anti-epileptic medication it is well documented that AED’s not only result in cognitive deficits but also have behavioural side effects. In the initial years with the advent of AED’s a common concern voiced by people with epilepsy was that taking medication was affecting their memory (Gillham et al. 1990). This was reflected in the growing interest in the impact of anti epileptic drugs on aspects of behaviour other than seizures. In recent times all new AED’s are evaluated for cognitive and behavioural side effects and the lack of such side effects is a major selling point for manufacturers. It is important to understand that the investigation of drug effects in individuals with epilepsy is problematic and complicated. This is more so because there is an interplay of so many other seizure related variables that to isolate the side effects of AED’s as opposed to aetiology, age of onset, duration of the seizure disorder, seizure type and frequency, is nearly impossible.
The older antiepileptic drugs such as Phenobarbitone (PHB), Phenytoin (PHT), Carbamazepine (CBZ) and Benzodiazepines are known to be associated with cognitive and behavioural side effects. PHB has been used since 1912 and historically has been associated with behavioural problems including excitement, aggression, hyperactivity, short attention span, irritability, distractibility, tearfulness and increased motor activity (Hirtz & Nelson, 1985). In the current study the results have indicated that there is a significant relationship between number of years of medication and higher scores on the variables of self esteem, depression and parental attitudes. It is important to point out anecdotal evidence which suggests that taking medication on a daily basis, most often twice or thrice a day conveys a message that a person is 'sick' and therefore not normal and this was also reflected in the discussions with the participant group. For the percentage of the participant group that took medication for over 20 years, a diminished self esteem especially could be attributed to this factor.
Also parental attitudes get affected because of the economic burden of medication and the fact that they have to ensure that the person with epilepsy takes medication regularly with the objective of reducing seizure frequency. In the current study qualitative data suggests that care giver burden is a common experience expressed by people who take care of people with epilepsy, this is not necessary only for parents but also holds true for siblings. Caregiver burden is often associated with individuals i.e. often a family member who takes care of the elderly and chronically ill patients (Faisong et al., 1999). Caregiver burden is referred to as the effect of stressors on family members caring for a physically or mentally ill person. Therefore the results of the current study where in greater number of years of medication resulted in higher scores for the variable of parental attitudes, this occurrence could be viewed in light of the occurrence of caregiver burden experienced by the family.
The socio demographic questionnaire also requested for information related to drug therapy i.e. whether the participant was on mono therapy i.e. one type of anti epileptic medication, two drugs dual therapy or poly therapy. Descriptive statistics indicated that 47.7 % were on poly therapy, followed by 38.6 % who were prescribed mono therapy and only 13.6 % were on two drugs or dual therapy. It is important to highlight the fact that neurologists in recent times advocate mono therapy as a best practice norm for people with epilepsy. It has also been researched that adverse effects are more likely to be seen with poly therapy rather than mono therapy (Meador, 1994). With the development of newer drugs which have positive effects on seizure frequency and negligible side effects; mono therapy has been massively advocated (Ludgate et al. 1985). With reference to India or any developing or underdeveloped country, the cost of AED is a huge burden on the family of the person with epilepsy and therefore comparatively cheaper drugs such as phenytoin and carbamazepine are still in use although they have been researched to have cognitive, behavioural and physical side effects.
With reference to the Indian setup, many patients are prescribed multiple medication controlling different aspects of their epilepsy because of financial constraints. This factor has been well illustrated by the findings of the current study as majority of the participants were on poly therapy although mono therapy is strongly advocated. In the current study, individual interviews with the families revealed that for many of them, medication was more important than daily nutrition but if a particular medicine was beyond their reach financially there were instances where they requested the neurologists to prescribe cheaper alternatives although they would have side effects. As put matter of fact by one parent, “some medication is better than none”.

Information related to the type of seizure disorder i.e. major, minor or major and minor fits was also investigated in the socio demographic questionnaire. Descriptive statistics indicate that majority of the participant population experienced major seizures i.e. 45.5% followed by 31.8 % that experienced major and minor seizures and only 22.7% experienced minor seizures.
According to the individual interviews conducted during the pre test procedure, majority of the participant population experienced major fits i.e. tonic-clonic seizures also known as grand mal seizures, 31.8% experienced major and minor seizures where in a simple seizure (no loss of consciousness and most often experienced as an aura) would gradually intensify into a generalised seizure.

Therefore one can see how seizure related variables influence psycho-social variables and this is important to understand not only for medical professionals but also for paramedical professionals such as clinical psychologists. This is critical more so as a need based intervention plan can be worked upon to help the individual with epilepsy in a holistic manner.
6.3: Discussion of Hypotheses:

A detailed set of hypotheses was formulated by the researcher based on the interplay of the various independent and dependent variables involved in the study. The results of the current research as illustrated in the previous chapter have been encouraging and therefore are substantiated by the scientific literature that is already available. Also epilepsy being a stigmatised chronic illness, greater effort had to be put in on the part of the researcher to keep the participant group engaged and committed for a period of three months and develop and implement a holistic intervention plan that would help manage the illness better. The current research not only studied the detrimental psycho social impact that epilepsy had on the individual but also studied the effect of planned therapeutic interventions and their differential impact. Therapeutic interventions, namely those of Family Therapy (FT), Cognitive Behaviour Therapy (CBT) and Yoga were chosen based on research evidence already available that proclaimed their beneficial impact for people with chronic epilepsy.

Following is a discussion of hypotheses related results and it is interesting to note that the statistical
findings have affirmed majority of the hypotheses thereby conforming to the vast literature available and consequently providing an Indian perspective to it.

The first hypothesis stated that there would not be any significant difference for scores on variables of self esteem, family relations, depression and parental attitudes amongst the experimental and control groups at the pre-test level. This particular hypothesis was accepted as there was no significant difference found amongst the pre test scores on the variables for the four groups assigned to the specific therapeutic interventions and the control group. This finding also confirms that the participant group was homogenous and unbiased which did not differ on these important variables which were under scrutiny. It is also important to note that the higher scores (above cut off) on majority of these variables is indicative of the detrimental impact that epilepsy can have on the individual consequently fostering psychopathology in people living with this stigmatised chronic illness. The findings can also be interpreted in view of the research studies which indicate that people with epilepsy have higher rates of psychopathology than the general population.
It is anticipated that this morbidity may be due to a reaction to chronic illness, cortical dysfunction and effects of anti-epileptic medication (Smith et al., 1986).

The second hypothesis stated that there would be a significant difference for scores on variables of self esteem, depression, family relations and parental attitudes amongst the experimental and control groups at the post-test level. The results indicated that the scores on the four psychological variables were significantly lower for the three intervention groups when compared with the control group. Therefore this finding not only affirms the hypothesis postulated but also illustrates the positive impact of planned psychotherapeutic interventions for people living with chronic epilepsy.

There is adequate evidence to support the view that people with refractory seizures or in other words chronic epilepsy have an increased risk of disorders of cognitive functioning, such as memory, language or difficulties of attention consequently leading to feelings of low self esteem and depression.
Therefore psychotherapeutic interventions are extremely effective for most patients to manage their epilepsy better. It has also been documented that this need is not only a perceived need by the medical and paramedical staff working with epilepsy patients and their families. In a recent study it was found that 19 percent of patients attending an epilepsy clinic requested more contact with a psychologist (Chaplin et al. 1998). Also evidence exists to show that majority of patients require more information about epilepsy and this is best provided by someone with expertise and more importantly has time to discuss issues in depth (Reid et al. 2001 & Huber et al. 2001). Therefore people with epilepsy and their families would prefer to interact with a psychologist on a regular basis in conjunction to a neurologist who would have limited time to discuss these non medical issues, but nevertheless important issues, in detail. Research evidence also suggests the possibility of using interventions based upon psychological principles to reduce seizure occurrence in people for whom other neurological and surgical approaches are not possible and for whom antiepileptic medication offers only inadequate seizure control (Goldstein, 2001).
Thus it can be inferred that the quality of life of persons suffering from chronic illness like epilepsy could be enhanced if care can be taken to provide planned psychological intervention.

Hence the validation of this particular hypothesis illustrates the effectiveness of planned therapeutic interventions even in a short time frame of three months and therefore one can only anticipate the positive impact that comprehensive therapeutic interventions can have on people with chronic epilepsy that are conducted on a long term and continual basis.

The third hypothesis stated that there would be a significant difference in the pre test and post test scores for the variable of self esteem in the study group I (group receiving the CBT intervention) and study group II (group receiving the FT intervention) and study group III (group receiving Yoga intervention) as compared to the control group receiving no intervention. The results indicated that there was a significant reduction in post test scores of self esteem for all the three intervention groups and although it was hypothesised that there would be no
difference obtained on pre test and post test scores for self esteem for the control group, the results indicated a statistically significant increase. Thus it can be inferred that if timely therapeutic interventions are not planned, chronic epilepsy can erode the individuals self esteem continually and can lead to clinical depression and subsequently suicidal ideation.

It has been well documented that although self esteem is a well recognised component of several psychiatric conditions, it is found to be significantly lower in people with epilepsy than those without (Collings, 1990; Baker, 1997). It has been suggested that this could be a result of the perceived level of stigma associated with the condition (Scrambler, 1989). Collings (1995), in a community based study proposed that people with epilepsy tend to evaluate themselves negatively and this may be related to the perceived stigma as a result of the physician’s diagnosis which apparently converted them from a ‘normal person’ to an ‘epileptic’. It is important to highlight that even during the sessions conducted by the researcher for the current study, majority of the participants at some point during the study mentioned that ‘Why me?‘;‘Why did epilepsy
happen to me?’; ‘I am not normal any more’. Therefore low self esteem in epilepsy can be a result of a number of potential sources including over protection, perceived stigma and the failure to fulfil expectations (Baker, 1997).

A paired samples t test for this particular set of data illustrated that scores on self esteem reduced tremendously for the group receiving CBT, followed by FT and Yoga. It is important to understand that self esteem as a variable in itself has a cognitive component to it. By definition self esteem is the degree to which one values oneself. Although the word esteem carries the connotation of high worth or value, the combined term self-esteem refers to the full dimension and the degree of self evaluation high or low (Reber, 1995). It is based on an evaluative cognitive judgement of one’s self. Psychotherapeutic interventions such as CBT are highly efficient in the management of epilepsy cases when stress caused by ones negative cognitions is associated with increasing frequency of seizures (Devinsky, 2002). It is known that negative or unpleasant cognitions associated with stress such as worry, fear, depression frustration, anger etc can lead to sleep deprivation or disrupted
and fragmented sleep therefore precipitating seizure activity in the brain. Stress and anxiety also trigger hyperventilation i.e. increase in breathing rate which is a well recognised means of provoking seizures for some individuals with epilepsy. Therefore a therapeutic approach that targets ones self talk and helps alter ones negative thinking pattern is more likely to influence ones perception of self. Thus in the current study with relation to the variable of self esteem, we see a great reduction in scores of self esteem there by indicating a greater beneficial impact for the group receiving CBT when compared to FT and Yoga.

The fourth hypothesis stated that there will be a significant difference in the pre test and post test scores for the variable of family relations in the study group I (group receiving the CBT intervention) and study group II (group receiving the FT intervention) and study group III (group receiving Yoga intervention) as compared to the control group receiving no intervention. It is important to point out that for the variable of family relations there was a significant reduction in post test scores only for the group receiving family therapy as a form of
intervention. For the group receiving therapeutic interventions in the form of CBT and Yoga there was no significant decrease in the scores. With reference to the control group although it was hypothesised that there would be no difference obtained on pre test and post test scores for family relations for the control group, the results indicated a statistically significant increase. Therefore the results highlight the fact that family relations is a difficult variable to work upon in a limited period of time as there are various deep seeded issues that need more time and that unless the family is involved in the therapeutic intervention as done in the group receiving family therapy it is difficult to approach or influence the family in an indirect way as done in CBT and Yoga. In family therapy the whole family is invited to explore and modify communication systems and behavioural functioning in order to minimise the negative impact of a chronic illness in this case epilepsy (Minuchin, 1974).

It is a known fact that the experience of a chronic illness dramatically changes an individual’s life and the life of the immediate family, which is often the primary care giver.
In addition to a physical or cognitive disability, which could be an outcome, a chronic illness impact’s ones emotional well being, financial status and interpersonal relationships amongst other things. Emotions such as anxiety, sadness, guilt and anger are not uncommon in people and families where someone suffers from a chronic illness and therefore family therapy becomes even more critical.

Also the problems associated with epilepsy such as behaviour disturbances, an overprotective and fearful attitude of the family, non supportive attitude of school authorities put together affect the individual and the family in a tremendous manner and therefore appropriate and timely interventions are needed (Shah, 2000). Hence, the role of family intervention is crucial in the management of epilepsy as various psychosocial issues such as over protectiveness or ignorance of parents, education, employment, marriage and pregnancy haunt the person living with it.
The fifth hypothesis stated that there would be a significant difference in the pre and post test scores for the variable of depression in the study group I (group receiving the CBT intervention) and study group II (group receiving the FT intervention) and study group III (group receiving Yoga intervention) as compared to the control group receiving no intervention. The results indicated that there was a significant reduction in post test scores of depression for all the three intervention groups and although it was hypothesised that there would be no difference obtained on pre test and post test scores for self esteem for the control group, the results indicated a statistically significant increase.

A link between depression and epilepsy has been proposed since the times of Hippocrates (Temkin, 1971). It has been researched as the most prevalent neuro-psychiatric disorder in epilepsy and occurs in up to 80% of epileptic patients (Robertson et al., 1987). Recent research also indicates that epilepsy is not a benign condition; on the contrary it comes with a plethora of other associated conditions (Nashef et al., 1995).
Ongoing seizures have to be coped with and for some patients these may be short lived episodes but for some they are psychologically traumatic as they not only occur frequently but cause embarrassment due to bizarre behaviours and incontinence in some cases as part of their seizure activity. Also people with epilepsy very often have to deal with treatment failures especially those with intractable or refractory epilepsy. All these experiences have a cumulative effect and foster a feeling of hopelessness.

The results of the current study can be viewed in light of the above mentioned studies. Depression being a common psychopathological condition for most people with epilepsy can be an easy target for planned therapeutic interventions which can directly impact ones quality of life. The findings of the study illustrate that all the three therapeutic interventions resulted in a significant decrease in scores on depression. Therefore one can only anticipate the improvement in ones psychological well being and quality of life if comprehensive intervention programs are available for people with epilepsy when they are initially diagnosed with it.
This will not only help manage the illness better but will also slow down or eradicate the negative psychological impact that epilepsy has on the individual's life.

The sixth hypothesis stated that there would be a significant difference in the pre test and post test scores for the variable of parental attitudes in the study group I (group receiving the CBT intervention) and study group II (group receiving the FT intervention) and study group III (group receiving Yoga intervention) as compared to the control group receiving no intervention. The results indicated that there was a significant reduction in post test scores of parental attitudes for all the three intervention groups and although it was hypothesised that there would be no difference obtained on pre test and post test scores for self esteem for the control group, the results indicated a statistically significant increase.

With reference to the variable of parental attitudes although for all the intervention groups there was a significant decrease, it was maximum for the group receiving family therapy.
It is important to note that children with epilepsy see the disorder through the window of their parent’s eyes. How epilepsy will affect the child often depends on how epilepsy affects the parents. On hearing the diagnosis of epilepsy parents are likely to go through a series of emotional responses e.g. shock, bewilderment, disappointment, hopelessness, guilt, anger and grief. Hence, family therapy as a form of intervention can help parents realize that life goes on and that the child with epilepsy and the family can enjoy life and flourish if the parents take a positive outlook towards the illness (Devinsky, 2002).

Regardless of the severity of the condition, children with epilepsy need special attention to ensure they have a positive outlook and their self esteem is intact (Devinsky, 2002). When it comes to parenting a child with epilepsy, there is a fine line between healthy caution and over protectiveness. Parents have a strong and natural tendency to direct their child’s behaviour. For children with epilepsy this may become exaggerated. Parents are often unaware of their directive behaviour or they fiercely defend it.
Even in the Indian set up it has been observed in many families that there is a case of over protection and ‘smothering’ instead of mothering for the handicapped and the chronically sick child. Consequently their emotional growth and development are stunted resulting in immature and irresponsible behaviour (Shah, 2000). In this case it is important to educate the family and teach new parenting skills which will help modify the behaviour of the epileptic child and improve family relationships. This aspect is appropriately managed only within the scope of family therapy.

It is also important to highlight that the joint family system which has exclusive positive attributes for most chronic illnesses works as a negative factor in the case of epilepsy. This is more so because of the social stigma attached to it and the association of epilepsy with spiritual forces and insanity. Therefore concealing the illness is not uncommon in joint families after the initial diagnosis consequently putting more pressure on the parents and seeing the child with epilepsy as a burden, liability or bringing misfortune to the family.
Therefore planning interventions with the family and consequently altering parental attitudes towards the epileptic child is critical in managing the illness better. Thus family therapy helped the parents and family members to understand the unique problem of the person with epilepsy and provided emotional support for enhancing the well being of the person.

The last hypothesis stated that there would be a differential impact of CBT, FT and Yoga intervention techniques. It can be inferred from the results obtained that family therapy as form of intervention was beneficial mostly for variables of family relations and parental attitudes. It is important to note that CBT and Yoga as forms of therapeutic interventions were not able to alter scores for the variable of family relations therefore suggesting that involving the family in therapy is of critical importance for the success of an intervention programme that claims to manage epilepsy better. Also for the variable of parental attitudes, all the three forms of intervention led to an overall decrease in scores but they were substantially greater for the group receiving family therapy.
It is important to mention qualitative data that emerged from the discussions with the families which were a part of the intervention receiving family therapy as they bring to light the issues faced by the family in reality. It was unfortunate that during these discussions where the identified patient i.e. the person with epilepsy was not included, majority of the parents expressed their utmost resentment towards their child with epilepsy. It was not uncommon for most parents in this group to express that their child was using the status of epilepsy as an excuse in most situations and because of the extra attention given to them, the other family members were angry with the parents. As a consequence of this, relationship of the parents with other siblings i.e. their other children without epilepsy was being negatively impacted. Also they perceived their child with epilepsy being contented in the ‘victim role’ as it was fulfilling a lot of objectives for e.g. not studying, not helping in the household chores, not taking financial responsibility even after completing basic education, carelessness in taking medication regularly etc. For some parents the scenario within the family was labelled as completely ‘hopeless’.
All these statements highlight the level of a dysfunctional element in the family and reiterate the need for family intervention. According to the researcher working with these families was the most challenging aspect of the interventions as there was a lot of pent up resentment, feelings of depression, feelings of not being a good parent and a common expression 'how can I hate my child who has epilepsy?' All these emotions had to be dealt with before one could proceed with intervention strategies therefore one cannot undermine the importance of therapy for the families of people with chronic illness as caregiver burden gradually induces elements of psychopathology not only for the identified patient but even for the family members in the care giving role.

Cognitive Behaviour Therapy was most beneficial for the variable of self esteem although other interventions also resulted in a decrease of scores indicating a positive effect on one's perception of one's self. Qualitative discussions with the participant group revealed that there were many associated factors which resulted in the lack of self esteem namely those of feelings of helplessness, inability to perform well, lack of accomplishment in various
spheres of life, lack of hope, an uncertain future and rejection experienced from family, friends and society at large. It is important to cite a few internal dialogues of the participants receiving CBT that highlighted this issue in greater detail. There were commonalities in the internal dialogue or self talk for majority of the participants in this group which emphasised on them being ‘not normal’ and ‘not being in control of life because of the unpredictability of seizures’. Also there was feeling of self doubt expressed where in the participants felt that ‘who would like to be my friend or marry me because I have epilepsy and I’m not like others’. Therefore a therapy module that attempted to challenge and change this negative self talk or internal dialogue consequently enhanced the individual’s level of self esteem compared to the other therapy modules.

It is extremely important to highlight that unlike family therapy or cognitive therapy which had a positive impact on specific variables, Yoga had an overall beneficial impact. It did not drastically affect only one variable but impacted all variables in a consistent manner. The scores on all the four variables are comparatively the lowest for the group receiving Yoga as a form of therapy.
These findings can be viewed in light of the fact that yoga in relation to epilepsy encompasses not only seizure control but also many factors dealing with overall quality-of-life issues (Yardi, 2001). The three main constituents of Yoga as a way of life taught in the program through lectures and demonstrations were firstly transference of skills learned through yoga techniques to daily routine activities, appropriate sleep and diet and attitudinal change along with emotional culturing. These are all life skills that have an overall impact on the individual’s life and this is very clearly reflected in the results obtained for the group receiving Yoga as a form of intervention. Yoga as a form of therapy was practiced in the form of techniques and exercises i.e. asanas and pranayam. It has also been well researched that stress is considered an important precipitating factor for seizures. Yoga is believed to induce relaxation and reduce stress. The effect of yoga on the EEG and the autonomic nervous system has also been documented (Panjwani et al, 1996) and therefore yoga can be an attractive therapeutic option for epilepsy (if proved effective), in view of its non-pharmacological nature, minimal side effects and international acceptance (Ramaratnam & Sridharan, 2000).
These findings are also reflected in the current study where as opposed to other therapeutic interventions which only influenced therapy related variables, Yoga had an overall beneficial impact and therefore as a researcher one can suggest that it should be used as an adjunct therapy to any other psychotherapeutic intervention which aims to manage epilepsy in a comprehensive manner.

Qualitative data from the discussions reveal that yoga not only helped in reduction of scores corresponding to the psychosocial variables under study but also helped in physical ailments experienced by the participants like acidity, flatulence etc which were common problems experienced by all the participants as many had medication on empty stomach. A common expression of the participants of the group receiving yoga as form of intervention was that of an experience of calm, composure and an overall feeling of well being. Also majority of the participants in this group expressed a greater sense of physical awareness related to the sensation of aura experienced by them and many reported that they practiced pranayam when they sensed an aura and many a times the aura did not result in a seizure.
It is important to specify that this specific effect of yoga on seizure reduction cannot be generalised based on these experiential forms of evidence and these experiential claims therefore need further scientific investigation.

Therefore one can conclude this discussion by saying that overall the findings of the current study have been immensely encouraging for the researcher and more importantly for the participant groups as the scores on most psychological variables under study i.e. self esteem, family relations, depression and parental attitudes decreased significantly post intervention. This clearly indicates the positive impact of psychotherapy and reiterates the need for such planned interventions. It also highlights how critical it is to understand how these seizures related variables impact ones psycho-social well being and therefore justify a need to develop and conduct a comprehensive care program focusing on psychotherapeutic measures to combat the detrimental impact of epilepsy in ones life.