Coping With Epilepsy

Epilepsy

- More problems of a social nature than the general population (Austin and deBoer, 1997).
- The most important determinant of quality of life and psychosocial functioning in people with epilepsy is freedom from seizures (Jacoby, 1992).
  - This finding is reflected in the psychosocial problems that are evident in people with refractory epilepsy and the improvement in scores on quality of life measures after successful surgery (Vickrey et al., 1992; Baker et al., 1993; Malmgren et al., 1997).
- Factors that have been associated with an increased risk of social dysfunction include:
  - severe and frequent seizures
  - chronic form of the condition
  - the comorbid presence of other conditions
  - educational underachievement
  - negative attitudes towards epilepsy
  - lack of family support (Austin and deBoer, 1997).

Psychopathology, Anxiety and Depression

- Individuals with epilepsy are at greater risk of psychopathology, anxiety, depression and suicide than the general population and they are also more likely to be socially dysfunctional than those without the condition (Jacoby et al., 1996; ILAE, 2003c; Pompili et al., 2005; Mensah et al., 2007).
- Depression and suicide are 4—5 times more prevalent in individuals with epilepsy than the general population (Brodie and Schachter, 2001).
- Anxiety and depression are the most prevalent psychiatric features in epilepsy, with anxiety being the most frequently reported psychiatric problem (Betts, 1981; Aronson et al., 1986; Collings, 1990; Jacoby et al., 1996).
- Psychiatric and psychological disorders are under diagnosed and untreated in epilepsy (de Boer et al., 2008).

Anxiety in Epilepsy

- Increased feelings of anxiety can be manifested in a number of ways:
  - Anxiety may be present prior to or during seizure activity.
  - Fear of having a seizure may induce feelings of anxiety (Brodie and Schachter, 2001).
  - Cognitive associations with having epilepsy may lead individuals with epilepsy to experience increased social anxiety (Brooks et al., 1995).
  - Anxiety has been associated with a number of epilepsy-related factors, such as:
    - poor seizure control
    - awareness of side effects
    - increased seizure activity and suicide severity (Smith et al., 1991; Jacoby et al., 1996; Mensah et al., 2007).
- Seizure severity was the most significant predictor of anxiety in a study which assessed quality of life in epilepsy (Smith et al., 1991).
- Epilepsy-related factors psychosocial factors play an important part in mediating anxiety in PWEE.
- Various (1982) argue that anxiety may be a consequence of the:
  - unpredictability of epilepsy
  - increased social anxiety
  - stigma
  - rejection from society.

Depression

- The existence of a relationship between epilepsy and depression has been documented since antiquity.
- The symptoms of depression are apparent in 40—60% (Grabowska-Grzyb et al., 2006).
- A number of epilepsy-related factors have been associated with depression:
  - Having focal epilepsy has been associated with depression (Forsgren and Nygren, 1999).
  - Grabowska-Grzyb et al. (2006) found that having complex partial seizures was also positively correlated with the experience of depression.
  - These authors also found that depression was more common in people with temporal lobe epilepsy (TLE) with a focus in the dominant hemisphere.
  - This may be particularly apparent in people with mesial temporal sclerosis (Quiske et al., 2002).
- High seizure frequency and refractory epilepsy have been shown to be associated with feelings of depression as have certain types of AED (Mendez et al., 1986; Schmitz et al., 1999; Kanner and Balabanov, 2002).
Depression

• The nature of the relationship between epilepsy and depression may be bi-directional such that history of depression is often much more common in people who later have a seizure (Hesdorffer et al., 1989; Forsgren and Nystrom, 1999).
  – Hesdorffer et al. (2000, 2006) found that major depression was associated with a much greater risk of developing focal epilepsy, a finding which supports a previous study by Forsgren and Nystrom (1999).
  – Older adults (over 55) were also four times more likely than controls to develop epilepsy.
• The evidence of depression as an antecedent factor prior to seizure onset was substantiated in a later study by Hesdorffer et al. (2006).
  – This study assessed the time order of association between epilepsy and depression in both adults and children over the age of 10.
  – People with a history of depression were 1.7 times more likely to develop epilepsy than the control sample.
  – Independent of major depression, participants who had a history of suicide attempt were also at a far greater risk of developing epilepsy.

Cognitive dysfunction related to epilepsy

• One of the most debilitating aspects of being diagnosed with epilepsy is the impact that recurrent seizures can have on cognitive functioning and daily life.
• In a study by Fisher et al. (2000) cognitive impairment was one of the biggest problems with having the disorder.
• Common cognitive deficits in people with epilepsy are:
  – Intellectual decline
  – Reduced information processing speed
  – Reduced reaction time
  – Attentional deficits and memory impairments

Memory

• Memory is the most frequently reported problem in epilepsy (Thompson and Corcoran, 1992; Corcoran and Thompson, 1993) and deficits can range from poor concentration and minor forgetfulness to gross clouding of consciousness and disorientation (de Boer et al., 2008, p. 542).
• People with TLE and especially MTLE are particularly vulnerable to memory deficits.
• Such deficits appear to be most apparent in those who have had epilepsy for a longer duration (Hendriks et al., 2002).

Learning Disabilities

• Up to a quarter of individuals with epilepsy have learning disabilities and a half of people with learning difficulties have epilepsy (de Boer et al., 2008).
• Learning can be heavily affected because seizures can effect the individual’s level of alertness as well as the short term storage of information.
• Nocturnal seizures may well interrupt sleep and interfere with the consolidation of memory (de Boer et al., 2008).
• Such difficulties can clearly have an impact on educational progress and academic attainment.

Cognition

• For the majority of seizure types, Aldenkamp and Bodde (2005) emphasize that cognitive impairment arising from seizure activity can be reduced or reversed by effective seizure control.
  – Therefore early detection of the cognitive consequences of seizure activity and effective seizure control are paramount in preventing long term cognitive dysfunction (Aldenkamp and Arends, 2004; Kent et al., 2006).
• This may be especially relevant to children with epilepsy, where the negative impact of seizures on cognitive functioning may accumulate overtime (Aldenkamp and Arends, 2004).
  – Early detection may be especially problematic for those with non-convulsive seizures that may go undetected.
Epilepsy and Cognitive Function

• The relationship between epilepsy and cognitive functioning appears to be bi-directional.
• Research has demonstrated that cognitive dysfunction can precede the onset of seizures in children (Oostrom et al., 2003; Berg et al., 2005; Hermann et al., 2006).
• Children who were tested within 12 months of diagnosis demonstrated significantly worse scores in relation to matched controls on measures of behavior, attention, reaction time, location learning and academic skills (Oostrom et al., 2003).
• These differences were apparent irrespective of epilepsy related variables.

Epilepsy and Cognitive Function

• Psychosocial factors were also found to impact on behavioral and cognitive impairment.
  — Children who did not adjust well to the diagnosis of epilepsy
  — the children of parents who did not adjust well to diagnosis or
  — children who had a history of family problems were at a greater risk of behavioral and cognitive deficits.
• Cognitive and behavioral functioning have been found to predict social competence in children with epilepsy, particularly in relation to school, participation in social activities and interpersonal relations (Caplan et al., 2005).
• A number of studies have also shown that children with epilepsy who had academic difficulties prior to seizure onset were particularly at risk of cognitive impairment (Oostrom et al., 2003; Berg et al., 2005; McNelis et al., 2005; Hermann et al., 2006).

Cognition and Seizure Type

• Many seizure related variables can impact on cognitive functioning, these include:
  — seizure type
  — seizure frequency
  — the age of onset, etiology
  — duration of epilepsy (Jokeit and Schacher, 2004)
  — the type and number of AEDs
  — interictal EEG discharges
  — the site of the seizure foci.
• The nature of cognitive impairment will vary according to the location of the seizure foci.

Temporal lobe epilepsy (TLE)

• MTLE is the most common focal epilepsy syndrome, and is characterised by focal seizures that cause epileptogenic mesial (medial) temporal lesions (usually hippocampal sclerosis) which are often resistant to AED therapy (Schacher et al., 2006).
• MTLE is also typically characterized by an early age of onset and a history of febrile seizures (Helmstaedter, 2001).
• The range of cognitive functions that can be compromised in people with repeated MTLE seizures include:
  — intelligence
  — learning
  — visuo-spatial functions
  — problem solving
  — memory function
  — academic attainment (Hermann et al., 1997; Hermann and Sadee, 2002).
• If the dominant hemisphere is affected then language deficits can also be apparent (Kent et al., 2006).
• People with TLE report word finding difficulties.

Temporal lobe epilepsy (TLE)

• For example, Mayeux et al. (1980) found that people with LTLE were impaired in word-finding compared to a RTLE and a generalized epilepsy group.
• Early age of onset has also been associated with deficits in word finding in TLE (Bell et al., 2001).

Temporal lobe epilepsy (TLE)

• Due to the damage and loss of neurons that recurrent seizures cause to the hippocampal system, it is not surprising that memory dysfunction is one of the most documented deficits in MTLE (Aleixo et al., 2006).
• Deficits are apparent in the immediate recall of short stories in logical memory tasks and in delayed recall in both verbal and non-verbal memory tasks (Corcoran and Thompson, 1993; Thompson and Corcoran, 1992).
• Complaints of memory problems are the top five reported daily problems:
  — finding a word that was on the ‘tip of the tongue’
  — losing things
  — going back to check that one has done something
  — forgetting that one was told something
  — forgetting peoples names (Corcoran and Thompson, 1993).
TLE

• Researchers have also identified differences in the type of memory impairment associated with right and left seizure foci.
• Verbal memory impairments are most often observed in people with MTLE who have a predominant left seizure focus while non-verbal or visuospatial impairments are typically found in those with a predominant right seizure focus.
• Research has also suggested that left hippocampal damage in MTLE may have more detrimental effects on memory function than right hippocampal damage.
  – This may be because people with left hippocampal lesions also exhibit more extra-hippocampal damage rendering them more susceptible to cognitive dysfunction.

Frontal Lobe Epilepsy (FLE)

• FLE does not impair intellectual functioning per se but removal of epileptogenic tissue in the frontal lobe has improved IQ performance (Milner, 1975).
  – Post-operative scores on the WAIS were improved despite large proportions of tissue being removed.
• This may be indicative of the fact that epileptogenic tissue in the FL can diminish general cognitive functioning (Morris and Cowey, 2000).
  – Indeed Milner suggests that epileptogenic tissue may in fact cause disruption to the functions of other cortical tissue.
• In general, memory is not impaired in FLE unless the memory task has an executive component such as organizing the material to be remembered (Delaney et al., 1980; Morris and Cowey, 2000).

FLE

• Deficits in response inhibition as assessed by various forms of the Stroop Task have been evident in FLE (Corcoran and Upton, 1993; Helmstaedter et al., 1996, 1998).
  – Such deficits are reflected in people with lesions of the frontal lobe (Stuss et al., 2001; Demakis, 2004).
• McDonald et al. (2005) investigated response inhibition and set shifting in a group of people with FLE, TLE and normal controls by using variations of the Stroop Task.
  – They found that FLE and especially those with LFLE were impaired on response inhibition in comparison to NC.
  – They also found that when they increased the executive demands of the task by testing two or more executive skills (response inhibition and set shifting) at the same time it exacerbated the impairments in FLE patients.

Conclusion

• Despite increasing knowledge about epilepsy it is clear that employers, teachers, family members and society as a whole need to be better educated so as to help reduce misconception, stigma and discrimination and thereby enhance the quality of life of people with epilepsy.
• Beyond this, increasing the knowledge that individuals with epilepsy have concerning their condition can improve their ability to manage it and reduce their perceptions of stigma.

Conclusion

• Engendering positive attitudes and coping strategies and utilizing cognitive behavioral techniques will help combat psychosocial problems and improve quality of life by helping people to adjust and accept their diagnosis.
• Self help groups and parental support networks may increase social support for the individual and their family and vocational training may help combat issues of employability.