

**THE ROLE OF THE EDUCATIONAL PSYCHOLOGIST IN THE
EMOTIONAL AND SOCIAL REHABILITATION OF THE
TRAUMATIC BRAIN INJURED ADOLESCENT**

by

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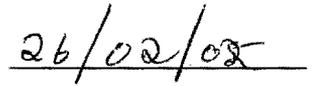
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THE ROLE OF THE EDUCATIONAL PSYCHOLOGIST IN THE EMOTIONAL AND SOCIAL REHABILITATION OF THE TRAUMATIC BRAIN INJURED ADOLESCENT

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SUMMARY

This research study consisted of an examination of the role played by the educational psychologist in the emotional and social rehabilitation of the TBI adolescent. A survey of the literature reveals that traumatic brain injury during adolescence negatively impacts on their adaptation, development and functioning after the acute phase of the rehabilitation process. In order to study this phenomenon, a psycho-educational perspective was utilised. An in-depth qualitative study was undertaken by means of a case study design. The two cases being presented offers the reader insight into the cases pre-morbid functioning, the accident and its aftermath, the specific traumatic brain injuries, the emotional and social problems encountered by these adolescents as well as the psychotherapeutic interventions applied by the educational psychologist in the rehabilitation process of the cases under investigation. The conclusions reached from this investigation were that traumatic brain injury during the developmental phase of adolescence, negatively impacts on the emotional and social well being of these adolescents, and that the educational psychologist plays a valuable role in the emotional and social rehabilitation of these adolescents.

KEY TERMS: adolescent traumatic brain injury, TBI, emotional deficits, social deficits, rehabilitation process, psychotherapeutic intervention, educational psychologist, brain structure.

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CHAPTER ONE

ORIENTATIVE ORIENTATION

1.1 INTRODUCTION

Recently the incidence of traumatic brain injury (as defined in section 1.6.1) has reached alarming proportions. Researchers Garcia, Krankowski and Jones (1998:33), estimate that one million children world-wide are taken into emergency rooms suffering traumatic brain injury each year. Research discussed by Kreutzer, Witol and Jones (1996:663) done on traumatic brain injury (hereafter only referred to as TBI) emphasises the fact that although TBI is prevalent across all age groups, TBI is a leading cause of death in persons younger than forty-five. Kreutzer et al (1996:663) further state that among all age groups, persons between the ages of fifteen and twenty-four, followed by individuals between ages five and fourteen, are at highest risk for sustaining TBI.

Andrews, Rose and Johnson (1998:136) observe that although TBI can be considered as the leading cause of death and disability in children and adolescents, the effects of TBI on the young have traditionally been regarded as less impairing than equivalent brain damage in adults. Abbot and Wilkinson (1992:243) also emphasise the fact that although the effects of TBI on adult functioning are well documented, relatively little is known about the long-lasting effects of TBI on the ongoing development of the adolescent.

The study of these long-lasting effects of TBI on the development of an adolescent can be a difficult and complex task, involving not only researching the immediate effects and the deficits caused by TBI, but also their impact on the normal developmental stages during adolescence (Andrews *et al* 1998:137). Abbot and Wilkinson (1992:244) stress that the quality of an adult's life is greatly dictated by the quality of his or her social relationships, but that these social skills to form and maintain important social relationships are mainly incubated during adolescence. Abbot and Wilkinson (1992:244) are further of the opinion that during the adolescent's quest for independence and status

these social relationships with friends become extremely important and that social acceptance by their peer group is a major tool by which adolescents judge their own emotional well being and level of success.

Any interruptions of the adolescent's development of social relationships influence the adolescent's quality of life and emotional stability both at the time of adolescence and throughout the rest of their lives. The impact of the disruption of normal social and emotional development during adolescence is clearly illustrated by Abbot and Wilkinson (1992:244):

TBI patients are much more seriously handicapped by emotional and personality disturbances than by their residual cognitive or physical disabilities.

Abbot and Wilkinson (1992:244) note further that these disturbances frequently result in feelings of isolation, loneliness and rejection. It can thus be concluded that any disturbances in the social and emotional development during adolescence, caused by TBI, can result in feelings of isolation, loneliness and rejection. TBI survivors are not only severely affected by their injuries caused by the trauma, but adolescent TBI survivors are also later plagued by emotional problems and social isolation and lack of acceptance.

These emotional and social problems are very well illustrated by a nineteen year old young woman three years after severe TBI, whereby she explains how she experienced her shattered dreams and isolation from friends after TBI (Lehr 1990:1):

I could feel sorry for myself when I realise the drastic difference between my life as it was and as it is now. I also can feel very sad for what I have lost, such as plans I had dreamed about before I became injured and the friends who could not handle my head injury and the changes it brought on. Those feelings could be real downers at times.

From this adolescent's account of her TBI, the brutal impact on her own development, her shattered future and her isolation from her peer group can clearly be seen.

An adolescent TBI survivor faces the challenges of effectively dealing with the problems inherent in adolescence as well as with the tragedy of an acquired disability stemming from TBI. This includes coping with a myriad of physical disabilities and grieving for the significant losses of and changes to their person both in functional terms and in aspirations and dreams (Abbot and Wilkinson 1992:245). Effectively dealing with these challenges can be overwhelming and frequently impossible for the vulnerable TBI adolescent.

The researcher has here made introductory comments on the debilitating effects of TBI on the emotional and social development of adolescents. In the next section the focus will be on the incidence of TBI.

1.1.1 Incidence

In a study of recent literature it became evident that adolescence is, unfortunately, a period when the incidence of TBI is very high. Lehr (1990:2) documented that although the incidence of TBI remains relatively stable throughout childhood, it increases dramatically in adolescence. The number of TBI in the fifteen to nineteen year-old age group equals that of the previous fourteen years combined. Since most injuries in adolescence are related to youngsters in motor cars or motor bikes either as the driver or the passenger, it is not at all surprising that this increase occurs when adolescents are obtaining their licences and are spending much of their time in cars and other vehicles (see figure 1.1). It is thus not uncommon for an adolescent to have a relative or classmate who was seriously injured or killed in a car accident (Lehr 1990:3).

Figure 1.1
Incidence of TBI



USA TODAY (<http://www.usatoday.com/leadpage/snapshot/snap137.htm>)

In reference to the above mentioned facts the question that arises is: what is the incidence rate of TBI in adolescence in South Africa? The researcher approached the following institutions (in March 2000), but none of these organizations could provide any relevant statistics on the incidence of adolescent TBI in South Africa:

- SA Federation for Mental Health
- Arrive Alive
- Road Accident Fund
- Council for Scientific and Industrial Research
- Central Statistics Services
- Health Department
- Headway
- Pretoria Academic Hospital.

Shapiro (2000) from the Pretoria Academic Hospital confirmed that there are no statistics

Academic Hospital, but that reliable statistics will only be available in 2003.

In a recent article by Roos (2000:16), it is estimated that 316 people in every 100 000 suffer TBI in South Africa every year. During an interview with Janse Van Rensburg (July 2000), these statistics on the incidence of TBI were confirmed. Janse Van Rensburg is the co-founder of the Brain Injury Group (BIG). Janse Van Rensburg himself sustained TBI in a car accident three years ago.

With this information, gathered from individuals by the researcher, on the incidence of TBI in mind, TBI could well be said to be a silent epidemic.

The focus in the next section will be on survival after an accident where a TBI is experienced.

1.1.2 Survival

The increased use of motor vehicles in the past century has led to an increased risk of TBI. The number of survivors has also increased dramatically since the introduction of helicopter evacuation and skilled paramedics, which enable quick transportation to specialised trauma centres as well as rapid pre-hospital stabilisation (Clark 1996:549). According to Tucker and Colson (1992:200) increasing numbers of adolescents with TBI survive accidents due to recent advances in emergency medicine. Minute-to-minute survival lengthens to daily progress towards a healing body and mind that usually function differently from before the injury.

Reflecting on the above mentioned facts, together with the development of sophisticated medical techniques and a growing population rate, it is thus evident that there will be more and more survivors of TBI. It can thus be envisaged that this growing population of TBI survivors will need to be adequately rehabilitated to form an integral part of society.

The next section deals with the factors that contributed towards this research.

1.2 FACTORS GIVING RISE TO THIS STUDY

The researcher became aware of the problems caused by TBI for adolescent functioning during an interview (February 2000) with the mother of an adolescent TBI survivor. The mother was concerned about her son's emotional and social well-being after the accident that caused the TBI.

The mother said that during the acute phase of rehabilitation of her son's TBI, the focus was mainly on the physical and cognitive problems experienced by her son. She felt strongly that more attention should be given to the therapeutic rehabilitation of the emotional and social problems experienced by a survivor after the tragic events that have led to TBI.

Traditionally, TBI rehabilitation typically focuses on a survivor's deficits. An array of professionals usually rehabilitate the problems in the physical, cognitive, speech and behavioural realms (Andrews *et al* 1998:136). The goal of the traditional rehabilitation programme is to optimise the physical, cognitive and behavioural recovery of the survivor (Crisp 1993:393).

However, it seems that the area of greatest loss is not in the physical, cognitive, or behavioural area but in the social and emotional realms. According to Lehr (1990: 155) and Andrews *et al* (1998:137) it is recognised that the emotional and social deficits caused by TBI are often most critical in terms of determining the levels of perceived stress and functional disability, both for the injured adolescent and the family. This area has received much less attention than the physical and cognitive deficits caused by TBI. The available literature that focuses on the emotional and social aspects of TBI is even sparser Andrews *et al* (1998:136).

Wood (1990:24) states about the emotional and social problems caused by TBI:

The importance of addressing the myriad of emotional and social deficits faced by the TBI adolescent cannot be over emphasised, providing an opportunity to rebuild a new sense of self.

When the literature is thus evaluated it becomes apparent that the emotional and social problems experienced by adolescent survivors of TBI should be acknowledged. The principle can be embraced that the focus of the rehabilitation of an adolescent TBI survivor should not only be on physical, cognitive and behavioural problems, but that careful attention should also be given to the emotional and social problems encountered after TBI. These emotional and social problems can cause mayhem, particularly in adolescence due to the dynamics inherent to this developmental stage, when individual and social identities are virtually inseparable.

The main research question can be formulated as follows:

- Can the educational psychologist play a role in the emotional and social rehabilitation of the TBI adolescent after the acute phase of recovery and rehabilitation?

From this main research question the following research questions arose:

- What is the structure and functioning of a normal adolescent brain?
- How is the structure and functioning of the adolescent brain altered after TBI?
- What type of injuries cause damage to the brain?
- Are all injuries to the brain debilitating?
- What impact does TBI have on the emotional development of the adolescent?
- What impact does TBI have on the social development of the adolescent?

- How is the family of the TBI adolescent affected by the injury?
- How does the TBI adolescent deal with normal adolescent developmental issues, for example sexuality and independence?
- Does the family of a TBI adolescent seek professional help including help from an educational psychologist?
- What type of rehabilitative strategies will an educational psychologist apply in therapy with a TBI adolescent?
- What role does a mainstream school setting play in the rehabilitation of the TBI adolescent?

With these research questions in mind, the researcher formulated the following hypotheses:

- The educational psychologist plays a valuable role in the emotional rehabilitation of a TBI adolescent
- The educational psychologist plays a valuable role in the social rehabilitation of a TBI adolescent
- The educational psychologist plays a therapeutic role in the overall rehabilitation of the TBI adolescent.

The following purpose statement can affirm the above-discussed hypotheses, which indicate that the main interest of this study will be to explore and describe the:

- Emotional problems encountered by a TBI adolescent.
- Social problems encountered by a TBI adolescent.
- Therapeutic role played by the educational psychologist.

1.3 DELIMITATION OF FIELD OF STUDY

This study is concerned with the emotional and social problems encountered by the TBI adolescent and his or her rehabilitation. As this is a very wide field, it is necessary to define the parameters of the problem investigated.

In this study the main delimiting factors are:

- An understanding of the brain and TBI from an psycho-educational perspective
- The effects of the emotional trauma on the adolescent after TBI
- The factors contributing towards emotional problems after TBI
- The rehabilitation of the emotional trauma after TBI, e.g. anger, frustration, depression and anxiety
- The social barriers encountered by the TBI adolescent
- Addressing social barriers experienced by the TBI adolescent, e.g. isolation, rejection and loneliness
- The role of an educational psychologist in the therapeutic rehabilitation of emotional and social problems encountered by an adolescent after TBI
- The therapeutic strategies applied by an educational psychologist during the emotional and social rehabilitation of TBI adolescents
- The age of TBI adolescents: between 12 and 19 years of age.

1.4 AIM OF THE STUDY

1.4.1 General aim

The general aim of this study is to innovate therapeutic strategies to assist TBI adolescents to cope with the emotional trauma and social problems encountered after TBI. The general aim of this research extends further, to discuss the therapeutic role played by the educational psychologist in the rehabilitation of the TBI adolescent. The general aim of this research encompasses the promotion of inclusive education in a mainstream school setting in order to promote emotional well being and social integration

of TBI adolescents and to aid them to realise their potential.

1.4.2 Specific aims

1.4.2.1 The nature of TBI

The specific aim in regard to the nature of TBI will be to include a literature study to explore the structure of the brain and to investigate the nature of TBI. Furthermore the impact of TBI on adolescent functioning will be investigated with specific reference to the educational challenges of learners with TBI.

1.4.2.2 Therapeutic emotional rehabilitation

In reference to the therapeutic emotional rehabilitation of the TBI adolescent, the specific aim will be to do a literature study in order to investigate and determine how TBI affects the emotional experience of the adolescent, as well as to consider the contributory factors that lead to emotional problems after TBI. Areas under investigation in this literature study will include:

- Self-awareness of the adolescent after TBI
- The impact of TBI on one's self esteem after TBI
- Anger experienced after TBI
- Depression as a result of TBI
- Frustration as a result of TBI.

This literature study will be supplemented by a limited empirical investigation to elaborate on the emotional problems experienced by the TBI adolescent, as well as the therapeutic rehabilitation of these problems as a result of TBI.

1.4.2.3 Therapeutic social rehabilitation

With regard to therapeutic social rehabilitation the specific aim will be to investigate the social problems encountered by TBI adolescents, by means of a literature study.

Areas that will be investigated during this literature study are the following:

- Social isolation after TBI
- Re-entry to school after TBI
- Social interaction with friends after TBI
- Making new friends after TBI
- Peer group interaction
- Social and leisure activities with a disability such as TBI.

Furthermore, a limited empirical investigation will be included to establish the social problems encountered by TBI adolescents. The therapeutic strategies used to rehabilitate the social problems encountered by the TBI adolescent will also be included in this empirical investigation.

1.4.2.4 Role of the educational psychologist

A literature study will be done to study the role played by an educational psychologist during the therapeutic rehabilitation of a TBI adolescent. This literature study will be supplemented by a limited empirical investigation, to explain the role of the educational psychologist in the therapeutic rehabilitation of the TBI adolescent.

1.4.2.5 Therapeutic strategies

Concerning therapeutic strategies, a literature study will be included to determine the different therapeutic models and approaches applied by therapists in the rehabilitation of TBI adolescents. An empirical investigation will be done to discuss the different therapeutic models and strategies used by the educational psychologist during the

therapeutic rehabilitation of the emotional and social problems encountered by TBI adolescents.

1.5 RESEARCH METHOD

The research approach will be twofold, namely a literature study supplemented by a limited empirical investigation.

1.5.1 Literature study

By means of an intensive study of recent literature, the researcher is enabled to interpret, synthesise and integrate information and thus be able to identify and clarify implications and inter-relationships. A study of the relevant literature will provide the researcher with a frame of reference to recontextualize the problem in a meaningful way.

The objective of this literature study is to:

- Establish the nature of adolescent TBI
- Establish the nature of emotional problems encountered by the TBI adolescent
- Establish the nature of social problems experienced by the TBI adolescent
- Study the therapeutic role of the educational psychologist in the adjustment of the TBI adolescent
- To research therapeutic strategies for TBI adolescents.

1.5.2 Empirical study

The research approach used during this investigation study will be qualitative: a case study design will be used. Two case studies will be described, of which one will be discussed extensively.

The researcher will collect detailed information by using a variety of qualitative data collection procedures.

The following methods of data collection will be included:

- Interviewing of TBI adolescents and their significant others
- Observation as an observer over a period of one year.

The following therapeutic interventions will be included in this empirical investigation:

- Individual therapy
- Group therapy

The following concepts will be used in this dissertation and are therefore clarified in the next section.

1.6 DEFINITION OF CONCEPTS

1.6.1 Traumatic Brain Injury (TBI)

To define TBI, students with TBI were compared to students with learning difficulties (LD). Table 1.1 shows the differences between learners with TBI and learners with LD.

Tucker and Colson (1992:204) suggest that learners with LD and learners with TBI differ in the following areas:

- The onset of the problem
- The cause of the problem
- Resulting problems
- Injury to the sensory system.

The differences discussed by Tucker and Colson (1992:204) are as follows:

TABLE 1.1

LD		TBI	
1.	Congenital, prenatal, or early onset.	1.	Sudden onset.
2.	Cause may be unclear; often appears when new demands are introduced (e.g., school starts).	2.	Specific cause.
3.	Often manifests in only one area (e.g., mathematics).	3.	Resulting problems strikingly complex.
4.	Visual – and/or auditory-perceptual difficulties often without specific organic damage.	4.	Visual-and/or auditory-perceptual difficulties due to specific injury to the sensory system.

A Comparison of characteristics of learners with LD and learners with TBI.

Adapted from Tucker and Colson (1992:204).

Reflecting on the above, it is thus evident that although adolescent TBI learners may seem to function much like adolescents born with other handicapping conditions, like learning, to be handicapped from birth is different from acquiring a severe disability in an accident. Adolescents with brain injuries can often remember how they were before their trauma, so a constellation of emotional and psychosocial problems not usually present in adolescents with congenital disabilities becomes a valid concern (Tucker & Colson 1992:204).

In the literature the most frequently used definition of TBI, is the definition of the National Head Injury Foundation (NHIF) in the USA (Hughes 1990:27; Clark 1996:550). In 1986 the NHIF adopted the following as a standard definition of TBI:

TBI is an insult to the brain, not of a degenerative or congenital nature but is caused by an external physical force, that may produce a diminished or altered state of consciousness, which result in impairment of cognitive abilities or physical functioning. It can also result in the disturbance of behavioural or emotional functioning. These impairments may be either temporary or permanent and cause partial or total functional disability or psychosocial maladjustment.

For the purpose of this study the definition of TBI by the NHIF will be used.

1.6.2 Educational psychologist

According to Unisa's model of Educational Psychology the educational psychologist is a professional who applies psychotherapeutic interventions in the treatment of psychological problems and psychopathology that are present in the behaviour and learning of children and adolescents. In reference to Unisa's model, it is implicated that the educational psychologist is always in a bipolar relationship with his or her client. It is further implied that the therapy applied by the educational psychologist is based on a series of interactions that is aimed at changing the behaviour and feelings of the client, which for the purpose of this research, will be a TBI adolescent (Lessing & Jacobs 2000:76).

The following definition of the educational psychologist, as discussed by *Microsoft Encarta* (1999), captures the essence of the role of the educational psychologist:

The educational psychologist is a person who applies scientific methods to study the behaviour of people in instructional settings. All areas covered by educational psychologists inevitably overlap with other areas of psychology, including child and adolescent development, social psychology, psychological testing and educational counselling.

According to the above-discussed definition, the educational psychologist is a person who studies the behaviour of people in a scientific way.

The following definition by Savage and Wolcott (1995:157) offers a more precise definition of the educational psychologist, with specific reference to the educational psychologist's role in the emotional and social rehabilitation of the TBI adolescent.

Savage and Wolcott (1995:157) define the educational psychologist as a professional:

- Specialising in counselling, including adjustment to disability
- Using scientific tests to identify personality, emotional, social and cognitive functioning
- Working with other therapist in a team during the rehabilitation of the TBI adolescent
- Sharing information derived from the applied scientific tests is with other team members, to ensure consistency in approaches
- Providing individual or group psychotherapy for the purpose of cognitive retraining, management of behaviour and development of emotional and social coping skills, to the TBI adolescent, to members of the family and to any significant others.

It can be concluded that for the purpose of the current research the definition of the "educational psychologist" is not limited to the application of scientific methods by a professional to study the behaviour of people. In the present study the educational psychologist will be defined as a professional with at least a masters degree in educational psychology, specialising in counselling and applying psychotherapeutic strategies and interventions to promote a TBI adolescent's emotional and social well being.

1.6.3 Rehabilitation

According to the *Readers Digest Great Illustrative Dictionary* (1985:1419) rehabilitation can be defined as a process, whereby a person with a handicap is restored to useful life through education and therapy.

Hughes (1990:69) captures the essence of rehabilitation with the following explanation of the rehabilitation process:

Rehabilitation refers to formalised training to restore functioning in a wide range of areas. Rehabilitation may begin in a facility designed for just that purpose, but the rehabilitation process actually spans the lifetime of a head - injured child. Rehabilitation can address cognitive, psychosocial, physical, speech and recreational and vocational deficits. Depending on the severity of the injury, rehabilitation may be required in only a few, or nearly all, of these areas.

In reference to the above mentioned definition of “rehabilitation” it can be described as an ongoing process requiring formalised retraining in the following areas:

- Cognitive
- Psychosocial
- Physical
- Speech
- Recreational and
- Vocational.

For the purpose of this study, the researcher will adopt the following definition of “rehabilitation”:

Rehabilitation is not a single intervention. Rehabilitation refers to an ongoing process. The goal of the rehabilitation process is the restoration of the TBI adolescent’s ability to function in society and to cope emotionally with the effects of the TBI. More narrowly,

the goal for the TBI adolescent is to establish and maintain his or her individuality while participating in group activities. Ultimately, the goal of the rehabilitation process is to establish a new sense of self and an acceptable new identity despite the tragic event that lead to TBI.

1.6.4 Emotion

Plug, Louw, Gouws and Meyer (1997:90) are of the opinion that emotion can be formulated as a complex condition of an organism that can be recognised by the activation of the central and autonomic nervous systems, intestinal reactions and feelings such as fear, fury, joy, anxiety, compassion and rejection. Plug *et al* (1997:90) further state that there is a distinct difference between “feelings” and “emotion” in the sense that “emotion” is attended by physiological changes in the body for example, increased heart rate, alleviated blood pressure as well as the activation of the sweat glands.

According to the *World English Dictionary* as used in *Microsoft Encarta* (1999) “emotion” can be described as a heightened feeling, an agitation or a disturbance felt towards somebody or about something.

For the sake of clarification and for the purpose of this research the following definition of “emotion” will then be appropriate:

Emotional responses are recognised by physiological changes in the human body and are evoked during unsettling situations. “Emotions” are thus the feelings, for example anger and anxiety, that an adolescent has to confront when he or she is faced with disturbing situations and events.

1.6.5 Social

Nothing more clearly explains our own cultural definition of humans in social relation

than “Ubuntu.” The word “Ubuntu” is an African concept of humans in social relation, which is derived from Xhosa. “Ubuntu” captures the essence of human social relationships and encompasses concepts like kindness, humanity, compassion, and goodness (*Microsoft Encarta* 1999). According to Tutu (2000/11/14), “Ubuntu” means, a person is only a person through other people. It can be further explained that a human being can only realise his or her full potential through interaction with other humans, thus living as a social being.

According to Charan (1996:23) humans are social beings:

The central idea in sociology from which all else develops is that human beings are social. We live in a society. Our lives are affected by one another. Dependence on others is a central fact of our life.

It can be concluded that the central concept of being human is to be a social being. Being human implies living in a society and that interdependence between humans is inevitable.

Charan (1996:23) is further of the opinion that humans are social in at least six ways and describes them as follows:

- From the time of birth, humans rely on others for survival. A human being's physical and emotional needs are met only by relying on other humans
- Humans learn how to survive from other humans
- As humans, we spend most of our lives in social organisations
- Human qualities develop through social interaction
- Individual qualities depend on social interaction. Individuals develop ideas, values, goals, interests, morals, talents, emotions, and tendencies to act in certain ways. These individual qualities are directed through social interaction
- Human beings adapt to different social interactions. Humans constantly adjust their actions to the actions of other humans.

To clarify and define the meaning of “social” more narrowly for this research with specific reference to the meaning of “social” in a rehabilitative setting, one can cite Ellis and Christensen (1989:114) who state as follows:

The goal of the social rehabilitation process is the restoration of the injured person’s ability to function in society. More narrowly, the goal for the person is to establish and maintain his or her individuality while participating in group activities. Ultimately a sense of self leads to an acceptable identity.

Reflecting on the above, the meaning of “social” is thus that the individual can function in a society and yet maintain his or her individuality.

For the purpose of this research, the following definition of “social” will be appropriate:

Human beings are essentially social beings. To be a successful social being it requires obtaining the basic social interaction skills that are necessary for the development and maintenance of relationships at school, work, within family and in leisure times. Social interaction is not independent, but interdependent. To be a socially competent individual requires being motivated to seek interaction with others and to be knowledgeable about the rules and ways of interacting. Social competency requires the effective and appropriate use of various skills so that needs and purposes are met and personal satisfaction, trust, and intimacy are developed. Being a socially competent individual further implies that social behaviour can be altered as the context, situation and relationships change (Riches 1996:28).

Since these basic social skills may have been altered by the tragic event that caused TBI, the TBI adolescent must be rehabilitated socially to act in socially acceptable ways. Being social also implies that there is a interrelationship between humans, which further imply that the peer group, friends, educators and family may interact differently with the

TBI adolescent. They too will need retraining in social skills.

1.6.6 Adolescent

Vrey (1992:65) divides the different phases in adolescence, allowing for cultural influences, as follows:

- Early adolescence (12 to 15 year age group)
- Middle adolescence (15 to 18 year age group) and
- Late adolescence (18 to 22 year age group)

Vrey (1992:165) explains that in this division of the phases of adolescence, the lower limit (12 to 15 years) is being dominated by physical puberty and the upper limit (18 to 22 years) by cultural demands.

According to Vrey (1992:165) therefore, “adolescence” refers to an individual in the age group 12 to 22 years, a period which is characterised by phenomenal physical and psychological growth and development. Vrey (1992:165) further describes “adolescence” as a term literally meaning “growing or developing towards something” and thus being a maturing period as such.

Abbot and Wilkinson (1992:28) see the adolescent as an individual in the process of development. In this process, the adolescent examines many of the philosophical, social, and physical options which are available. The adolescent tries out numerous self-images and behaviour and accepts or rejects them. However, not until there is at least a sense of self-acceptance can adolescence end. A person has successfully achieved the goals of adolescence only when he or she is able to engage in a truly intimate relation with another person.

Abbot and Wilkinson (1992:28) summarise adolescence as a period of rapid personal

“development” beginning at puberty and ending at adulthood, by which time most people have achieved employment, a relatively permanent relationship with another, or both. Adolescence can thus be said to be a period of transition between childhood and life as an adult.

According to Smith and Cowie (1991:214) adolescence is biologically marked by the onset of puberty; a person is sexually mature and could potentially become the parent of a child. Smith and Cowie (1991:214) elaborates further on the social development of the adolescent: socially adolescence is marked by an increasing independence from parents as the young person prepares to leave home, to complete his or her education, to form sexual partnerships and to seek vocation or employment.

Gauvain and Cole (1996:230) state that among the personality traits most associated with adolescence by historians, social scientists, and psychologists is an inner turmoil experienced during a period of life known as the “storm and stress period”. It is a period marked by uncertainty and conformity with peers. Adolescence is also a stage of life when the individual is seeking self-identity.

Gauvain and Cole (1996:231) capture the essence of adolescence in the following manner:

Adolescence is a phase of life when youth is most pliable, plastic and formative.

In terms of the above citation, adolescence can be seen as a period of life when individuals are most likely to be influenced and shaped by their peers and significant others that play a part in the adolescents life.

In summary, the definition of "adolescent" for this research will refer to a person who is:

- Between the ages of 12 and 19

- Undergoing puberty
- Developing towards adulthood
- Seeking self-acceptance
- Developing self-identity
- Seeking independence from parents
- Forming relationships with the opposite sex and
- Conforms with his or her peers.

In this section, the different concepts as mentioned in the research title were defined. With these concepts now clarified, the researcher will discuss the programme which will be followed in this study.

1.7 PROGRAMME OF THE STUDY

The layout is as follows. There are six chapters in this investigation:

In Chapter one an overview of the purpose of the study is given, as well as an outline of the specific nature of the problem under investigation and the intended method of research and intervention.

Chapter two is concerned with aspects of the structure and functioning of the brain, as well as brain injury from an educational perspective.

Chapter three is devoted to the emotional and social trauma encountered by adolescents after TBI.

Chapter four discusses the different psychotherapeutic interventions that are used by the educational psychologist in the rehabilitation of the TBI adolescent.

In Chapter five an empirical study is undertaken. Two case studies, of which one is discussed extensively, are presented, as well as the development of a therapeutic

rehabilitation programme.

Chapter six discusses the findings of the investigation, conclusions are drawn and suggested recommendations are offered for future research based on this study.

1.8 CONCLUSION

The researcher is of the opinion that the information and rehabilitation strategies discussed in this research will provide help and motivation to parents and educators of the TBI adolescent.

The researcher trusts that this research would provide the support and impetus to help the TBI adolescent to overcome the trauma of the injury.

In the next chapter, the focus will be on the structure and functioning of the brain. Attention will also be given to injuries to the adolescent brain and how these injuries affect normal brain functioning with specific reference to the emotional and social functioning during adolescence.

CHAPTER TWO

STRUCTURE, FUNCTION AND TRAUMATIC INJURY OF THE BRAIN: FROM AN EDUCATIONAL PERSPECTIVE

2.1 INTRODUCTION

The brain is unequivocally the most complex and delicate organ in our body. The brain structure is fascinating and delicate, with billions of individual nerve cells clustered together into functional areas of specialization. While the structure of the brain is exceptional, its functions are even more miraculous. The brain is involved in the control or mediation of nearly every aspect of our behaviour, thoughts and emotions, ranging from breathing to composing symphonies (Hughes 1990:13).

In this chapter the researcher's goal is not to provide a wide-ranging explanation of the intricacies of the brain, but to provide enough background to understand the structure of the brain and how the brain and its functions are altered by TBI.

2.2 ORGANIZATION OF THE BRAIN

2.2.1 Introduction

Although the brain is extremely complex, the understanding of basic locations and functions of the brain is important in order to understand the nature of adolescent traumatic brain injury and the subsequent impairments, as well as the rehabilitation process.

2.2.2 Hemispheres of the brain

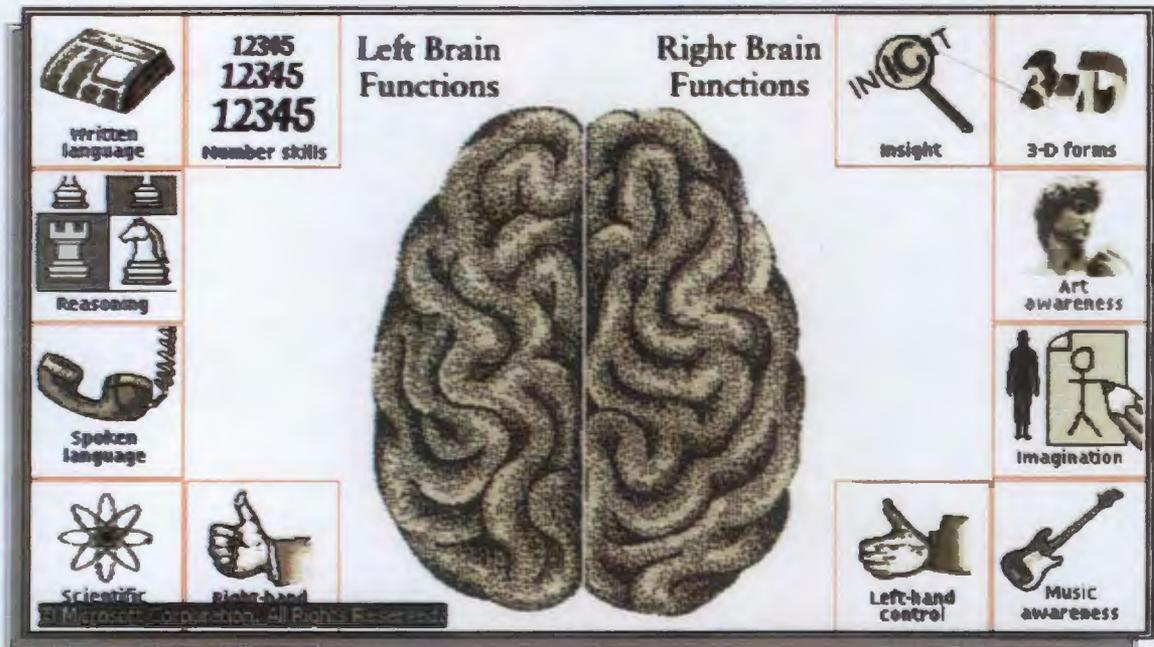
The brain is divided into two halves or hemispheres, right and left. Each half is specialized for various tasks or functions. The degree to which each side of the brain controls a function is called "lateralisation". Speech and language skills for most people are highly lateralised, being controlled, in most cases, primarily by the left hemisphere (Einstein 2001) (<http://www.furman.edu~einstein.htm>). While the left

side controls verbal reasoning, the right side of the brain has to do with the non-verbal aspects of language, for example humour, intonation as well as visual-spatial and rhythmic concepts (*Microsoft Encarta 1994*).

A summary of the lateralisation of the hemispheres of the brain will now be presented in Figure 2.1.

Figure 2.1

Left and right brain functions. (*Microsoft Encarta 1994*)



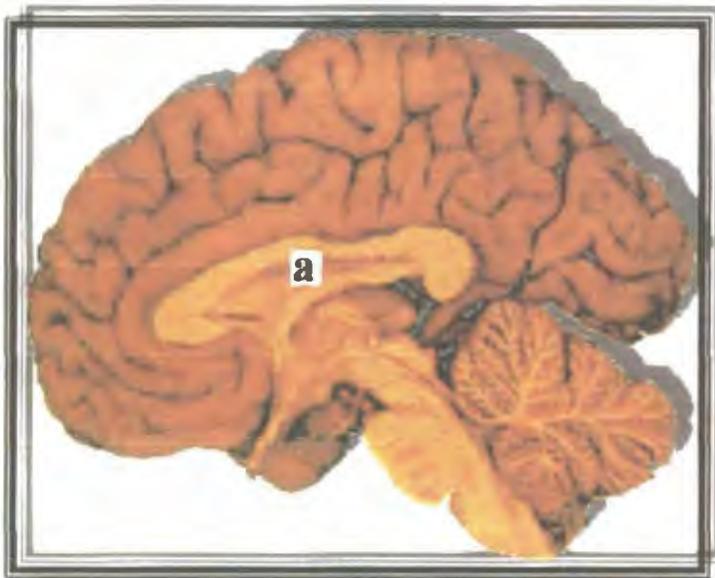
“Left and Right Brain Functions” Microsoft (R) Encarta. Copyright © 1994 Microsoft Corporation. Copyright © 1994 Funk & Wagnalls Corporation.

In reference to the above discussed summary of the highly specialized functions of the specific areas of the brain, it can be considered that the left half of the brain is concerned with details of language (written and spoken), mathematics, reasoning, scientific insight and control of the right side of the body. The right half of the brain handles insight and comprehension, art and music awareness, imagination as well as visual spatial (3-D) awareness and the control of the left side of the body.

The two hemispheres of the brain are connected by a bundle of white fibres called the corpus callosum. This is the medium through which communication between the two hemispheres takes place. The structure of the corpus callosum is illustrated in Figure 2.2.

Figure 2.2

Longitudinal section of human brain with corpus callosum (marked a)



(Catterall, Falconi, Salgado & Krug (2001))

(<http://www.phy.syr.edu/courses/modules/MMM/Biology/biology.html>)

In the next section, the means of protection of the brain will be discussed.

2.2.3 Meninges and skull

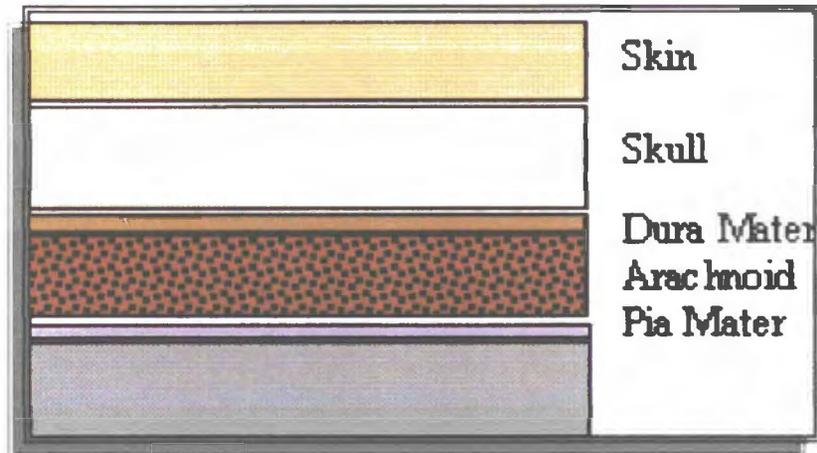
Externally, the brain is protected by the cranium (skull). Further, the brain is covered by three types of tissue or meninges, which help to protect the brain. These are the dura mater (tough mother), arachnoid (spider-like), and pia mater (tender mother).

(<http://anatomy.uams.edu/>) The structure of the protective layers of the brain is presented in Figure 2.3.

Figure 2.3

Coverings (Meninges) of the brain (Chudler 2001)

(<http://faculty.washington.edu/chudler/meninges.html>)



The subdural space is situated between the dura mater and arachnoid and contains a film of water with vulnerable blood vessels that can easily be injured. When blood accumulates in the subdural space after injury, it has no method of escape and causes subdural haematoma (bruising). This haematoma creates a damaging pressure on the brain (Hughes 1990:16).

Beneath the protective layers lies the part of the brain that is concerned with the more complex mental activities. This part of the brain is known as the cerebrum. Claassens, Dalbrock, Schroeder, Khadaroo and Wessels (1998:335) explain the "complex mental activities" under the control of the cerebrum in the following manner:

Your intellectual capacity is determined by the ability of your cerebral cortex to register impressions, the activity of your association areas and the sum of your past experiences.

From the above-mentioned citation, the importance of the cerebrum is evident, since the cerebrum is the location of intellectual ability.

The cerebrum (figure 2.4) with the similarly important cerebral cortex (figure 2.5) will be discussed in the next section.

Figure 2.4

Lateral view of cerebrum

Catterall *et al* (2001) (<http://www.phy.syr.edu/courses/modules/MMM/Biology/biology.html>)

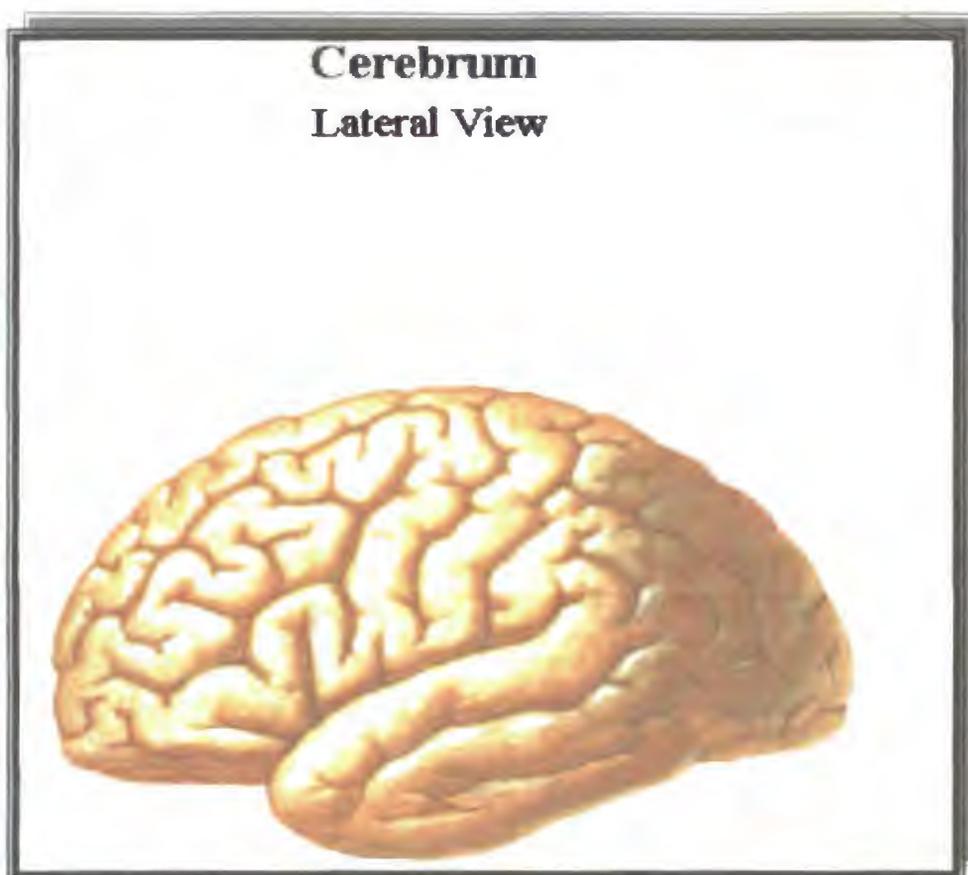
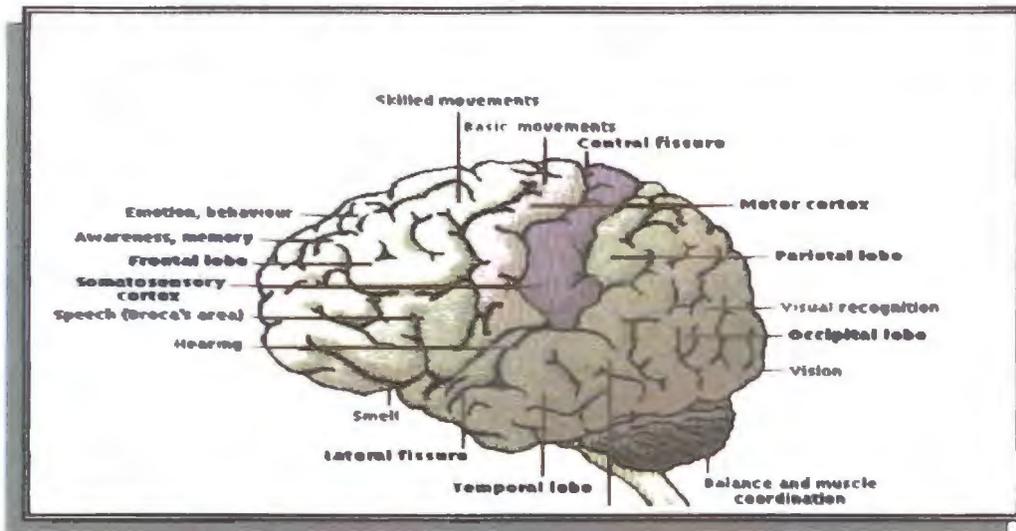


Figure 2.5

Functions of the cerebral cortex

Functions of the cerebral Cortex.™ Microsoft (R) Encarta Copyright © 1994 Microsoft Corporation
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2.2.4 Cerebral cortex

Many motor and sensory functions have been mapped to specific areas of the cerebral cortex as indicated in Fig 2.5. In general, these areas exist in both hemispheres of the cerebrum, each serving the opposite side of the body. It is important to note, though, that the areas of language are an exception to the statement made in the previous sentence. Both Wernicke's area, concerned with the comprehension of spoken language, and Broca's area, governing the production of speech, have been pinpointed (in most cases) to the left hemisphere of the cerebral cortex (Finstein 2001). It is thus evident that injury to the areas of language can be problematic, since the areas of language are not found on both hemispheres of the cerebral cortex. The frontal cortex is, further, operative in the function of thought and emotion. The frontal cortex plays a valuable role in the linking of input from the different sense organs (Catterall *et al* 2001). The frontal cortex is thus concerned with simultaneously coordinating

information from the senses of sight, hearing, touch, taste and smell (*Microsoft Encarta* 1994).

2.2.4.1 *Functions of the cerebral cortex*

Claassens *et al* (1998:336) summarize the functions of the cerebral cortex as follows:

- Control of voluntary movements

The cerebrum is the seat of the will. All impulses that bring about voluntary actions are situated in the cerebrum.

- Controls higher mental activities

The cerebrum is the seat of all those functions we could include under the term "higher mental activities", viz. consciousness, intelligence, memory, judgement, imagination, will power and self control.

- Perception of sensation

The cerebrum also houses the centre of all physical sensations, e.g. sight, hearing, taste, touch and smell.

- Controls emotion

The cerebrum is also the seat of certain emotions, e.g. joy, love, guilt, anger etc.

Each hemisphere or side of the cerebrum is further divided into four lobes (Figure 2.5). Distinct creases or fissures in the cortex itself mark the boundaries of these lobes. These four lobes, known as the frontal, parietal, occipital and temporal lobes, will be discussed in the next section.

2.2.4.2 *Frontal lobes*

According to Hughes (1990:16), the frontal lobes are situated in the front of the brain and because of this vulnerable location, the frontal lobes are usually injured during TBI (Figure 2.5). Russell and Sharratt (1992:25) elaborate further on the vulnerability of the frontal lobes by explaining that if a survivor of TBI was hit on the back of the head, the brain would slam into the front of the inside of the skull. Russell and Sharratt (1992:25) and Mira, Tucker and Tyler (1992:14) go on to explain that if TBI occurs on one or the other side of the head, the brain will be injured as it bounces from side to side within the skull.

On the complexity of the frontal lobes Hughes (1990:16) notes that the frontal lobes are the most complex and least understood concerning details of their function. The frontal lobes are important in controlling expressive language, initiating behaviour, thinking creatively, solving complex problems and controlling emotions. The frontal lobes are considered the centre of planning and organizing complex behaviour (Da Soasa 1999) (<http://www.sciencedaily.com/releases.htm>).

When these frontal lobes are injured, behavioural problems such as poor judgement and lack of control can be expected. Motivational deficits and lack of initiative are also frequently seen (Hughes 1990:17).

2.2.4.3 *Parietal lobes*

The parietal lobes lie in the middle portion of the top of each hemisphere (Figure 2.5). According to Russell and Sharratt (1992:25) and Hughes (1990:17), the parietal lobes are the centres for perception of sensation, reading, listening, memory, awareness of spatial relations and perception of tactile stimulation such as the ability to recognize objects by touch. The parietal lobe's sensitive location and function is the reason why damage to this area frequently results in disorientation in space and distortion of body

image (Mattingley 1999). (<http://psyche.cs.monash.edu.au/v5psych-5-14-mattingley.html>.)

2.2.4.4 *Occipital lobes*

The occipital lobes are found at the very back of the brain (Figure 2.5). Because of their location, they are often least injured in TBI. The occipital lobes are the centres for the reception of vision.

The more complex integration of visual stimuli occurs in the adjacent temporal and parietal lobes (Hughes 1990:17; Russell & Sharratt 1992:25).

2.2.4.5 *Temporal lobes*

The temporal lobes are located along the sides of each hemisphere (Figure 2.5). Because of their vulnerable location, they are easily damaged. Some of the functions of the temporal lobes are sequencing, memory, language and musical ability (Russell and Sharratt 1992:25).

Hughes (1990:18) explains that damage to the temporal lobes contributes to the occurrence of temporal lobe seizures. Patients with temporal lobe seizures frequently report a sense of being out of their body, inexplicable fear, *deja vu*, feelings of impending doom and complex hallucinatory states (Chudler 2001) (<http://faculty.washington.edu.chudler.music.html>.)

Collaborating with the brain are the auxiliary brain structures. Their structure and function are discussed in the next section.

2.2.5 Auxiliary brain structures

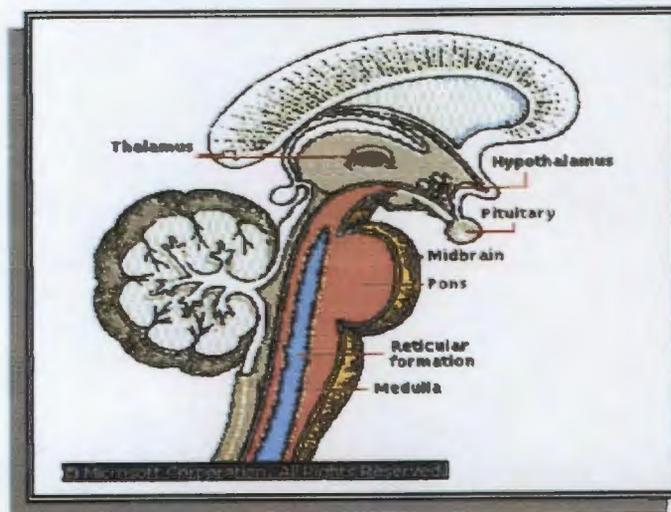
The coloured parts marked in Figure 2.6 indicate the auxiliary brain structures. The following auxiliary brain structures will be discussed in the next section:

- Brain stem and reticular area
- Limbic system
- Cranial nerves
- Cerebellum.

Figure 2.6

Structure of the brain stem

Microsoft (R) Encarta. Copyright © 1994 Microsoft Corporation. Copyright © 1994 Funk & Wagnalls Corporation



2.2.5.1 Brain stem and reticular area

All messages between the body and the brain must pass the brain stem. It is situated at the base of the brain (Day 2000) (<http://www.science.mcmaster.ca.htm>). The brain stem is important in regulating basic body functions like pulse, breathing, respiration and digestion (Howard 1999) (<http://www.soaring-eagle.org>). According to Russell and Sharratt (1992:22), the brain stem also controls cognitive skills such as the ability to focus attention.

Russell and Sharratt (1992:22) note further that the brain stem is prone to injury due to its vulnerable position at the base of the brain near bony areas. Hughes (1990:18) explains that the brain stem is particularly prone to injury because of its location, where it tends to be pulled and twisted during TBI. Howard (1999) stresses that brain stem injuries are frequently the cause of fatal head injuries and coma.

Attention and concentration problems common to traumatic brain injured adolescents probably reflect damage to the reticular area (Figure 2.6) of the brain stem, since the reticular formation area controls level of consciousness, including sleep, drowsiness, relaxation, alertness and attention (Robertson 1999) (<http://www.nursingceu.com/>).

2.2.5.2 *Limbic system*

The limbic system is located in the core of the brain. Emotional behaviour is to a great extent controlled by this system (Rocha do Amaral & De Oliveira 2000) (<http://www.epub.org.htm>). Basic behavioural responses like eating, fighting, care of offspring, sexual activity and fleeing danger seem to be controlled by the limbic system (Hughes 1990:18).

Whereas most major nerves emerge from the spinal cord, the twelve pairs of cranial nerves project directly from the brain. The structure and function of the cranial nerves will be discussed in the next section.

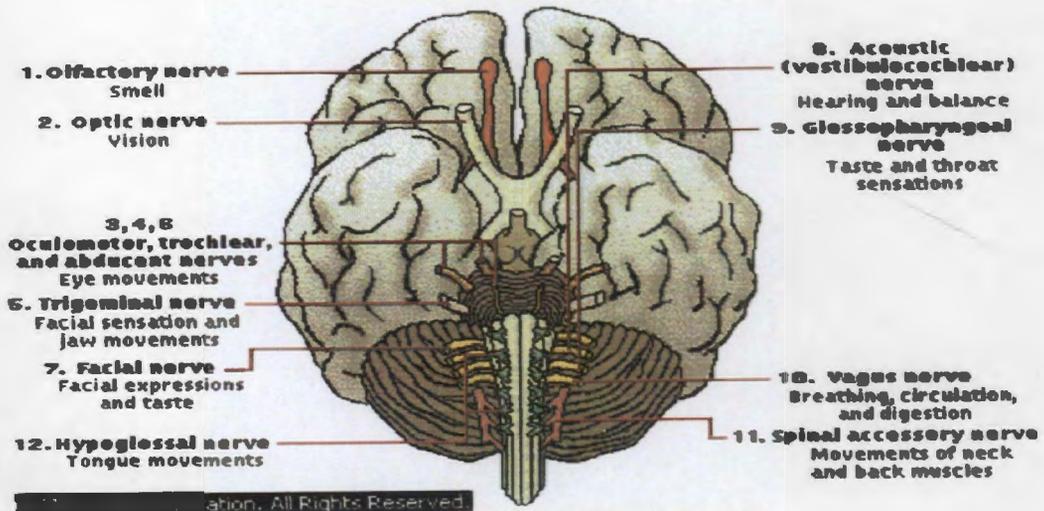
2.2.5.3 *Cranial nerves*

These nerves are located near the brain stem and injury to them can cause impairment to the senses of smell and hearing. Further dysfunction is caused to eye and facial muscles as well as problems with voice control (Chudler 2001) (<http://faculty.washington.edu/chudler/cranial/html>). The locations of the cranial nerves are presented in Figure 2.7.

Figure 2.7

Cranial nerves

Microsoft (r) Encarta. ® Copyright © 1994 Microsoft Corporation. ® Copyright © 1994 Funk & Wagnalls Corporation



The cerebellum, also known as the small brain, will be discussed in the following section.

2.2.5.4 Cerebellum

The cerebellum is located in the cupped areas of the cranium (skull) directly behind and above the brain stem (Figures 2.2 & 2.5). The cerebellum is well protected; therefore if it is damaged the damage is not so severe (*Microsoft Encarta* 1994). The cerebellum is responsible for co-ordinating movement in the body, and the cerebellum controls balance and muscle coordination (Day 2000). According to Hughes (1990:18), the cerebellum is also concerned with the specialization of sensory and motor control.

In the previous sections, the aim of the researcher was to provide an understanding of the structure and function of the brain from an educational perspective. The aim of the researcher is not to discuss the intricacies of the brain in detail, but to provide enough background so that educators, parents and professionals can have a better understanding of the impact of TBI on the function of the brain.

In the next section, the researcher will discuss the significance of TBI during adolescence.

2.3 TRAUMATIC BRAIN INJURY DURING ADOLESCENCE

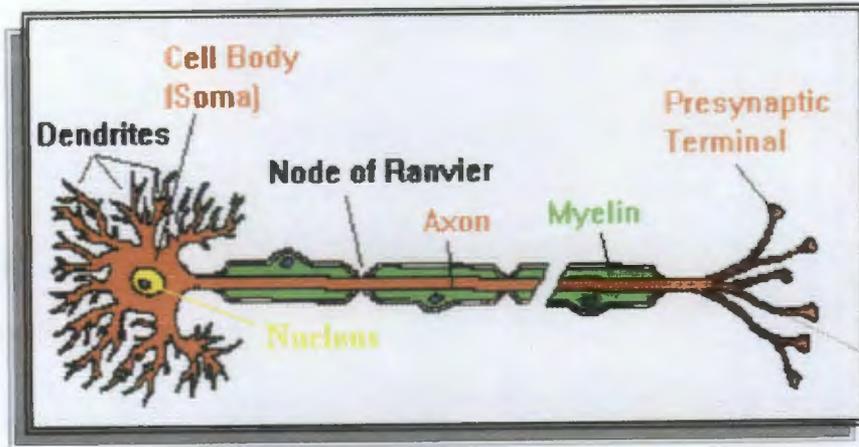
It is important to note that damage to brain tissue is permanent, because brain tissue does not regenerate (Mira *et al* 1992:15). Injury to the brain during adolescence is significant in the sense that the adolescent brain is still in the process of development (Lehr 1990:16).

Mira *et al* (1992:10), still on the topic of adolescent TBI, explain that changes in the organization of the brain as well as interconnections and the maturation of the nerve fibres continue to take place at least through adolescence. Some of the brain systems that are involved in higher level cognitive activities, such as judgement and planning, do not mature until at least late adolescence. For these reasons a TBI occurring even as late as adolescence will affect a brain that is still changing and developing (Mira *et al* 1992:11). According to Hughes (1990:18), the process of brain development is a lengthy one, continuing well into adolescence, with complexity of making connections and interconnections between neurons occurring over a period of years. The brain, which is an extension of the central nervous system (CNS), is made up of nerve cells or neurons. These neurons are covered with a myelin sheath and are indicated in Figure 2.8.

FIGURE 2.8

Structure of a neuron Chudler (2001)

<http://faculty.washington.edu/chudler/cells.html>



Hughes (1990:20), on the importance of adolescent brain development, explains that development of the myelin sheath covering brain cells continues through adolescence. The myelin sheath increases the efficiency with which nerve impulses are transmitted. Hughes (1990:20) further states that although the cortex of the brain reaches 70% of its total mass by the age of one, many specific functions of the cortex only reach maturity during adolescence. It is thus expected that higher cognitive functions like abstraction and complex problem solving, which require a high level of cortical maturity, are the last to develop (Hughes 1990:20). According to Hughes (1990:21) each skill that is mastered by the brain serves as the foundation for the development of more complex tasks, therefore it can be expected that the adolescents with TBI may fall considerably behind their peer group.

With this knowledge as background, it is obvious that adolescence is a very critical age if one sustains TBI. Adolescent TBI poses serious ramifications for the young person, since the adolescent brain is still in the process of development.

Since TBI is an insult to the brain (definition of TBI see section 1.6.1) it can result in a variety of types of head injuries, which will be discussed next.

2.4 TYPES OF HEAD INJURIES

Russell and Sharratt (1992:26-27), as well as Johnson (1999) (<http://www.tblaw.com>), distinguish between the following types of TBI:

- Closed head injury

This is the most common type of head injury. This injury occurs when the head collides with an object. At the same time, the brain hits the inside of the cranium and damage occurs.

- Open head injury

Open head injury occurs when an object breaks through the cranium and penetrates the brain. Overall, diffuse injury occurs because nerve networks are torn apart. Localized damage also occurs.

- Shearing stress lesions

This injury, also known as diffuse axonal injury, is sustained in all types of TBI. Nerve cells and nerve networks are torn apart. Cell death usually does not occur, but the different parts of the brain can no longer communicate with each other in the same manner as they did before the injury.

- Contusion

A contusion is a bruise to a specific part of the brain.

- Haematoma

A haematoma is a contusion (bruise) on a much larger scale.

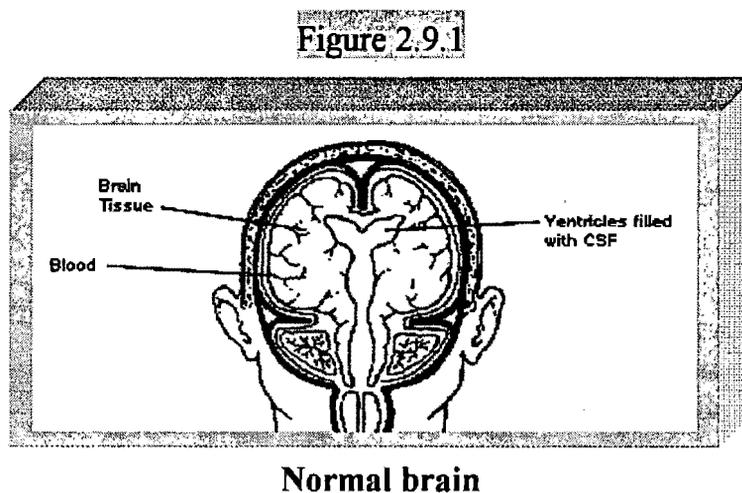
- Haemorrhage

A haemorrhage is the bleeding of the brain and can cause a pocket of blood to accumulate in an area, causing pressure against adjacent tissue. This pressure can cause additional damage to the initial injury. Further pressure creates insufficient blood flow to any area of the brain, resulting in more damage.

For the sake of clarification of the different types of brain injury, the structure of a normal brain is compared to the structure of a brain with different types of brain injuries (Figures 2.9.1 - 2.9.4). The following illustrations were adopted from the Virtual Hospital ® (2001) (<http://www.vh.org/>):

Although the brain is well protected, it may be injured. Damage to the brain may occur immediately, or it may develop after the injury due to swelling or bleeding.

The structure of a normal brain is presented in Figure 2.9.1.



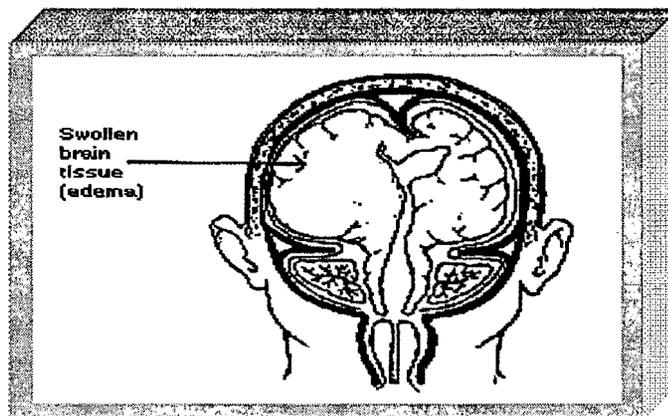
Copyright images used with permission of Virtual Hospital (<http://www.vh.org/>), The University of Iowa.

After brain injury, the contents of the brain may change. The brain tissue may swell, causing the brain to take up more room in the skull. This is called oedema. When this

occurs, the swollen brain tissue will push the other contents to the side. The structure of a brain with oedema is presented in Figure 2.9.2.

There may be bruising called contusions or haematomas. A collection of blood or a blood clot, called a haemorrhage, may be formed. This may also push the other contents to the side. The structure of a brain with a haematoma is presented in Figure 2.9.3.

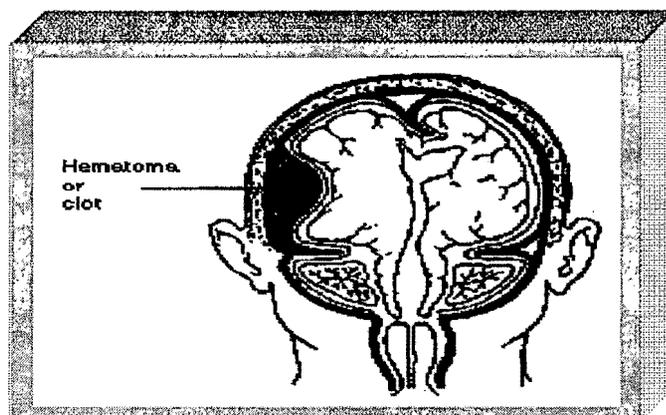
Figure 2.9.2



Brain with oedema (swelling)

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Figure 2.9.3

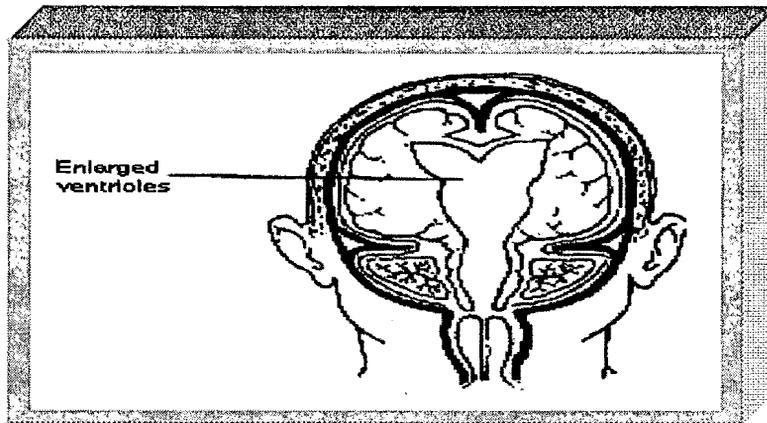


Brain with a haematoma

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The flow of CSF (cerebrospinal or spinal fluid) may also become blocked. This will cause the open spaces or ventricles of the brain to become enlarged. This is referred to as hydrocephalus. Figure 2.9.4 illustrates the structure of a brain with hydrocephalus.

Figure 2.9.4



Brain with hydrocephalus

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In retrospect, it does not really matter what the mechanism of injury is; the fact is that it leaves the survivor of TBI with a brain that no longer functions in the same way as it did before the accident.

The next section deals with the classification of the severity of TBI.

2.5 SEVERITY OF INJURY

On the severity of TBI, Johnson (1999) (<http://www.tblaw.com>) cited the following remark:

No head injury is too severe to despair of, nor too trivial to ignore.

(Hippocrates 4th Century B.C.)

It is of utmost importance for any individual who is concerned with the rehabilitation of the TBI adolescent to have knowledge of the severity of the adolescent's injury. According to Mira *et al* (1992:5), information about the severity of the injury provides valuable clues about the anticipated outcome. Such severity is assessed by means of the type and amount of damage done to the cranium and skull as well as the level of consciousness after the injury (Johnson 1999).

The following grouping of mild, moderate and severe TBI injuries is based on a compilation from the following sources (Giles and Clark-Wilson 1993:17-20; Mira *et al* 1992:5-6; Lehr 1990:17-18):

- Mild injury

Loss of consciousness or post-traumatic amnesia (loss of memory) for less than a half-hour, without a skull fracture.

- Moderate injury

Loss of consciousness or post-traumatic amnesia for 1 - 24 hours or the presence of a skull fracture.

- Severe injury

Loss of consciousness or post-traumatic amnesia of more than 24 hours. Evidence of contusion or hematoma and intra-cranial hemorrhage is present.

- Fatal injury

Death within 28 days of injury.

In an attempt to structure and quantify observations of unconsciousness, the Glasgow Coma Scale (GCS) was developed in 1974 by Teasdale and Jennett as cited by Lehr (1990:18). Since the educational psychologist will be working closely with other professionals, e.g. occupational and speech therapists, during the rehabilitation of the TBI adolescent, it is important to have an understanding of the GCS. (See Appendix One.)

The GCS classifies "coma" as the absence of eye opening, the inability to obey commands and the failure to speak recognizable words (Lehr 1990:18). The GCS score is equal to the three categories of response. The maximum score is 15 and the minimum is 3, with the more severely injured individuals scoring lower (Lehr 1990:18).

Lehr (1990:18) suggests the following as an indication of the severity of TBI, using the GCS as a criterion:

- Mild TBI = GCS score of 13-15
- Moderate TBI = GCS score of 9-12
- Severe TBI = GCS score of 3-8.

After the acute phase of recovery the Rancho levels, as an indication of cognitive functioning, are often used by professionals as a criterion to establish the functional level of the TBI survivor (Lehr 1990:22-23). (See Appendix Two.) The Rancho levels are divided into 8 stages, extending from a deep coma through to independent behaviour. According to Lehr (1990:22), it is important to note that the attainment of independent behaviour by the TBI survivor is not necessarily an indication of complete recovery to pre-injury functional levels.

2.6 SYNTHESIS

In chapter two areas of the brain that control the most prominent functions were discussed. Acquaintance with basic function, location and the deficits caused by injuries, is of utmost importance in the rehabilitation of the TBI adolescent.

2.7 SUMMARY

In this section, a summary of chapter two with regard to the structure and function of the brain, is presented.

Table 2.1

Brain structure	Function
Left hemisphere	<ul style="list-style-type: none"> - Written language - Spoken language - Number skills - Reasoning - Scientific skills - Right-hand control
Right hemisphere	<ul style="list-style-type: none"> - Insight - 3-D forms - Art awareness - Imagination - Music awareness - Left-hand control
Corpus callosum	<ul style="list-style-type: none"> - Communication between hemispheres
Cranium Dura mater Arachnoid Pia mater	<ul style="list-style-type: none"> - Protection of brain
Cerebrum	<ul style="list-style-type: none"> - Voluntary movement - Higher mental activities - Perception of sensation - Emotion
Frontal lobes	<ul style="list-style-type: none"> - Expressive language - Initiating behavior - Thinking creatively - Solving complex problems - Controlling emotions
Parietal lobes	<ul style="list-style-type: none"> - Sensations - Reading - Listening - Memory - Spatial awareness - Tactile discrimination
Occipital lobes	<ul style="list-style-type: none"> - Reception of vision

Temporal lobes	<ul style="list-style-type: none"> - Sequencing - Memory - Language - Musical ability
Brain stem	<ul style="list-style-type: none"> - Pulse - Breathing - Respiration - Digestion
Limbic system	<ul style="list-style-type: none"> - Eating - Fighting - Care of offspring - Sexual activity - Fleeing danger
Cranial nerves	<ul style="list-style-type: none"> - Smell - Hearing - Eye and facial muscles - Voice control - Taste
Cerebellum	<ul style="list-style-type: none"> - Coordinating body movement - Sensory and motor control
Types of injuries	
Contusion	<ul style="list-style-type: none"> - Bruise to part of brain
Haematoma	<ul style="list-style-type: none"> - Large contusion
Haemorrhage	<ul style="list-style-type: none"> - Bleeding of brain
Oedema	<ul style="list-style-type: none"> - Swelling
Severity of injury	
Mild TBI	<ul style="list-style-type: none"> - Loss of consciousness for less than half an hour - GCS 13-15
Moderate TBI	<ul style="list-style-type: none"> - Loss of consciousness for 1-24 hours - GCS 9-12
Severe TBI	<ul style="list-style-type: none"> - Loss of consciousness for 24 hours or longer - GCS 3-8
Fatal TBI	<ul style="list-style-type: none"> - Death within 28 days of injury

2.8 PROJECTION FOR NEXT CHAPTER

In Chapter Three a discussions of the emotional and social problems as encountered by the TBI adolescent will be presented, with special reference to: self-awareness, self-esteem, loneliness, anger, depression, frustration, interaction with friends, making friends, peer group interaction as well as to social and leisure activities.

CHAPTER THREE

EMOTIONAL AND SOCIAL PROBLEMS ENCOUNTERED BY ADOLESCENT TBI SURVIVORS

3.1 INTRODUCTION

Adolescents recovering from TBI present a variety of emotional and social problems. In chapter three the focus will therefore be on the contributory factors to emotional and social problems as experienced by the TBI adolescent as well as on the actual manifestation of the emotional and social problems of the TBI adolescent.

O'Hara and Harrell (1991:379) as well as Andrews, Rose and Johnson (1998:26) are of the opinion that although the field of TBI rehabilitation has made strides in the areas of survival, medical assessment, and cognitive rehabilitation, the patients' emotional responses to trauma are addressed often minimally or belatedly. O'Hara and Harrell (1991:379) propose further that the traditional rehabilitation model of TBI has inadvertently omitted or minimised the emotional and social needs of TBI patients, resulting in prolonged traumatic stress responses. According to Andrews *et al* (1998:26) the effects of TBI on adolescents have traditionally been regarded as less serious, in part this notion, known as the Kenhard Principle, may be due to the continued acceptance by some clinicians that brain damage in children and adolescents is less impairing than the equivalent damage to adults. Even though the Kenhard Principle has been brought into serious question in recent neuroscience literature, the continued acceptance of this principle may in part explain the neglect of certain sequelae of adolescent TBI, such as emotional well being and social functioning (Andrews *et al* 1998:26). TBI patients' early cries regarding unmet needs and psychic distress often lead to "acting out behaviour" which are then interpreted as cognitive dysfunction due to the TBI, rather than emotional and social distress (O'Hara & Harrell 1991:379).

Although TBI can occur to people of any age, gender, or socio-economic class, adolescents most frequently sustain it. Adolescents recovering from TBI often show a variety of emotional and social problems as they are faced with real life settings in the classroom and other social interactions (Ponsford *et al* 1995:234). Ponsford *et al* (1995:234) stress the fact that adolescence is a critical period in a person's life to sustain TBI, since adolescents are still in the process of attaining emotional separation and independence from parental support. During adolescence the young person is also in the process of the establishment of an identity and forming important social and intimate relationships (Ponsford *et al* 1995:234).

The attainment of the above-mentioned developmental milestones is rudely interrupted by the occurrence of TBI. By virtue of the TBI adolescents' situation as well as the physical, emotional and social deficits caused by TBI, many of the TBI adolescents have a reduced capacity to resolve age relevant issues. It is thus clear that the problems that are experienced by TBI adolescents are not only relevant to age specific developmental issues, but that these "normal" developmental issues are also greatly amplified by the occurrence of TBI.

Ponsford *et al* (1995:234) and Andrews, Rose and Johnson (1998:27) stress that an inability to resolve adolescent developmental issues, because of TBI, can result in serious emotional and social problems, for example feelings of lack of purpose or an inability to find intimacy with others, and can result in self-defeating behaviour, for example substance abuse. These emotional and social problems can cause the TBI adolescent to experience a low self-esteem, frustration, and social isolation (Ponsford *et al* 1995:235).

It can be concluded that TBI is a leading cause of permanent disability in adolescents and that these adolescents experience serious emotional and social problems. In the next section, a discussion of the contributing factors to the emotional and social problems of the TBI adolescent will be presented.

3.2 FACTORS CONTRIBUTING TO THE SEVERITY OF EMOTIONAL AND SOCIAL DEFICITS.

Lehr (1990:155-156) identified four factors that contribute to the severity of emotional and social deficits caused by TBI during adolescence. These factors will be discussed next.

3.2.1 Severity of injury

According to Lehr (1990:155) and Andrews *et al* (1998:27), the adolescents who sustain severe TBI injury are more likely to experience difficulties in the emotional and social areas as they recover. (See Chapter Two.) Lehr (1990:155) explains TBI injuries as being on a spectrum, with those survivors who are at the extreme end of severity of injury being in a persistent vegetative state, having fewer or literally no emotional or social concerns.

One can conclude that the more severe the TBI injury is, the more pronounced the deficits will be, resulting in distinct emotional and social problems.

3.2.2 Pre-injury behaviour and personality

According to Lehr (1990:156) as well as Andersson, Gundersent and Finset (1998:393), pre-injury behaviour and personality have been identified as a critical factor in the occurrence of emotional and social disorders after TBI. Those adolescents who have been functioning well in emotional and social areas before the injury are less likely to develop new disorders after the TBI. Savage and Wolcott (1995:84) endorse this fact and warn that it is important to note that even adolescents who were functioning well in the emotional and social areas before the injury, are at increased risk of developing new difficulties in these areas. Savage and Wolcott (1995:84) and Deaton (1995:1) further make it clear that it is important to note that emotional and social problems related to TBI

often do not appear for many months or even a year or longer post-injury.

It is evident that adolescents with a predisposition to emotional and social problems will have more problems in this area after the occurrence of TBI.

3.2.3 Psychosocial adversity

Lehr (1990:156) as well as Kehle and Clark (1996) (<http://www.elibrary.com>) state that psychosocial adversity is a composite measure reflecting on the adolescents' family and living settings and is composed of variables such as:

- Large family size
- Overcrowding
- Parental psychiatric disorder
- Parental criminal behaviour
- Low social economic status
- Foster care because of family difficulties
- Discordant family relationships.

It seems then that emotional and social problems encountered by a TBI adolescent will be amplified when combined with psychosocial adversity.

3.2.4 Post-traumatic epilepsy

Research discussed by Lehr (1990:156), found in follow-up studies of adolescents with temporal lobe epilepsy in particular, that they have more emotional problems and have also been found to have a tendency to social isolation. (See Chapter Two). This observed despite optimal anti epileptic treatment.

Mira, Tucker and Tyler (1992:29) added the following to the list of contributing factors

and will be discussed next.

3.2.5 Denial

After TBI, families and educators may have an inability to face or recognise and deal with the residual, emotional and social disabilities encountered by the injured adolescent. This can lead to feelings of isolation, as the injured adolescent must face his or her problems alone (Mira *et al* 1992:29).

On the other hand, the injured adolescent may be unable to recognise problems because of denial (Mira *et al* 1992:29). Savage and Wolcott (1995:90) affirm the issue of denial by explaining that TBI adolescents with right hemisphere injuries (See Chapter Two) may not be able to recognise their problems, and hence deny that they have any. This inability to recognise problems together with denial, may cause such adolescents to deny changes and the need for therapy and are to be therefore hampered in developing a realistic picture of their new self.

3.2.6 Diminished ability in problem solving

Following a TBI, the TBI adolescent is faced with the normal issues of adolescent development. Mira *et al* (1992:29) and Lewington (1993:279) explain that TBI adolescents not only have to deal with the TBI, but that these adolescents also have to deal with adolescent developmental issues, for example peer relations, sexuality, as well as independence. However, cognitive deficits may diminish their abilities to solve adolescent developmental issues effectively.

3.2.7 Sexuality

Mira *et al* (1992:29) accentuate the fact that issues concerning adolescent sexuality after TBI are often openly ignored, yet adolescence is a period of maximal sexual interest,

learning and activity.

Following a TBI, adolescents may be cut off from peers, who are a major source of information about sexual matters. Adding to this, impulsiveness and impaired judgement can have detrimental consequences for sexual behaviour. These problems may lead to a wrong choice of partners, a disregard for safe sex or contraception and inappropriate selection of time and place (Mira *et al* 1992:29). Lehr (1990:164) endorses this fact and is of the opinion that the sexual acting out behaviour is often used by the TBI adolescent as a way of dealing with or combating feelings of loneliness.

It is evident that the issue of sexuality could have a detrimental impact on the emotional and social well being of the TBI adolescent.

3.2.8 Restriction and over-protection

After TBI, adolescents lose their independence. According to Mira *et al* (1992:28) the increased dependency may be an after-effect of the constant caregiving required after the injury, or may reflect restrictions stemming from physical limitations or impaired judgement. Because of an adolescent's failure to recognise deficits, the imposed limitations may cause him or her to view the parents as unreasonably restrictive, thereby bringing about serious family conflict (Mira *et al* 1992:28).

3.2.9 Realising career goals

According to Mira *et al* (1992:29), this issue is particularly significant for adolescents who are injured in the later school years. Because of the physical and cognitive deficits caused by TBI, this means that former goals and dreams of university, college or jobs must be altered. According to Savage and Wolcott (1995:95) although TBI adolescents often have memory problems, they generally do not forget what they wanted "to be" before the injury.

Previous career goals and dreams are shattered, bringing about serious emotional problems. Hence, depression after TBI is common for many TBI adolescents as they adjust to their disability.

3.2.10 Substance abuse

According to Mira *et al* (1992:31) and Sherwin and O'Shanick (1998:341), the issue of substance abuse, particularly alcohol use, is strongly implicated as a cause of TBI, although blood alcohol levels are seldom checked in adolescents at the time of trauma. According to Mira *et al* (1992:31) about half of the injured adolescents have been found to have blood alcohol levels above the legal level for intoxication at the time of injury.

Lehr (1990:164) confirms these facts about substance abuse and is of the opinion that drugs and alcohol may be abused by TBI adolescents to blunt the felt intensity of their emotions as the TBI adolescents grieve their losses and experience anxiety to the point of panic about their reduced capabilities to cope with demands.

After the TBI many adolescents may return to alcohol or other drugs to try to mask the hurt of their alienation from friends, family conflicts and the loss of skills. This dependence on alcohol and other drugs can complicate and add to the emotional and social problems encountered by the TBI adolescent (Mira *et al* 1992:31).

In the next section, a discussion of the emotional problems experienced by the TBI adolescent will be presented.

3.3 EMOTIONAL PROBLEMS ENCOUNTERED AFTER TBI

In the previous section, the contributory factors to emotional and social problems were discussed. Here the focus is placed on the typical emotional problems that can be encountered by an adolescent after TBI, for example depression, anxiety and anger.

3.3.1 Depression

Adolescents with depression often have the same characteristics as depressed adults, including negative affect, hopelessness, and negative thoughts about the future (Wright-Strawderman and Lindsey 2000) (<http://www.elibrary.com>). Adolescents with TBI, both the leading killer and the leading cause of disability in adolescents, often manifest depressive symptomology (Wright-Strawderman and Lindsey 2000). According to the above-mentioned authors, the symptoms of depression often go undiagnosed because these depressive symptoms are masked by the physiology of the trauma. The TBI adolescent may withdraw from social contacts, as well as feel hopeless and helpless about the future. According to Wright-Strawderman and Lindsey (2000), the emotional, social and physical changes after TBI tend to result in an increase in depressive symptoms during the first 12 to 24 months, gradually decreasing by the third or fourth year.

Ponsford *et al* (1995:243) found that depression is a relatively less common feature in the acute phase of recovery from severe TBI. According to Ponsford *et al* (1995:243), this is thought to be largely due to confusion and lack of insight on the part of the injured individual, but it may also be related to the fact that relatively greater support from health professionals is available during this period. Although the provision of ongoing support may circumvent the development of depression, this is not always the case (Ponsford *et al* 1995:244).

According to Lehr (1990:164), depression sets in as TBI adolescents become more aware of the effects of TBI in terms of their own reduced capabilities. Lehr (1990:164) accentuates the fact that TBI adolescents can become depressed to the point where they become acutely suicidal and wish that they had never lived. Mira *et al* (1992:28) warn that any talk or action hinting at suicide must be viewed as a serious reaction by the TBI adolescent.

Ponsford *et al* (1995:243) stress that the chronic loss of motivation and self-esteem, as

well as the sense of hopelessness that accompanies severe depression, will seriously interfere with attempts to rebuild a new lifestyle. O'Hara and Harrell (1991:405) state that although depression could interfere with adjustment to the disabilities caused by TBI, it might well be a positive clinical sign that the TBI adolescent is struggling towards self-redefinition and acceptance.

It is important for the significant people and therapists working with the TBI adolescent to be aware of the possibility of depression in the TBI adolescent and they must therefore be knowledgeable about the manifestation of depression accompanying TBI.

This manifestation will be discussed next.

3.3.1.1 Manifestation of depression

According to Ponsford *et al* (1995:244), any of the following symptoms may be apparent in the manifestation of depression in the TBI adolescent:

- Changes in mood - which are characterised by:
 - Tearfulness
 - Flat or blunted affect
 - Aggressiveness or irritability

- Changes in thinking pattern - which are characterised by:
 - Sense of hopelessness
 - Feelings of helplessness
 - Feelings of worthlessness
 - Negative or pessimistic attitude
 - Frequent self-criticism
 - Self-pity
 - Suicidal thoughts

- Poor concentration and memory
- Worry over health
- Lack of motivation or interest in activities normally engaged in Previously
- Behavioural changes - which are characterised by:
 - Reduced attention to physical appearance and hygiene
 - Social withdrawal
 - Relationship difficulties
 - Suicidal behaviour
 - Substance abuse
- Physical symptoms - which are characterised by:
 - Excessive sleeping, or sleep disturbances
 - Falling asleep with difficulty
 - Frequent waking nightmares
 - Early morning waking
 - Loss of appetite
 - Weight loss or weight gain over a brief period
 - Elevation of blood pressure
 - Physical complaints.

Apart from depression that results directly from TBI, it is important to note that there are additional factors that could contribute to the occurrence of depression after TBI.

These factors will be discussed next.

3.3.1.2 *Organically based reasons for depression after TBI*

Ponsford *et al* (1995:244) stress that the therapist must be careful to discriminate between

organically-based changes and those reflecting emotional disturbances, since some of the symptoms of depression can also be seen as a direct result of the TBI as such, owing to the organic damage done to the brain.

3.3.1.3 *Predisposing factors*

According to Ponsford *et al* (1995:244) it is also necessary to assess the injured adolescent's personality and emotional state before the injury since in a small percentage of cases the TBI could have been caused by a suicide attempt. One can conclude that if the adolescent had a predisposition to depression, the depressive character would be exacerbated by the TBI.

- In this discussion, the aim of the researcher is not to provide information on the clinical diagnosis of depression. For the diagnostic criteria on depression the educational psychologist is referred to the *Diagnostic and Statistical Manual of Mental Disorders* referred to as the DSM- IV (1993), as compiled by the American Psychiatric Association (Carson & Butcher 1992:11).

In the next section, the focus will be on anxiety as an emotional response experienced by the TBI adolescent.

3.3.2 Anxiety

As with depression, anxiety tends not to manifest itself in victims of severe TBI during the acute stages of recovery. According to Ponsford *et al* (1995:247), anxiety may only manifest when the TBI adolescent has begun to be involved with activities in the community. Ponsford *et al* (1995) are of the opinion that TBI adolescents experience anxiety when they have difficulty in coping with situations as a result of cognitive deficits, for example in social settings where the TBI adolescent may feel self-conscious or may experience difficulty keeping up with conversations, in the school or when

engaging in study activities.

In studies conducted by Hibbard, Uysal and Kepler (1998:25), anxiety was found about twice more often in individuals with TBI than in the general population. Ponsford *et al* (1995:247) make it clear that these anxiety responses are normal, because the coping difficulties are definitely real to the TBI adolescent. Ponsford *et al* (1995:247) stress that these anxiety responses may be significantly out of proportion to the situation. According to Ponsford *et al* (1995) if these anxiety responses are not brought under control they can become self-perpetuating, highlighting the organically based problems, and leading to avoidance of stressful situations and ultimately a further loss of confidence.

The manifestation of anxiety in TBI adolescents will be discussed next.

3.3.2.1 *Manifestation of anxiety*

According to Ponsford *et al* (1995:247), anxiety can manifest itself in a number of ways:

- Changes in thinking patterns which are characterised by:
 - An anticipation of things going wrong
 - Catastrophising
 - Black and white thinking e.g. "I am a total failure"
 - Making predictions not based on fact

- Feelings marked by anxiety, for example:
 - Feeling out of control
 - Feeling fearful
 - Feeling embarrassed
 - Feeling nervous
 - Feeling uncertain about making decisions
 - Feeling confused

- Self-doubting feelings
- Bodily sensations which are marked by physical arousal, for example:
 - Increased heart rate
 - Muscle tension
 - Headaches
 - Nausea
 - Shaking
- Behavioural changes marked by:
 - Social withdrawal
 - Inhibition
 - Flustered behaviour
 - Escape from or avoidance of situations.

In reference to the above factors, it can be assumed that the TBI adolescent struggling with anxiety will experience emotional distress as well as problems with social interactions.

3.3.3 Anger

The National Centre for Youth with Disabilities from the University of Minnesota (1995) states that emotional disabilities are not necessarily visible until someone acts out their emotional pain (<http://www.cyfc.umn.edu>). This could well be said of TBI adolescents who manifest with emotional responses of anger.

Problems in controlling anger are commonly experienced by those who have sustained severe TBI (Ponsford *et al* 1995:245). Ponsford *et al* (1995:245) are of the opinion that if this anger is not managed correctly it could severely influence personal relationships, social and leisure pursuits, and ultimately influence successful school and community re-

entry.

Shaw and Yingst (1992:260) make it clear that anger, as experienced by TBI adolescents, is often typified by hostility, often unprovoked, in interactions with others. According to Shaw and Yingst (1992:260) rejection and refusal of assistance, verbal and physical outburst and cognitive victimisation also accompany the display of anger. The latter may be experienced by TBI adolescents who are dealing with chronic, intractable pain particularly severe headaches (Shaw and Yingst 1992:260).

According to Ponsford *et al* (1995:245), a great deal of anger in the form of blame is frequently focussed on the person who the TBI adolescent perceives as being responsible for his or her injury or on the different health professionals dealing with the rehabilitation of the TBI adolescent.

O'Hara and Harrell (1991:404) make it clear that TBI adolescents with symptoms of anger and blame may resist therapy or reject the therapist's efforts to establish an alliance, particularly if the TBI adolescent is not ready to express the anger or suspects that the therapist does not understand the anger or blame.

The manifestations of anger are now discussed.

3.3.3.1 *Manifestations of anger*

According to Ponsford *et al* (1995:250) anger is normally demonstrated in the following ways:

- Shouting
- Swearing
- Throwing objects
- Hitting others

- Hostility
- Refusal to cooperate
- Rejection of assistance.

From the above it is evident that if anger is not dealt with it could hold serious emotional and social problems for the TBI adolescent.

3.3.4 Self-awareness

According to O'Hara and Harrell (1991:394) self-awareness can be defined as the:

- Recognition of how others perceive us
- Ability to critique our own behaviour
- Recognition of internal motivation
- Recognition of our own cognitive and emotional strengths and limitations
- Recognition of personal change over time.

Unfortunately, adolescent TBI survivors may experience partial losses in self-awareness (Ponsford *et al* 1995:236). Ponsford *et al* (1995:236) conclude that reduced self-awareness and unrealistic self-appraisal can have a detrimental effect on the emotional well being of a TBI adolescent.

According to Ponsford *et al* (1995:236), reduced awareness of changes in cognition, behaviour and personality after the occurrence of TBI, is thought in most cases to result directly from neurological impairment, specifically frontal lobe function, rather than from a psychological need to deny the trauma. Ponsford *et al* (1995) warn that this denial, lack of insight and reduced self-awareness could lead to reduced motivation for rehabilitative work, result in unrealistic decisions regarding work and study and cause serious conflict with family members.

Ponsford *et al* (1995:237) and Meridith and Rassa (1999:10-12), came to the conclusion that the development of realistic self-appraisal is an essential part of the rehabilitation programme if the TBI individual is to return successfully to a productive lifestyle.

In the next section, the focus will be on the occurrence of Post-Traumatic Stress Disorder.

3.3.5 Post-traumatic stress disorder

According to Shaw and Yingst (1992:261), a minority of TBI survivors may develop Post-Traumatic Stress Disorder (PTSD). This psychiatric disorder is triggered by events out of the realm of normal human experience, such as an accident where TBI has been sustained (Shaw and Yingst 1992:261). According to Ponsford *et al* (1995:232) PTSD may occur if a person has experienced an event that is outside the range of usual human experience, such as a serious threat to one's life or physical integrity, or that of another person.

Ponsford *et al* (1995:232) pointed out that a crucial issue in the development of PTSD appears to be the individual's own perception of what happened. There is usually some recollection of the events preceding the accident and the sense of impending disaster, if not a recollection of the accident itself and the events afterwards (Ponsford *et al* 1995:232-233). Therefore the development of PTSD is confined to adolescents with mild TBI, where such recollections may be possible (Ponsford *et al* 1995:232-233).

In the next section, the manifestation of PTSD is discussed.

3.3.5.1 Manifestations of PTSD

According to Ponsford *et al* (1995:232), the following are manifestations of PTSD:

- Nightmares

- Flashbacks of trauma
- Intrusive recollection of trauma
- Avoidance techniques such as:
 - Avoiding situation that triggers the recollection of trauma
 - Blocking feelings
 - Feeling detached
 - Being estranged from others.

O'Hara and Harrell (1991:406) added the following to the list of PTSD manifestations:

- Panic or terror when an environmental or ideational stimulus provokes physiological and cognitive linking to the trauma
- Markedly changed emotional repertoire, with some patients experiencing:
 - Emotional frozenness
 - Hyper irritability
 - Intense, intractable anger.

In relation to the above discussed features it is evident that as long as the TBI adolescent experiences PTSD, it has serious ramifications for the emotional and social well being of the TBI adolescent.

- For the clinical diagnosis of PTSD, the educational psychologist is referred to the *Diagnostic and Statistical Manual of Mental Disorders* referred to as the DSM- IV (1993), as compiled by the American Psychiatric Association (Carson & Butcher 1992:11).

In the next section the focus will be on the social problems that can be encountered by the TBI adolescent.

3.4 SOCIAL PROBLEMS THAT CAN BE ENCOUNTERED BY TBI ADOLESCENTS

3.4.1 Introduction

The TBI adolescents' inability to regulate behaviour can have an adverse effect on their ability to relate socially with peers, family, and professionals (Hughes 1990:44). If these behavioural problems are superimposed upon the rapid and important developmental phases that the adolescent is to go through, this surely causes alarm as far as the social development is concerned (Mira *et al* 1992:11). Doelling and Bryde (1995:102) observe that the behavioural problems that cause serious deficits in the social arena of the TBI adolescent may include irritability, impulsivity, depression, labile mood, poor self-perception, a lack of self-determination, frustration and immaturity. Mira *et al* (1992:24) emphasise the importance of behavioural management in dealing with these behavioural problems, even when these are related to abnormal brain functioning, since the adolescent's ability to function in school and community will be hindered if the behavioural problems are to continue.

The National Centre for Youth with Disabilities from the University of Minnesota (2001). found, in recent estimates, that adolescents with physical and/or neurosensory disabilities are seven times more likely to develop emotional problems than those adolescents without these disabilities. The reason, in part, is the adolescents' social isolation and lack of peer support (<http://www.cyfc.umn.edu>). In these findings the important link between emotional and social problems, with special reference to adolescents with disabilities, is made clear. With this in mind, it is evident that TBI adolescents who experience emotional problems will also experience problems in the social area of their functioning. On the other hand, if TBI adolescents experience deficits in social interaction this will definitely affect them emotionally.

Some of the problems that can be expected after TBI and their subsequent impact on social functioning will now be discussed.

3.4.2 Impulsivity

According to Hughes (1990:44) impulsivity is the acting hastily without regard to possible consequences and is one of the most frequent observed behaviours after TBI. Savage and Wolcott (1995:90) explain that this is particularly true for adolescents with frontal lobe injuries, since these adolescents often feel "out of control" and cannot therefore effectively inhibit impulses. (See Chapter Two.) Hughes (1990:44) elaborates further on this topic and explains that the TBI adolescent lacks the ability to inhibit his or her behaviour; the result can range from a tendency to answer questions before they've been completely asked, to impulsively acting out sexual urges.

It can be deduced that if a TBI adolescent cannot control impulses, especially sexual urges, this can have a negative impact on all social interactions.

3.4.3 Motivational problems

Motivational problems frequently result in difficulties in social settings. According to Hughes (1990:44), the TBI adolescent may find it extremely difficult to initiate behaviour. Even if behaviour is initiated, the adolescent can find it extremely difficult to follow through with a task to completion, without considerable structure and assistance. Often this tendency is exacerbated by the apathy displayed by the TBI adolescent. According to Hughes (1990:45) and O'Hara and Harrell (1991:398) this tendency towards apathy and lack of motivation could be an ego defence mechanism used by the TBI adolescent to protect him or herself from possible failure.

This display of apathy and lack of motivation to initiate any behaviour could adversely affect the TBI adolescents' social interaction.

3.4.4 Mood swings

According to Hughes (1990:45), increased variability of emotions is a common side effect of damage to the limbic system or frontal lobes (See Chapter Two). Savage and Wolcott

(1995:90) affirm this by explaining that mood swings are common after TBI, since the brain is having difficulty trying to inhibit impulses and respond properly to emotions. Mira *et al* (1992:28) refers to "emotional lability" as "affective disturbances." These authors also acknowledge the fact that changes in the way emotional reactions are experienced and expressed are common following TBI.

The adolescent may experience sudden or inexplicable mood swings and may at times cry or laugh for no apparent reason (Mira *et al* 1992:28). When these sudden mood swings are coupled with lack of inhibition of behaviour, this causes the potential for unpredictable behaviour, which can clearly cause problems in the adolescents' ability to relate to others.

3.4.5 Language and communication problems

According to Hughes (1990:38) disorders in the ability to communicate are generally termed aphasias. Expressive aphasia is present when the TBI adolescent is unable to produce or express speech, and receptive aphasia is the inability to comprehend speech from others (Hughes 1990:38). Much more common are variable degrees of dysfunction in language skills, usually termed dysphasia (Hughes 1990:38). According to O'Hara and Harrell (1991:396) language problems are caused, in most cases, by injuries to the left temporal lobe of the brain (See Chapter Two).

Savage and Wolcott (1995:78) comment that conversational interaction is vulnerable after TBI, since TBI adolescents may produce language that is unacceptable in the setting and situation, wander unpredictably in conversation, fail to initiate interactions or have difficulty inhibiting unacceptable statements. The TBI adolescent may appear "different" and socially awkward, seriously influencing all his or her social interactions (Savage & Wolcott 1995:78).

Since speech and language functions encompass all forms of communicative behaviour,

including both understanding the communication of others and formulating and carrying out our own communications, it is understandable that a TBI adolescent with impairment of communicative skills may find it difficult to socialise successfully.

In the next section, specific areas where TBI adolescents experience social problems will be discussed.

3.5 SPECIFIC SOCIAL PROBLEMS ENCOUNTERED BY TBI ADOLESCENTS

3.5.1 Introduction

Deaton (1995) (<http://www.paraquad.org.psy/tbi.htm>) proposes that the trauma of a TBI is neither limited to its physical pain nor to its sometimes visible effects on speech, appearance, and motor skills. Deaton (1995) goes on to explain that the more subtle impact of TBI includes the ways in which it alters the relationships among the adolescent who is injured, his or her family, and the communities in which they live. The resulting problems are referred to as psychosocial difficulties (Deaton 1995).

According to Deaton (1995), these psychosocial problems could be more enduring than the physical effects and often more disturbing. According to Mira *et al* (1992:27), psychosocial difficulties are the most significant of the TBI effects for adolescents. Mira *et al* (1992:27) it is clear that these psychosocial problems often persist and are not easily treated since these problems not only are related to the actual injury, but are also compounded by subsequent problems with social relationships.

Deaton (1995) stresses that psychosocial problems can arise due to changes in the adolescent's expression of emotions and behaviour, self-concept, and social interactions. Some psychosocial difficulties are a direct result of the injury, others reflect an exaggeration of pre-injury characteristics or behavioural tendencies and some problems occur in reaction to the injury and the changes it has brought on (Deaton 1995 and Mira

et al 1992:27).

Mira *et al* (1992:27) explain that the psychosocial difficulties experienced by TBI adolescents cluster in several areas like family and peer relationships. These difficulties will be discussed next.

3.5.2 Disorders in family relationships

Mira *et al* (1992:27) as well as Deaton (1995) confirm that an adolescent's severe illness and subsequent lengthy rehabilitation, after TBI, may alter family roles. Mira *et al* (1992:27) further explain that the greater need for supervision or restriction on activity sets the injured adolescent apart from social settings. What complicates matters even more is the fact that other siblings may resent the excessive parental attention that the injured adolescent receives (Mira *et al* 1992:27). If the TBI adolescent is a survivor of an accident in which other family members were killed, it can dramatically complicate the relationships among remaining family members (Mira *et al* 1992:27).

From Mira's (1992:27) argument it appears that the occurrence of TBI seriously alters the dynamics within a family. The altered family roles together with the physical, personality, behavioural and cognitive changes of the TBI adolescent can cause strain in a family and ultimately affecting the social well being of the TBI adolescent negatively.

3.5.3 Peer relationships

Following a TBI, adolescents experience significant disruptions in their friendships. Falconer (2000) (<http://www.gopher.sasquatch.com>) stresses that adolescents who have sustained TBI are unable to monitor their behaviour and lack insight into the effect of their behaviour on themselves and others. Falconer (2000) emphasises that consequently TBI adolescents find that even long standing friendships do not survive the behavioural, thinking and personality changes caused by the TBI. Mira *et al* (1992:28)

confirm this and stress that in, many cases, the peer group reconstituents without the injured adolescent. Because of behavioural and cognitive problems, the TBI adolescent experiences yet another obstacle, which is that the friends who rallied at the time of the injury may start to drift away (Mira *et al* 1992:28). Deaton (1995) noted that TBI adolescents are less able to interpret the other's emotions and the meaning of subtle non-verbal cues and are therefore less appropriate in their social behaviours, further complicating the interaction with friends.

The TBI injured adolescent may no longer be able to interact in the quick-witted way that adolescents, in particular, admire (Mira *et al* 1992:28). On the other hand, the TBI adolescents may be overwhelmed by social interactions requiring rapid processing of complex stimuli and may withdraw from social activities (Mira *et al* 1992:28).

3.5.4 Leisure activities

Lehr (1990:206-208) is of the opinion that the impact of loss of friends on adolescents after TBI is often most apparent in their leisure activities. Instead of being part of sport and cultural activities or going to the movies, the TBI adolescent may be limited to pursuits such as watching television and playing computer games alone. Rarely do TBI adolescents or their parents prefer this situation, but seldom are they able to alter the cycle once it has begun (Lehr 1990:206-208).

Upon returning to school, the adolescents' re-socialisation may be difficult because of activity limitations imposed by the disabilities after the trauma. Because of the interaction of the many deficits and impairments experienced after TBI, the adolescent will not be able to pursue the same leisure activities as before the accident (Mira *et al* 1992:30 and Lehr 1990:206-208).

Since extramural and other leisure activities provide ample opportunities for adolescents to socialise with peers and friends, it is clear that the TBI adolescent will miss these

opportunities, which can only complicate the social problems already experienced by the TBI adolescent.

3.6 CONCLUSION

From the above survey of the literature it is evident that emotional and social deficits, as experienced by TBI adolescents, are linked. The emotional and social well being of the TBI adolescent is dependent on others. If the TBI adolescent experiences emotional difficulties these will definitely manifest in the adolescent's social functioning.

On the other hand, if the TBI adolescent experiences problems in the social realm this will definitely have some emotional repercussions for the TBI adolescent.

It is thus of utmost importance that the educational psychologist should address both the social problems, as well as the emotional problems, experienced by the TBI adolescent during therapy in the course of the rehabilitation programme.

3.7 PROJECTION FOR NEXT CHAPTER

In Chapter Four the therapeutic strategies that can be used by the educational psychologist during the rehabilitation of the TBI adolescent, will be discussed.

CHAPTER FOUR

THE ROLE OF THE EDUCATIONAL PSYCHOLOGIST AS PSYCHOTHERAPIST IN THE EMOTIONAL AND SOCIAL REHABILITATION OF THE TBI ADOLESCENT

4.1 INTRODUCTION

Psychotherapy forms an essential part of any long-term TBI treatment, assisting the TBI adolescent in adjusting to his or her new capabilities and helping to mitigate the emotional and social problems that arise from the cognitive, physical, personality, and behavioural problems brought on by the injury (Bubb 2001). Psychotherapy provides a roadmap for the TBI adolescent's future, helping the TBI adolescent to maintain a positive outlook, set new goals and working through trauma. The collaborative effort between the therapist and the TBI adolescent is a process of awareness and compensation following TBI.

In the next section, the concept of psychotherapy will be discussed.

4.2 PSYCHOTHERAPY

Psychotherapy could be defined as a talk therapy and is used by a therapist to ensure improved emotional well being (TBI consumer report # 4 1998:3, <http://www.mssm.edu/tbinet/alt/pubs/report4.html>). Psychotherapy helps TBI adolescents to receive emotional support, resolve conflicts in relationships, understand feelings and problems and try new solutions to old problems. Goals in psychotherapy with TBI adolescents may be specific, for example to change undesirable behaviour, to

improve relationships, or more general, for example to experience less anxiety, or to improve self-esteem (TBI consumer report # 4 1998:3).

Cicerone (1998:1) elaborates on the nature of psychotherapy with TBI adolescents by explaining that psychotherapy provides a platform where TBI adolescents can share their fears and worries, mourn the losses they have experienced as part of the injury, talk about the "new self", deal with the reaction of others and learn healthy strategies for coping with life's challenges. Psychotherapy can occur between the therapist and the individual, or it can be done in groups with several individuals meeting with one or two therapists (Watkins 1999, <http://www.baltimorepsych.com/PSYCHOTHERAPY.html>).

According to UNISA'S theory of relations therapy, psychotherapy could be defined as a series of transactions between the educational psychologist and, for the purpose of this research, the TBI adolescent. During the course of these transactions the importance of the different relations in which the TBI adolescent engages will be addressed. The TBI adolescent and the educational psychologist need to pay attention to the attributions made by the TBI adolescent with regard to his/her relation to the injuries, deficits, education, family, peers, and so forth. The relations theory of UNISA places significant meaning on the attributions made by the TBI adolescent in the different relations engaged with. The educational psychologist as psychotherapist will pay careful attention to the meaning, experience, and concern attributed, by the TBI adolescent, in the different relations. Throughout the process of psychotherapy the main goal is to lead the TBI adolescent to optimum self-actualisation (Jacobs 1987).

In the next section, the focus will be on psychotherapy in relation to TBI in general.

4.3 PSYCHOTHERAPY AND TBI

Several researchers are of the opinion that for many years TBI individuals have been excluded from psychotherapy (Heilbronner 1998:10 ; Lewington 1993:27). Heilbronner (1998:10) explains that this exclusion was based on the assumption that TBI individuals could not benefit from psychotherapy due to permanent cognitive, speech and emotional disturbances. According to Lewington (1993:275) and Prigatano and Schacter (1991:3) the TBI client can no longer be dismissed as inappropriate for, or unable to benefit from, psychotherapy, which seeks to heal affective sufferings and a shattered sense of self.

According to O'Hara and Harrell (1991:144) this low expectation of the TBI individual's capacity to identify and meet his or her own emotional needs has prevented many TBI survivors from resuming empowerment, equality, sensing safety and survivorship and redefining self. Cicerone (1998:12) affirms the importance of psychotherapy during the course of rehabilitation of TBI individuals and is of the opinion that psychotherapy forms an essential part of the rehabilitation process. O'Hara and Harrell (1991:145) state, from their clinical experience in the rehabilitation of TBI individuals, that failure to meet a TBI individual's emotional needs will result in incomplete rehabilitation, inadequate resolution and redefinition of "old self" by a "new self", and extended internal emotional conflict. Prigatano and Schacter (1991:3) support this fact and propose that psychotherapy with TBI individuals aims to attend to their "disordered minds" and their "wounded souls".

Heilbronner (1998:1) warns that certain factors make psychotherapy with TBI individuals vastly different from psychotherapy with other individuals. Heilbronner (1998:1) elaborates that the therapist must be prepared to face ineradicable cognitive and behavioural impairments and be willing to assist the TBI adolescent to set realistic goals. Cicerone (1998:13) concurs, and warns that oftentimes it will be more difficult to develop a healthy therapeutic relationship during the course of therapy, although it is most important to do so. Issues with memory, emotional control and capacity for empathy - amongst others - are examples of factors often unique to individuals with TBI, which can

throw serious stumbling blocks into the therapist's plans (Heilbronner 1998:12). Zitnay (1998:9) suggests that standard interventions must be modified in a way that is empathetic with the TBI individual's specific cognitive deficits. Zitnay (1998:9) further suggests that communication between the therapist and the TBI individual should be less complex, geared towards identifying specific deficits and developing strategies to compensate for lost functions. Cicerone (1998:13) and O'Hara and Harrell (1991:146) comment on the qualities of the therapist working with TBI individuals and suggest that such work requires the therapist to have an understanding of brain-behaviour and of how TBI impacts on the individual's capacity to participate meaningfully in therapy.

Although there is a lack of scientific evidence on the success of psychotherapy with TBI individuals, it is the opinion of Ponsford *et al* (1995:240) and O'Hara and Harrell (1991:147), from evidence gathered during their clinical experience with TBI individuals, that psychotherapy can be successful. These findings are affirmed by several other clinicians working with TBI adolescents (Leichtman 1992:335; Delmonico, Hanley-Peterson & Englander 1998:11). These authors suggest that many TBI individuals can obtain some benefit from psychotherapy, particularly in the post-acute phase of recovery, when they are in the process of returning to live in the community, to work and study, and to social and leisure activities. It is the opinion of Heilbronner (1998:10) that psychotherapy with TBI individuals can be a valuable enterprise that should not be overlooked.

According to Heilbronner (1998:22), research has shown that there is very little difference in the effectiveness of any method of psychotherapy for the rehabilitation of TBI. No one approach is superior to any other, although all methods are superior to no treatment at all (Heilbronner 1998:22; Ponsford *et al* 1995:241 & Miller 1993: <http://www.wwnorton.com>). On this topic Prigatano and Schacter (1991:3), as well as Bubb (2001), suggest that psychotherapists be compelled to evaluate the ways in which

traditional psychotherapeutic models can be revised and implemented to best serve this special population.

Firstly, one should note that all psychotherapeutic techniques must be adapted to suit the TBI adolescent. Secondly, because no specific psychotherapeutic strategy is more successful than any other in the rehabilitation of the TBI adolescent, the focus in this research will be on the components and outcome of psychotherapy with TBI adolescents. It is important to note that although the focus will be on the process of psychotherapy with TBI adolescents, this process could be applied in individual, group or family psychotherapy.

In the next sections, the emphasis is placed on the process of psychotherapy in the emotional and social rehabilitation of the TBI adolescent.

4.4 PSYCHOTHERAPEUTIC PROCESS WITH TBI ADOLESCENTS

4.4.1 Introduction

According to Prigatano and Ben-Yishay in Rosenthal, Griffith, Kreutzer and Penfiand (1999:272), the process of psychotherapy is difficult to describe because, by its very nature, it is an individual process. Ponsford et al (1995:254) capture the essence of psychotherapy with TBI adolescents by suggesting that the availability of a close, confiding relationship is significantly associated with a more positive emotional disposition in TBI adolescents.

The focus of psychotherapy is to help TBI adolescents to understand and cope with what has happened to them (Lehr 1990:177; Cicerone 1998:13). Because of possible cognitive and awareness limitations this must be done in a way that makes sense to the TBI adolescent, is relatively easy to remember, fits what is known about TBI in general and

specifically, and must also explain what the TBI adolescent experiences (O'Hara & Harrell 1991:148; Cicerone 1998:13). This necessarily involves the therapist assuming an active teaching role in the beginning (Lehr 1990:175). Gradually, issues of what the injury means to the adolescent, including grappling with issues of "why me?" emerge (Cicerone 1998:13). The aim of psychotherapy after TBI is to achieve a sense of self-acceptance and forgiveness for those responsible for the injury, making realistic commitments to learning, improving behaviour in social situations and in deficit areas, as well as fostering a sense of realistic hope (Heilbrunner 1998:12). Cicerone (1998:13) further emphasizes the importance of modifying the TBI adolescent's belief system regarding the severity of the deficits or the impact of these deficits on daily functioning. Cicerone (1991:13) further emphasizes that TBI adolescents may be assisted in learning to regulate their lifestyle, to avoid problems, to recognize early signs of stress and to take steps to avoid it. According to Cicerone (1998:13), assistance may be given in developing methods of compensating for cognitive impairments by reducing the overall workload and by the introduction of a diary. Furthermore Cicerone (1998:13) points out that the task of the therapist is to assist TBI adolescents to develop a realistic appraisal of their abilities, to tolerate or shift the focus of attention away from their symptoms and to re-establish a sense of mastery over the environment.

Lehr (1990:177) is of the opinion that in doing psychotherapy with TBI adolescents it is important to consider their developmental and overall functioning levels. Furthermore Lehr (1990:178) highlights the fact that TBI adolescents and their parents must be made aware of the fact that psychotherapy after TBI can often be a painful process, involving grief over lost capacities and potential, awareness of altered functioning, defensiveness, and adjustment that allows for continued growth and development.

Certain themes, components, focal points and techniques make the process of psychotherapy with TBI adolescents unique and different from other forms of psychotherapy. As discussed previously in this chapter, the choice of a

psychotherapeutic technique is an eclectic process, but for the educational psychologist to be successful in the rehabilitation process it is of crucial importance that the following themes, components, focal points and techniques, as discussed next, need to be included and emphasized in any process of psychotherapy.

In the next section the focus moves to important themes that underlie psychotherapy with TBI adolescents.

4.4.2 Themes of psychotherapy with TBI adolescents

Now that the value of psychotherapy with TBI adolescents has been established, it is necessary to investigate the specific nature of psychotherapy with TBI adolescents. According to Cicerone (1998:12) and (Bruyn 2001), the nature of psychotherapy with such adolescents will vary according to the stage of neurological recovery, the nature of the impairments and the severity of the disability. Cicerone (1998:12) makes it clear that no matter what therapeutic approach is used in dealing with TBI adolescents it will always incorporate the following components:

- Psychotherapy needs to address possible discrepancies between the TBI adolescent's assumptions about his or her world, feelings and behaviour and the TBI adolescents actual functioning in the world
- It should help the TBI adolescent establish a future orientation.

The two major focus points in psychotherapy with adolescents who have TBI, namely therapeutic confrontation and establishment of future a future orientation, as discussed by Cicerone (1998:12), will be considered next.

4.4.2.1 *Therapeutic confrontation*

The issue of discrepancies between an individual's assumptions and his or her actual functioning in the world is present in all forms of psychotherapy. However, it is especially important in relation to TBI, which so often impairs a person's cognitive abilities and capacity to control behaviour. These cognitive and behavioural deficits may disrupt the TBI adolescents' basic assumptions concerning his or her ability to perform usual activities (Andersson, Gundersent and Finset 1999:402). Cicerone (1998:12) stresses that the failure to address possible discrepancies between the TBI adolescent's assumptions and actual competencies can be a primary reason for lack of success in therapy. A goal of most psychotherapies is to help the individual recognize and face the very thing he/she fears. Nowhere is it more true than with TBI individuals. According to Heilbronner (1998:23) psychotherapy with TBI adolescents requires a keen sense of when to confront them and when not to. Heilbronner (1998:23) is of the opinion that if the psychotherapist moves too fast in either direction it could have disastrous consequences for the rehabilitation of the TBI adolescent. Too much confrontation may result in overwhelming anxiety and rupture of the therapeutic alliance, while too little confrontation may lead to continued unawareness of deficits and a "candy coating" of important issues to be addressed (Heilbronner 1998:23).

Cicerone (1998:13) emphasizes the following as paramount in the therapeutic confrontation:

- The therapeutic confrontation of the TBI adolescent's awareness and beliefs must occur in a context of belief in the therapeutic relationship
- The therapist must be aware of the TBI adolescent's cognitive and emotional readiness to acknowledge losses
- Central to the premise of psychotherapy is the establishment of a shared conceptualization of the problem by the TBI adolescent and the therapist
- The therapist needs to pay attention to the understanding of the TBI adolescent regarding his or her ability to perform specific behaviour in specific domains

- TBI may alter the TBI adolescent's understanding of his or her abilities. For this reason, feedback about the TBI adolescent's behaviour is an essential aspect of rehabilitation. Information obtained from significant others, family members, educators, friends and other therapists may provide an alternative perspective on the TBI adolescent's actual abilities
- Important to note is that any discrepancies observed in the therapeutic situation are based on the TBI adolescent's own, current, belief rather than on a comparison with pre-injury behaviour or with the expectations of the therapist
- In a significant number of cases, especially following relatively mild injuries, TBI adolescents may develop a heightened sensitivity to their deficits. This heightened awareness and sensitivity towards symptoms may lead to misinterpretation of normal difficulties as evidence of impairment. A form of "learned helplessness", whereby the TBI adolescent restricts activities and avoids tasks because of the belief that he or she is likely to fail, sometimes accompanies this. Psychotherapy with these TBI adolescents must address and confront the interaction between subjective appreciation of difficulties, emotional reactions to perceived deficits and actual competencies
- In some cases, psychotherapy needs to confront the secondary issues and environmental reinforcement preventing the TBI adolescent from assuming an attitude of health. For example the TBI adolescent may become too dependent on the assistance of significant others, and experience additional benefits from this dependent role
- Some TBI adolescents may be able to function completely but no longer achieve the same emotional satisfaction stemming from being at the top of the class, thereby increasing the need to make others aware of their deficits.

In this discussion of therapeutic confrontation in the psychotherapeutic rehabilitation of the TBI adolescent, the complex interaction among the cognitive, emotional and injury variables is clearly illustrated. The task of the educational psychologist as a psychotherapist working with TBI adolescents is clearly a complex and difficult

endeavour. It has to take into account the different variables dictating the TBI adolescent's behaviour, the consequences of the specific brain injuries for the behaviour of the TBI adolescent and the development of an emphatic skill to apply the very necessary tool of therapeutic confrontation.

4.4.2.2 *Establishment of a future orientation*

According to Cicerone (1998:13), the second theme in psychotherapy after TBI is to establish a future orientation. As is stated by Cicerone (1998:13) "No one gets ahead by looking backwards". Cicerone (1998:13) and Lewington (1993:283) explain that it is common and appropriate for a person who has experienced a TBI to think in terms of the recovery and resolution of impaired functions. During the early period after brain injury, a significant amount of spontaneous neurologic recovery can be expected. Cicerone (1998:13) makes it clear that it is of utmost importance for all the therapists and people involved in the treatment of the TBI adolescent to maintain a positive attitude towards the recovery. Cicerone (1998:53) warns that during the post-acute course of recovery when permanent deficits become evident, psychotherapy needs to be directed at enabling the TBI adolescent to resume a satisfactory level of functioning, despite the persistence of symptoms or impairments. Cicerone (1998:53) goes on to explain that the emphasis of psychotherapy needs to be on the resolution of the disability.

The task of the educational psychologist is thus to help the TBI adolescent to function in the real world rather than to aim at the removal of symptoms or impairments (Lehr 1990:178).

In the previous section, the themes underlying psychotherapy with TBI adolescents were discussed. The focus in the next section will be on the components of psychotherapy with TBI adolescents.

4.4.3 Components of psychotherapy with TBI adolescents

The following components of psychotherapy with TBI adolescents will be discussed next:

- Therapeutic alliance
- Structure
- Reframing
- Educating and information
- Reorientation
- Coping with failure.

4.4.3.1 *Therapeutic alliance*

The role of the "therapeutic alliance" has been recognized as a crucial key to change in most forms of psychotherapy. Heilbronner (1998:22) agrees that the working alliance between the therapist and the TBI adolescent is perhaps the most critical agent of change. The cornerstone of any successful psychotherapeutic treatment is empathy (Zitnay 1998:9). The therapists' offering of unconditional positive regard, accurate empathy and genuineness is both necessary and sufficient for therapeutic progress to be made (Heilbronner 1998:22). According to Heilbronner (1998:23) such an approach is especially important in working with TBI adolescents, because their relationships have changed dramatically as a result of their injury and because more restrictive demands and expectations are being placed upon them by others in their home and community. Zitnay (1998:9) elaborates further and explains that positive emotional identification is necessary for the psychotherapeutic relationship to be successful, resulting in a better understanding of the changes caused by the TBI and in assistance with the development of strategies for coping with these changes. Heilbronner (1998:23) is of the opinion that even in the face of severe cognitive limitations the individual with a brain injury will still

be able to "feel" the therapist's understanding and empathy and come to recognize therapy as a unique time.

4.4.3.2 *Structure*

Before progress can be made, the educational psychologist and the TBI adolescent must establish a structure within which they will function (O'Hara and Harrel 1991:321). According to Sherwin and O'Shanic in Ylvisaker (1998:337), as well as O'Hara and Harrell (1992:385), boundaries must be established, particularly as the therapeutic relationship with TBI adolescents is a nontraditional relationship to begin with. These authors suggest that issues of confidentiality, sharing of personal information and physical contact should be discussed and boundaries set in the beginning of therapy. According to Sherwin and O'Shanick (1998:337), external limits in the form of behavioural contracts may have to be imposed in an effort to facilitate internalization of control. Maruish and Moses (1997:258) suggest that the structure of psychotherapy with TBI adolescents should incorporate graded interventions. Maruish and Moses (1997:258) further explain that this approach grades psychological interventions on a continuum from those involving the least amount of commitment and effort on the part of the TBI adolescent to those involving the most effort.

4.4.3.3 *Reframing*

In the course of the psychotherapeutic process with TBI adolescents the psychotherapist may have to facilitate a transition between what was or could have been, to what is and what might be (Lehr 1990:178). Sherwin and O'Shanick (1998:337) are of the opinion that as TBI adolescents recover some of their skills or attempt to resume past activities, they may become very sensitive to the discrepancies between current and expected performance capabilities. For adolescents with mild TBI, any remaining symptoms may be highly distressing as the adolescent and significant others may perceive the symptoms

to be "cured". This distress may result in psychological magnification of the extent of the deficits that they are still experiencing. Sherwin and O'Shanick (1998:337) suggest that although validating the distress, psychotherapists also need to facilitate a reinterpretation of the extent of the disability that is actually being exhibited. According to Ellison, Weinstein and Hodel-Malinofsky (1994:248) the reframing of stressful events and situations, by the therapist, enables the TBI adolescent to feel more in control and less powerless and victimized. Prigatano (1998:44) suggests that the aim of reframing is to alleviate the TBI adolescent's personal suffering and to re-establish meaning in life in the face of, and not despite, brain dysfunction and accompanying frustration.

4.4.3.4 *Educating and information*

Prigatano, as cited by Ellison *et al* (1994:254), has stressed the importance of psychotherapy in helping to answer two questions that eventually arise, no matter how severely injured the TBI adolescent: first, "What has happened to me?" and second, "Why has this happened to me?"

This component of psychotherapy requires the psychotherapist to be more directive, active and flexible than is typical of other forms of psychotherapy (Seidman 1994:13; Farmer *et al* 1996:532). According to Seidman in Ellison *et al* (1994:13) and Lewington (1993:282), TBI adolescents must be provided with information about their injuries and current skills and capabilities. Furthermore, Sherwin and O'Shanick (1998:337) suggest that TBI adolescents need to be given conservative estimate for their potential recovery. Information provided should be tailored to meet both the comprehension abilities and the needs of the TBI adolescent (Falconer 2001: <http://www.brain-train.com>). These authors are of the opinion that it is responsibility of the psychotherapists to assess how best to present the information, when to present it and, perhaps most crucially, whether to present it at all. Sherwin and O'Shanick (1998:337) stress that in some cases TBI adolescents need to hold on to their denial in order to cope with their reality. In these

cases, it is crucial for the psychotherapists to assess whether the denial is impeding functional performance and progress. If not, little reason exists to challenge the denial.

4.4.3.5 *Reorientation*

Sherwin and O'Shanick (1998:337), as well as Lehr (1990:178), propose that after information and education regarding TBI, these adolescents must be helped to realise that there is a future, and that although restrictions exist, they must be encouraged to find new dreams and challenges. These authors believe that reframing of events, realistic self appraisal of past events, and ways to prevent future injury may have to be developed to decrease the use of ineffective coping strategies such as denial, resignation, and escape. Ellison et al (1994:248) are of the opinion that failure to accept what has happened and to integrate the event into a meaningful reconstruction of one's life can leave the TBI adolescent feeling constantly rageful and traumatised

4.4.3.6 *Coping with failure*

As adolescents with TBI set out on the course of psychological and physical recovery, setbacks are inevitable (Lehr 1990:178). Sherwin and O'Shanick (1998:338) maintain that the psychotherapist must prepare the TBI adolescent by cautioning him or her and preparing the parents and environment to expect the subsequent distress. They feel that by doing this the psychotherapist may be established as an expert, and most important, may be able to contain some of the inevitable disappointment brought on by such setbacks. These authors suggest that in cases where denial and poor self-awareness result in overestimation of skills, planned failures - occurring in real life settings - may enable TBI adolescents to safely learn their limitations.

In conclusion, the above section can be viewed as a framework wherein psychotherapy with TBI adolescents can be conducted. The next section considers important issues, as

focal points, that must be dealt with in terms of the suggested framework of the psychotherapeutic process with TBI adolescents.

4.5 FOCAL POINTS OF THERPEUTIC INTERVENTION

In the next section the focus will be on the important focal points in the psychotherapeutic process with TBI adolescents namely:

- Independence
- Education
- Sex and sexuality

4.5.1 Independence

According to Sherwin and O'Shanick (1998:338) it is important to involve TBI adolescents in consultation during rehabilitation and to encourage them to set the goals they want to accomplish, as this can promote feelings of independence and motivate them to try harder and adhere to the programme longer. These authors are also of the opinion that goal setting provides an opportunity to regain a sense of mastery as TBI adolescents achieve the goals. Sherwin and O'Shanick (1998:338) also suggest that with appropriate facilitation, goal setting will allow TBI adolescents to gradually increase self-awareness of their new limitations. According to the Independence Program (I-To-I), created by the New York Institute of Technology (2001:<http://test.itoi.org/about.html>), the goal of any independence programme should be to maximize opportunities that reward responsibility, involvement, and decision making. Meridith and Rassa (1999:12) suggest that the goal of psychotherapy is to have an adolescent TBI survivor generalize compensatory strategies outside the psychotherapeutic environment, and are of the opinion that generalization of compensatory strategies increases the probability of independence and return to a productive lifestyle.

4.5.2 Education

Regarding education, the educational psychologist plays a crucial role in the facilitation of the school re-entry programme (Funk, Bryde, Doelling & Hough 1996:52-53). According to Hughes (1990:73), returning to school is an important milestone in the recovery of the adolescent with TBI. It represents in many ways a return to normality for both parents and the TBI adolescent (Hughes 1990:73; Patton, Blackbearn and Fad 1996:15). As for the importance of successful school re-entry, Lehr (1990:189) sums it up as follows:

For adolescents who sustain head injuries in the high school years, the psychosocial needs centering on being a member of their school class may be more important than their academic mastering and skills level.

It is the view of Savage and Wolcott (1995:118-127) that the essence of childhood, of which adolescence forms part, is learning. This fact is emphatically true for adolescents after TBI (Lehr 1990; Ponsford *et al* 1995 and Mira *et al* 1992:50-51).

Deaton (1995: <http://www.paraquad.org>.) suggests that school reentry must be handled very carefully. Deaton (1995) is of the opinion that when the transition back to school is made too rapidly or when educators do not understand the special needs of the TBI adolescent, school assignments may be too difficult for the TBI adolescent. The damage done by inadequate planning for school reentry may be incalculable (Rader, Thomas & Lenk 1995:197). Early failures after returning to school may make the TBI adolescent reluctant to persist in efforts to achieve and succeed (Jones & Johnson 1994:116). Deaton (1995) is of the opinion that later, when cognitive abilities have improved and the TBI adolescent could succeed academically, he or she may be unwilling to jeopardize self-esteem by trying.

It is the view of the researcher that the manner in which the rehabilitation team handles the transition to school is significant, not only for the learner's subsequent learning, but also for their long-term emotional and social well being.

4.5.3 Sex and sexuality

In spite of the importance of sexuality for all people, but particularly for adolescents, sexual issues are not addressed adequately following TBI (Ponsford *et al* 1995:254). Ponsford *et al* (1995:254) are of the opinion that TBI disrupts many important aspects of sexuality, including social and relationship skills, self-esteem and behavioural control.

According to Sherwin and O'Shanick (1998:338) parents may have the misguided belief that talking about sex with their TBI adolescent is irrelevant, because of the changed circumstances, or they may even argue that it can be harmful in the sense that it might give the TBI adolescent encouragement to pursue a sexual relationship. These authors suggest that parents must be encouraged to perceive their TBI adolescents as being able to pursue and being capable of attachment, and within the limitations set by their injury, competent for and deserving of intimate and sexual relationships. Sherwin and O'Shanick (1998:338) believe that TBI adolescents may require education and guidance in the areas of both partnered and self-sex and in the effect medication may have on performance. The issues of contraception and safe sex must also be addressed.

In the next section, possible therapeutic techniques as discussed by Sherwin and O'Shanick, edited by Ylvisaker (1998:338-340), will be considered.

4.6 THERAPEUTIC TECHNIQUES

4.6.1 Memory book

TBI adolescents may use a memory book to document and remind them of past and future events (Oddy, Yeomans, Smith & Johnson in Rose & Johnson 1996:82). Cue cards with appropriate responses to certain situations may also be helpful, with a small cue from the environment advising the TBI adolescent to use the cue card (Sherwin & O'Shanick 1998:339). Sherwin and O'Shanick (1998:339) point out that in cases of severe disability, TBI adolescents must be able to remember to have someone read to them from the memory book. Ellison *et al* (1994:247) suggest that in some cases the psychotherapist can assist the TBI adolescent in maintaining a therapy logbook, in which important insights are written down during the session, reviewed at the end of the session, and reviewed again at the beginning of the following session.

4.6.2 Relaxation training and stress management

Relaxation training can help reduce anxiety, and stress management can be effective in reducing arousal that precipitates an inappropriate expression of anger (Sherwin & O'Shanick 1998:338; Falconer 2001: <http://www.brain-train.com>). According to Sherwin and O'Shanick (1998:338), music can be used to facilitate relaxation and computer games may be used to teach biofeedback for tension reduction.

Bracy (2001:<http://www.inetdirect.net/nsc/>) observes that relaxation therapy can be incorporated, formally as a part of psychotherapy or informally as a part of cognitive rehabilitation. Bracy (2001) is further of the opinion that frustration and increased stress inevitably accompany the intensive therapy that is required after TBI. Bracy (2001) suggests that the incorporation of relaxation training in the psychotherapy process will be beneficial to TBI adolescents.

4.6.3 Checklists and self-monitoring inventories

Asking clients to self-monitor, using lists and inventories, can be employed to increase self-awareness. According to Sherwin and O'Shanick (1998:339) and Garcia *et al* (1998:34), objective test performances of real-life activities can be used as a tool for confrontation and reality testing. In instances when TBI adolescents complain that they are being treated unfairly, checklists may be an effective tool to gather concrete data on the actual prevalence of these cases (Sherwin & O'Shanick 1998:339; Andersson *et al* 1999: 402).

4.6.4 Video- and audiotape feedback

Videotaping may be used as a memory aid to allow TBI adolescents to review psychotherapy sessions or as a basis for feedback after role playing, when they can review their performance (Sherwin & O'Shanick 1998:339; Farmer, Clippard, Luehr-Wiemann, Wright & Owings 1996:544). Ponsford *et al* (1995:159), Ellison *et al* (1994:245) and Lewington (1993:282) suggest that videotaping may also increase self-awareness, as TBI adolescents can learn to self-review and self-critique more accurately, and these adolescents can watch the tapes as many times as needed. Videotaping is also an effective tool to record progress in the mastery of a skill. O'Hara and Harrell (1991:394) as well as Pepping (1998:48) are of the opinion that evidence gathered from video- and audiotapes provides scenarios for role-playing and practice in changing specific behaviour. Sequential videotapes made over the rehabilitation period may assist the TBI adolescent in seeing recovery as it takes place (O'Hara & Harrell 1991:394; Andersson *et al* 1999:402).

4.6.5 Support groups

The awareness that you share a common experience with others can provide essential reassurance and comfort (Johnson 1998:<http://www/tbiguide.com>). Support groups provide an opportunity to discuss similar problems and work out effective solutions.

Support groups have proven to be very important adjuncts to successful self-management of TBI impairments (<http://www.headinjury.com>: 1998).

Support groups are an excellent opportunity for TBI adolescents to practise social skills in a real-life setting, increasing social interaction and receiving support from the few people who know what they have gone through (Sherwin & O'Shanick 1998:339). These authors further suggest that facilitation by a trained facilitator is needed to ensure the pragmatics - that is, the interpersonal competence of language and communication, and the maintaining of focus.

Ponsford *et al* (1995:241) are of the opinion that a support group represents a more natural and enduring method of enhancing self-esteem and self-awareness in TBI adolescents. Ponsford *et al* (1995:241) maintain that friends made in a support group are more able to focus on the TBI adolescent's strengths. On the friendships made among the members of a support group, Ponsford *et al* (1995:241) comment that these friendships are more likely to remain a part of the TBI adolescent's life in the years to come.

4.6.6 Group therapy

Group therapy differs from support groups in the sense that the participants in group therapy are all survivors of TBI. A support group is formed with TBI survivors and significant others.

Ponsford *et al* (1995:239) observe that for TBI adolescents who have sufficient memory and language skills and behavioural control, individual psychotherapy may be supplemented with group therapy, which provides an opportunity for peer group feedback and support. Ponsford *et al* (1995:239) further stress the fact that group therapy can be a particularly useful means of addressing important adolescent developmental issues. Much like a support group, group therapy is an opportunity to practise social skills.

Because of its professional guidance and therapeutic focus, it can also provide more structured feedback about such performance (Sherwin & O'Shanick 1998:339). Group therapy can facilitate self-awareness, as TBI adolescents receive feedback about their interpersonal style and adroitness (Delmonico, Hanley-Peterson & Englander 1998:12).

The interpersonal nature of the difficulties experienced by adolescents with TBI lends itself well to Yalom's model of group psychotherapy as discussed in Delmonico *et al* (1998:12). Yalom's model of group psychotherapy describes curative factors which provide measures for change that are distinctly different from traditional psychotherapy. These factors are as follows:

- Instillation of hope
- Universality (commonality of experience)
- Learning of new information
- Altruism (improvement through giving to others)
- Corrective recapitulation of the primary family group
- Social skills training
- Modeling and behavioural rehearsal
- Interpersonal learning, for example:
 - Importance of interpersonal relationships
 - Corrective emotional experience
 - Group as a social microcosm
- Group cohesiveness
- Catharsis
- Existential factors, for example:
 - Unfairness of life
 - Mortality issues
 - Personal responsibility.

4.6.7 Community-based activities

The aim of community-based activities is to facilitate a TBI adolescent's development and the maintenance of physical, mental, emotional, and social abilities through recreational activities (Augusta Health Care, INC. 2001: <http://www.augustamed.com>).

Fear of failure and of being embarrassed may inhibit TBI adolescents from going into the community (Tyerman in Rose & Johnson 1996:100). However, a community-based outing to a place of their choice may both encourage them to test newly learned skills - from manoeuvring a wheelchair to interpersonal interaction in a social setting - and may transfer some control over the rehabilitation back to them (Sherwin & O'Shanick 1998:339).

4.6.8 Planning tasks

Practising multi-step cognitive exercises or complex processing, in the office or hospital setting, is an artificial way of cognitively retraining TBI adolescents (Sherwin & O'Shanick 1998:339). The Head Injury Hotline (2001: <http://www.headinjury.com/goalset.htm>) suggests that the ability to set goals is essential to effective problem solving, and, by default, is essential to self-management and self-determination.

According to Sherwin and O'Shanick (1999:339) and Lewington (1993:277) this goal can be achieved by allowing TBI adolescents to plan a desired activity, such as going to the movies or making a favourite sandwich, and carefully guiding and cueing the TBI adolescent to the components of the task. After several attempts, TBI adolescents may be allowed to develop the plans on their own and may be given the opportunity to fail (Sherwin & O'Shanick 1999:339; Head Injury Hotline 2001). These authors state that the educational psychologist may purposefully not remind the TBI adolescents of all the

stages of the task. When difficulty is encountered, TBI adolescents should be given the opportunity to explore or practise self-correcting tactics.

4.6.9 Communication

Although variations of traditional psychotherapy are effective, Sherwin & O'Shanick (1998:339) remark that the sessions should be shorter and more frequent, so as to accommodate fatigue, attention span, and the TBI adolescents limited memory skills. Sherwin & O'Shanick (1998:339) point out that interruptions such as telephones and other environmental distractions are to be kept to a minimum. Verbal communications should be made in short, simple sentences, repeated and paraphrased if needed (Zitnay 1998:9; Leichtman 1992:353; De Pompei & Blosser 1998: <http://www.biausa.org/road05.htm>). TBI adolescents should be asked to repeat and elaborate on what they have been told, in order to enhance retention and decrease parroting of the instructions (Sherwin & O'Shanick 1998:339; Finlayson & Garner 1994:295; Lewington 1993:277).

It must be taken into consideration that TBI may result in severe impairment of cognitive and linguistic abilities. (See Chapter Two.) Communication with a TBI adolescent who has severe linguistic impairments may be extremely problematic. Leichtman (1992:353) draws attention to the use of nonverbal communication techniques, such as writing, drawing, telling of stories, art, music or engaging in structured therapeutic games.

Lewington (1993:278) makes it clear that communication with TBI adolescents requires patience and concentration on the part of the psychotherapist in order to attend to the message, both cognitive and emotional, the TBI adolescent is working hard to express. Lewington (1993:278) suggests that the psychotherapist does not attempt to speed up the process or pressure the TBI adolescent to get to the point. Attending to the TBI adolescent and offering missing words only when requested can reduce levels of anxiety

and frustration and increase the feeling of unconditional acceptance. Lewington (1993:278) is further of the opinion that later, during the course of psychotherapy, it may become a mutually agreed upon goal to assist the TBI adolescent in becoming more verbally concise by notifying him or her when he or she is digressing from the topic. This is an important issue since the purpose is to enhance the TBI adolescent's communication skills outside the psychotherapeutic arena, where acceptance may not be unconditional (Lewington 1993:278).

4.6.10 Music

Yost (1999:2) proposes that the purpose of music therapy is to use music to achieve non-music therapy goals such as increased self-esteem, enhancement of social and emotional skills, and to sharpen cognitive abilities. According to Sherwin and O'Shanick (1998:339), music can be used to stimulate and draw out the comatose TBI adolescent, soothe irritated spirits, and create a sense of familiarity in a depersonalized environment. Sherwin and O'Shanick (1998:339) further point out that the use of music in psychotherapy with TBI adolescents may be effective, for whom music often is a primary mode of expression. Music can also be an indirect way of communicating feelings that a TBI adolescent finds difficult to label, admit, or put into words (Yost 1999:2; Pepping 1998:48; Lewington 1993:286).

4.6.11 Stories, myths and fables

On the use of stories, myths and fables, Ruiz (2001:<http://www/cl.inteco.htm>) observes that narrative thought consists in telling stories about oneself to oneself and to others. Ruiz (2001) is of the opinion that by telling these stories we start to construct a meaning with which our experience gains sense.

The telling of stories is a form of communication with which TBI adolescents are familiar. Stories and fables are also a safe way for TBI adolescents to share of themselves and to relate stories about a third person who may be encountering difficulties (Sherwin & O'Shanick 1998:340; Lewington 1993:286). Using props such as puppets and stuffed animals allows TBI adolescents to neutralize and distance themselves from painful emotion or a difficult situation (Pepping 1998:48; Garcia *et al* 1998:34). Stories and fables can also offer opportunities to learn how others have mastered a situation and to glean cultural morals and values (Prigatano 1991 in Sherwin & O'Shanick 1998:340).

4.6.12 Psychological test review

According to O'Hara and Harrell (1991:394) as well as the Neuro-Science Center of Indianapolis (2001: <http://www.inetdirect.net/nsc/>), the TBI adolescent and the psychotherapist may review the results of psychological testing for gaining insight into the TBI adolescent's personality, emotional adjustment, and coping options. O'Hara and Harrell (1991:394), as well as Rader *et al* (1995:194), are of the opinion that these discussions can provide the opportunity for the TBI adolescent to better understand his/her emotional response, life themes, and capacity for adjustment to major trauma. Another factor to be considered is that the review of psychological tests may provide a bridge between the therapist and the TBI adolescent, particularly when the therapist uses the data to introduce discussion of sensitive, personal, and emotional content, which the TBI adolescent may otherwise avoid initiating (Farmer *et al* 1996:544; Deaton 1995: <http://www.paraquad.org/psytbi.htm>).

4.6.13 Pain management

TBI adolescents frequently suffer from chronic pains, which are related to headaches and brain trauma as well as orthopaedic injuries (Dabrowski & Sparadeo 1998: <http://www.biausa.org>). According to O'Hara and Harrell (1991:395), pain reduction

may take priority over self-awareness and relationship skills building. O'Hara and Harrell (1991:395) add that information about chronic pain, as well as skills building in these areas, may need to precede any psychotherapeutic work.

For TBI adolescents who are focussed heavily on their pain, it is important to attempt to qualify and quantify the pain. O'Hara and Harrell (1991:395) and Ellison *et al* (1994:248) suggest the use of a daily Pain Card, on which the TBI adolescent records his or her level of pain every hour, the medication that is taken and the antecedents that accompany pain escalation. This allows for baseline measurements before any psychotherapeutic intervention is undertaken (O'Hara & Harrell 1991:385; Farmer *et al* 1996:544). O'Hara and Harrell (1991:395) suggest further that pain cards can be used to monitor changes responding to specific interventions. Self-monitoring not only allows TBI adolescents to observe their patterns of pain and learn which pain management strategies are most effective, but emotionally prepares the TBI adolescent for reductions in pain medication following mastery of such strategies (O'Hara & Harrell 1991:395; Dabrowski & Sparadeo 1998: <http://www.biausa.org>).

On the success of pain management with psychotherapy, Ellison *et al* (1994:248) state that without denying a neurological basis for symptoms following traumatic brain injury, psychotherapeutic interventions have a lot to offer the TBI adolescent.

In the next section key elements of successful psychotherapy, such as the training of the psychotherapist and working relationship with the family, are considered.

4.7 CRITICAL FACTORS IN PSYCHOTHERAPY WITH TBI ADOLESCENTS

4.7.1 Training of psychotherapist

Heilbronner (1998:23), as well as Rose and Johnson (1996:111), emphasize that psychotherapists working with TBI adolescents must possess more than a rudimentary understanding of brain-behaviour relationships and of how damage to certain parts of the brain is likely to manifest in some fairly predictable but also unpredictable behaviour. Heilbronner (1998:23) and O'Hara and Harrell (1991:383-384) further stress that psychotherapists working with TBI adolescents need to be able to understand and consider a TBI adolescent's behaviour from a neuropsychological perspective, although the therapist does not have to be a neuropsychologist or neuropsychiatrist. Sherwin and O'Shanick (1998:335), as well as Farmer *et al* (1996:533) make it clear that a basic understanding of brain functioning, assessment of severity of brain damage, and general guidelines for prognosis are critical for any therapist desirous to work with adolescents with TBI.

Heilbronner (1998:52) points out that if the psychotherapist cannot deal with the demands inherent to the process of psychotherapy with TBI adolescents, referring the client is the most logical and ethical approach.

4.7.2 Goal setting

According to Heilbronner (1998:23) and Farmer *et al* (1996:535), a critical factor in psychotherapy with TBI adolescents is the establishment of realistic goals. Leichtman (1992:350-351) remarks that the most common recommendation made for the psychotherapy with TBI adolescents should concern setting modest, limited, concrete and realistic goals. Realistic goal setting is true of most psychotherapies; it is especially critical with TBI adolescents, since the neurobehavioural consequences of the injury significantly limit the degree to which they can achieve "success" in treatment and in the world at large (Heilbronner 1998:52; O'Hara & Harrell 1992:383). Heilbronner (1998:52) adds that the psychotherapist must set realistic and attainable goals and not expect or demand more than the TBI adolescent is capable of achieving at any given

time. Bubb (2001) is of the opinion that it is of crucial importance that the psychotherapist involve the TBI adolescent as well as the family in the development and implementation of realistic goals. Sherwin and O'Shanick (1998:337) endorse this fact and suggest that the presenting problem and the conceptualization of goals should be shared and understood equally by the TBI adolescent and the psychotherapist. Farmer *et al* (1996:535) and Bruyn (2001) point out that the implementation of therapeutic goals is often determined by a TBI adolescent's rating on the Rancho Coma Scales (See Appendix Two). Bruyn (2001) believes that timing is a crucial factor for the psychotherapeutic goals to be successful and adds that the best time to implement therapeutic goals and to start psychotherapy is when the TBI adolescent's rating on the Rancho Coma Scale reaches stage VI (confused, appropriate behaviour).

4.7.3 Lifelong process

Sherwin and O'Shanick (1998:331) observe that TBI interferes with an adolescent's normal developmental course. Issues and tasks previously mastered may need to be relearned, and stages poorly resolved need to be revisited before the TBI adolescent can move forward (Sherwin & O'Shanick 1998:331; Bubb 2001). Bubb (2001) and Lehr (1990:180) suggest that psychotherapy is needed by TBI adolescents over a lifetime, since psychosocial aspects of injury are likely to manifest themselves in a variety of ways over an extended period.

4.7.4 Inter-disciplinary nature

According to Leichtman (1992:347) psychotherapy with TBI adolescents should not be considered in isolation from other treatment modalities, but rather as one aspect of a comprehensive treatment programme with its own unique contributions. It is the belief of Sherwin and O'Shanick (1998:336), as well as Farmer *et al* (1996:545) that psychotherapists working with TBI adolescents must be prepared to interface routinely

with other therapists and professionals such as occupational, speech, and physiotherapists as well as medical doctors, educators and even lawyers. Territoriality has no place in the therapy of TBI adolescents; only a cooperative, multidisciplinary approach can maximize outcome (Sherwin & O'Shanick 1998:336; Rose & Johnson 1996:111).

4.7.5 Working relationship with family

Rose & Johnson (1996:111), as well as Farmer *et al* (1996:543), conclude that for the psychotherapy with TBI adolescents to be effective, a close working relationship needs to be established with the family. This fact is endorsed by Grieve (2001) and Laroie (2000:76) who point out that although the primary therapeutic bond is established with the TBI adolescent, it is usually the parents who will implement the treatment programme. Sensitivity to the family culture, values, and goals are necessary if such an alliance is to be established and succeed (Sherwin & O'Shanick 1998:336; Rocchio 1998:37; Pepping 1998:48).

Although the focus of this research is on the therapeutic rehabilitation of the TBI adolescent, it is suggested that for the psychotherapeutic process to be truly successful, attention should be given to family therapy, which will not only include the parents and the TBI adolescent but also the siblings (Conoley & Sheridan 1996:667).

4.7.6 Transference and countertransference

Engaging in a psychotherapeutic relationship with TBI adolescents may be riddled with pitfalls, some inherent to any psychotherapeutic relationships, some unique.

Psychotherapists are often at the receiving end of transference in the form of emotional outbursts and displaced feelings of frustration and anger. Heilbronner (1998:52) argues

that psychotherapists working with TBI adolescents must make a concerted effort to minimize their own emotional reactions to these occasional emotional outbursts.

According to Sherwin and O'Shanick (1998:336) and Leichtman (1992:352), countertransference is ever present in the psychotherapeutic relationship with TBI adolescents. Countertransference comes to the fore when psychotherapists are confronted with their own and their families' mortality (Sherwin & O'Shanick 1998:336). These authors further observe that issues concerning parenting, emotions and skills may seep into the therapeutic relationship, as psychotherapists may feel inadequate to the task. Countertransference may also come to the fore as frustration at the lack of, or extremely slow, progress may be transferred to the TBI adolescent, whose neurologic limitations may be interpreted by the psychotherapist as resistance, apathy, or lack of appreciation (Sherwin & O'Shanick 1998:336; Andersson *et al* 1999:394). Heilbronner (1998:52) concurs and explains that TBI adolescents may often display a lack of empathy for others. Heilbronner (1998:52) comments that psychotherapists working with TBI adolescents must be prepared to deal with the relative lack of appreciation and, at times overt deprecation from TBI adolescents who perceive the psychotherapist as too critical, demanding and not offering enough support.

A Psychotherapist's ability to endure in and desire a long-term, perhaps a lifelong, therapeutic relationship with the client comes to the fore in such issues.

The next section deals with factors ensuring a favourable psychotherapeutic outcome.

4.8 FAVOURABLE OUTCOME

According to Schefft, Malec, Lehr and Kanfer in Maruish and Moses (1997:255), successful psychotherapy would result in the TBI adolescent objectively viewing and accepting his or her disabilities, finding a meaning and commitment in life. Although

psychotherapy targets a variety of impairments for improvement, the TBI adolescent needs to regain a feeling of being worthwhile as an individual (Schefft *et al* 1997:255). Prigatano and Ben-Yishay in Rosenthal *et al* (1999:272) agree with these facts and remark that work, love, and play become important issues in the TBI adolescent's treatment because these are avenues for increasing a sense of meaningfulness.

On the favourable outcome of psychotherapy with TBI adolescents, Margolis (1998:25) captures its essence as follows:

After TBI healing is not only desirable, but also necessary and even possible, even where a cure is not.

The view of these authors can be aligned with the relations theory of UNISA, in the sense that a favourable outcome of psychotherapy can be measured by the optimal self-actualization of the TBI adolescent, despite the occurrence and ramifications of TBI.

4.9 CONCLUSION

The importance of addressing the myriad of emotional and social problems faced by TBI adolescents cannot be overemphasized. As many TBI adolescent survivors have residual permanent cognitive change and ongoing emotional and social needs, the psychotherapeutic relationship may extend over years.

At an appropriate time after injury, the ideal situation is that all those who are survivors of TBI, be given access to individual- and group psychotherapy to enhance the development of self-awareness, whilst maximizing self-esteem and providing an opportunity to rebuild a new sense of self.

Through planned psychotherapeutic interventions, as discussed in this chapter; it may be possible that the emotional and social sequelae of TBI in adolescents can be minimized if not avoided, both for themselves and for those who care for them.

4.10 PROJECTION FOR NEXT CHAPTER

In Chapter Five, the case studies are presented with an explanation of the emotional and social problems encountered by the TBI adolescents, as well as a discussion of the role of the educational psychologist and the specific psychotherapeutic techniques applied.

CHAPTER FIVE

PRESENTATION OF CASE STUDIES

5.1 INTRODUCTION

In Chapter Five the aim of the researcher is to familiarise the reader with the cases under investigation, after providing a theoretical introduction to the technique used.

A survey of the literature revealed that adolescent TBI survivors manifest with various emotional and social problems. These emotional and social difficulties experienced by adolescent TBI survivors could be as a direct result of the severity of the injury or they could be as a result of an interplay of different variables unique to the specific TBI adolescent under investigation, for example, pre-injury personality and family structure. The empirical inquiry for this research can be seen as a process that investigates the phenomenon of adolescent TBI within its real-life context.

In the next section qualitative research design, in general, will be discussed.

5.2 RESEARCH DESIGN

5.2.1 Qualitative research

This study is considered to be qualitative research. Qualitative research is grounded in the assumption that features of the social environment are constructed as interpretations by individuals and that these interpretations tend to be transitory and situational. Thus, within the qualitative paradigm the entity to be studied is the life world of the human being as it is experienced individually (Fink 2000: <http://www.qualitative-research.net>). For the purpose of this research the "real life world" under investigation is the

phenomenon of adolescent TBI, and the emotional and social problems these TBI adolescents encounter, as well as the rehabilitation of these emotional and social problems through the psychotherapeutic interventions applied by the researcher as an educational psychologist.

In the next section the basic assumptions of qualitative research are presented.

5.2.1.1 *Basic assumptions of qualitative research*

(Winegardner 2001: <http://www.tsga.edu/online/cybrary/case1.html>) as well as (Cresswell 1994:11-12) suggest the following as a framework and the basic assumptions to consider when conducting qualitative research (this suggested framework is also used in the conduction of this research study):

- There is an overarching interest by the researcher in understanding the meaning people have constructed surrounding the TBI phenomenon in adolescents
- There is an inductive approach to the knowledge generated
- The researcher focuses on the emic perspective (the perspective of the participants in the research study)
- Meaning is mediated through the investigator's own perceptions
- The researcher is the primary instrument for data collection and analysis
- The research involves fieldwork
- The end product is narrative and descriptive.

5.2.1.2 *Strengths and weaknesses of qualitative research in general*

Cresswell (1994:157-159) and Fink (2000: <http://www.qualitative-research.net>) comment that the following can be seen as the strengths and weaknesses of qualitative research:

- Strengths

The end product of qualitative research is an in-depth, naturalistic description of the phenomenon under investigation. Great emphasis is placed on the perceptions and perspectives of the participants in the research.

- Weaknesses

Determining the accuracy of the account, discussing its generalisability, and advancing the possibilities of replicating it have long been considered the scientific evidence of scholarly research. However, qualitative researchers have no single stance or consensus on addressing traditional quantitative topics such as validity and reliability.

In qualitative research internal validity (the accuracy of the information and whether it matches reality) is ensured by the triangulation of data collecting techniques. (See section 5.2.4.) The intent of qualitative research is not to generalise findings (external validity), but to form a unique interpretation of events. This interpretation of events is referred to as "naturalistic" generalisation and the data generated by the qualitative research would resonate experientially with a broad cross section of readers, thereby facilitating a greater general understanding of the phenomenon.

The limitation of duplicating the study, in other words, the reliability of the research is overcome by the statement of the researcher's central assumptions, the sample selection criteria and the selection of informants in order to enhance the chance of research being able to be replicated in another setting.

5.2.2 Case study design

The qualitative approach used in this research will be conducted through a multi-modal case study design. Two case studies are discussed, of which Case 1 will be examined extensively. The case study design used in this research is descriptive in the sense that it serves to make the unfamiliar familiar, to give the readers a common language about the topic, and most importantly, to provide a holistic description of the phenomenon under investigation (Faux 2001: <http://www.qualitative-research.net/>). Furthermore the case study design for this research could be said to be heuristic in nature, by enhancing the reader's understanding of the phenomenon, bringing discovery of new meaning, extending the reader's experience, or confirming what the reader already knows (Winegardner 2001: <http://www.tsga.edu/online/cybrary/case1.html>).

In the next section the strengths and weaknesses of a case study design are presented.

5.2.2.1 Strengths and weaknesses of a case study design in general

According to Cresswell (1994:11-12) and (Winegardner 2001: <http://www.tsga.edu/online/cybrary/case1.html>) the following are the strengths and weaknesses of a case study design:

Strengths

A case study design is adaptive, flexible and responsive to changing conditions as the study progresses.

Weaknesses

The use of a case study design is labour-intensive and time consuming as it involves fieldwork and it usually takes a prolonged period of time for patterns and themes of the phenomenon under investigation to surface.

5.2.3 Sampling

Winegardner (2001: <http://www.tsga.edu/online/cybrary/case1.html>) and Fink (2000: <http://www.qualitative-research.net>) state that sample selection in a case study design is usually non-random, purposeful, and small and it requires the researcher to spend considerable time in the natural setting of the study, often in intense contact with the participant.

The reasons for two case studies being presented in this research are the following:

- The study of the phenomenon of adolescent TBI is an extensive and intense process
- To present a "thick" description of the TBI cases under investigation, the researcher had to be involved in the real world of the TBI adolescent over an extensive period of time (in this sense "thick" refers to richly descriptive narrative, expressed in words rather than the statistical data of the quantitative approach; Winegardner 2001: <http://www.tsga.edu/online/cybrary/case1.html>)
- The study of the phenomenon of adolescent TBI in real life settings is time consuming
- For the emotional and social problems to manifest and for the effectiveness of psychotherapy to be established, the study was conducted over a prolonged period of time (with Case A: 2 years already; with Case B: 1 year already).

The criteria for the selection of the cases under investigation are:

- Adolescent TBI survivors between the ages of twelve and eighteen.

5.2.4 Data collecting and analysis techniques

According to Faux (2001: <http://www.qualitative-research.net/>), in the case of qualitative research using a case study design the researcher is the primary instrument of data collection and analysis and this process usually involves fieldwork. Case study data collection is typically multi-method, involving interviewing, observing and analysing of documents. The use of multiple sources of information is referred to as triangulation of data and is of importance in this research so as to confirm the validity of the research (Tellis 1997: <http://www.nova.edu/shss/QR/QR3-3/tellis2.html>). For the purpose of this research, multiple sources of information are sought and used because no single source of information can be trusted to provide a comprehensive and holistic perspective of the phenomenon under investigation (Winegardner 2001).

For the purpose of this research the following methods are used to collect data so as to compile the cases under investigation:

- The study of doctor's and occupational therapist's reports so as to describe the physical location of the TBI, GCS and Rancho levels. (See Appendix One and Two.)
- Structured interviews with parents, teachers, occupational and speech therapists, as well as TBI adolescents. The aim of conducting structured interviews is that the questions posed in the interview are targeted and focus on the topic under investigation at the time (Tellis 1997: <http://www.nova.edu/shss/QR/QR3-3/tellis2.html>).
- Checklists to guide the more structured interviews, for example with the teachers (see Appendix Three.)
- Unstructured interviews with parents, siblings, therapists, teachers and friends. During these unstructured interview, open-ended questions are asked in order to solicit the participant's opinion of the phenomenon under investigation (Yin 1994:80)

- The clinical experience, of the present researcher, gained from doing therapeutic rehabilitation with the TBI adolescents under investigation
- Direct observation to collect data about the social and emotional problems encountered by the TBI adolescents under investigation, in real life settings such as community outings and at school. The aim of direct observation is to abstract from the complex flux of social behaviour and interactions those actions that are of potential significance to the research question (Manstead and Semin in Hewstone, Stroebe, Codal and Stephenson 1992:75).

For the purpose of qualitative study, research is conducted simultaneously with data collection, data interpretation and narrative reporting. In the case of case study research, dominant modes of data analysis are the search for "patterns" and "themes" by comparing results with patterns and themes predicted from theory or the literature as well as "explanation building", in which the researcher looks for causal links and/or plausible or rival explanations and attempts to build an explanation about the case (Creswell 1994:152-157).

5.2.5 Presentation of data

The relevant data, as compiled by using the data collecting techniques (see section 5.2.4) are presented in a descriptive and holistic manner (emphasising the importance of the whole and the inter-dependence of all the variables), which thus conveys the main details of the process over many sessions. Yin (1994:82) warns that descriptive case studies should not be used simply to describe all the data collected, but as Winegardner (2001: <http://www.tsga.edu/online/cybrary/case1.html>) amplifies, it is the responsibility of the researcher to be selective in order to focus on answering the purpose of the study, including a full but thematic description of topics which could be considered a complete description of the phenomena under investigation.

Stemming from the above, the data compiled through the multi-modal data collecting procedure, is presented in a selective but holistic representation of the phenomenon under investigation. As the cases under investigation were studied in a real life setting, the interventions conducted to rehabilitate the emotional and social problems of the adolescent TBI cases, cannot be presented in a sequential manner as in a real life context, emotional and social issues, for example anger, denial and loneliness are dealt with as the problems arise. The presentation of the cases will therefore not be in the form a record of follow up psychotherapy sessions but will be presented as psychotherapeutic themes and how these themes were rehabilitated. In section 5.5 and 5.8, a holistic summary of the cases under investigation is given, including the themes that were revealed during the research process, sources of information and the data collecting methods used, psychotherapeutic interventions, the outcome of the interventions as well as factors contributing to the success of the applied interventions.

In the next section the case studies will be presented in a descriptive and narrative approach.

5.3 CASE STUDY 1

Biographical detail

Subject:	A
Current age:	18
Age at time of accident:	16
Grade:	12 (in 2001)

5.3.1 The injury and its aftermath

On September 16 1999, A had just finished rugby practice at school. It was about 17: 00 p.m. when A got on to his motorbike to drive home. The traffic light was green for A and

he proceeded to cross the intersection. A motorist ignored the red traffic light and crashed into A. Although A was wearing a helmet at the time, it came loose because of the impact. He was rushed to the local hospital. At the time, A was unconscious and the radiologist recognised a severe haematoma of the brain (see section 2.4). Apart from the swelling on the brain, A also sustained orthopaedic injuries to his legs. It was decided to transport A with a helicopter to a hospital in Pretoria, where neurosurgery could be undertaken. Unfortunately the weather was very bad and A could only be transported the following day. On arrival, A immediately underwent neurosurgery. The neurosurgeon said that A had a GCS of I (see Appendix One), and that he doubted it if A was going to survive the accident and requested the parents to think of donating A's organs. A's condition deteriorated and eventually doctors performed a craniotomy, which provided additional room to accommodate the brain swelling (part of the skull is removed). The bone was frozen, so it could be replaced later. A had been in a coma for six weeks and remained in hospital for three months; during this time the family went through times of despair alternated by hope. A has sustained severe brain injuries to the frontal and left temporal areas of the brain with specific reference to the Broca area that controls expressive language (see section 2.2.4 and figure 2.5). In December 1999 A was discharged from the acute care hospital and admitted to a rehabilitation centre. During the time in the rehabilitation centre, A received occupational, physical and speech therapy. A was discharged to go home in January 2000 by which time he was still very weak, in a wheelchair and had to be fed by a tube.

Almost a year post injury A was diagnosed with Hemianopia, which entails blindness for the right or left half of vision in each eye.

5.3.2 Pre-morbid history

Prior to A's TBI, he was considered to be a top student in the tenth grade. After his accident, during a prize giving ceremony, the school acknowledged his achievements by

rewarding him as one of the top ten students for 1999. The educators, learners and friends were deeply disturbed by the accident and its aftermath. A also achieved in athletics, rugby and golf. A's pre-morbid functioning and personality was marked by a strong willpower, a keen sense of achievement and perfectionism. He was emotionally and socially well adapted and liked by his peers. The family structure was marked by very close family ties and a great deal of parental involvement.

In the next section the focus will be on the psychotherapeutic interventions as used in the case study of A. The psychotherapeutic interventions will be presented as themes and not as psychotherapeutic sessions (see section 5.2.5).

5.4 PSYCHOTHERAPY

Psychotherapy started four months after the accident, when A had a Rancho level of VI (confused, appropriate behaviour; see Appendix Two). What struck the researcher most about A was his sense of humour, his determination and willpower.

5.4.1 Emotional and social problems

Right from our first session, A indicated that it was his wish to return to his former school. It became clear that A's self identity and actualisation was constructed and established through his perception, meaning attribution and experience of his relations with his friends, peers, educators and school as such. Although A's physical disabilities were a source of some anger and frustration, he was determined not to experience them as a setback. A felt he was in control over the physical disabilities and believed that with hard work and occupational, physical, and speech therapy that he could overcome the disabilities. The extent of his physical disabilities, when the researcher met him was, that he walked with a limp, his muscles were very weak, especially on the right side of his

body, his facial muscles on the right side were affected and his expressive speech was severely affected (see section 3.2.1).

A's greatest source of emotional problems was the fact that he was cut off from his friends and school (see section 3.5.2). His parents also raised their concern that although his friends visited him frequently their visits now became less frequent. They felt that the friends did not know how to react towards A and the fact that A could not communicate with them complicated the matter. This, together with the fact that his former dreams of a tertiary education at a university and of becoming an amateur golf player were shattered, caused him great emotional pain. In A's case, the interplay between social isolation and emotional problems is clearly illustrated. The emotional pain that A experienced manifested itself in anger and denial of the severity of deficits.

5.4.2 Communication

Psychotherapy was complicated by the fact that A could not converse verbally (see section 3.4.5 as well as section 4.6.9). Initially his parents were involved in therapy, as interpreters, to overcome the communication problem. Another reason for the family involvement in psychotherapy, is the fact in this case that the family members act as important co-therapists (reinforce psychotherapeutic interventions, as suggested by researcher, at home) in the psychotherapeutic rehabilitation.

During the initial phase of the rehabilitation process, when A's communication and language skills were very poor the following augmentative communication methods were incorporated in the therapy process:

- Feeling faces

Initially, feeling faces were included in psychotherapy to talk about A's feelings. The researcher asked him about his feelings and he had to indicate his response by pointing at the picture of his choice. After his response, we talked about his response. At this stage, it was important for the researcher to pay careful attention to non-verbal cues as indicators of emotional distress. Important issues as well as A's responses that were discussed in therapy using the feeling faces as augmentative communication are as follows:

Figure 5.1

Feeling faces

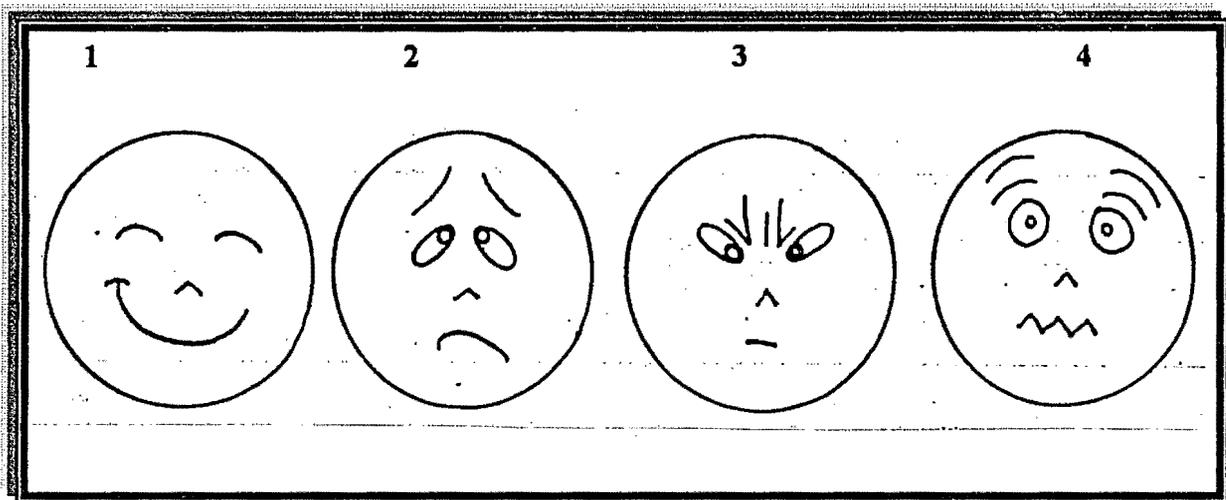


Table 5.1

A's responses using "feeling faces"

<u>ISSUE</u>	<u>RESPONSE</u>
Self-esteem	2
Self-image	2
Hope for the future	4
Independence	3
Return to school	1

Anger	3
Social isolation	2
Sense of justice and accountability of the person who was responsible for accident	3

- Collage

At the early stages of psychotherapy, it was extremely difficult to deal with A's emotional pain due to the communication barrier. To overcome this problem and to establish some form of rapport A was asked to make a collage. On this collage, he had to present some important aspects of his past and present life as well as to indicate how he perceived his future life to be.

A's collage revealed the following focal issues that could be discussed in therapy:

- A's feelings about his injuries and the subsequent disabilities
- The fact that he could no longer take part in rugby and golf
- A's wish to return to his former school
- A's wish to have a motorbike and his denial of the dangers of motorbikes
- The fact that he wanted to pursue a career in computers
- A's wish to have a girlfriend in a future
- A's collage revealed his mother's depression at the time.

A's continued speech therapy proved to be very successful and now, two years post injury, communication is no longer a problem.

5.4.3 Anger

Information gathered from different sources (see table 5.1), for instance, the feeling faces as well as interviews with his parents, revealed that A experienced extreme anger towards the driver of the vehicle that was responsible for the accident. Regarding this issue, A felt frustrated because he could not verbalise and show his frustration and anger. The researcher drew a man and explained to A that the drawing represented the person responsible for the accident. What happened next was extremely therapeutic and a means of catharsis for A. (in this sense catharsis refers to a technique used to relief tension, anxiety and anger by bringing repressed emotions to consciousness). A first scratched all over the drawing and tore it up with extreme anger and aggression. This was followed by sadness and A cried for the rest of the session. This was an important and necessary part of the therapeutic process, as this was the first time after the accident that A in some way could show his anger, frustration and sadness. Although this was an emotionally taxing session, it proved to be successful and cathartic for A as it paved the way towards acceptance.

5.4.4 Denial of deficits and abilities

At the beginning stages of psychotherapy, denial was a great problem. It was difficult to establish whether the denial was due to organic injury to the brain or if it was a defence mechanism to cope emotionally (see section 3.2.5). A frequently expressed his wish that he wanted his father to repair his motorbike. This caused a great deal of tension for the family as A became upset and angry about the fact that his father indicated that he was not yet able to ride the motorbike. A was upset about the fact that his former independence was taken away from him and he felt his parents want to control him and set limits. This led to therapeutic confrontation, when A was confronted with the fact that he had lost his former abilities and that motorbikes are dangerous. A kept on denying this and indicated that cars are more dangerous than motorbikes since he was not responsible for the accident because it was a car. He also denied that he had problems with co-ordination and balance. The inter-disciplinary nature of therapy with the brain-injured

person came to the fore and the occupational and physical therapists were asked to help in this aspect, to indicate to A, during therapy, that he was not ready to drive and that he still had to work on his co-ordination and balance. They also used the opportunity to deal with the safety aspects and dangers of motorbikes. The psychotherapeutic confrontation led to transference in the sense that A became upset, angry and very stubborn (see section 4.7.6). Eventually the inter-disciplinary method of confrontation proved successful and A accepted the fact that he was not ready to ride his motorbike.

Denial further proved to be a problem in dealing with A's wish to go back to his former school. A denied his deficits and believed that he could go back and complete grade eleven and grade twelve with his peer group. This was a very sensitive issue for all the role players. This led to further therapeutic confrontation and transference (see section 4.4.2.1 as well as section 4.7.6). It was explained to A that this might be an unrealistic goal and that he had lost a lot of time when he was in hospital. During psychotherapy, the subject, family and researcher discussed different scenarios and other options. Options of special schools were brought up. A reacted very strongly and became very upset. He indicated that there was nothing wrong with him, and that he was not a candidate for a special school. A indicated that if he could not go to his former school he would rather sit at home. It was decided to visit a special school in Pretoria, to see how it is and what they could offer. An appointment was made with the educational psychologist at the school for an interview with A and his parents. The researcher as well as the other therapists involved was invited by the parents to accompany them to the school. On arrival in Pretoria, A was very unhappy and reacted strongly and refused to visit the special school. In the end, it was decided that the parents and the other therapists would go alone and A and the researcher had coffee in a mall, where we had a discussion and it became clear that for A to be happy this was not a viable option. A expressed his fear that he would not be able to make new friends.

Since most of A's social and emotional problems centred around the fact that he was cut off from his peers and school, it was decided to investigate the possibility of returning to school. After several meetings with the parents and the other therapists involved it was decided to approach A's former principal to investigate the probability of them accommodating A.

5.4.5 School re-entry

The researcher as educational psychologist played a valuable role in the school re- entry process (see section 4.5.2). Since A's attribution of meaning, involvement and experience of his functioning in the world centred on his school and friends, the school re-entry was an important milestone in A's emotional and social rehabilitation. It must be noted that the main objective of the school re-entry process was to enhance A's emotional and social well being and not the mastering of academic skills as such.

A's father and the researcher went to see the principal of the school. We explained to him that A's wish was to return to school. The principal was delighted but expressed some of his fears:

- They as educators in a main stream school setting did not have the knowledge to deal with learners with brain injury
- Would A be able to cope?
- How would the learners handle the situation?

It was decided that A would go back to school and the main goal was to reintegrate him socially in an attempt to enhance his emotional well being. A meeting was also arranged with A's educators. Present at this meeting were the educators involved, A's parents and the team of therapists. Before the scheduled meeting the educators were given a questionnaire to complete. The aim of this checklist was to involve the educators and to

gain an indication of their concerns and questions surrounding A's return (See Appendix Three). At this meeting the therapists gave the relevant information and answered all the questions surrounding A's brain injury, the effects it had on him and the role they had to play in the rehabilitation process.

It was then decided that A would return to school but that it will be a gradual entry. A was to return but initially for only a few periods a day. Before A's return, his classmates were informed about his return. The learners also had the opportunity to ask questions and get the relevant information. It was also explained to them what their roles were in this process.

The school played an extremely important role in the emotional and social rehabilitation of A. School re-entry had the added advantage that it handed some control back to A, it increased his independence, new skills could be tested in a real life setting and ample opportunities were created for community based activities (see section 4.6.7). A was included in all the activities of the school; some of the important milestones during this time included the following:

- Incorporation of A in the yearbook of the school in which he was welcomed back and where it was they stated how proud the educators and learners were of him and how they admired his courage to return to school
- Participation as supporter and participant during athletics meetings
- Forty days, where he dressed up as Frankenstein
- The grade twelve farewell
- Awards evening when he received a trophy for perseverance and a standing ovation from all the educators, learners and parents.

In a recent therapy session, A was asked what he thought had contributed the most to his emotional and social rehabilitation. Moreover, his reply was:

Definitely the fact that I could return to my former school, the compassion of the teachers as well as the fact that I could socialise with my friends.

5.4.6 Support group

A support group (see section 4.6.5) was established that incorporated A's friends. Support groups have proven to be very important adjuncts to successful self-management of TBI impairments (<http://www.headinjury.com>: 1998). Two sessions were held with the friends, A and the researcher after which the support group functioned on its own. The following important issues were raised during these sessions:

- The role of the support group in the emotional and social well being of A
- The role of the support group in the involvement of A in sport gatherings and other school related activities
- How to overcome the communication barrier
- A's needs and aspirations.

From this support group, a friend was assigned. The role of the friend was to act as a communication link between the support group, A and the family. The friend could be contacted in relation to a sudden change of plans, activities and arrangements concerning dates of meetings, travel arrangements and so forth.

The support group proved extremely valuable in the emotional and social rehabilitation of A as he was invited and welcomed to rugby matches as a supporter, which A enjoyed thoroughly. During the school's inter-house athletics meeting A even participated in the discus event.

In July 2000 A, his parents and the researcher paid a visit to the Brain Injury Group (BIG). BIG is a nation wide support group for people with acquired brain injuries with the aim of focussing on the needs and aspirations of the brain injured and of exploring ways of achieving these. A and his family became members of BIG, this proved to be a valuable tool in the emotional rehabilitation process as A, and his family could identify with other BIG members. The support of BIG, the monthly newsletters and the exchange of success stories played a valuable role in the establishment of hope and provided much needed reassurance and comfort.

5.4.7 Group therapy

Group therapy (see section 4.6.6) was attempted with A and an adolescent girl who sustained brain injuries a couple of years ago.). Group therapy can facilitate self-awareness, as TBI adolescents receive feedback about their interpersonal style and adroitness (Delmonico, Hanley-Peterson & Englander 1998:12). This group therapy proved not to be successful as A could not identify with this girl due to A's denial of his deficits. A became agitated and indicated that he was not like the girl and that there was nothing wrong with him.

A year later group therapy was attempted again. At this stage, A's rehabilitation was well under way and A came to grips with his deficits. Group therapy was started with A and B (case study 2) and proved to be very successful. The success could be ascribed to the fact that A and B had similar injuries and that they could identify with one another. At the stage A was emotionally and socially more secure and could provide a great deal of support to B. A saw himself as a kind of mentor for B, as he could help B on his way through the rehabilitation process and provide him with much needed support and hope for the future. The fact that A could provide some support to B improved A's self-esteem and helped him on his way to self-actualisation. A's attribution of meaning, involvement and experience of his functioning in the world had changed from a person that receives

support to a support giver. A perception of himself changed from that of a victim to a survivor of TBI.

5.4.8 Family therapy

A great deal of time was allocated for family therapy. One of the reasons for family therapy is the fact that the parents and siblings can act as important co-therapists (reinforce psychotherapeutic interventions, as suggested by researcher, at home) in the rehabilitation process. Aspects and issues of the therapy sessions were discussed with the family, as certain aspects of therapy had to be reinforced at home. Another reason for family therapy is the fact that the family provides valuable information on the emotional, social and behavioural problems as experienced by A.

Although it falls outside the scope of this research it must be mentioned that the following issues were dealt with as part of the psychotherapeutic rehabilitation process:

- Altered family roles after the accident
- Shattered dreams
- Coping with loss
- Coping with change
- Coping with new demands
- Acceptance
- Referral of mother to a medical practitioner, concerning her severe depression, as revealed by A's collage.

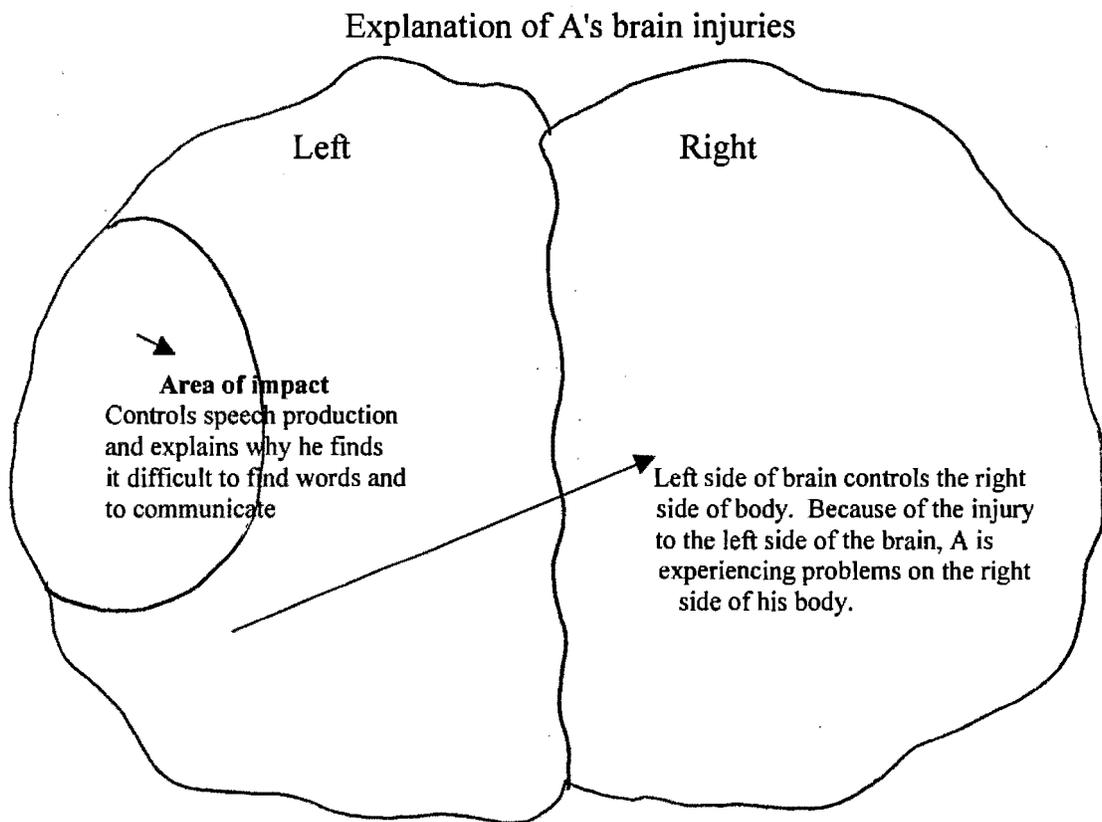
It must be noted that the above mentioned issues were dealt with either in a formal psychotherapeutic setting or as they surfaced spontaneously during unstructured interviews with the parents.

The outcome of the family therapy was successful as it helped the family deal with their grief and led them towards acceptance.

5.4.9 Educating

An important aspect of the psychotherapeutic process of the TBI adolescent is education in relation to the injury and the subsequent deficits (see section 4.4.3.4). Educating A, in the form of drawings of where he had sustained his injuries (see figure 5.2), why he was presenting certain deficits, as well as about his then current skills and capabilities, was an important aspect of the psychotherapeutic process that paved the way towards acceptance.

Figure 5.2



5.4.10 Relaxation techniques

Since the psychotherapy was at times very stressful and accompanied by frustration and transference, relaxation training in the form of progressive relaxation as well as soothing music was incorporated in the psychotherapeutic process (see section 4.6.2 as well as section 4.6.10). Relaxation training can help reduce anxiety, and stress management can be effective in reducing arousal that precipitates an inappropriate expression of anger (Sherwin & O'Shanick 1998:338; Falconer 2001: <http://www.brain-train.com>). This proved to be beneficial for both A and the researcher in reducing arousal that precipitated expression of anger, transference and/or countertransference (see section 4.7.6).

5.4.11 Contributing factors for success in therapy

Certain factors unique to A's case made success in therapy possible. The great amount of family involvement and commitment on the part of the family can certainly be seen as a major contributing factor in the successful rehabilitation of A (see section 4.7.5). The support and encouragement that A received and still receives from his family is an essential factor in the success in therapy.

A's pre-injury personality and abilities proved to be a valuable predictor and contributing factor in the success of his emotional and social rehabilitation. A's extreme willpower to overcome this problem and the fact that he has a positive outlook provided him with the strength to see himself as a survivor and not a victim of brain injury. The easiness of A's social rehabilitation can be attributed to his pre-injury personality (see section 5.3.2) and his interaction with his friends as well as the fact that he had no behavioral problems after the accident.

The well planned, inter-disciplinary team approaches proved very successful (see section 4.7.4). The occupational and speech therapists acted as important co-therapists in the reinforcement of issues that were dealt with in psychotherapy. The good communication

that was created by the team approach proved to very beneficial in the rehabilitation process.

The positive attitude of A's educators and his friends at school played an extremely valuable part in the successful rehabilitation of A's emotional and social problems.

5.4.12 Future problems

The fact that A's friends are writing their final grade twelve examination and that most of his friends are going to university, brought old issues of former dreams to the for. A is still a very positive person and although he can not go on with tertiary education straight away, his rehabilitation process is still underway. During therapy, A came to accept the fact that he must set new goals and new time limits and is not going to see this as a setback.

A and his parents are also worried that now that his friends are leaving town A again will be socially isolated. Therapy with the brain injured person can be seen as a lifelong process and as new milestones are reached, new emotional and social problems will arise (see section 4.7.3). Therapy now takes a new direction, the focus moves to community integration, and new frontiers will need to be explored to sustain A's continued emotional and social well being.

It is now more than two years post injury and A has made enormous strides in his emotional and social rehabilitation. Although his world is going to change he has been equipped and has a solid foundation and the necessary social skills to keep contact with old friends, make new friends and to deal with any social interaction to ensure his emotional well being.

In the next section a holistic summary of case study 1 will be presented.

5.5 SUMMARY OF CASE STUDY 1

The summary of the data analysis of case study 1 is discussed and presented with reference to the following concepts:

- Emerging themes as revealed by the research
- Sources and methods used to collect the relevant data
- Psychotherapeutic interventions as applied by the educational psychologist
- The outcome of the different interventions
- Factors contributing to the successful outcome.

Table 5.2

THEME	SOURCE OF DATA COLLECTED	THERAPY & INTERVENTION	OUTCOME	FACTORS CONTRIBUTING TO OUTCOME
Communication	<ul style="list-style-type: none"> - Clinical experience - Interviews with OT & ST - Doctor's report 	<ul style="list-style-type: none"> - Feeling faces - Interpretation of the client - Collage - Collaboration with OT & ST 	<ul style="list-style-type: none"> - Improved over a period of time and is still improving 	<ul style="list-style-type: none"> - Interdisciplinary approach to therapy - Commitment & motivation of subject - Parental involvement
Anger	<ul style="list-style-type: none"> - Interviews with parents - Feeling faces - Collage - Observation 	<ul style="list-style-type: none"> - Drawing - Music - Relaxation 	<ul style="list-style-type: none"> - Acceptance only came over a period of time - Successful in a cathartic way 	<ul style="list-style-type: none"> - Interdisciplinary approach working towards healing - Pre-injury personality and behaviour
Denial	<ul style="list-style-type: none"> - Observation - Interviews with significant others 	<ul style="list-style-type: none"> - Therapeutic confrontation - Interdisciplinary collaboration 	<ul style="list-style-type: none"> - Acceptance of deficits and lost abilities only came after a period of time 	<ul style="list-style-type: none"> - Therapeutic confrontation - Team approach - Parental commitment
Social isolation	<ul style="list-style-type: none"> - Interviews with parents & friends 	<ul style="list-style-type: none"> - School re-entry - Support group - Group therapy 	<ul style="list-style-type: none"> - School reentry proved to be 	<ul style="list-style-type: none"> - Commitment & motivation of educators

	<ul style="list-style-type: none"> - Observation - Collage - Feeling faces 		extremely beneficial	<ul style="list-style-type: none"> - Support of BIG - Group therapy as such - Motivation and commitment of subject
Family distress	<ul style="list-style-type: none"> - Interviews with parents - Interviews with other therapists - Observation - Collage revealed mother's depression 	<ul style="list-style-type: none"> - Family therapy - Referral of mother to a doctor for medication regarding depression 	Proved to be very successful	<ul style="list-style-type: none"> - Therapy as such - Commitment and concern of other therapists - Doctors involvement
Ignorance regarding injury	<ul style="list-style-type: none"> - Observation - Denial of deficits - Interviews with significant others 	<ul style="list-style-type: none"> - Educating the subject by means of a drawing and explanations 	<ul style="list-style-type: none"> - Proved to be successful as in paving the way towards acceptance; knowledge of injury 	<ul style="list-style-type: none"> - Education and commitment of therapists
Stress	<ul style="list-style-type: none"> - Observation 	<ul style="list-style-type: none"> - Relaxation 	<ul style="list-style-type: none"> - Successful 	<ul style="list-style-type: none"> - Sensitivity to A's needs

In the next section case study two will be discussed. It must be noted that case study 2 is not discussed as extensively as case study 1 (see section 5.2.2).

5.6 CASE STUDY 2

Biographical detail

Subject: B
Current age: 13
Age at time of accident: 12
Grade: 7 (for the second year in a row)

5.6.1 The injury and its aftermath

In the year 2000, when B was twelve years old, he experienced severe brain injuries in a horrific motor vehicle accident. He was in a coma for two weeks and remained in hospital for approximately two months. B suffered a severe haematoma to the left

frontal-temporal lobes of the brain (see section 2.2.4.5). The Broca area that is situated in the left-temporal areas of the brain controls the muscles of the face and mouth and enables the production of speech (see figure 2.5). B also sustained orthopaedic injuries to his right leg and was paralysed on his right side of his body. After B's discharge from hospital he was still very weak and in a wheelchair.

B's accident and subsequent injuries and rehabilitation were complicated by the fact that his father and two uncles died instantly in the accident. B's nephew also sustained severe orthopedic injuries in the accident.

5.6.2 Pre-morbid functioning

Data obtained from B's former educators and the occupational therapist working with B before the accident, revealed that B had suffered from hyperactivity. B's academic achievement was average. Occasional behavioural problems and subsequent aggressive interaction with his peers also marked B's pre-morbid functioning.

Data obtained from the above mentioned informants further revealed that the family involvement was marked by denial of B's behavioural problems and that the parents were not committed to the therapy prescribed by the occupational therapists. The teachers also felt that the parents were not involved in B's school progress.

5.7 PSYCHOTHERAPY

In B's case psychotherapy started five months after his accident, when B had a Rancho level of VI (confused appropriate behaviour, see Appendix Two).

The next section deals with the emotional and social problems as experienced by B.

5.7.1 Emotional and social problems

B's emotional problems were amplified by the grief that he experienced due to the death of his father. Apart from the loss of his father, B has to deal with the loss of his former abilities and the physical disabilities caused by the accident. B find it extremely difficult to cope with these losses, which cause him emotional pain. B's emotional pain is manifested in frustration and anger.

The social problems that are encountered by B are due to the fact that B finds it extremely difficult to communicate and that he is still bound to a wheelchair. B's social problems are further complicated by his aggressive behaviour, his impulsiveness and his lack of social skills.

5.7.2 Family therapy and bereavement

Apart from dealing with his injuries and loss of abilities after the accident, B had to deal with the death of his father and his uncles. After B's discharge, he indicated that he wanted to know where his father was. It was an extremely difficult situation, complicated by the communication barrier. Due to the fact that B was in a coma and in hospital for so long, he could not attend the funerals.

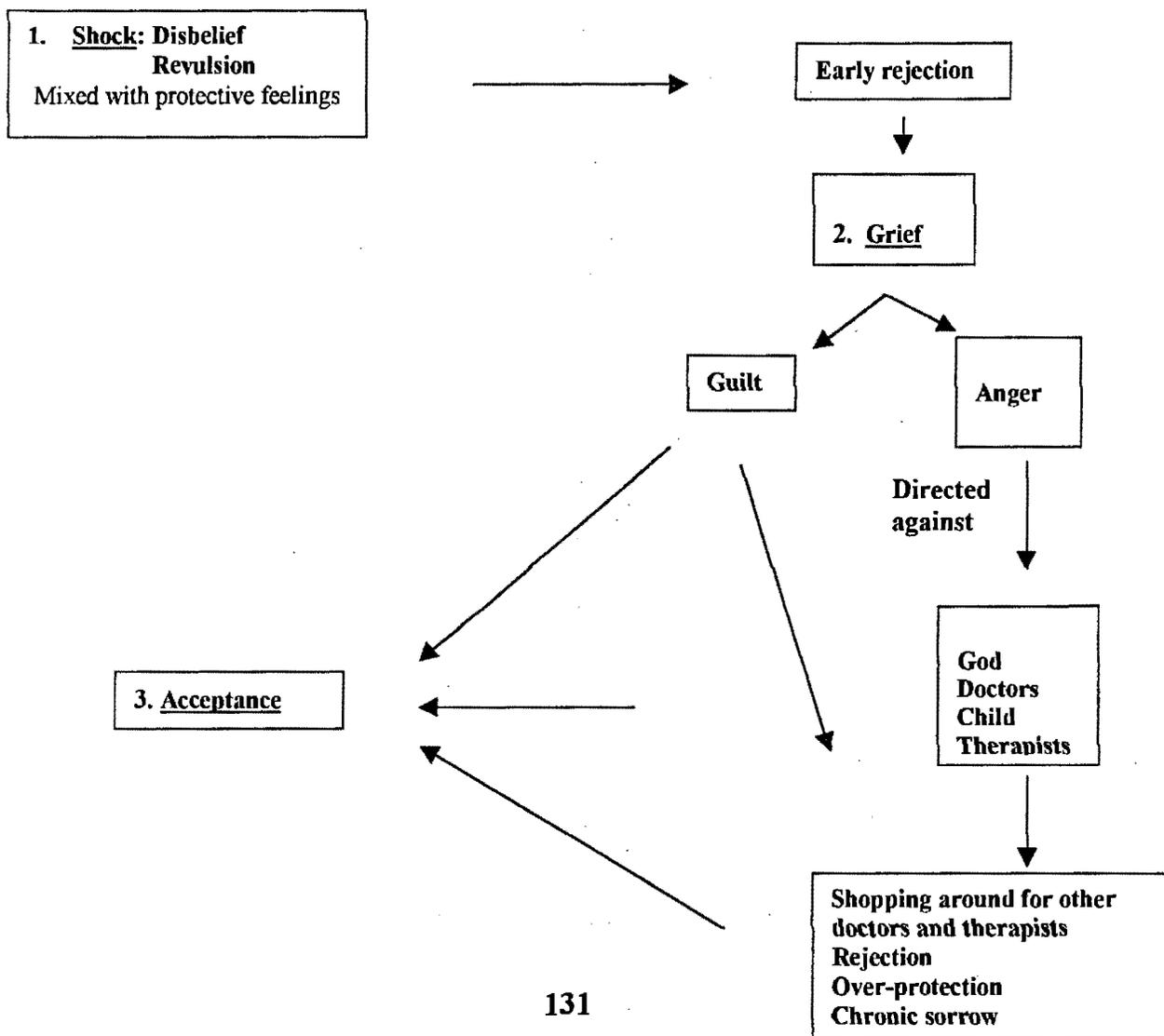
Initially, therapy centred on the explanation of what had happened to him and the injuries that he had sustained. Later during a family therapy session, B was told that his father and uncles had died in the accident. B reacted with denial and kept on asking for his father. This psychotherapeutic intervention allowed the remaining family members to bond with each other and B, and to become involved in and deal with their grief. The family members showed B pictures of his father and the accident and later took him to his father's grave. Due to the sensitive nature of the issue and to allow B to come to terms with his father's death, the process was gradual and extended over a couple of weeks.

The people involved in this process were guided by B's varying emotional responses and readiness, for instance when B indicated that he wanted to know what happened to him or if he was asking for his father.

Family therapy was complicated and emotionally extremely taxing, due to the fact that the family not only mourned the loss of B's former abilities, but also the death of their father, husband and other family members. Family therapy mainly dealt with the bereavement process in the form of the classical stages of the grief reaction as explained in Figure 5.2.

Fig 5.3

Classical stages of the grief reaction
(Hall 1989:172)



Concerning the outcome of the bereavement process, it must be noted that the bereavement process takes time and that B and his family are still working towards acceptance with special reference to acceptance of the death of the father and the loss of his former abilities.

5.7.2.1 The use of metaphor in bereavement therapy

To deal with B's emotional pain concerning his injuries and death of his father the following metaphor (see section 4.6.11) was used as a technique to help in the process of bereavement:

The little airplane

Once upon a time, there was a squadron of airplanes. There were big, strong airplanes and there were small, fast airplanes. The airplanes were the pride of their country. Then war broke out and the airplanes had to protect their country's borders. The airplanes were very proud of the fact that they had to do such an important job. They knew that this was not going to be an easy task and that there was going to be a lot of danger involved. The airplanes prepared themselves and loaded the bombs and ammunition. Then they took off to the war zone. The airplanes were involved in some heavy fighting and finally they overcame the enemy. The people of the country were very proud of the brave airplanes, because they saved them and made their country a safe place to live in. Unfortunately, the airplanes were badly damaged by the enemy. The big, strong airplanes were easy targets. They were bombarded by the enemy but fought until the end to protect and save their country. Towards the end, the big, strong airplanes could not fight any more and they died on the battlefield. The small, fast airplanes were just as brave and fought until the end despite their damages. The brave, little airplanes survived the war and returned as heroes. Although the little airplanes lost their wings and some could not fly, the

people of the country were very grateful and proud of them. The little airplanes were heartbroken and very sad over the big airplanes that did not survive the war. On a bright sunny day, the little airplanes thought of all the lessons that they had learnt from their big brothers. They remembered that it was the wish of the big airplanes that if they did not survive in the war, the little ones had to follow their example. There and then, the little airplanes decided that they had to do something about the situation. They came to realise that they would not be able to defend their country with their broken wings and decided that were to do something about their situation. After many months of hard work the little aircraft started to look and feel better about themselves. The wings of the little aircraft were fixed, and they received a new coat of paint. With their new bright colours, new engines and new propellers they felt good about themselves. After many months of hard work, although not the same as they were, the little airplanes were ready for action. The little airplanes were very proud of themselves and thought that the big aircraft would be just as proud of them. The countrymen were just as proud and decided to have the following slogan written on the wings of their new little, fast airplanes:

**WITH A LOT OF HARD WORK
AND A LOT OF PATIENCE IT IS
POSSIBLE TO ACHIEVE THE
IMPOSSIBLE**

The outcome of this psychotherapeutic intervention proved to be very successful in the sense that B enjoyed it and could identify with the message of hope after loss.

5.7.3 Animal-assisted therapy

The researcher recommended animal-assisted therapy. The researcher felt that, especially during the beginning phase of psychotherapy, traditional psychotherapeutic methods fell short. The lack of success in the beginning of psychotherapy can be ascribed to the major

communication barrier as well as lack of insight and denial. It was recommended that B get a puppy.

Since B is an animal lover the animal-assisted therapy in the form of a puppy proved to be very successful. The soothing and therapeutic bond that was established between B and his puppy created a sense of comfort, hope, love and acceptance.

Animal-assisted therapy (Utah animal-assisted therapy association: <http://www.uaata.org>) had the added advantage that B had to take responsibility for his puppy as far as care, feeding and grooming were concerned. This new four-footed friend enhanced B's emotional well being. Not only did this relationship encourage friendship, but it also encouraged responsibility, ownership, a kind of social interaction and participation.

5.7.4 Aggression

B's post-injury functioning and social interactions are marked with anger and aggression. As B's pre-injury behaviour was also marked by aggression, and this was an important predictor of his post-injury behaviour. B's social interactions suffered due to this aggressive behaviour, in the sense that when his peers in school offered their help, he would react in a rude manner. These aggressive outbursts manifested itself in the form of swearing in sign language. This reaction caused his friends and peers to withdraw from him.

The researcher found it extremely difficult to deal with B's anger outbursts, since B displayed lack of insight into his behaviour and in how his outbursts affected the people around him. To ensure B's emotional and social well being, psychotherapy was directed to his friends and peers at school in the form of group therapy (see section 4.6.6). The cause of B's anger and lack of control was explained to them as well as how to cope with this anger by ignoring it and to give B some time to cool of.

The researcher herself was often times at the receiving end of transference in the form of aggressive emotional outbursts and displaced feelings of anger (see section 4.7.6). As was suggested by Heilbronner (1998:52) the researcher tried to make a concerted effort to minimise her own emotional reactions to these occasional emotional outbursts. The researcher found that if she remained calm and gave B some time to let off some steam, she was able to continue with psychotherapy without any further emotional reactions.

As B's therapy continued and he gained some benefit from the animal-assisted therapy, he started to take control of his anger, frustration and emotional outbursts.

5.7.5 Equestrian therapy

Based on the success of the animal-assisted therapy as well as on B's love for animals and the fact that B did do horseback riding before the accident, equestrian therapy was suggested (therapy done through means of horseback riding). The therapeutic value was described by Hippocrates as "the riding's healing rhythm" (Partners in equestrian therapy: http://www.jesherry.com/pet/Equestrian_Therapy/equestrian_therapy.html). This therapy proved to be extremely valuable in the emotional as well as the social rehabilitation of B.

Equestrian therapy offered B an excellent means of physical activity that aided in improving his balance, posture, coordination and most importantly, the development of a positive attitude and sense of accomplishment. With equestrian therapy, the horse became B's equaliser and partner. B and the horse worked as a team and the horse responded with emotion to B. With equestrian therapy, B was mobile, towering and uplifted, both physically and psychologically.

Equestrian therapy had the added advantage that B learned animal care and equipment use, which further encouraged responsibility and participation. B's social well being was

enhanced not only by interaction with the horse and the therapist but he also met other children with disabilities with whom he could relate.

In the next section the focus of discussion is on the factors, unique to case 2, that complicated the psychotherapeutic process.

5.8 FACTORS THAT COMPLICATED THERAPY

5.8.1 Denial of deficits

The psychotherapeutic process as well as the occupational, speech, and physiotherapy were extremely hampered by B's mother who denied his deficits. In this case, the pre-morbid family functioning acted as an important predictor of the mother's denial (see 5.6.2).

B's mother refused to admit that B had suffered severe brain injuries and believed that B would recover completely. This denial caused the mother to change from doctors, therapists and even schools. Unfortunately, B's mother is still in denial.

5.8.2 Parental involvement

The parental involvement in case 2, before the accident also became an important predictor for parental involvement after the accident. B's mother was in the unfortunate position that she became a single parent and had to deal with John as well as the death of her husband.

B's mother also has a demanding job that takes up a lot of her time. As family involvement is a good predictor of successful rehabilitation, it is an unfortunate situation that B's mother is seldom available and can therefore not usually act as an important co-

therapist in the emotional and social rehabilitation of B, though in one instance only, she was involved in such a process as taking B to his father's grave.

5.8.3 Pre-morbid personality and functioning

Aggressive behaviour, impulsiveness and hyperactivity marked B's pre-morbid personality and functioning. Unfortunately, this was exacerbated by the TBI and negatively impacts on B's current emotional and social functioning.

As these are difficult issues to rehabilitate, it is going to take some time and since psychotherapy with the brain injured is a life long process, it can only be hoped that psychotherapy would be continued.

5.8.4 Lack of motivation

B displayed motivational problems and constantly needed motivation, for example to get motivated to get out of his wheelchair when he could walk. B also displayed some helplessness and was comfortable with this role when things were being done for him. B needed a lot of guidance in goal setting to get motivated.

5.9 SUMMARY OF CASE STUDY 2

The summary of the data analysis of case study 2 is discussed and presented with reference to the following concepts:

- Emerging themes as revealed by the research
- Sources and methods used to collect the relevant data
- Psychotherapeutic interventions as applied by the educational psychologist
- The outcome of the different interventions

- Factors contributing to the successful outcome
- Factors complicating the therapeutic program.

Table 5.3

THEMES	SOURCE OF DATA COLLECTED	THERAPY	OUTCOME	FACTORS THAT + IMPACTED ON THE OUTCOME	FACTORS THAT - IMPACTED ON THE OUTCOME
Emotional problems due to loss and bereavement	<ul style="list-style-type: none"> - Observing - Interview with family 	<ul style="list-style-type: none"> - Talk therapy & working through the stages of grief - Going to the grave - Photo's - Metaphor (airplane) 	<ul style="list-style-type: none"> - B and his family are still in mourning - Beneficial in working through the stages of grief - Creation of hope 	<ul style="list-style-type: none"> - Family Involvement (in this sense only) - Therapy as such 	<ul style="list-style-type: none"> - B's lack of insight - Denial
Aggression	<ul style="list-style-type: none"> - Interview with educators - Interview with mother & sister - Observing - Interview with friends 	<ul style="list-style-type: none"> - Group therapy - Animal assisted therapy - Equestrian therapy - Relaxation 	<ul style="list-style-type: none"> - Successful in the sense that B has better control of his emotional outbursts 	<ul style="list-style-type: none"> - Friends involved in group therapy 	<ul style="list-style-type: none"> - Pre-injury personality & behaviour - Lack of insight - Impulse control
Loneliness	<ul style="list-style-type: none"> - Interviews with significant people 	<ul style="list-style-type: none"> - Animal assisted & equestrian therapy 	<ul style="list-style-type: none"> - Successful in the sense that B found some comfort in his puppy - New friends were made at the equestrian therapy 	<ul style="list-style-type: none"> - Pre-injury interest in animals - Team approach of therapists 	<ul style="list-style-type: none"> - Lack of parental involvement - Motivational Problems - Aggressive behaviour and hostility

5.10 CONCLUSION

It can be deduced from the two discussed cases, that although the two adolescents sustained similar injuries they presented unique emotional and social problems. These cases clearly showed the important pre-morbid factors that influenced the success of the psychotherapeutic process, for example pre-injury functioning, behavior and personality as well as family involvement.

What came to the fore in the study of these cases was the fact that TBI is unique and that no two cases present the same emotional and/or social problems. Certain factors that helped or complicated the emotional and social rehabilitation of the TBI adolescent were highlighted.

It can be concluded that the educational psychologist can indeed play a valuable role in the emotional and social rehabilitation of the TBI adolescent. It can be further concluded that, from a psycho-educational perspective and the relations theory of UNISA, the TBI adolescent can be led to self-actualisation through psychotherapeutic interventions in order to alter the experiences, attribution of meaning and perspective that the TBI adolescent has attributed to the phenomenon of TBI.

In Chapter Six a synopsis of the findings will be presented, conclusions will be drawn and suggestions for further research will be discussed.

CHAPTER SIX

SYNOPSIS OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

Adolescent TBI survivors experience a myriad of emotional and social difficulties and seek assistance to deal with these problems when they are confronted in real life settings. Such awareness on the part of the researcher resulted in the need to examine adolescent TBI, the impact of TBI on the developing adolescent brain, the extent of the emotional and social problems that they experience, as well as the role of the educational psychologist as psychotherapist. Thus, the researcher undertook this study to determine the cause of the emotional and social problems experienced after adolescent TBI, as well as the part played by the educational psychologist in the rehabilitation of these emotional and social problems as experienced by the TBI adolescent. The following hypotheses were proposed:

- Educational psychologists play a valuable role in the emotional rehabilitation of a TBI adolescent
- Educational psychologists play a valuable role in the social rehabilitation of a TBI adolescent
- Educational psychologists play a therapeutic role in the rehabilitation of the TBI adolescent.

To confirm the above hypotheses and to answer the following research question: can the educational psychologist play a role in the emotional and social rehabilitation of the TBI adolescent after the acute phase of recovery and rehabilitation?; the researcher undertook a literature study on the phenomenon of adolescent TBI. Further, because this form of TBI occurs during adolescence and the experience, perceptions and attributions of

meaning are significant for the optimal outcome of the rehabilitation process, a psycho-educational perspective was presented. A qualitative, empirical investigation in the form of two case two studies was also carried out to determine the effects of TBI on the adolescent brain, the emotional and social problems experienced by the adolescent TBI survivor, and the therapeutic role played by the educational psychologist. The study focussed upon the present emotional and social functioning of TBI adolescents, the emotional and social problems that are encountered, the reasons for these emotional and social problems and possible therapeutic techniques that rehabilitate these emotional and social problems.

In this chapter, conclusions regarding the emotional and social problems regarding adolescent TBI survivors, as well as the psychotherapeutic process, are noted. Findings regarding the literature as well as the empirical investigations have been noted. Further, other issues that have arisen from this study as possible issues for further investigation are highlighted. The value and limitations of this study are also presented.

6.2 FINDINGS FROM THE LITERATURE STUDY

There is evidence in the literature investigation that TBI impacts negatively on the emotional and social well being of the adolescent TBI survivor. The following are contributing factors to the severity of emotional and social deficits:

- Severity of injury - the more severe the TBI is, the more pronounced the deficits, resulting in distinct emotional and social problems
- Pre-injury behaviour and personality - adolescents with a predisposition to emotional and social problems will have more problems in this area after the occurrence of TBI
- Psychosocial adversity - emotional and social problems encountered by a TBI adolescent will be amplified when combined with psychosocial adversity

- Post-traumatic epilepsy - adolescents with temporal lobe epilepsy, have more emotional problems and have been found to have a tendency to social isolation
- Denial - the inability to recognise problems together with denial may cause TBI adolescents to deny therapy and changes and they are therefore hampered in developing a realistic picture of their new self
- Diminished ability to solve problems - cognitive deficits may diminish their abilities to solve adolescent developmental issues effectively
- Sexuality - the issue of sexuality could have a detrimental impact on the emotional and social well being of the TBI adolescent
- Restriction and overprotection - imposed limitations may cause the adolescent to view the parents as unreasonably restrictive, thereby bringing about serious family conflict
- Realising career goals - because of physical and cognitive deficits caused by TBI, this means that former goals and dreams of university, college or jobs must be altered
- Substance abuse - drugs and alcohol may be abused by TBI adolescents to blunt the felt intensity of their emotions

Actual emotional problems that may be encountered are:

- Depression - depression sets in, as TBI adolescents become more aware of the effects of TBI in terms of their own reduced capabilities
- Anxiety - TBI adolescents experience anxiety when they experience difficulty in coping with situations as a result of cognitive deficits, for example in social settings
- Anger - as experienced by TBI adolescents, is often typified by hostility, often unprovoked, in interactions with others
- Self-awareness - reduced self-awareness and unrealistic self-appraisal can have a detrimental effect on the emotional well being of a TBI adolescent

- Post-traumatic stress disorder - this psychiatric disorder is triggered by events out of the realm of normal human experience, such as an accident where TBI has been sustained.

Issues that may contribute to social problems:

- Impulsiveness - is an acting hastily without regard to possible consequences and is one of the most frequent observed behaviours after TBI
- Motivational problems - display of apathy and lack of motivation to initiate any behaviour could adversely affect the TBI adolescents' social interaction.
- Mood swings - are common after TBI, since the brain is having difficulty trying to inhibit impulses and respond properly to emotions
- Language and communication - since speech and language functions encompass all forms of communicative behaviour it is understandable that a TBI adolescent with impairment of communicative skills will find it difficult to socialise.

Actual social problems that may be encountered are:

- Disorders in family relationships - an adolescent's severe illness and subsequent lengthy rehabilitation, after TBI, may alter family roles. If the TBI adolescent is a survivor of an accident in which other family members were killed, it can dramatically complicate the relationships among remaining family members
- Peer relationships - TBI adolescents find that even long standing friendships do not survive the behavioural, thinking and personality changes caused by the TBI
- Leisure activities - Because of the interaction between the many deficits and impairments experienced after TBI the adolescent will not be able to pursue the same leisure activities as before the accident.

As for the role of the educational psychologist in the emotional and social rehabilitation of the TBI adolescent, there is evidence in the literature that:

- The TBI client can no longer be dismissed as inappropriate for, or unable to benefit from, psychotherapy
- Evidence gathered from clinical experience with TBI individuals shows that psychotherapy can be successful
- Psychotherapy forms an essential part of the long-term TBI treatment, assisting the TBI adolescent in adjusting to his or her new capabilities and helping to mitigate the emotional and social deficits
- Psychotherapy helps TBI adolescents to receive emotional support, resolve conflicts in relationships
- Psychotherapy with TBI adolescents can be beneficial particularly in the post-acute phase of recovery, when they are in the process of returning to live in the community, to work and study and to social and leisure activities
- Goals in psychotherapy with TBI adolescents may be specific, for example to change undesirable behaviour, to improve relationships, or more general, for example to experience less anxiety, or to improve self-esteem
- Psychotherapists are compelled to evaluate the ways in which traditional psychotherapeutic models can be revised and implemented to best serve this special population.

From a psycho-educational perspective, the developmental stages and maturation levels of the adolescent before TBI are of paramount importance as it is believed that the TBI will impede the normal development and maturation of the adolescent and hinder the learning and becoming of the adolescent. The TBI adolescent's perception, meaning attribution and experience of TBI will impact on the intra-psychic structures of the adolescent and determine the long-term effects and the TBI adolescent's ability to cope.

From a psycho-educational perspective the role of the educational psychologist is to assist the adolescent to mitigate psychological problems that arise as a result of perceptions, meaning attributions and experience attached to TBI. Further, the role of the educational psychologist is to assist the TBI adolescent to reach full self-actualization despite deficits and difficulties caused by TBI.

6.3 FINDINGS FROM THE EMPIRICAL INVESTIGATION

The researcher has arrived at the following conclusions based on the empirical findings of this study:

- Adolescent TBI survivors in this study, who perceive TBI as the end of their lives, with no hope for the future and with no hope that they can return to their former lives with specific reference to their friends, peer group and school, suffer from depression, anger and anxiety.

These TBI adolescents suffer from depression because their perception of the situation is that they have lost everything: not only their cognitive and physical abilities, but also their important support groups.

These adolescent TBI survivors suffer anger, and are confronted with existential issues of "why has this happened to me?" and "what did I do wrong to deserve this?" Anger is further directed towards the person these adolescents perceive as being responsible for the accident.

Anxiety manifests when these TBI adolescents perceive the situation as hopeless and when they start to wonder how they are going to cope in the future. Anxiety is further

amplified when these TBI adolescents are confronted by real life situations in the community.

Depression, anger and anxiety are psychological problems that negatively impact on the intra-psychoic functioning of the TBI adolescent. These psychological problems can be attributed to the perception, meaning attributions and experience of such a TBI adolescent. The role of the researcher, as educational psychologist, was to assist the TBI adolescent through therapeutic intervention to work through this depression, anger and anxiety. This was accomplished through psychotherapeutic interventions that were adapted to suit the TBI adolescents. Psychotherapeutic interventions that were used included:

- School reentry to reestablish social bonds with peers, friend and educators
 - Talk therapy to deal with depression, anger and to establish hope for the future
 - Relaxation therapy to alleviate anxiety
 - Role play to practice possible scenarios in real life settings
 - Excursions to real life settings
 - Group therapy
 - Establishment of support group.
- Family involvement plays a major role in the rehabilitation of the TBI adolescent. The family is actively involved as co-therapists. The role of the educational psychologist is to provide support to the family and to give information on TBI and the possible outcomes.
- During the developmental phase of adolescence most perceptions, attributions and experience with regard to any significant situation or event are formed by the opinion and beliefs of their adolescent peer group. To be socially accepted by their peers is

particularly important for the TBI adolescents' emotional well being, since their perception of self is formed in relation with their interaction with their peer group. In this regard social and emotional rehabilitation cannot be separated. For the TBI adolescent's emotional well being they must be socially integrated with their former friends and peers, since it is very difficult to make new friends after the injury.

- Denial, which could be organically in nature, is a problem the educational psychologist is confronted with. Denial can create difficulties in the sense that the TBI adolescent denies difficulties and over estimates their potential. On the other hand if parents deny the seriousness of the injury and the difficulties that the TBI adolescent experiences, therapy and change may be resisted.
- A mainstream school setting may be valuable in the emotional and social rehabilitation of the TBI adolescent. The role of the educational psychologist is to provide the educators and learners with information on TBI and on how to support the TBI adolescent emotionally and socially.
- The inter-disciplinary nature of the rehabilitation of the TBI adolescents has been clearly established. In the two cases in this study, the views and insights of the occupational - and speech therapists, proved to be invaluable in gaining additional insight into the emotional and social problems of these TBI adolescents.
- Pre-morbid functioning proved to be a very clear indication of emotional and social functioning after TBI, not only as a prediction of the problems that could be expected, but also as a prediction of a favourable outcome.
- A serious concern raised by the families of the TBI adolescents is the issue of funding. The lengthy stay in hospital as well as the costs of additional therapies such

as occupational, speech and physical therapy leave these families with a financial burden. Although these families acknowledge the benefits of psychotherapy, they foresee problems in funding this additional therapy.

The above mentioned conclusions confirm the hypothesis and answers the research question that:

- Educational psychologists play a valuable role in the emotional rehabilitation of a TBI adolescent
- Educational psychologists play a valuable role in the social rehabilitation of a TBI adolescent
- Educational psychologists play a therapeutic role in the rehabilitation of the TBI adolescent.

6.4 LIMITATIONS OF THIS STUDY

The researcher noted the following limitations:

- The case study design - not all types of TBI and severity of injuries were presented in this sample group, due to the fact that a qualitative research project over an extended period is time consuming and that since the researcher was not living in a city, cases were difficult to find.
- A larger group of participants would have allowed the researcher to undertake a comprehensive statistical analysis of data, which would have provided the researcher with valuable information regarding the various variables that were examined. Further, the reliability and validity of the study would have been clearly established.

- The interviews, discussions and observations proved to be time consuming and stressful due to the sensitive nature of the topic.

6.5 CONTRIBUTIONS OF THIS STUDY

In the researcher's attempt to evaluate the effects of TBI on an adolescent's emotional and social well being, as well as the role of the educational psychologist in the rehabilitation process, the following contributions were made:

- The major contribution of this study was the establishment of the role of the educational psychologist in the emotional and social rehabilitation of the TBI adolescent.
- The study has provided additional information surrounding the phenomenon of adolescent TBI and this has contributed to the general body of knowledge of this problem.
- This study has opened the way for further in-depth study into the phenomenon of adolescent TBI. Further in-depth studies with a larger sample group would prove a more reliable source of the effects of TBI on adolescent emotional and social functioning as well as the effects of the psychotherapeutic interventions by the educational psychologist.
- A body of knowledge has been established surrounding the adaptation of conventional psychotherapeutic techniques in the therapeutic rehabilitation of the TBI adolescent.
- This study provided some evidence that a main stream school setting can be used as a vehicle for rehabilitation of the TBI adolescent and that the concept of inclusive

education is a viable option, provided that educators are furnished with the necessary training.

6.6 RECOMMENDATIONS FOR FURTHER STUDY

Of specific interest to the researcher was the significant interest by educators concerning the issue of *inclusive education*. The educators expressed their concern regarding the adequacy of training to deal with learners who have educational barriers. Although this research mentioned the school re-entry and education of the TBI adolescent, it falls outside the scope of this investigation. A study to investigate the school re-entry and transition programme would be useful.

During the course of this investigation, issues of cognitive and behavioural rehabilitation came to the attention of the researcher. A study into the role of the educational psychologist in cognitive remediation and cognitive-behavioural therapy could be a valuable enterprise.

Further, the effects of TBI on the family and the siblings create a crisis and the educational psychologist can play a valuable therapeutic role in the aftermath of the injury where family roles have changed dramatically.

A study into the funding of psychotherapy for TBI patients could provide the families of adolescents with peace of mind during this time of emotional turmoil and stress.

The development of a measuring instrument, as a follow up for this investigation, to measure the emotional and social well being of the TBI adolescent when psychotherapy is started and then of intervals of one year post-injury, throughout the lifetime of the adolescent TBI survivor, could be undertaken.

Further exploration of changes in family relationships and interactions following TBI, so that these can be predicted from the point of view of preventative counseling.

6.7 FINAL REMARKS

Adolescent TBI appears to be disturbingly prevalent and it is the researcher's belief that in attempting to understand the emotional and social problems that these adolescents encounter, assistance can be given to TBI adolescents to ensure that they do not suffer long-term emotional and social effects after the injury. In this process assistance and guidance can be provided to the TBI adolescent to ensure that he or she can function effectively as a well-adjusted individual, which in essence entails the self-actualisation of the individual. In order for the adolescent TBI survivor to attain self-actualisation, the role of the educational psychologist as a therapist can be invaluable in understanding the dynamics involved and to provide the necessary therapeutic interventions.

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APPENDIX ONE
Glasgow Coma Scale Ratings

Eye Opening

Spontaneous	4
To speech	3
To pain	2
None	1

Best Motor Response

Obeys commands	6
Localises	5
Withdraws	4
Abnormal flexion	3
Extensor responses	2
None	1

Verbal Response

Orientated	5
Confused conversation	4
Inappropriate words	3
Incomprehensive	2
None	1

Adopted from Virtual Hospital www.org/ (2001/01/02).

APPENDIX TWO

Rancho Levels of Cognitive Functioning

- I. No response to stimulation
- II. Generalised response to stimulation
- III. Localised response to stimulation
- IV. Confused, agitated behaviour
- V. Confused, inappropriate, non-agitated behaviour
- VI. Confused, appropriate behaviour
- VII. Automatic, appropriate behaviour

Adopted from Virtual Hospital www.org/ (2001/01/02).

APPENDIX THREE

EDUCATOR'S NEEDS CHECKLIST

Educators name: _____.

Directions: Show how important these needs are, by using the scale below and placing a circle around the number that best describes your answer.

1	2	3	4
Not	Slightly	Important	Very
important	important		important

I need to -----

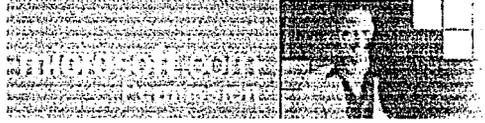
- | | |
|---|---------|
| 1. be told what is being done with or for the learner by the therapist. | 1 2 3 4 |
| 2. give my opinions to therapists and parents. | 1 2 3 4 |
| 3. to be told about all changes in the learner's medical status. | 1 2 3 4 |
| 4. have my questions answered honestly. | 1 2 3 4 |
| 5. be shown that my opinions are used in planning the learners treatment or education. | 1 2 3 4 |
| 6. have a professional to turn to for advice or services when the learner needs help. | 1 2 3 4 |
| 7. have complete information on the learner's physical problems (e.g. walking, communication, vision, headaches etc.) | 1 2 3 4 |
| 8. have complete information on the learner's thinking problems (e.g. confusion, memory etc.) | 1 2 3 4 |

- | | |
|--|---------|
| 9. be told why the patient act in ways that are different, difficult or strange. | 1 2 3 4 |
| 10. be shown what to do if the learner is upset, tired or acting strange. | 1 2 3 4 |
| 11. have information on the learners rehabilitative or educational progress. | 1 2 3 4 |
| 12. have a forum established where I as educator and therapists can plan the learner's future education. | 1 2 3 4 |
| 13. discuss my feelings and worries with therapists. | 1 2 3 4 |
| 14. have help in deciding how much to let the patient do him/herself. | 1 2 3 4 |

If there are any needs that you want to include on this questionnaire please include them on the lines provided.

Thanking you for your co-operation

Elmarie van Pारेen



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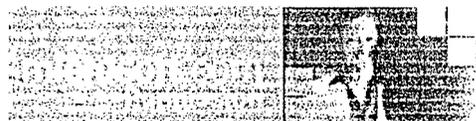
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(2) The Reference Number. Once this request has been submitted, you will receive a reference number. **Make note of this number for ALL future correspondence in regard to this particular Microsoft Permission Request.**

(3) The printed copy of this web request. **This is only required if sending your samples via fax!**

Fax or email the sample/drawing/mockup of the image(s), a printed copy of this web request, **and** the corresponding reference number to the Permissions/Copyright Group:

Fax to (425) 936-7329

OR

Email permcopy@microsoft.com.

Please be sure a sample(s) of the image(s) in question are attached to your email or fax. Allow 15 to 21 days for processing.

1a. or accompanying product documentation prohibit the use you are proposing?

- * Yes
* No

1b. Please explain:

* I am doing a thesis for the completion of a masrets degree in educational psychology
The title of the thesis : The role of the educational psychologist in the emotional and social rehabilitation of the traumatic

2. Describe fully the image(s) in question.
(for example, is the image a piece of clip art, a screen shot, a character, a box shot, hardware, a font, etc.), and specifically what does the image contain (e.g., a butterfly, an airplane, etc.)? Please also provide the **exact** file name of the image(s), if applicable, (e.g., **The image is a piece of clip art showing two theater masks and the file name is - en00311_(p).gif**). Please be as specific as possible, and please note you will need to provide a sample of the image(s) showing the context of the intended use. If you do not provide a sample for our review, permission will be denied.

* 1. Left and Right brain functions
2. Human Brain
3. Functions of cerebral cortex
4. Structure of brain stem
5. Cranial nerves

3 For all requests to include icons in a software product or web site, please supply us with the following (3a-3e).

3a. What is the name of the software product or web site you are developing?

3b. What version number will you use for your release, or what is your web site's URL?

3c. What development tools were used to develop your software product or web site?

3d. What form(s) of distribution will you use to distribute your product.
For example: CD, Internet, Intranet, etc.

3e. Please list what function each icon will perform.

4. What is the exact title and version of the Microsoft product from which you obtained the image(s)?
Please use the full name from the Microsoft product package, if applicable.

* Microsoft Encarta 1994 and 2000

5. If the image is from the Internet or from a Microsoft product that is posted on the Internet, provide the exact URL address:

No

6. If the item(s) was obtained from within a Microsoft product unrelated to the Internet, provide the exact location within the Microsoft product:
This will allow us to locate the item within the product in question. Please note - we will be unable to process your request without this information.

Microsoft Encarta 1994 and 2000

7. Provide detailed information regarding how this item(s) will be used:
For example, whether this is to be used in a school project, in a book, in a software program, for your company logo, etc.

* In the form of a book as part of a thesis as for completion of a masters degree in educational psychology.

8. Explain the circumstances surrounding your inquiry:
For example, why do you need the item(s)? Which issues are you trying to resolve? Etc.

* To explain the structure and function of the brain.

9. Provide an estimated timeframe this item(s) will be in active use:

*

10. Describe the nature of your business, company, product, services and/or event:
For example, are you a Microsoft Delivery Service Partner (DSP), Original Equipment Manufacturer (OEM), Solution Provider, Reseller, Educator, End-user, Tradeshow, Training Seminar, etc.

*

11. Have you had previous contact with Microsoft regarding this request?

- * Yes
- * No

If so, with whom or which department did you correspond?

Provide the name of your customary Microsoft contact, if any:

12. Additional comments:

WAIT! Use your web browser to print this page for your records.

JACOB VAN PAREEN

From: Greg Johnson <greg@vh.org>
To: JACOB VAN PAREEN <jvpareen@mweb.co.za>
Sent: Tuesday, March 27, 2001 8:58 PM
Subject: Re: copyright

Elmarie,

Thank you for your request to use the illustrations that you very thoughtfully included as part of your correspondence.

Yes, you have permission from Virtual Hospital to use the images as you've described below. Please credit as follows:

Copyright images used with permission of Virtual Hospital (www.vh.org), The University of Iowa.

Thanks again for your cooperation.

--Greg Johnson, Virtual Hospital Manager

Dear librarian

I am currently doing a thesis as for completion of a masters degree in educational psychology.
 Title: The role of the educational psychologist in the emotional and social rehabilitation of the traumatic brain injured adolescent.

University of South Africa (UNISA).

I hereby request your permission to use the following illustrations.

Thanking you for your consideration and prompt reply.

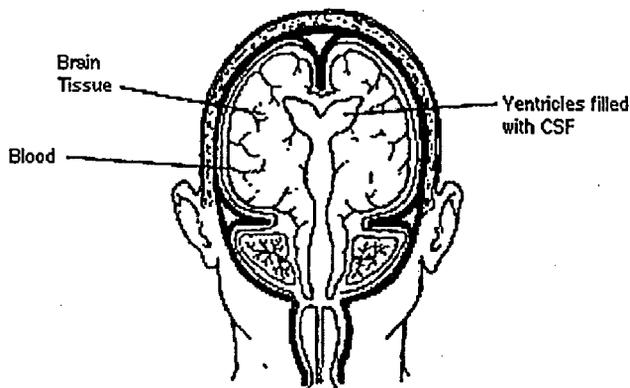
Elmarie van Pareen.

Iowa Health Book: Brain Injury - A Guide for Families and Friends

What Happens with Brain Injury?

Credits

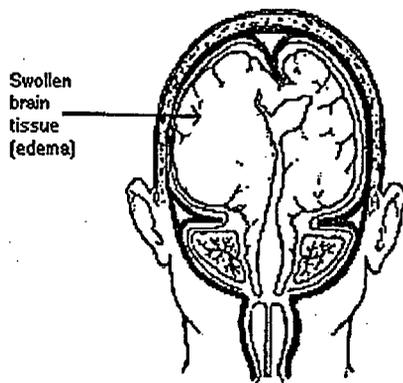
Even though the brain is well protected, it may be injured. Damage to the brain may occur immediately, or it may develop after the injury due to swelling or bleeding. The skull is usually filled like this:



Normal Brain

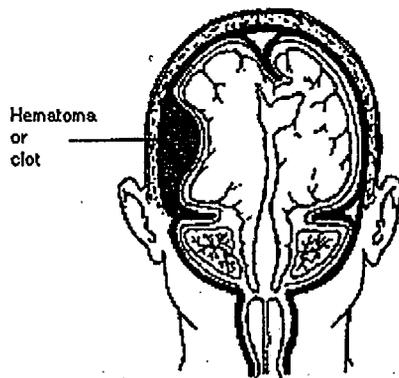
After brain injury, the contents may change. The brain tissue may swell, causing it to

take up more room in the skull. This is called edema. When this occurs, the swollen brain tissue will push the other contents to the side.



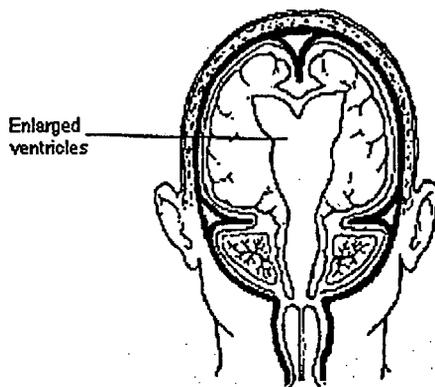
Brain with Edema

There may be bruising called contusions or a collection of blood called a hematoma or clot. This may also push the other contents to one side.



Brain with a Hematoma

The flow of CSF may also become blocked. This will cause the open spaces (ventricles) to become enlarged. This is called hydrocephalus.



Brain with Hydrocephalus

Any of these changes can cause increased intracranial pressure.