

Treating Trauma in Early Childhood by Utilising Eye Movement
Integration Therapy

by

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Abstract

In South Africa, trauma is a vivid reality for many children. Unfortunately due to a lack of resources and knowledge, many children in early childhood who experience trauma symptoms are left untreated. Children in this developmental phase of early childhood, have a limited vocabulary, which adds to the challenge of effectively treating trauma through alternative talk therapies. Neurotherapies like Eye Movement Integration Therapy (EMI), which does not rely on the verbal ability of the child, has therefore gained a lot of interest.

The goal of this study was to explore whether EMI can be a useful intervention in treating trauma in early childhood. The objectives included to, i) determine whether or not a change in trauma symptoms was evident from pre- to post-EMI intervention, using the Trauma Symptom Checklist for Young Children (TSCYC); ii) explore the perceptions of parents/caregivers regarding EMI's effectiveness in the reduction of trauma symptoms; and iii) formulate conclusions and recommendations regarding EMI's implementation as a trauma intervention with children in early childhood.

The researcher followed an exploratory design. The one-group pre-test/post-test design was utilised for conducting the study. The study made use of the Trauma Symptoms Checklist for Young Children (TSCYC), a parent/caregiver report that measures the prevalence and intensity of trauma symptoms like anger, anxiety, dissociation, post-traumatic stress intrusion, post-traumatic stress avoidance, post-traumatic stress arousal, post-traumatic stress total and sexual concerns, in order to determine if a single EMI session could produce a change in trauma symptoms. The group was measured prior to the administration of one EMI session, which according to Beaulieu (2004) is sufficient to result in a measurable change in trauma symptoms. Two weeks later the group's symptoms were re-measured, using the same instrument. The prescribed EMI protocol was followed.

Although the findings from studies of EMI with adults and teenagers appear promising, the usefulness of EMI with young children has not been explored. The results from the study indicated that all of the symptoms as measured by the TSCYC reduced significantly ($p < .05$) after a single EMI session. It would therefore appear as if EMI might be a useful intervention strategy to treat trauma experienced during early childhood.

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Chapter 1: Introduction to the Research Study

1.1 Introduction

Between April 2010 and March 2011, 54 225 serious cases of crime against children were reported in South Africa (SAPS, 2011). According to Lewis (1999), such high figures suggest that many South African children may encounter at least one traumatic event in their lives. Considering these alarming statistics, it can be assumed that many children will require specialised rehabilitation to assist them in coping with the trauma experienced.

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) (American Psychiatric Association, 2013) determines that an event is classified as traumatic if a person was directly or indirectly exposed to, or witnessed, death; was threatened with death; experienced a serious injury or was threatened with a serious injury; or experienced sexual violence or was threatened with sexual violence. Adding to this definition, Beaulieu (2004) asserts that an event can be classified as traumatic if an individual or his/her significant other(s) considers it to be traumatic. Scaer (2005) made an interesting observation that an individual's response subsequent to a traumatic event may result in a failure of his/her prevailing coping mechanisms. Thus, for the purpose of this research study, trauma was classified as an individual's (or his/her significant others') perception of an event that he/she considered as distressing enough to render his/her fundamental coping mechanisms ineffective.

1.2 Developing Significance for the Research Study

The impact of trauma on the psychosocial well-being of children is well documented. Literature indicates that trauma has a detrimental effect on the cognitive, emotional, and social well-being of children (Kubeka, 2008; Sternberg, Lamb, Guterman & Abott, 2006). It has also been established that children who experience trauma are at risk of developing Post Traumatic Stress Disorder (PTSD), which may carry over into adulthood (Rivett, Howarth & Harold, 2006; Papalia, Olds & Feldman, 2008). Traumatized children tend to struggle with adaptation, and exhibit difficulties ranging from deviant behaviour to levels of withdrawal (Milot, St-Laurent, Estier & Provost, 2010). This finding implies that trauma has not only a neurobiological effect on children, but it also affects their social interactions and the systems with which they interact. The latter statement is congruent with both the neurobiological and the ecological systems' perspectives, which form the foundation of prevailing social work interventions (Larkin, 2006). Kakuma, Kleintjes, Lund, Drew, Green and Flisher, (2010) established that children's mental health is particularly important in middle-income

countries like South Africa, due to the positive link between good mental health and sound socio-economic development. That said, therapeutic services such as psychotherapy and trauma counselling are often too expensive and therefore inaccessible to many South African children. Furthermore, a general lack of knowledge regarding trauma treatment in early childhood exacerbates this problem (De Young, Kenardy & Cobham 2011; Lochat & van Niekerk, 2000). Early childhood, defined as the developmental phase between the ages of three to seven years, is considered a pre-operational stage of development (Papalia, Olds & Feldman, 2008). Children in early childhood are further disadvantaged by their limited capacity to provide an accurate representation of an event or experience due to their limited vocabulary and comprehension (O'Tool & Chiat, 2006). This may be a challenge when applying conventional psychotherapy or counselling since many of the therapeutic interventions are based on verbal ability and comprehension (Beaulieu, 2004). This latter shortcoming makes the option of alternative therapies that do not require verbal input on the part of the child, such as Eye Movement Integration (EMI), extremely attractive.

EMI is a contemporary neurotherapy that requires minimal verbalisation from the client (Beaulieu, 2004). It is founded on the concept that traumatic experiences become fragmented and are therefore not processed in the same way that typical memories are processed. EMI facilitates the integration and processing of trauma memories on a multi-sensory level, which may then result in a reduction of symptoms (Beaulieu, 2004; Struwig, 2008). Previous studies on the utilisation of EMI with adults (Beaulieu, 2004) and adolescents (Struwig, 2008) appear promising, but evidence regarding its successful application with young children remains undetermined.

1.3 The Goal and Objectives of the Study

The goal of this study was to explore the utilisation of EMI as an intervention in the treatment of trauma during early childhood. The objectives of the study were to:

- i) determine whether or not a change in trauma symptoms was evident from pre- to post-EMI intervention, using the Trauma Symptom Checklist for Young Children (TSCYC);
- ii) explore the perceptions of parents/caregivers regarding EMI's effectiveness in the reduction of trauma symptoms; and
- iii) formulate conclusions and recommendations regarding EMI's implementation as a trauma intervention with children in early childhood.

1.4 The Methodology

Due to the limited amount of research on EMI's usefulness with young children, the researcher used a similar methodology to Struwig (2008), in order to replicate Struwig's methodology but with a younger age group. Struwig's (2008) study made use of a mixed method approach. During her quantitative data collection Struwig asked participants to complete the Trauma Symptom Checklist for Children (TSCC), before and two weeks after, the application of a single EMI session. Simultaneously she also conducted a semi-structured interview (for her qualitative data collection) with the participants, two weeks after the EMI session. By doing this, Struwig determined that a single EMI session managed to reduce the trauma symptoms in children between the ages of 14 and 16 years. In this study, the researcher also occupied both roles of researcher and practitioner. Although the researcher conducted the EMI session, she was able to maintain objectivity in her role as researcher, because EMI does not involve traditional counselling (i.e. talking in depth about experiences and feelings). Therefore, the researcher did not analyse or counsel participants, but rather observed and recorded their responses during the EMI sessions.

1.4.1 Design & Approach

Due to the limited research available on the topic, the proposed study was an exploratory one. Even though Andreas and Andreas (1989) and Beaulieu (2004) have provided research on EMI as an intervention technique, and Struwig (2008) researched the usefulness of this technique in treating adolescent trauma, the utilisation of EMI in treating trauma in the early stages of development (early childhood) has not been researched. In order to acquire a richer view on the utilisation of EMI with young children, the researcher employed a mixed method, equal sequential approach. This approach involves first collecting and analysing quantitative data and then explains these results in more details by collecting and analysing the qualitative data (Creswell, 2013). The researcher therefore first collected the quantitative data through the TSCYC, analysed the results through the Statistical Package for the Social Sciences (SPSS). She then built on these results by collecting the qualitative data through a semi-structured interview, and analysing the results through content analysis.

1.4.2 Population and Sample

The population of this study was children between the ages of five to seven years, living in Gauteng, who have suffered a traumatic incident and who were experiencing trauma symptoms (as set out in the Trauma Symptom Checklist for Young Children (TSCYC) for at least four weeks prior to the data collection. A sample of twelve children was selected from the researcher's private practice and categorised as follows: three white females, three African females, three African males,

three white males. This sample size was determined by Stuwig (2008)'s study in order to replicate her study and add to her findings. These children were new referrals. They did not form part of the researcher's clientele base. Non-proportionate quota sampling was utilised, since the researcher attempted to increase the generalisability of her study by drawing a sample that was as comparable to the population as much as possible (De Vos, 2011). Participants were not asked to pay for the researcher's service.

1.4.3 Data Collection Instrument & Method

The one-group pre-test/post-test design was best suited to the quantitative section of the study in that it studies one group who will be tested before and after the intervention in order to determine whether change was facilitated (Bless & Achola, 2000). According to Beaulieu (2004), change can be expected after a single EMI session. Therefore, the researcher proposed that the intervention comprise a single EMI session of 45 minutes, as suggested by Struwig (2008). The Trauma Symptom Checklist (TSCYC) was the quantitative data collection instrument that was used. The TSCYC is a standardised report, completed by the parent/caretaker to test the existence of trauma symptoms in three to twelve year old children (Briere, 2005). The checklist describes a number of things that children often think, feel, or do, and responses are scored on a four-point scale depending how often the child experienced each event. The TSCYC has nine clinical scales, measuring constructs such as Atypical Response (ATR), Anxiety (ANX), Depression (DEP), Anger (ANG), PTS-Intrusion (PTS-I), PTS-Avoidance (PTS-AV), PTS-Arousal (PTS-AR), PTS-Total (PTS-TOT), Dissociation (DIS), and Sexual Concerns (SC). The TSCYC was administered prior to the intervention, and again two weeks after the intervention.

Semi-structured interviews with the parents/caregivers of the participants were carried out two weeks after the intervention, in order to gain a comprehensive representation of their perceptions regarding the reduction of trauma symptoms in the participants. The interview programme explained and described the different symptoms of trauma (as stated in the TSCYC) and then sought the parent/caregiver's perceptions regarding the change in trauma symptoms from pre- to post-EMI intervention.

1.4.4 Data Analysis

According to Treiman (2009) the Statistical Package for the Social Sciences (SPSS) is one of the most used and trusted tools for analysis of quantitative data. The SPSS was therefore used to capture the study's quantitative data. The Wilcoxon Signed Rank Test was used to compare the pre- and post-test scores of the TSCYC's different clinical scales. Significance was set at $p < .05$. The

qualitative data from the journals and interviews was analysed through content analysis. This technique allowed the researcher to define relevant categories to include (Hsieh & Shannon, 2005). In this study, the categories that were identified were similar to the TSCYC categories (Ezzy, 2002). Therefore, the themes included changes in the different symptoms, as listed by the TSCYC, namely ANX, ANG, DEP, DIS, PTS-I, PTS-AV, PTS-AR, PTS-TOT, and SC.

1.4.5 Reliability & Validity

In their study, Briere et al., (2001) reported that the eleven scales of the TSCYC have proven to be reliable as they effectively measure a client's exposure to a traumatic experience. The TSCYC's reliability is high because it incorporates two validity scales that assess for over-reporting and under-reporting of symptoms. The TSCYC's validity is high, based on an evaluation in four domains, which are scale inter-correlations, association with trauma, discriminant validity, and diagnostic utility for PTSD (Briere, 2005). The TSCYC also demonstrates good reliability and validity in studies conducted in the USA (Briere et al., 2001; Wherry, Graves & Rhodes King, 2008); however, it has not been validated in South Africa. This may be a possible limitation of the study, due to the possibility that the participants may not be familiar with TSCYC concepts. However, the researcher addressed the limitation by explaining all concepts and terms to the participants before they completed the TSCYC in order to ensure comprehension of the concepts and terminology.

The researcher ensured the trustworthiness of the qualitative data through persistent observation and journaling, triangulation of methods, and compiling an audit trail so that others could confirm the findings.

1.5 Ethical Considerations

The researcher completed the necessary EMI training through the Milton Erickson Institute of South Africa (MEISA) and is suitably qualified to implement the EMI intervention. This training involved a four-day workshop where the origins, theory and application of EMI were discussed in detail. The workshop furthermore entailed practical sessions where the researcher had the opportunity to practice using this technique on fellow colleagues under the supervision of the EMI trainer.

1.5.1 Informed Consent and Child Participant Assent

The researcher obtained written informed consent from the relevant guardians of the participants who were minors. Greene and Hogan (2005) emphasise that children, like adults have the right to be

informed about the nature of the research. They continue by stating that children also have the right to give their assent on whether or not to participate. Children are also more likely to participate in a positive manner if their rights are acknowledged and respected (Fraser, Lewis, Ding, Kellet & Robinson 2005). Therefore, the researcher was sensitive to the children's responses and assents, and simultaneously respected their right to autonomy. (See Appendix A and Appendix B).

1.5.2 Voluntary Participation

The researcher ensured that the participants and their caregivers knew that their participation was voluntary and that they could withdraw from the study at any time. Fisher (2004) emphasises that voluntary participation includes that:

- i) participants who form part of the caseload must be ensured that dissent will not result in withdrawal of ongoing services; and
- ii) participants who are not part of the caseload must be informed of alternative non-experimental alternatives if they decide to withdraw.

Due to the fact that the researcher only selected participants who did not form part of her existing caseload, she ensured that the participants understood that there would be no negative consequences if they decided to withdraw from the study or give negative feedback in terms of the treatment.

1.5.3 Explaining the Purpose and Nature of the Study

The researcher explained and provided information regarding the purpose and nature of the study. According to Fisher (2004), in the case of children this includes allowing them the opportunity to ask questions about the purpose, duration, compensation, procedures, potential risks, and benefits of the study. Therefore, the researcher explained the EMI theory, the protocol that was followed, and the process of the study to the participants and their caregivers. The first part required the parent/caregiver to fill in the TSCYC. The child participant then received a 15-20 minute EMI treatment session (this reduced treatment time is explained in Chapter 3). After a two-week waiting period, the TSCYC was completed again in order to determine whether or not there was a reduction in symptoms. The second part of the study involved a semi-structured interview with the parent/caregiver in order to explore their perceptions regarding the possible reduction of trauma symptoms. It was explained that there have been no documented risks involved in the treatment of EMI (Beaulieu, 2004; Struwig, 2008). However, due to the sensitive nature of the problem (exposure to trauma), the intervention may evoke painful and overwhelming emotions, and it was advised that in cases where participants might require additional counselling, the researcher would assist them without charge. By doing this, the researcher ensured the well-being of the child.

1.5.4 Confidentiality

Confidentiality forms the foundation for ethical research (Farrell, 2005). The information obtained remained strictly confidential and anonymous. The researcher also explained the limits of confidentiality as stipulated by the South African Council for Social Service Professions (SACSSP) to the participants and their caregivers. The data was stored appropriately and was only handled by the researcher. Furthermore, because the proposed study was exploratory and involved therapeutic interventions with children, the researcher submitted an application to the Ethics Committee for approval.

1.5.5 Objectivity

The researcher occupied the role of both researcher and practitioner. In order to ensure that she remained objective, the researcher was reflexive during the data collection by recording her thoughts and feelings in a journal.

1.5.6 Leaving an audit trail

The researcher kept all the data collected in a safe at her office. The key to this safe is only available to the researcher and her office manager. The data was kept safe and will be kept for a period of 5 years, where after it will be destroyed

1.5.6 Ethical Clearance

The Ethics Committee of the University of Johannesburg provided the study with Ethical Clearance (See Appendix E).

1.6 The Structure Of The Study

This study consists of five chapters. Chapter 1 serve as a general introduction and outline of the study. Chapter 2 provides an in-depth literature study regarding the impact of childhood trauma, the symptoms of trauma, and EMI. Chapter 3 focuses on the research methodology, and Chapter 4 discusses the findings of the study. In Chapter 5 the researcher brings the study to a close with conclusions and recommendations.

Chapter 2: Childhood Trauma And Eye Movement Integration Therapy

2.1 Introduction

Although the term ‘psychological trauma’ has enjoyed considerable attention in the past, it was only recently recognised that children and adults respond differently to traumatic events (Levine & Kline, 2007). It is evident that trauma remains a subjective experience (Beaulieu, 2004), which implies that what may be considered as insignificant by one individual may be traumatic to another. Early literature on children’s exposure to traumatic events describes the child as being relatively unaffected by, and disengaged from the experience, implying that the child remains unaware of the traumatic effect of the event (Evans, Davis & DiLillo, 2008). However, this viewpoint has recently been rejected as contemporary research indicates that childhood trauma may lead to neurobiological changes in the brain, emotional problems, and psychological disorders (Weber & Reynolds, 2004). Despite the interest in, and focus on the phenomenon of trauma, little has been written about the prevention and treatment thereof, and a need for brief and effective treatment strategies exists (Levine & Kline, 2007).

This chapter focuses on the various definitions of trauma. The impact of trauma on neurobiology is explained in order to show how EMI, a neurotherapy, may be promoted as an intervention strategy. The different symptoms of trauma, as set out by the TSCYC, is discussed comprehensively to illustrate further the impact of trauma on children. Due to the fact that EMI is a relatively new intervention, a brief discussion focus on the protocol and aspects related to the EMI session. Additionally, the symptoms of trauma and the theoretical underpinnings of EMI is discussed. The chapter then concludes with the trauma spectrum relevant to South African children.

2.2 Defining Trauma

There are different definitions of trauma. Scaer (2005, p. 5) defines trauma as an “experience that involves a threat to life while the victim is in a state of relative helplessness”. However, healthcare professionals use the DSM-V criteria to determine whether or not an event is traumatic. This definition states that “an event is traumatic if both of the following conditions were present: i) The person experienced, witnessed or was confronted with an event that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others, and ii) The person’s response involves intense fear, helplessness, or horror” (APA, 2013, p. 463).

Although not all traumatic experiences lead to the development of Post Traumatic Stress (PTS), the criteria set out for the purpose of this study require the development of PTS; therefore it is necessary to provide a definition thereof. The APA (2013, p. 463) defines Post Traumatic Stress Disorder (PTSD) as an anxiety disorder that may present subsequent to an incident that an individual experienced as stressful and overpowering. It includes having intrusive flashbacks, nightmares, or avoidance of any reminders of the event. Ruback and Thompson (2001) elaborate on this definition by stating that four symptoms must be present in order to diagnose PTSD. These symptoms are re-experience, hyper-arousal, avoidance, and numbing. Re-experience often occurs in the form of nightmares or flashbacks of the event or situation. Hyper-arousal is described by Scaer (2005) as a state of distress experienced inside the body and mind that an individual cannot seem to get to subside. This results in a lower fear threshold. Consequently, when hyper-aroused, an individual may perceive something as a threat that would normally not be considered as such. Scaer (2005) further points out that hyper-arousal disturbs the individual's sleeping patterns, concentration, and sense of safety and security. The individual tries to restore homeostasis, which then leads to the development of the third and fourth symptoms, namely avoidance and numbing.

Much progress was made by the DSM-V definition that now broadens the scope of trauma from 'a life-threatening event' to include death, threat of death, actual serious injury or a threat of serious injury, or actual or threatened sexual violence. This new definition also encompasses second-hand and direct exposure. It adapts the criteria of intrusive symptoms, dissociative reactions, and avoidance of stimuli specific to children, for example, re-enactments of trauma in play, and frightening dreams without recognisable content (APA, 2013). However, Ozer and Weiss (2013) criticise this definition, stating that it generalises how people respond to situations, and does not include individual responses. The researcher agrees with Beaulieu (2004), who maintains that an event should be considered traumatic if the individual or his/her significant others consider it to be so. Therefore, focus is placed on the individual's perception of an event, rather than the reality thereof.

Based on the above, the researcher defined childhood trauma as a child's reaction to or experience of any event or stressor that is perceived by the child, or his/her significant others, as being traumatic in that it overpowered the child's ability to cope, and therefore altered his/her original physical, cognitive, emotional, and psychosocial functioning. Therefore, for the purpose of this study the type of trauma experienced by the child was irrelevant. What was relevant was that the child has experienced trauma. Additionally, in order to explain how a neurotherapy like EMI might be used to reduce the impact of trauma, it is not only important to understand how trauma is

defined, but also how it affects the brain. The following section focuses on the neurobiological impact of trauma on the developing brain.

2.3 The Neurobiology Of Trauma

EMI is a neurotherapy that aims to reduce trauma symptoms through the integration of trauma memories. In order to understand how EMI can be utilised to facilitate change, it is important to understand the neurobiological effects of trauma. Trauma is thought to affect the individual at various levels. Weber and Reynolds (2004) point out that trauma is considered to be not only a psychological event, but also a physiological experience. Therefore, when a child is exposed to a threatening situation, several biological systems and neurotransmitters are involved in determining the child's reaction (Briere & Scott, 2006). A discussion of all the involved systems is beyond the scope of this study, and thus only the central systems will be discussed.

2.3.1 The Brain Structures Involved in a Trauma-Related Reaction

The brain comprises of a left and a right hemisphere, which are further divided into three main regions, namely the forebrain, the midbrain, and the hindbrain (Mason, 2011). The forebrain is mostly concerned with cognitive, motor, and emotional behaviours, and is thus associated with the responses that occur in stressful situations (Charney & Nestler, 2004).

The forebrain consists of the following structures, the “cerebral cortex, limbic system, thalamus, and hypothalamus” (Mason, 2011, p. 45). During her literature study the researcher observed that despite considerable speculation regarding the structures in the forebrain, the amygdala and hippocampus were always included. These limbic system structures form a “network that contributes to emotion, learning and memory” (Struwig, 2008, p. 30). The cerebral cortex, though not part of the limbic system, is also relevant due to its role in the processing of sensory material (Mason, 2011). The locus cereuleus is located in the pons of the brain stem and plays a role in psychological responses to stress (Donegan, Sanislow, Blumberg, Fulbright & Lacadie, 2003).

When faced with a threatening situation the brain structures that play a role are the amygdala, hippocampus, cortex, and locus cereuleus. In order to understand how these structures function during threatening situations, it is important to understand how they function under normal conditions.

The amygdala is the structure in the brain involved in emotion and survival behaviour (Breedlove, Rosenzweig & Watson, 2007). It processes emotions and determines where memories are stored in

the brain. The amygdala is functional from birth and begins to provide emotional importance and meaning to stimuli that are related to affective states (Weber & Reynolds, 2004). Furthermore, it modulates attention or vigilance, the valence of events/objects, and perceives the emotional expressions of others (Donegan et al., 2003).

The hippocampus is responsible for memory formation and behaviour learning (Weber & Reynolds, 2004). Unlike the amygdala, the hippocampus only starts to function at age two, and fully mature at age five (Weber & Reynolds, 2004).

The cerebral cortex is the layer of the brain referred to as the grey matter. It is divided into four lobes, namely “the parietal lobe, the frontal lobe, the occipital lobe, and the temporal lobe” (O’Brian, Kennedy & Ballard, 2008, p. 89), which all have different functions. The orbito-frontal cortex is located directly behind the eyes, in the frontal lobe and is responsible for the cognitive process of decision-making (Basavanthappy, 2007). Hence the orbito-frontal cortex regulates conscious and unconscious “survival behaviour” (Scaer, 2005).

The locus cereuleus in the brain stem is a noradrenaline structure that secretes the hormone adrenaline, performing a pivotal role in arousal and wakefulness (Donegan et al., 2003).

From the above section it is evident how these neurological structures influence individuals’ responses to trauma. In the following section, the neurological reaction to trauma, together with how trauma memories are formed, will be discussed.

2.3.2 The Brain and Trauma Reactions

Emotional or physical trauma affects the individual at various levels. Weber and Reynolds (2004) point out that emotional trauma is not only considered to be a psychological event, but is also a physiological experience. The researcher finds Van der Kolk’s (1988) animal model of shock helpful and accurate in explaining how human beings adapt to threatening situations. Van der Kolk (1988) explains that animals respond with a “fight, flight or freeze” response when they are faced with a threat. Human beings react in a similar fashion when they perceive that they are in danger. This can also be referred to as the survival mode, and it is nature’s shortcut designed to help humans and animals to react as quickly as possible when faced with danger.

A human being goes into survival mode when faced with trauma. The neurobiological response to the trauma that is experienced or perceived, is that the locus cereuleus in the brain evaluates the

situation for its threat-based content and sends a message to the amygdala (Delima & Vimpani, 2011). The amygdala links emotional content to the stimuli received from the locus cereuleus (Weber & Reynolds, 2004). After linking the emotional content to the stimuli, this information is sent to the hippocampus, where cognitive meaning is assigned to the information (Weber & Reynolds, 2004). From the hippocampus this information is relayed to the orbito-frontal cortex and the Hypothalamus/Pituitary/Adrenal (HPA) axis, which is the body's hormonal response (Scaer, 2005) that is activated. The relevant hormones are then secreted to enable the body's stress response and sent to the cerebral cortex that organises the survival behaviour.

When survival relies on a quick response, this fast pathway allows the amygdala to respond directly to information from the sensory modalities before it is filtered, interpreted, and intercepted by the orbito-frontal cortex. The orbito-frontal cortex can be considered the master regulator of survival behaviour. According to Weber and Reynolds (2004), the orbito-frontal cortex filters and interprets the stimuli and activates the body's endocrine response. An example of this process would be an individual who was attacked by a snake. A week later the same individual walks in a park and sees a tree branch on the ground, that resembles a snake. Before the hippocampal-cortical can interpret the information, the amygdala reacts, the fight or flight response takes over, and the individual suddenly runs away thinking that it's a snake. Figure 1 below illustrates this trauma pathway.

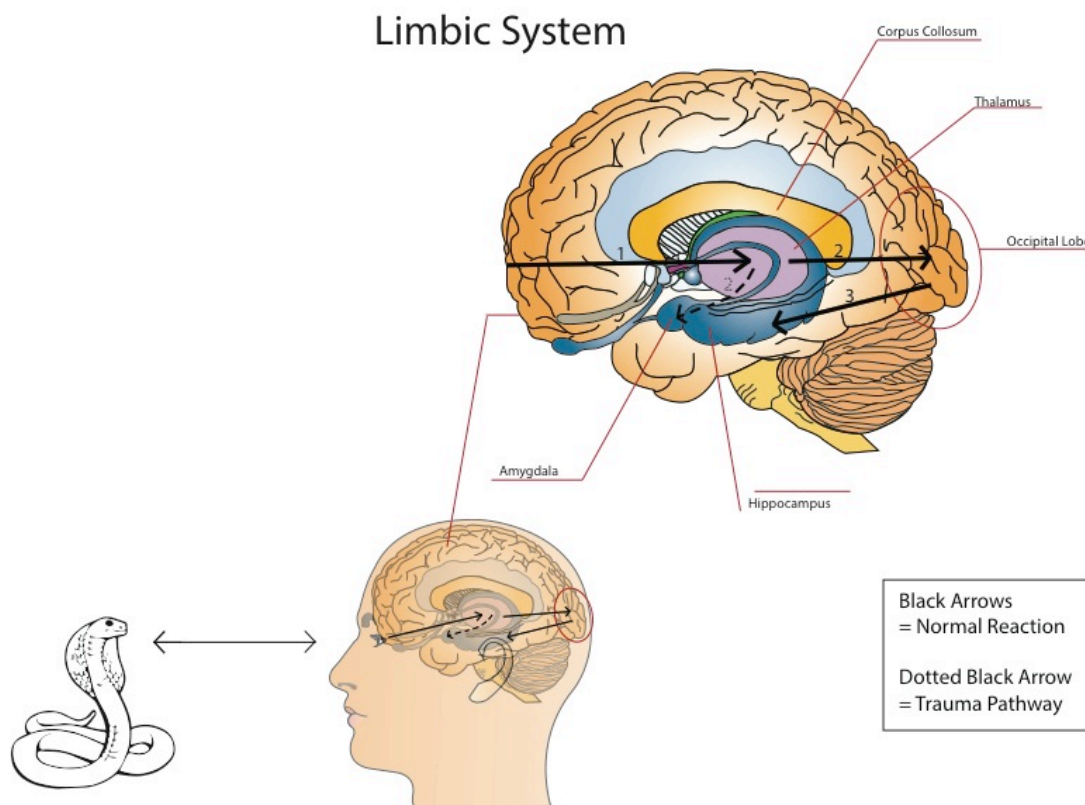


Figure 1: The trauma pathway

Scaer (2005) makes an interesting observation regarding the way in which trauma is stored in the body when he points out that animals recovering from a 'freeze' response often continue with movements that would be associated with an escape response, for example when an animal lying on the ground continues to make running movements. There are a number of terms for this response, but the researcher prefers Scaer's (2005) term, which is "freeze discharge". It is in the absence of this "freeze discharge" that the adrenaline build-up associated with the threat and attempted escape remain confined to the body and brain, leading to many symptoms that are associated with PTSD (Scaer, 2005). In other words, people who are traumatised cannot heal from the trauma unless they are enabled to complete the behaviours that they were unable to complete at the moment of the trauma. This intense arousal is then stored in the body and unless it is treated, it can result in PTSD, behavioural and emotional problems.

2.3.3 Memory and Trauma

Bjorklund (2005) describes memory as the process during which information is stored in and retrieved from the mind. He states that previously memory was considered to be unitary, and that the idea that there are multiple memory systems was only accepted later. Two memory systems that are involved in the case of traumatic memory are explicit/declarative memory and implicit/non-declarative memory (Cloninger, 2009). These two memory systems need to be connected for effective functioning to take place.

Explicit/declarative memory involves the conscious recall of experiences and is closely linked to the language system (Scaer, 2005). In other words, explicit memory involves ideas and experiences of which a person is consciously aware. The hippocampus develops in the second year of life and is responsible for explicit/declarative memory processes (Squire, 2004). This explains why individuals cannot consciously recall experiences that occurred prior to the age of two years.

According to Peres, McFarlane, Nasello, and Moores (2008), implicit or non-declarative memory is an unconscious process that eludes language. It does not follow a narrative and is thus considered to be speechless. It refers to things that were learnt once and that can now be repeated without consciously thinking about them, like riding a bicycle. Scaer (2005) maintains that the amygdala is responsible primarily for storing the implicit/non-declarative memory.

The implicit and explicit memory systems are usually corroborated (Kaplow et al., 2006). When the amygdala is over-stimulated due to extreme stress, the hippocampus is suppressed (Teicher et al., 2003). In such a case, the implicit and explicit memories become fragmented, which result in the

implicit and explicit memories becoming detached from one another, leaving the traumatic memory fragmented and full of gaps. In order for an individual to recover from the trauma, integration and processing of the implicit and explicit memories are required (Beaulieu, 2004).

The above section highlighted the effects of trauma on a person's neurobiological systems. This information is important to promote our understanding of why EMI can be promoted as an effective intervention for trauma treatment. However, EMI can only be effective as trauma intervention if trauma-related symptoms have been identified and measured (Struwig, 2008). Hence, the different symptoms of trauma will be discussed in the following section.

2.4 Symptoms of Early Childhood Trauma

Childhood trauma has a significant influence on the overall functioning of children (Perry, Pollard, Blaickley, Baker & Vigilante, 1995). The relevant literature contains significant evidence that trauma detrimentally affects the developing child at various levels (Goldman, 2005; Kagan, 2004). Perry, Pollard, Blaickley, Baker and Vigilante (1995) report that children are most vulnerable to the effects of trauma during the developmental phase of infancy and early childhood, and that trauma has a negative effect on several developmental processes of very young children. Nemerhoff (2004) points out a correlation between childhood trauma and neuropsychiatric symptomology in adolescence and adulthood. Literature further reports on permanent changes in the developing brain after a traumatic incident (Solomon & Siegel, 2003). Stover and Berkowits (2005) state that there are reported cases where young children have experienced prominent personality changes after traumatic experiences. These prominent effects may be because the brain is most sensitive to environmental input and as a result, most vulnerable to stress during early childhood (Kay, 2009).

Therefore, it can be argued that during early childhood the effects of trauma can have a detrimental effect on developmental processes such as emotion regulation, attachment formulation, and autobiographical memory development (Ogle, Rubin & Siegler, 2013).

However, it is imperative to understand that not all children respond in a similar way to trauma, or even develop similar symptomology. Kraminer, Meyr, Stein, Grimsrud, Seedat and Williams (2008) maintain that a variety of individual, familial, and societal factors play a role in a child's resiliency to trauma. These factors include the age of the child, the meaning assigned to the event, and the child's mental efficiency (Kraminer et al., 2008; Monochino, 2010; Patel, Flisher, Nikapota, Malhotra, 2008).

Children may present with a variety of symptoms after a traumatic experience. According to Briere et al. (2008), the severity of the symptoms is predicted by the severity, intensity and amount of trauma experienced. Levine and Kline (2007) state that young children have limited motor and expressive language skills, and that resultantly their expression of their symptoms may differ from that of older children. Furthermore, development in the early childhood phase happens at a rapid rate, and if trauma symptoms persist, developmental milestones may be delayed (Levin & Kline, 2007). Thus, it is essential that trauma symptoms be assessed and treated during this crucial phase of development.

The Trauma Symptom Checklist for Young Children (TSCYC) is a parent/caregiver self-report questionnaire that assesses the presence and intensity of six different symptom domains, namely Anger (ANG), Anxiety (ANX), Depression (DEP), Dissociation (DIS), Post-Traumatic Stress-Intrusion (PTS-I), Post-Traumatic Stress-Avoidance (PTS-AV), Post-Traumatic Stress-Arousal (PTS-AR), Post-Traumatic Stress-Total (PTS-TOT), and Sexual Concerns (SC) (Briere, 1996). The TSCYC was used as the quantitative instrument for this study and hence the different symptoms as listed by the TSCYC will be elaborated on.

2.4.1 Anger

Anger can be described as an emotion characterised by resentment towards someone or something (APA, 2001). Although anger is a normal way to release energy, excessive anger may be detrimental to both physical and mental health (APA, 2001). Anger in traumatised children may manifest in non-compliant behaviour, self-harming behaviour, unpredictable tantrums, or physical aggression towards other people or possessions (Cohen, Mannarino & Deblinger, 2008). Aggression may be expressed in young children through temper outbursts, tantrums, throwing toys, hitting, bullying, biting, or kicking (Levine & Kline, 2007).

2.4.2 Anxiety

There is a correlation between childhood trauma and the development of anxiety (Heim & Nemerhoff, 2001). The APA (2001) defines anxiety as an unpleasant emotion characterised by feelings of tension, worried or concerned thought patterns, and physiological changes such as increased blood pressure, dizziness, shortness of breath, sweating, or rapid heartbeat. Studies reveal that individuals who suffered maltreatment in childhood present with more symptoms of depression and anxiety in comparison to those with no history of abuse (Bufulco, Moran, Baines, Bunn & Stanford, 2002; Heim & Nemerhoff, 2001).

Young children often develop new fears or even avoidant behaviours as a result of trauma. They may express their anxiety by clinginess to a caregiver, becoming afraid of the dark/monsters/ghosts, exaggerated protests, or a barrage of questions in an attempt to gain a sense of safety and control (Levine & Kline, 2007). Furthermore, trauma affects the child's perception of the world as a safe place, which may result in the development of anxiety.

2.4.3 Depression

Studies display a significant link between childhood trauma and depression (Heim & Nemerhoff, 2001; Read, Van Os, Morrison & Ross, 2005). Depression includes “feelings of worthlessness, excessive guilt, recurrent thoughts of death or suicide, a lack of interest in daily activities, weight loss/gain, disturbances in normal sleep patterns, and a lack of energy” (APA, 2001, p. 308). Depression has a negative impact on the psychosocial functioning of a child, and is also linked to delinquent behaviours (Weisz, McCarty & Valeri, 2007). Children in different developmental stages may express depression in different ways. Children who show symptoms of depression during early childhood are less interested in play, show a decrease in overall energy, appear anxious, and may perform self-harming behaviours. They may also be irritable and aggressive, and may struggle to concentrate (Du, 2013). Therefore, even though the main symptom of childhood depression is a low mood, the social worker should be aware of the various ways in which it can manifest.

2.4.4 Dissociation

The phenomenon of dissociation has long been known as a mental reaction to psychological stress. “Dissociation involves a disruption in the usually integrated functions of consciousness, memory, identity and perception” (Cromer, Stevens, DePrince & Pears, 2006, p. 136). An extensive range of studies has established a relationship between trauma and dissociation in children (Cromer et al., 2006; Diseth, 2005; Kiesel & Lyons, 2001; Macfie, Cincetti & Toth, 2001). During early childhood a child assimilates experiences in order to develop an integrated personal history, perception of the world, and a sense of self. However, children who are traumatised in the early childhood phase of development may be unable to assimilate their experiences and consequently develop a fragmented sense of consciousness, memory, identity, and perception (Macfie et al., 2001).

The theory of structural dissociation explains dissociation as a divide between the “Apparently Normal Personality” (ANP) and “Emotional Personality” (EP) (Nijenhuis, Van der Hart & Steel, 2010). The EP repeatedly suffers from painful sensory reminders of the trauma and remains stuck in the traumatic experience, while the ANP is associated with avoidance of the trauma, detachment, numbing, and amnesia (Nijenhuis et al., 2010). Although they are part of the same individual, the

EP and ANP have different psychobiological variables, for example different ways of perceiving, relating, and responding to the world (Nijenhuis, Van der Hart & Steel, 2005). According to Putman's (1997) theory of a trauma-related developmental pathway to structural dissociation, young children are particularly vulnerable to dissociation. In young children, psycho-biological functioning together with the sense of self, are highly state dependent. The child's ability to integrate and navigate between different behavioural states depends on the development of certain brain structures that serve integrative functions (for example, the hippocampus and prefrontal cortex) and the attainment of skills to sustain and modulate different emotional states. Secure attachments with caregivers enhance the child's ability to cohere among different behavioural states. Thus, when a young child is traumatised, these psycho-biological processes are compromised and may render the young child incapable of integration between different states (Van der Hart, Nijenhuis, Steele & Brown, 2004). Structural dissociation can be divided into three levels, namely primary structural dissociation, secondary structural dissociation, and tertiary structural dissociation (Nijenhuis et al., 2005; Van der Hart et al., 2004).

Primary structural dissociation is dissociation in its simplest form. It involves a single ANP and a single EP, with the ANP as the dominant part of the personality. Primary structural dissociation encompasses uncomplicated forms of trauma-related disorders, such as basic acute stress disorder, PTSD, simple dissociative amnesia, and simple somatoform dissociative disorders (Nijenhuis et al., 2005; Struwig, 2008; Van der Hart et al., 2004).

Secondary structural dissociation involves a division beyond a single ANP and EP. In this case the EP is sub-divided and fixed in "attachment crying (the sad part often experienced as a child), avoidance of social rejection (the socially submissive 'happy' part), and the physical and relational defence (angry, fearful, submissive, frozen parts), with a single ANP that remains intact" (Nijenhuis, Van der Hart, & Steel, 2005, p. 910). Secondary structural dissociation usually develops due to persistent and complex trauma and characterises more complex trauma-related disorders, such as complex PTSD and Dissociative Disorders Not Otherwise Specified (DDNOS) (Struwig, 2008; Nijenhuis et al., 2005; Van der Hart et al., 2004).

Tertiary structural dissociation comprises the sub-division of both EP and ANP. This is the most complex form of dissociation and is characteristic of Dissociative Identity Disorder (DID), which is often co-morbid with complex PTSD (Van der Hart et al., 2005). Trauma in early childhood may prevent the development of an integrative pre-trauma personality, therefore leading to the development of more than one ANP (Van der Hart et al., 2004). Furthermore, the sub-division of

the ANP can occur during the traumatic experience or at a later stage, when features of daily life, replicate the traumatic experience and therefore reactivates the memories and emotions associated with the event. (Struwig, 2008; Van der Hart et al., 2005).

In summary, it is clear that dissociation is a complicated phenomenon and that the social worker has to identify and explore each dissociative part of the personality in order to construct the content for integration to take place.

2.4.5 Post-Traumatic Stress

The post-traumatic stress syndrome is a consequence of the inability of time to heal all wounds (Van der Kolk, McFarlane & Meisaeth, 2007). Despite the human ability to adapt and survive, traumatic experiences can alter all aspects of functioning to such a degree that the memory of one event can taint all other experiences. Even though most people who are exposed to a traumatic event are able to continue with their daily lives without being haunted by the incident, there are those who cannot seem to integrate the traumatic experience and they then go on to develop the symptoms of PTS. Individuals differ in respect of their responses to trauma, which may include symptoms of a variety of mental disorders, for example, Post Traumatic Stress Disorder (PTSD), acute stress disorder, general anxiety disorder, depressive disorders, or adjustment disorders (Pervanidou, 2008; Van der Kolk et al., 2007). In order to make a diagnosis of PTSD, four symptoms should be present, namely re-experience, hyper-arousal, avoidance, and numbing (Ruback & Thompson, 2001; Beaulieu, 2004). There is no set pattern for the development of these symptoms and they may develop in any combination. The symptom of re-experience often occurs in the form of nightmares or flashbacks to the event or situation. Another important aspect to bear in mind in the case of PTSD is that the onset of the symptoms must be four weeks after the incident, and that the PTSD symptoms must be present for more than one month after the traumatic event (APA, 2001). The onset and duration of the symptoms set a diagnosis of PTSD apart from a similar disorder called acute stress disorder. In the case of acute stress disorder, the onset of the symptoms occurs within weeks after the incident (Sadock & Sadock, 2012).

For the purpose of this study intrusive/re-experience, hyper-arousal, and avoidance symptoms will be discussed in the following section, since they are the symptoms measured by the TSCYC (Briere, 1996).

2.4.5.1 Intrusive/Re-experience Symptoms

Intrusive or re-experience symptoms are one of the key symptoms that develop after a traumatic event. They often present as flashbacks or nightmares and visual, auditory, physiological, and emotional responses to the trauma (Kleim, Bryant, Graham & Ehlers, 2013). These intrusive symptoms occur spontaneously, and the individual is often unaware of what might have triggered the re-experiencing. Individuals who have experienced trauma frequently perceive these intrusions as threatening and either attempt to avoid any reminders of the event, or are mobilised to seek help (Laposa & Rector, 2012).

2.4.5.2 Hyper-arousal Symptoms

Hyper-arousal is described as a constant state of abnormal activation. Scaer (2005) describes hyper-arousal as a state of distress inside the body and mind that an individual cannot seem to subdue. Hyper-arousal results in a lower fear threshold, and it also leaves the individual vulnerable to other life stressors (Kendall-Tachett, 2000). In other words, the brain becomes threat-sensitive. The trauma is stored in the body, which results in the body over-reacting when facing of a new stressor. Consequently, when hyper-aroused, an individual may perceive something as a threat that usually would not be considered as such. In children, hyper-arousal may present in sleep patterns, difficulty with concentration, startle responses, and intrusive thoughts (Kendall-Tachett, 2000; Scaer, 2005).

2.4.5.3 Avoidance Symptoms

Avoidance symptoms often develop as a result of the intrusive and hyper-arousal symptoms. Avoidance can take two forms:

- i) internal avoidance, which is an attempt to avoid distressing memories, thoughts or feelings associated with the event, and
- ii) external avoidance, which includes avoiding external reminders of the event, for instance people, places, activities, conversations, and objects (APA, 2013).

It is critical to understand that children may express their PTS symptoms in different ways, depending on the event, the severity and duration thereof, and the child's developmental age (Carrion, Weems, Ray & Reis, 2002; Levendosky, Huth-bocks, Semel & Shapiro, 2002). In early childhood, children may express their symptomology through play, drawings, and stories, and may display various symptoms, including fears unrelated to the event (for example monsters), separation anxiety, inattentiveness, impulsivity, withdrawal, and regressive behaviours (Carrion et al., 2002; Levendosky et al., 2002; Vickerman & Margolin, 2007; Wherry et al., 2008).

2.4.6 Sexual Concerns

During childhood, children internalise experiences of self and self in relation to others (Spies, 2005). This implies that children will process experiences and attach meaning to them in terms of how they relate to the self. Thus, the child will internalise certain messages to create an internal working model, which will ultimately determine how he or she responds and relates to others. Many children who have been sexually abused, raped, or exploited may display a wide array of sexual behaviours that might cause concern. Children who display inappropriate sexual behaviour may be reacting out of their own victimisation (Kellogg, 2005). Literature suggests that behaviour often displayed by sexually abused children includes loss and powerlessness, low self-esteem, anger and hostility, guilt and shame, avoidance of intimacy, pseudo-maturity or developmental regression, self-destructive behaviours, and/or inappropriate sexual behaviour (Kellogg, 2005; Spies, 2005). Young children may display behaviours indicative of preoccupation with sexual behaviours, repetitive sexual behaviours like masturbation, compulsive sexual play, developmentally inappropriate knowledge, and interest in sexual activities (Levine & Kline, 2007; Spies, 2005).

Children may develop a variety of symptoms after exposure to a traumatic event. These symptoms affect not only their neurobiology, but also their emotional, behavioural, and social functioning. Thus, it is important for health care professionals to be equipped with techniques and interventions that can help reduce these effects of trauma. Even though trauma is a universal phenomenon, its causes may differ from country to country. Each country has unique challenges that might make its population vulnerable to trauma. Therefore, in the following section, the researcher will highlight some aspects in the South African context that may create vulnerabilities for trauma.

2.5 Trauma in South Africa

Trauma is a universal phenomenon that is not confined to space or time. It can take on a variety of forms, such as natural disasters, car accidents, crime and violence, and physical illness or injury. Like all other countries, South Africa has its problems. The country is confronted by poverty, HIV/Aids, and a high incidence of crime and violence, which leaves its citizens, and especially the children, vulnerable to trauma. The primary causes of trauma in South Africa will be discussed in the following section.

2.5.1 Poverty

Despite significant changes in post-apartheid South Africa, a number of socio-economic issues still require attention. According to Statistics South Africa (2013), 31.3% of the South African population currently lives below the poverty line. This is a matter of concern, considering the link

between poverty and mental health. Literature indicates that living in communities with a high poverty rate increases the risk of exposure to trauma (Evans & Kim, 2007; Klest, 2012). Poverty exposes children to ongoing trauma, and also places them at risk of becoming perpetrators of future victimisation (Kiser, 2007). Furthermore, children from poor communities also face possible traumatic physical and social risk factors, such as adults living dysfunctional lifestyles, family stressors, violence, abuse, neglect, financial instability, and substance abuse (Evans, 2004; Evans & English, 2002; Evans & Kim, 2007; Lupien, King, Meaney & McEwen, 2000). As a result, children living in poor communities may be constantly exposed to victimisation due to a higher than average population of perpetrators and other physical and social risk factors. This exposure to ongoing trauma and re-victimisation often results in the development of PTS (Spinnazola, Blaustein & Van der Kolk, 2005; Kiser, 2007), which could easily turn into a vicious cycle of victimisation and re-victimisation due to trauma if the trauma experienced by these children is not effectively treated.

2.5.2 HIV/AIDS

Even though many people may die from other illnesses and diseases, HIV/AIDS is highlighted in this section because of its high prevalence in South Africa. Despite the progress made with regard to the treatment of people diagnosed with HIV/AIDS, the number of deaths due to this virus is still increasing. With 5.6 million people living with HIV, South Africa is the country with the highest incidence of HIV in the world (AIDS Foundation South Africa, 2011). Of these 5.6 million people, approximately 270 000 have died from HIV-related illnesses. These statistics have devastating effects on the infected persons, and on their children. Children are often raised in households where family members are sick or have died of AIDS. Furthermore, the features and factors associated with the treatment of HIV/AIDS, for example syringes, hospitals, blood, and death often form part of children's living environment (Freeman, 2004) and undoubtedly exposes them to trauma.

2.5.3 Crime and Violence

During 2013 a total of 2 217 862 crimes were reported in South Africa. These included 599 633 crimes of contact (crimes against a person), 126 936 contact-related crimes (arson or malicious damage to property), 563 114 property-related crimes, 9 988 car hijackings, 34 892 robberies and 2 745 cases of neglect and ill-treatment of children (Statistics South Africa, 2013). International and national studies show that being a victim or even witnessing a crime or violence can lead to negative outcomes and difficulties in functioning (Kaminer & Eagle, 2010). Between 2001 and 2013 there was a progressive increase in crime in South Africa (Crime Stats SA, 2013), which has resulted in a large percentage of the population, including children, possibly suffering from symptoms of PTSD (Kaminer & Eagle, 2010).

In summary, the unique challenges that confront South Africans, such as poverty, crime, violence, and HIV/AIDS make them particularly vulnerable to trauma-inducing events. This is supported by the South African Police Services report (SAPS, 2011), according to which an astounding total of 2 071 487 cases of serious crimes were reported during the year of reporting. Furthermore, studies indicate that between 5 300 000 and 5 900 000 people in South Africa live with HIV/AIDS (UNAIDS, 2011). These high statistics are concerning and further highlight the unique trauma spectrum in South Africa. Over time researchers have shown an interest in trauma, and with the increasing incidence of crime and violence in South Africa (SAPS, 2011), one can assume that there will be an increase in the number of people exposed to traumatic experiences. Ever since the inclusion of PTSD in the DSM-III (APA, 1987), the search for brief and effective treatment methods to successfully address psychological and physical distress has been widespread. Various therapeutic interventions are available for the treatment of trauma, including solution-focused therapy (Berg & Steiner, 2003), hypnotherapy (Wester & Sugerman, 2007), narrative therapy (White & Epston, 1990), and cognitive behaviour therapy (Beck, 2011). However, the researcher believes that many of these interventions that address trauma are time-consuming and do not produce lasting effects. Beaulieu (n.d.) adds that even though alternative therapies have been used to reduce stress symptoms, they have failed to produce lasting results. Recent studies on trauma and memory propose that traumatic experiences are stored in the temporal lobe that involves in memory, and are also stored as somatic sensations (Levine, Lazrove & Van der Kolk, 1999). This suggests that traumatic experiences are also stored in emotional affect states. Therefore, traditional talk therapies (which rely on verbal communication) may be unsuccessful in treating trauma when used on their own.

2.6 Eye Movement Integration Therapy

Since Eye Movement Integration Therapy (EMI) combines aspects of talk therapy with neurotherapy to treat traumatic memories, many therapists have exhibited profound interest in EMI, which is a modern and powerful treatment based on the idea that previously traumatic experiences are fragmented and restricted to the limbic system with the result that it is not processed in the way that other material is usually processed. The process involved includes unlocking previously suppressed information and passing it through to the conscious areas of the brain where it can be processed and integrated in a holistic manner. Beaulieu (2004) comments that it is this effect of integration and processing on a multi-sensory level, combined with the activation of positive memory, that results in the reduction of trauma symptoms. Although the treatment does not require much effort from the client, the therapist does need adequate training to perfect the technique and its accompanying movements.

2.6.1 Neurolinguistic Programming

EMI has its roots in Neurolinguistic Programming (NLP) and was influenced by the works of Milton H. Erickson, Fritz Perls and Virginia Satir (Bandler & Grinder, 1979). NLP can be described as a way of arranging and understanding how subjective experiences are processed and stored in the brain (Einspruch & Forman, 1985). Thus, it offers a way in which people can re-programme their brains to facilitate change.

NLP focuses on the link between how people represent their worlds in terms of language and neurology, and how these two systems interact to form behaviours (Struwig, 2008). The founding fathers of NLP, John Grinder and Richard Bandler (1979), determined that certain mental processes involved in storing information in different modalities and the brain can be affected by certain observable behaviours such as facial expressions, tone of voice, perspiration, heart rate, and eye movements, which they termed “accessing cues”. This led to further studies regarding eye movements by Andreas and Andreas (1989), which revealed a joint relationship between eye movements, sensory modes, and thought patterns. The realisation that eye movements can affect and change thought patterns led to the development of the EMI technique (Andreas & Andreas, 1989). Beaulieu studied under Steve and Connirae Andreas, and with their permission Beaulieu adapted and further developed the EMI technique (Struwig, 2008).

2.6.2 Eye Movements and the Brain

Although the idea that eye movements are related to internal thought patterns was first suggested by William James in 1890, it was only during a study in 1977 that Robert Dilts realised that eye movements are linked to cognitive and neurophysiological processes (Dilts, 1998). As a result of these studies, the following eye movement patterns were identified:

- i) “eyes up and left: non-dominant hemisphere visualisation, i.e. remembered imagery;
- ii) eyes up and right: dominant hemisphere visualisation, i.e. constructed imagery and visual fantasy;
- iii) eyes lateral left: non-dominant hemisphere auditory processing, i.e. remembered sounds, words, and tonal discriminations;
- iv) eye lateral right: dominant hemisphere auditory processing, i.e. constructed sounds and words;
- v) eyes down and left: internal dialogue or self-talk;
- vi) eyes down and right: feelings, both tactile and visceral; and
- vii) eyes straight ahead, but defocused or dilated: quick access of almost any sensory information, but usually visual” (Dilts, 1998, p. 33).

In view of the completed research, it is clear that empirical evidence indicates the link between certain eye movements and internal representational systems (Dilts, 1998; Beaulieu, 2004; Grinder, DeLozier & Bandler, 1977; Bandler & Grinder, 1979; Dilts, Grinder, Bandler & DeLozier, 1980; Struwig, 2008). Therefore, by using the 22 eye movement patterns identified by the EMI model, certain eye movement patterns adapted from Dilts's research, can access and change internal thought processes.

Even though this association between eye movements and thought patterns is accepted, our understanding and evidence regarding the precise neurological underpinnings of EMI are still lacking. Beaulieu (2004) speculates that binocular rivalry and inter-hemispheric switching may possibly explain the mechanisms of EMI. It is a well-researched fact that inter-hemispheric switching can occur under various conditions, including sleep-like behaviours, language, and binocular rivalry (Schmidt, 2008). Binocular rivalry is the term used to explain the process of alternating perceptual states after the presentation of different images to the eyes separately, which causes the eyes to compete for conscious perception (Pettigrew & Miller, 2000). However, in the case of certain psychological disorders there may be a delay in this inter-hemispheric switching. Pettigrew and Miller (2000) for example, noted that patients with bipolar disorder experience a delay in inter-hemispheric switching. Beaulieu (2004) speculates that this delay in inter-hemispheric switching also occurs during an overwhelming experience. It is speculated that EMI with its repetitive, smooth movements may restore communication between the hemispheres, resulting in the integration of the fragmented memories (Struwig, 2008).

2.6.3 EMI and Young Children

2.6.3.1 Smooth Pursuit Eye Movements

During wakefulness, conscious and unconscious mechanisms control our eye movements. This suggests a neurological complexity that is absent from eye movement during sleep (Beaulieu, 2004). Three basic types of eye movement occur during wakefulness, namely fixation, saccades, and smooth pursuits. Fixation is the action of focusing on a fixed point without deviation so that the image is focused on the region of the retina where vision is optimal (referred to as the fovea). This usually takes place in conjunction with saccades (Hollingworth, Williams & Henderson, 2001). Saccades are rapid movements of the eye to a new target. This can be either a conscious or an unconscious process (Carpenter, 1988). Smooth Pursuit Eye Movements (SPEM) involve following a mobile target so that the image remains on the fovea. All three of these eye movements are controlled by a complex set of interactions between the cortex, brainstem, and cerebellum (Suzuki,

Yamada, Hoedema & Yee, 1999). EMI utilises SPEM to access traumatic memories (Beaulieu, 2004).

According to Hofsten and Rosander (1997), SPEM increases with age. In their study, the authors concluded that the smooth-pursuit system is less mature in children. Whether or not this will influence EMI is yet to be determined. Struwig (2008) reported no challenges to this immature smooth-pursuit system in her study.

2.6.3.2 Attention and Concentration

Attention, which seems like a relatively simple and mindless act, is in fact a complicated construct. Attention can be defined as the ability to select and orient oneself in response to external stimuli, which is important if one wants to remain focused in order to achieve certain goals (Brownell & Kopp, 2007). An individual can pay attention in one or more modality, and in each modality attention has various components, for example decision-making and motor orientation (Essa, 2013). During EMI treatment the client is expected to follow the 22 eye movements with his/her eyes. This then requires the ability to pay attention mainly by using the visual modality. The age-appropriate expectation in terms of the child's ability to concentrate by using mainly the visual modality should be considered. Struwig (2008) recommended that when utilising EMI with children, the treatment should be reduced to approximately 30 minutes. Studies indicate that concentration increases with age, and that children between the ages of five and seven years should be able to concentrate for approximately 4-15 minutes (Goldberg, 2001; Essa, 2013; Palfrey, Levine, Walker & Sullivan, 1985). For this reason the researcher found a pilot study helpful in order to estimate the age-appropriate length of sessions.

2.6.4 Critique of EMI

Like many other exploratory techniques, EMI has received some criticism. Some practitioners are of the opinion that the exact mechanisms of EMI lack empirical validation, which would make it unethical to practice this technique on clients (De Villy, 2001). Adding to this is the concern of the lack of literature and knowledge regarding the science of EMI and how it brings forth change in patients (Russel, 2008). Still, however there are those practitioners who continue to believe in the technique stating that the results that they have experienced in their practice speak for itself (Dr. Hartman, personal communication, 3 August; Struwig, personal communication, 30 January, 2014). This is supported by Beaulieu (2004), who states that the understanding of the functional mechanisms of a procedure does not determine its usefulness.

From personal encounters the researcher found that some individuals speculate that although EMI may facilitate change in patients, this change may not only be ascribed to the EMI alone, but rather to other factors including the therapeutic relationship and other psychotherapy concepts. Beaulieu (2004), however states that there is a distinction between EMI therapy and alternative therapies in that during the EMI session the therapist does not assume the role of counsellor. During no part in the session does the therapist give advice or council the client. The therapist rather allows the technique to do the work, by tapping into the traumatic memory and facilitating the integration of new information. Dr W. Hartman (personal communication, August 3, 2012) confirms this by adding that the role of the EMI therapist is to facilitate the process, not to analyze or council. In this study therefore the researcher only conducted a single EMI session, in order to exclude any possible effects of a therapeutic relationship.

Despite the critique, the researcher is therefore of opinion that EMI may be a useful technique and its benefits should be further explored.

2.7 Conclusion

As a result of South Africa's high crime and violence statistics and some challenging socio-economic and health factors, trauma has become an expected part of life. From the above section it is clear that trauma has a devastating effect on children, in particular on the developing child. Symptoms such as anxiety, aggression, dissociation, PTS, and sexual concerns may lead to deteriorating the functioning of the child. Owing to the young child's lack of verbal ability to express him/herself adequately, a brief therapy that does not rely on verbal ability is required. EMI promises to provide a reduction in the symptoms of trauma after only one session. If this holds true, social workers will be empowered and enabled to assist many young children with trauma symptoms in a short period of time. This might contribute to the healthy emotional and psychological development of many children.

Chapter 3: Research Methodology

3.1 Introduction

Methodology forms the foundation of any research study. It can be considered the blueprint for the study, providing an exact outline of how the study will be conducted or executed. Therefore, methodology refers to the research process and how results are obtained (Greene & Hogan, 2005).

The purpose of the study was to explore the utilisation of EMI as an intervention in the treatment of trauma during early childhood. Since the intention was not to evaluate the effectiveness of EMI, but rather to explore its usefulness, the researcher followed an exploratory design. The one-group pre-test/post-test design was utilised for conducting the study. The design is simplistic in that it involves only one group with single measurements (De Vos, 2011). The group was measured prior to the administration of one EMI session, which was believed to be sufficient to result in a measurable change in trauma symptoms. Two weeks later the group's symptoms were re-measured, using the same instrument. The prescribed EMI protocol was followed, however based on the findings from the pilot study the length of the sessions were reduced to between 15 and 20 minutes, rather than the 30 minutes recommended by Struwig (2008).

Whereas Chapter 1 contained only a brief overview of the research methodology, this chapter provides a detailed discussion regarding the research paradigm, approach, research design, data gathering, population, sampling, and data analysis. The process of an EMI session is highlighted briefly since it is an independent variable in the study. The chapter concludes with a discussion of some of the ethical aspects that informed the researcher throughout the study.

3.2 The Research Design

According to Royse (2008), research designs can be divided into three main categories, namely exploratory designs, descriptive designs, and explanatory designs. In this study, an exploratory design was employed. Exploratory designs are employed when the researcher wants to gain new insights into a specific phenomenon in order to form hypotheses' (Babbie, 2007). This exploratory design was chosen as the student attempted to explore the usefulness of EMI in treating early childhood trauma. This choice was in line with Royse's (2008) argument that exploratory designs are chosen where the topic is relatively new. In the case of this topic, only one book about EMI specifically was published, and only one mini-dissertation was written about the utilisation of EMI in treating teenagers. Furthermore, information regarding the use of EMI when working with young

children is very limited. This lack of information may be because EMI is a relatively new field of intervention.

Seeing that the main purpose of this study was to explore the usefulness of EMI with young children who have been traumatised, this study employed mixed methods of both the qualitative and quantitative approaches. McRoy and Freeman (2005) define qualitative research as research that focuses on the participants' accounts, experiences, and perceptions. Therefore, it is the measure of that which is subjective to the participants and their experiences within the research process. The qualitative approach to research is concerned with "non-statistical methods" of data sampling (Fouche & Delpont, 2011). When a qualitative research approach is followed, the focus is on the perceptions and views of the participants since the researcher attempts to see and comprehend experiences and situations through the participants' eyes (Struwig & Stead, 2001). In contrast, quantitative research is more standardised and focuses on specific questions or hypotheses that remain constant throughout the study (Fouche & Delpont, 2011). Punch (2013) states that this approach takes scientific explanation based on universal laws while aiming to measure the social world objectively and predict and control human behaviour. Quantitative researchers obtain data from the participants only and avoid adding their own interpretations to the participants' experiences (Punch, 2013).

Thus a mixed-methods approach, as utilised in this study, involves combining aspects of both the qualitative and quantitative approaches (Greene & Hogan, 2005). The latter is still regarded as a "new" approach and remains a source of much confusion for many researchers (Leech & Onwuegbuzie, 2009). Johnson and Onwuegbuzie (2004, p. 17) provide a comprehensive definition of a mixed-method approach as "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study". Mixed-method approaches advocate the use of whatever methodological tools may be required in order to answer a specific research question (Johnson & Onwuegbuzie, 2004). Therefore, this design linked with the functionalist paradigm. A paradigm can be seen as a way in which the world is seen, in other words as a researcher's frame of reference of the social world (Greene & Hogan, 2005). The functionalist paradigm, also referred to as the social systems theory, focuses on providing explanations for various sociological concerns from a perspective that is inclined to be "realistic, positivistic, deterministic and nomothetic" (Burrell & Morgan, 1979, p. 22). This paradigm therefore seeks to understand the role of social problems and how they function in the wider society (Babbie, 2013, p. 37). It seeks to provide rational explanations for intangible and elusive social problems. Furthermore, it aims to provide practical solutions to problems

(Babbie, 2013). The researcher sought to determine how trauma affected various aspects of an individual's functioning, for example, symptoms of anxiety or depression, and how this impact could be reduced through the utilisation of EMI. From this stance, trauma may be considered as one system that influences other systems, therefore sharing similarities with the social systems' perspective. According to Ruben and Babbie (2008), this best fits the functionalist paradigm. In the case of this study, the researcher proposed to gain a practical solution (EMI) to a social problem (psychological trauma) by utilising a mixed-method approach.

3.3 Quantitative Component of the Study

3.3.1 Quasi-Experimental Design

A quasi-experimental design involves the selection of groups, without a random pre-selection process, on which a variable is tested. After the selection, the variable is compared between different groups, or over a specified period of time (Thyer, 2012). The researcher chose the one-group pre-test/post-test design for conducting her study. The design is regarded by De Vos (2011) as simplistic in that it involves only one group with single measurements. The group was measured before the administration of a single EMI session, which according to Beaulieu (2004) is sufficient to produce a measurable change in trauma symptoms. Two weeks after the EMI session, the same instrument was used to re-measure the group's symptoms. The prescribed EMI protocol was followed and the duration of the session was between 15 and 20 minutes, which is less than the 30 minutes recommended by Struwig (2008).

3.3.2 Data-Collection Method: Trauma Symptom Checklist For Young Children

The Trauma Symptom Checklist for Young Children (TSCYC) is a standardised, parent/caretaker report designed to test the existence of trauma symptoms in children aged between three and twelve years (Briere, 2005). Administration includes providing the parent/caretaker with a TSCYC Item Booklet and Answer Sheet. The Item Booklet describes a number of things that children often think, feel, or do, and the number of the entry that indicates how frequently each experience occurs must be circled on the answer sheet. Scoring is done on a scale of 1 to 4, with 1 indicating that the experience never happens, 4 indicating that it happens almost all the time, and 2 and 3 indicating that it happens either sometimes or often.

The TSCYC has eleven sub-scales, namely Response Level (RL), Atypical Responses (ATR), Anxiety (ANX), Depression (DEP), Anger (ANG), Post-Traumatic Stress Intrusion (PTS-I), Post-Traumatic Stress Avoidance (PTS-AV), Post-Traumatic Stress Arousal (PTS-AR), Post-Traumatic Stress Total (PTS-TOT), Dissociation (DIS), and Sexual Concerns (SC). Briere (1996) states that

since respondents often tend to indicate either the highest or the lowest frequency on checklists, the TSCYC has the RL and ATR scales in order to evaluate these tendencies. The remaining nine scales are abuse specific (e.g. PTS, DIS, and SC) or generic (e.g. ANG, ANX, and DEP). Details of the symptoms and scales of the TSCYC were discussed in Chapter 2.

The respondents in this study were exposed to different traumatic experiences. However, many measures and scales for childhood trauma are trauma specific (Struwig, 2008). The TSCYC's ability to determine the presence and intensity of trauma symptoms in young children, regardless of the type of trauma experienced, make it the best instrument for the purpose of this study. The TSCYC is a Level B instrument, which allows social workers administrative authority. The pre-test TSCYC was estimated to take approximately 30 to 45 minutes to complete, while the estimated time to complete the post-test was between 20-35 minutes (Struwig, 2008). (After conducting the pilot study, these times were reduced. This will be discussed in more detail later in this chapter.)

3.3.2.1 Reliability

According to Carmines and Zeller (1979), reliability refers to the consistency of a certain measure over time and across different cultures. In other words, reliability refers to how accurate and reproducible a test or technique is. For example, if two children are suffering from PTSD, both should score high on a test that measures trauma symptoms. If one child scores high and the other scores low, the measure is inconsistent and therefore unreliable.

In their study, Briere et al. (2001) report that the TSCYC's eleven scales display reliability and are associated with exposure to a traumatic experience. Furthermore, the incorporated scales that assess for over- and under-reporting of symptoms add to the TSCYC's reliability. It is further reported that the TSCYC's clinical scales have good to excellent reliability and high test-retest reliability (Briere, 2005).

3.3.2.2 Validity

Validity indicates whether an instrument measures what it was intended to measure (De Vos, 2011). In other words, if an instrument is considered valid, one can assume that it is sound. It is important for instruments to be valid to ensure that results are accurately interpreted and applied. It is also important to measure that which you intend to measure to ensure that your results will be usable in practice.

The TSCYC's validity was evaluated in four domains, namely scale inter-correlations, association with trauma, discriminant validity, and diagnostic utility for PTSD. Adding to this, the scales for PTS, DIS, and SC are supportive of the TSCYC's construct validity since it correlates with findings documented elsewhere in literature (McLeer et al., 1998). Findings have indicated that, based on these 4 domains, the TSCYC has a high validity (Briere, 2005).

Despite the evidence of the TSCYC's strong reliability and validity of the in the USA, the TSCYC's reliability has not yet been established in South Africa (Struwig, 2008). Although the possibility of participants not being familiar with the terminology of the TSCYC was anticipated to be a limitation of the study, the researcher addressed this by explaining all concepts and terms to the participants before they completed the TSCYC in order to ensure comprehension of the concepts and terminology.

3.3.3 Data Analysis: The Statistical Package for Social Science and the Wilcoxon Signed-Rank Test

Treiman (2009), states that there are a variety of tools to analyse quantitative data, but the Statistical Package for Social Science (SPSS) is one of the most popular and trusted tools. The SPSS was used to capture the quantitative data of the study. According to Singh (2007), the SPSS is user-friendly and wide ranging. This study had a small sample size that was not drawn from a normally distributed population, which implied the use of non-parametric statistics (Pett, 1997). To calculate the differences between the two-paired groups, the Wilcoxon Signed-Rank Test was selected. Cohen and Lee (2004), state that the results from this test are presented with regard to the size of the differences, and positive or negative ranks.

The following assumptions of the Wilcoxon Signed-Rank Test, allowed for it to be a suitable choice for this study: a) *“The data is paired observations from a single randomly selected sample, constructed either through matched pairs or through utilizing subjects as their own controls”*. In this study pre- and post-intervention differences in trauma symptoms were observed in the same sample of children. b) *“The data to be analysed must be continuous and at least ordinal in level of measurement, both within and between pairs of observations”* Pett (1997, p. 115). According to De Vos (2011), the data in this study is ordinal as it is ranked according to magnitude. Items on the TSCYC are rated on a 4-point scale ranging from 0 (never) to 3 (almost all of the time), but are summarised to yield short scales that range from 0 to 3 (Briere, 1996).

Based on the above assumptions, it is evident that the Wilcoxon Signed-Rank Test was the best suited for the analysis of the study's quantitative data.

3.4 Qualitative Component

3.4.1 Data-Collection Method: Semi-Structured Interviews and Journal Entries

Interviews offer opportunities to explore individuals' experience of the research. Therefore, semi-structured interviews with the parents/caregivers were selected as a valuable way to gain insight to their experiences of the EMI treatment. De Vos (2011) maintains that interviewing is the predominant mode for qualitative data collection. The two main forms of interviews are unstructured interviews and semi-structured interviews. The selection of the interview form may be determined by the researcher's objective (Terrblanche & Durheim, 2006). A semi-structured interview was conducted with the parent/caregiver of each participant two weeks after the EMI intervention and once the post TSCYC had been completed. Semi-structured interviews are used when the researcher wants to obtain an in-depth account of the participants' experiences/perceptions regarding a specific topic. The semi-structured interview is more focused as it contains a set of predetermined questions on an interview schedule that will guide the researcher (De Vos, 2011). The interviewing schedule that was used for this study focused on the six sub-scales measured by the TSCYC, namely ANX, ANG, DEP, DIS, PTS and SC. This interview schedule was used to triangulate the data gathered from the TSCYC (see Annexure C).

3.4.1.1 Journal Entries

Jones (2009) defines reflective practice as the action during or after an event in order to examine professional activity. In other words, reflection is a process of stepping back and consciously thinking about thoughts, feelings, and actions in order to learn from them. Journal-writing or reflective writing forms part of qualitative data collection and is thus an important aspect of research methodology (Morrow, 2005). Journal writing allows the researcher to record his/her thoughts, feelings, experiences, and observations. During this study the researcher used journal-writing after the EMI sessions had been conducted. These entries contained details about her thoughts, observations, shortcomings, speculations, and recommendations to be considered during the session with the next respondent. These entries can be seen in Annexure D.

3.4.1.2 Trustworthiness and Credibility of Qualitative Instruments

The results of qualitative studies are often doubted, and it is the researcher's obligation to convince the reader of the research's trustworthiness (Pitney & Parker, 2009). Qualitative researchers ensure the overall trustworthiness of their data by addressing issues of credibility, transferability, and

dependability (Royse, 2008). The concept of credibility refers to whether or not the findings of the study are credible (Pitney & Parker, 2009). According to Royse (2008), credibility refers to the researcher's ability to provide as much information as possible when describing the context and research findings, to allow readers to apply the findings to their particular contexts in the best way possible. Dependability is the final aspect of trustworthiness and refers to the clarity and appropriateness of research processes (Pitney & Parker, 2009). Guided by the suggestions made by Pitney and Parker (2009), and Csiernik, Birnbaum and Pierce (2010), the researcher employed the following strategies to ensure the trustworthiness of the qualitative data.

- *Prolonged Engagement*

While collecting qualitative data, the researcher is expected to develop an in-depth knowledge of the phenomenon being researched (Csiernik et al., 2010). This requires the researcher to spend an extensive period of time in the particular setting. In the case of this study, the researcher ensured that she is adequately trained in the EMI technique and well informed in terms of trauma in early childhood.

- *Persistent Observation*

According to Csiernik et al. (2010), persistent observation demands that the researcher observe the phenomenon being studied and make adequate notes to ensure depth of data. The researcher made use of reflective journaling to acknowledge her central involvement in the study. This also allowed her to reflect on each participant's trauma, experience, and EMI process.

- *Triangulation*

Triangulation refers to a process that ensures that multiple data sources are used to explore the same aspect (Csiernik et al., 2010). Since this is a mixed- method study, data gathered by way of the quantitative (TSCYC) and qualitative methods (semi-structured interview and journal entries) could be validated.

- *Leaving an Audit Trail*

Leaving an audit trail addresses both the dependability of the data and allows others to confirm the findings of the study. The researcher kept all the data collected in a safe at her office. The key to this safe is only available to the researcher and her office manager. The data will be kept safe for a period of 5 years, where after it will be destroyed.

The abovementioned strategies indicate the researcher's effort to ensure the trustworthiness and credibility of her qualitative data.

3.4.2 Data Analysis: Content Analysis and Journal Entries

Researchers can make use of a variety of techniques to analyse their qualitative data. The researcher made use of content analysis to analyse the data from both the semi-structured interviews and the journal entries. Content analysis is one of the most traditional approaches to analysing verbal data in a rich, systematic, objective, and quantitative manner (Clarkson, 1998; Hsieh & Shannon, 2005). The aim of content analysis is to identify units of meaning that can be grouped into certain quantifiable categories based on frequency of occurrence (Clarkson, 1998). The researcher identified the categories for the interview while compiling the interview schedule. Since the mixed-method approach was followed, the categories that were identified were similar to the sub-scales of the TSCYC, namely ANX, ANG, DEP, DIS, PTS and SC.

The same categories were used for the analysis of both the interviews and the journal entries. Some children reported their experiences to the researcher and therefore these experiences together with the researcher's observations were documented. Other themes that focus more on the EMI process were also identified. The researcher followed Struwig's (2008) suggestion that the individual entries should be coded separately according to particular themes, which will be discussed in the final chapter.

3.5 Study Population and Sampling

A population is considered to be a number of people living in a specific area (Hornby, 2005). Strydom's (2011, p. 193) definition, which describes a population as "individuals in the universe who possess specific characteristics from which the researcher will draw his/her sample", is better suited to research. A sample can be described as elements of the population of interest (Royse, 2008). The population for this study consisted of children aged between five and seven years who live in Gauteng and have experienced trauma, and who presented with symptoms of trauma that were present for a minimum period of four weeks prior to the baseline data collection. The sample size was that of 12 children selected from the researcher's private practice. The sample size was determined by Struwig (2008) as the researcher intended to replicate Struwig's (2008) methodology in order to increase the generalizability of the results.

Convenience sampling was applied to select a sample of twelve children from the researcher's private practice. According to Bailey (1994), convenience sampling involves choosing the closest

people as respondents. Convenience sampling allowed the researcher to use clients between the ages of five and seven years who were referred to her practice. Thereafter the researcher made use of non-proportionate quota sampling. The researcher was of opinion that this sampling method was most applicable due to the fact that she both wanted to replicate Struwig (2008) study, but also get as close as possible representation of the population, especially black and white. The researcher decided upon non-proportionate, as she wanted equal amount African males, White males, African females and white females. Utilising this sampling method required that the researcher first decide which strata would be relevant to the study (Bailey, 1994). In this study, the main characteristics that were of relevance were gender and population group, which ensured a diverse sample including both male and female, and white and African respondents. By using non-proportionate quota sampling the researcher was able to select a sample that represented important characteristics of the population and ensured the inclusion of differences.

The sample was categorised as follows: three white females, three African females, three African males, three white males. By utilising quota sampling and drawing a sample that was as comparable to the population as possible, the researcher aimed to increase the generalisability of the study (De Vos et al, 2006). All the children who were included in the study were new referrals and did not form part of the researcher's clientele base at the stage of sampling.

Despite many debates regarding the researcher's ability to remain objective when using respondents from his/her own client base, literature mentions many cases in which researchers occupy the roles of both practitioner and researcher simultaneously, using their own clients as participants. This is known as the scientist-practitioner approach, which allows research and practice to be merged in order to bridge the gap between research and practice (Wakefield & Kirk, 1996; Yegidis & Weinbach, 1996; Hudson & Nurius, 1994). Hudson and Nurius (1994) further emphasise this point by stating that practitioners make valuable contributions to scientific knowledge due to their close proximity to the data and their commitment to effective practice. However, what should be taken into account is reflexivity so as to ensure that the researcher remains aware of how his/her own thoughts and feelings may influence the research (Hudson & Nurius, 1994). Thus, the researcher worked reflexively from the inception to the completion of the research.

3.6 Ethical Considerations

The researcher completed the necessary EMI training through MEISA and is suitably qualified to implement the EMI intervention. Other ethical considerations included:

3.6.1 Informed Consent and Child Participant Assent

The researcher obtained written consent from the relevant guardians of the participants, as they were minors. The rights of child participants should not be neglected. Greene and Hogan (2005) emphasise this by stating that children have the right to be informed about the study and to give their assent regarding participation. Fraser, Lewis, Ding, Kellet and Robinson (2005), add that children are also more likely to participate in a positive manner if their rights are acknowledged and respected, and consequently the researcher was sensitive to the children's responses and assents, and simultaneously respected their right to autonomy.

3.6.2 Voluntary Participation

The researcher ensured that the participants and their caregivers knew that their participation was voluntary and that they could withdraw from the study at any time. Fisher (2004) emphasises that voluntary participation includes that:

- i) Participants who form part of the caseload must be ensured that dissent will not result in withdrawal of ongoing services, and
- ii) Participants who are not part of the caseload must be informed of alternative non-experimental alternative if they decide to withdraw.

Since the researcher selected only participants who do not form part of her existing caseload, she ensured that the participants understood that there would be no negative consequences if they decided to withdraw from the study. The researcher also ensured the participants and their caregivers that the service will not be withdrawn if their feedback were negative or indicated that the EMI did not have a desirable effect.

3.6.3 Explaining the Purpose and Nature of the Study

The researcher explained and gave information regarding the purpose and nature of the study. According to Fisher (2004), in the case of children, this includes allowing them the opportunity to ask questions about the purpose, duration, compensation, procedures, potential risks, and benefits of the study. Consequently, the researcher explained the theory of EMI, the protocol that would be followed, and the process of the study to the participants and their caregivers. The first part involved the parent/caregiver completing the TSCYC forms. The child participant then received a 15-20 minute EMI treatment session. After a waiting period of two weeks, the TSCYC was completed again in order to determine whether there was a reduction in symptoms. The second part of the study involved a semi-structured interview with the parent/caregiver in order to explore their perceptions regarding the possible reduction of trauma symptoms.

It was explained that there are no documented risks involved in the treatment of EMI (Beaulieu, 2004; Stuwig, 2008), however, due to the sensitive nature of the problem (exposure to trauma), the intervention may evoke painful and overwhelming emotions. In such cases where participants may require additional counselling, the researcher explained that she was willing to assist them free of charge. By doing so, the researcher ensures the well-being of the child.

3.6.4 Confidentiality

Confidentiality forms the foundation for ethical research (Farrell, 2005). The information obtained remained strictly confidential and anonymous. The researcher explained the limits of confidentiality as stipulated by the SACSSP to the participants and their caregivers. The data was stored appropriately and was handled only by the candidate.

Furthermore, because the proposed study was exploratory and involved therapeutic intervention with children, the researcher submitted an application to the Ethics Committee for approval. (See Annexure E).

3.6.4 Objectivity

During this study the researcher occupied the role of both researcher and practitioner. In order to remain objective, the researcher attempted to be reflexive throughout the study by recording her own thoughts and feelings during the sessions. Please see Annexure D for these journal entries.

3.6.5 Leaving an audit trail

The student will store all the data in a safe cabinet in her office. The data will be stored for a period of 5 years, where after it will be destroyed.

3.7 Defining The Intervention: Conducting the Pilot Study

3.7.1 Arranging the Session

3.7.1.1 Preparation

When EMI is used in a normal therapeutic setting, the process differs from that which was followed for the purpose of this study. Usually the first interview involves a detailed clinical interview, which is followed by the EMI treatment during the next session. In the research setting, the clinical interview was excluded in order to eliminate the possibility of therapeutic value that may stem from the individual contact. Therefore, the aim was to isolate the usefulness of the EMI treatment as such. The process followed in the research setting is set out in Figure 2.

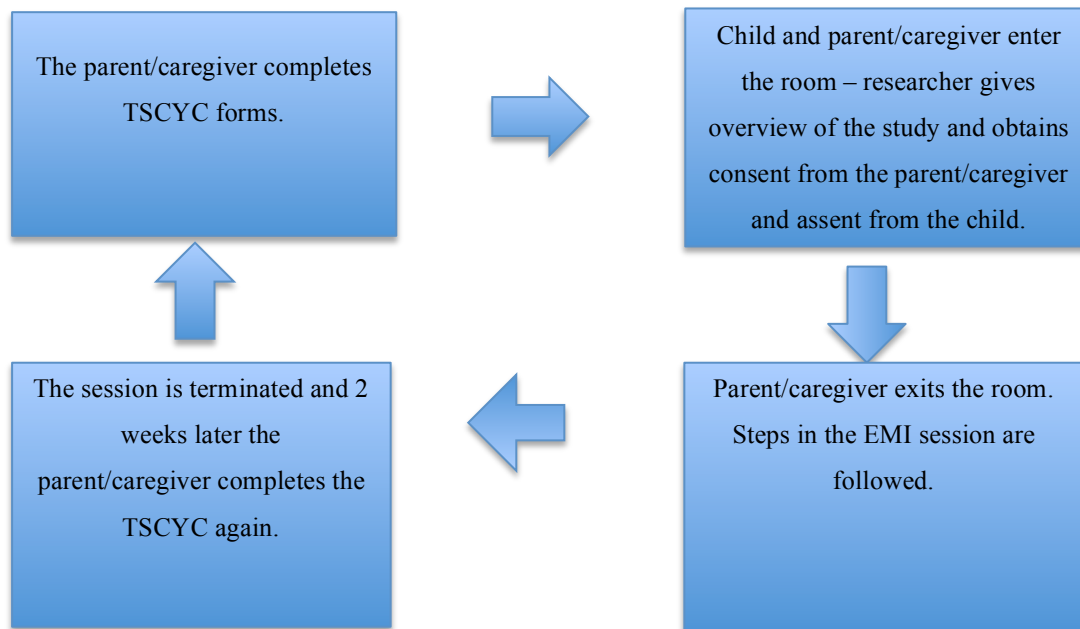


Figure 2: The structure of the EMI session in the research setting

Before the research began, the researcher conducted a pilot study with one participant. During this session, the researcher implemented the following processes in order to determine whether changes in terms of seating arrangements, tool to use, or protocol were required.

To facilitate a safe, non-threatening environment, the researcher ensured that the children were seated in comfortable chairs of a height that ensured that they would be at approximately the same height as the researcher when seated. The chairs were arranged as suggested by Beaulieu (2004), i.e. the researcher’s chair was placed slightly to the right of the child so that they would not face each other directly (see Figure 3 below). This arrangement enabled the child to focus on the researcher’s hands and enabled the researcher to cover the entire range.



Figure 3: The seating position for conducting EMI

3.7.1.2 Establishing Verbal Cues

One of the most daunting challenges for the researcher was the identification of the so-called verbal cues. According to Beaulieu (2004), a “verbal cue” is a phrase or sentence that summarises the part of the event that was most traumatising to the child. These verbal cues are intended to keep the client in touch with the traumatic memories in order to unlock new information and sensations. During the pilot study the researcher became aware of the fact that the respondent found it challenging, due to his age appropriate limited vocabulary, to explain or identify the verbal cues/phrases that provide a “title” to their traumatic experience. The researcher therefore adapted the protocol by identifying the verbal cues on behalf of the child and, based on his reaction to the word/phrase, determined the effectiveness of those cues in keeping the child in touch with his experiences. This was then also done during the rest of the study.

The next task of the researcher was to determine the visual “hot spots”. This was achieved by waving her open hand across the visual range (like washing a TV screen) while repeating the verbal cues. It was helpful to visualise the visual range in four quadrants with the hot spots as the quadrants that represent the most and the least discomfort. According to Struwig (2008), the quadrant that elicits the least discomfort can be seen as the resource zone, which can be utilised to comfort the client if necessary.

Another important aspect of EMI is the measurement of the progress made, which is often measured by scaling (Beaulieu, 2004). During the pilot study the researcher found that the following method of scaling was most effective to measure the child’s progress: “Look at the ruler on the wall. The

end where you see the storm cloud is marked 10, which represents very bad feelings. The other end where you see the sun is marked 0, which tells us that the event does not bother you at all. Where do you think you are on this ruler?”

3.7.1.3 Determining the Visual Range, Speed, Distance, and Tool

EMI is a very technical model. The tool, distance, range, and speed should all be taken into account when utilising eye movements. Dr W. Hartman (personal communication, 11 May 2012) refers to this sequence of considerations as the tool, distance, range, and speed (TDRS) model. The tool refers to the object that will be used to make the different movements. Beaulieu (2004) suggests using either a pen or two fingers since the client finds these easiest for their eyes to follow. However, during the pilot study the researcher determined that if she used a finger puppet, the child was better able to follow the movements and remained focused and interested for longer periods. This finger puppet was therefore used with all other participants in the study. The distance between the therapist’s fingers and the client’s eyes should also be considered. The researcher considered this to be an important aspect because an inappropriate range caused discomfort and contributed to feelings of fatigue. Based on the pilot study, the researcher thus agrees with Dr Hartman (2012) (personal communication, 3 August 2012) who suggested that the therapist must attempt to keep the tool at knee distance from the client’s eyes.

3.7.2 Conducting the Session

3.7.2.1 The Eye-Movement Patterns

There are 22 eye movements in the EMI protocol. Once the therapist determined the positive/comfortable or negative/uncomfortable areas or quadrants, she used her discretion to determine which patterns of movements to use in order to access the trauma. The researcher found that by beginning with movements that centred on the positive quadrants assisted the participant to ease into the process. This helped the participants to feel more comfortable and kept them from feeling overwhelmed. While using each of the each eye movement patterns, the therapist repeated the verbal cues (trauma words).

According to Beaulieu (2004), EMI focuses on accessing the traumatic material through the use of Slow Pursuit Eye Movements (SPEM). Therefore, the movements should be slow instead of rapid. Beaulieu (2004) recommends that the duration of an EMI session should be between 60-90 minutes for adults. However, Struwig (2008) recommends that sessions with children be reduced to 45 minutes. During the pilot study, the researcher noted that the respondent had difficulty following the movements and lost concentration after 25 minutes. It was challenging to continue the session

thereafter, and therefore the researcher decided to limit the duration of the sessions with young children to between 15-20 minutes, which was more effective.

3.7.2.2 Between the Movements

After the completion of each pattern of eye movements, the researcher tapped into the participant's limbic system by asking what he experienced in each modality. Even though Leskin, Kaloupek and Keane (2008) state that trauma is often stored in the visual, kinaesthetic, and affective modalities, Beaulieu (2004) suggests that the client should be asked to share his/her experience in each modality. The researcher disagrees with Beaulieu (2004) and is of opinion that when a modality was clear of trauma repeating the questions in the 'clean' modalities irritated and even distracted the participants. Sometimes however unexpected experiences arouse from modalities that appeared to be 'clean' or inapplicable, and therefore the researcher suggests that once the primary modalities have been established, the therapist may ask a general question such as "Are you experiencing anything else?" to ensure that no experiences are missed.

3.7.3 Terminating the Session

When all of the eye movements have been completed, the client was asked to scale his distress once again. This provided an indication of whether or not the client's distress was lowered and indicated whether the session could be terminated. Since the integration of the trauma continues for the following two weeks (Beaulieu, 2004), it was helpful for the researcher to prepare the client regarding what could be expected in terms of physical symptoms such as headaches and nausea.

It is evident that EMI is very structured and follows a strict protocol. Therefore, in order for clients to benefit from the treatment, therapists must have completed the required training.

3.8 Summary

The above outline of the methodology followed provides a clear framework for the data collection, analysis, and interpretation of the study. A mixed-method approach was best suited to this study, as indicated by the exploratory design and functionalist paradigm. A one-group pre-test/post-test design was used with a sample of twelve respondents between the ages of five and seven years. The criteria for the respondents included that they have experienced a traumatic event more than four weeks prior to the study and presented with trauma symptoms. The TSCYC was used as the quantitative data-collection tool, while a semi-structured interview was used to collect the qualitative data. The quantitative and qualitative data-collection tools were employed simultaneously and were considered to be equally important.

The steps of the pilot study, aspects of conducting of the session, and data analysis were also discussed. The next chapter focuses on the analysis and interpretation of the data gathered.

Chapter 4: Results and Discussion

4.1 Introduction

The focus of this chapter is on the analysis, interpretation, and discussion of the data. Wetcher-Hendricks (2011) states that this phase of the research is exciting for the researcher since this is where the mass data that has been collected becomes structured and meaningful. The researcher agrees with this statement, and emphasises that it is during this phase that the entire research process became meaningful and “alive”. Thus, the process of data analysis can be seen as the process that enabled the researcher to answer his/her initial research question/hypothesis.

As mentioned in Chapter 3, the researcher made use of a parallel mixed analysis for this study. After the quantitative data was collected, it was submitted to the SPSS and the results were retrieved. At the same time, the content of the qualitative data was analysed and organised into categories. The data that was retrieved from the TSCYC was considered in correlation to the data retrieved from the journal entries and the semi-structured interviews. This was done in order for triangulation of data to be implemented.

The data is represented in terms of the categories provided by the TSCYC. The data is represented in a table graph, and thereafter a discussion of each category follows. Finally, data that was retrieved from journal entries that do not form part of the above categories is also discussed.

4.2 The Respondents

Twelve children took part in this study. Of these twelve, three were White males, three White females, three African males, three African females. The respondents were aged between five and seven years and all of the respondents were new clients that were referred to the researcher’s private practice for trauma. These children were termed as Respondent 1, 2, 3, etc. In Table 1, below, the respondents and a brief description of each is listed.

Pseudo Name	Age	Gender	Population Group	Problem
Respondent 1	6	Male	White	Diagnosed with cancer six months prior to the EMI session and has experienced the diagnosis and the hospitalisation and chemotherapy very traumatic.
Respondent 2	7	Male	White	Diagnosed with cancer six months prior to the EMI session

				and has found the diagnosis and the hospitalisation and chemotherapy very traumatic.
Respondent 3	5	Male	White	Was attacked by a wild baboon two months prior to the EMI session. Ever since the attack, he has become very aggressive. He also avoided wild animals.
Respondent 4	5	Male	African	Has been physically abused by his biological mother. He was placed in the care of his aunt, who accompanied him to the sessions.
Respondent 5	6	Male	African	He is the twin of Respondent 6. Has been sexually abused by biological parents and placed in the care of his aunt. Soon after the placement his biological parents died.
Respondent 6	6	Male	African	Has been sexually abused by their biological parents and placed in the care of his aunt. Soon after the placement their biological parents died.
Respondent 7	7	Female	White	Sexually abused by her biological parents and placed in care with a foster family. After the placement, respondent 7 started acting out and became very aggressive.
Respondent 8	6	Female	White	Death of parent.
Respondent 9	7	Female	White	Father died in a motor vehicle accident and the respondent was on the scene and held her father as he passed away.
Respondent 10	5	Female	African	Diagnosed with cancer six months prior to the EMI session and has found the diagnosis and the hospitalisation and chemotherapy very traumatic.
Respondent 11	6	Female	African	Diagnosed with cancer six months prior to the EMI session and has found the diagnosis and the hospitalisation and chemotherapy very traumatic.
Respondent 12	5	Female	African	Sexually abused by a peer at school. After the incident the parents noted a preoccupation with sexuality.

Table 1: Brief description of each respondent in the study.

From the above section it can be seen that all twelve respondents were exposed to traumatic events and meet the criteria for the study.

4.2.1 Reflexivity

During the study, the researcher occupied both the role of researcher and practitioner. Many authors criticise this role of the research practitioner and states that the researcher cannot stay objective during the study (Cochran & Lytle, 2009; Ekbia & Hara, 2008). Hudson and Nurius

(1994), however states that information gathered from the scientist-practitioner is rich in information and allows the research to bridge the gap between research and practice. Ebia and Hara (2008) however cautions that the researcher should remain reflexive when applying the scientist-practitioner approach in order to adhere to objectivity concerns. During the research process the student therefore kept a journal to record her own thoughts and feelings during the EMI sessions. This allowed her to determine her own thoughts and feelings during the data collection and allowed her to remain objective during the analysis of the data. These journal entries can be seen in Annexure D.

4.2.3 Difficulties Experienced with the Respondents

The researcher experienced some difficulty with Respondent 4. This child had a very limited vocabulary and the researcher found it challenging to explain his role during treatment. Initially he struggled, but he then started following the EMI movements. Due to his limited vocabulary, Respondent 4 did not have the ability to answer the questions after each movement, for example; “did you see anything?” However, he did complete the EMI and may have experienced the full benefit of EMI, despite his inability to verbalise his experiences during the treatment. This might confirm the benefit of using EMI with younger children who have a limited vocabulary.

As mentioned earlier, the clinical scales as provided by the TSCYC was used to group the data analysis. These categories are:

- ANX;
- DEP;
- ANG;
- PTS;
- DIS; and
- SC

The quantitative and qualitative data results will be presented via these categories.

4.3 An Analysis of the Effectiveness of EMI

The Wilcoxon Signed-Ranks test was used to assess whether or not there was a significant change in the data before and after treatment. The variables measured were the symptoms of trauma as presented by the TSCYC. These are Anxiety (ANX), Depression (DEP), Anger (ANG), Post-Traumatic Stress- Intrusion (PTS-I), Post-Traumatic Stress-Avoidance (PTS-AV), Post-Traumatic Stress-Arousal (PTS-AR), Dissociation (DIS), and Sexual Concerns (SC).

According to Pett (1997), the Wilcoxon Signed-Ranks test is used when there is a small sample size and when variables are not distributed normally. According to the SPSS analysis of this data, some variables were not distributed normally, which implies that the Wilcoxon Signed-Ranks test was the most applicable test for the analysis of this data. This test not only allows the researcher to determine the positive and negative direction of the data, but it also allows for the extent of the differences between the two pairs to be determined (Pett, 1997). For this study, the differences between the pre-test TSCYC and the post-test TSCYC were calculated and the ranks were determined. The results of the data are presented in Table 2.

Variable	Pre-test Median	Post-test Median	Negative Ranks	Z	P (1-tailed)
ANX	65,42	48,67	10	-2.535	0,0055*
DEP	61,08	51,67	10	-2,805	0,0025*
ANG	58,33	48,00	10	-2,763	0,003*
PTS-I	67,08	54,42	10	-2,121	0,017*
PTS-AV	72,50	55,17	10	-2,356	0,009*
PTS-AR	60,33	48,75	9	-2,625	0,0045*
PTS-TOT	68,75	52,50	11	-2,983	0,0015*
DIS	57,58	52,50	9	-1,650	0,049*
SC	55,85	41,33	4	-1,635	0,051*

Table 2: Pre-test and post-test median scores, the negative ranks, Z-scores and 1-tailed significance for ANX, DEP, ANG, PTS-I, PTS-AV, PTS-AR, PTS-TOT, DIS, and SC.

***Significant differences (at $p < 0.5$) are marked with an asterisk.**

According to these findings, there was a reduction in all the median scores, thus a reduction in trauma symptoms. Also, all nine variables (symptoms of trauma) revealed differences between the pre-test and post-test scores that were significant (at $p < .05$). Figure 4 illustrates the reduction in the specific categories.

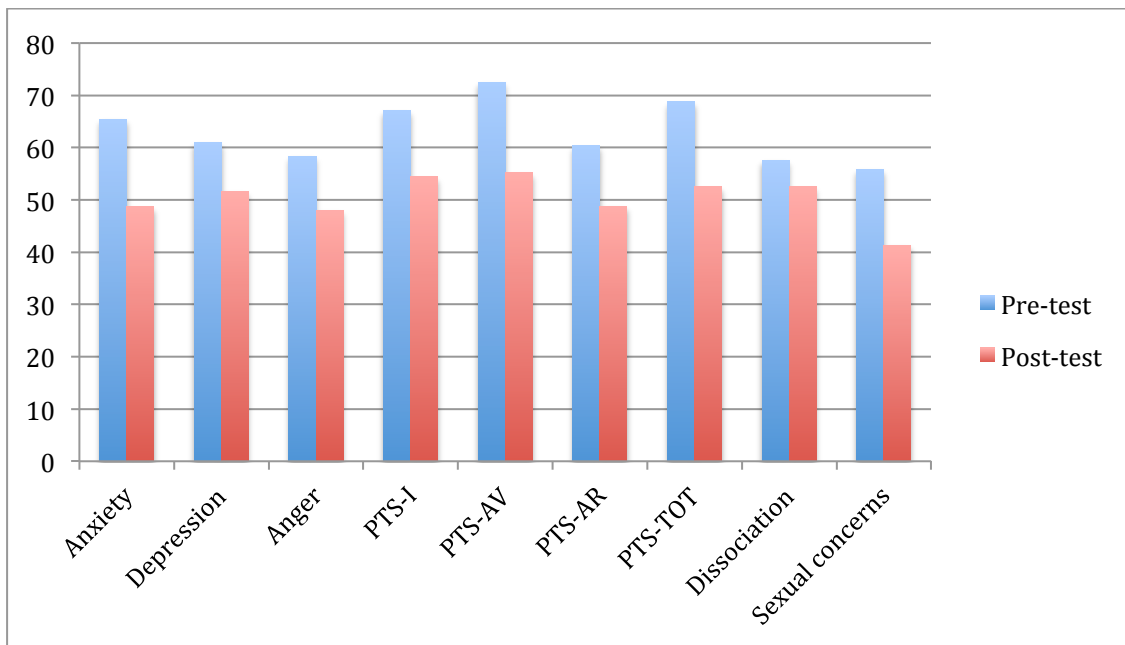


Figure 4: The reduction of the pre-test and post-test median scores of the clinical scales pre and post EMI treatment.

In the following section, each category (symptom) will be discussed in terms of the results from the Wilcoxon signed-rank test and the semi-structured interviews (content analysis). The qualitative data was analysed and reoccurring themes were coded into the categories as set out by the TSCYC.

4.3.1 Anxiety

Quantitative results

From the Wilcoxon signed-rank test it is evident that the twelve children experienced a change in median ANX scores from the pre-test (Md=65,42) to the post-test (Md=48,67) ($p=0,0055$). The negative ranks of the Wilcoxon test confirm that ten of the twelve children experienced a reduction in their ANX levels.

Qualitative results

The content analysis indicated that eleven of the caregivers/parents indicated a decrease in the respondents' ANX levels. One respondent's ANX levels were described as remaining the same prior to and after the treatment. During the EMI treatment, Respondent 2 experienced extreme stomach-ache, which subsided by the end of the treatment. According to the Respondent 2's mother, he also complained about stomach-ache whenever he had to go to the hospital for injections, before the cancer diagnosis was made. This is considered by Beaulieu (2004), to be a normal reaction as the EMI triggers a body memory of the traumatic incident (being diagnosed with cancer and the subsequent chemo-treatment).

According to the Respondent 1's mother, Respondent 1 experienced extreme ANX prior to the EMI treatment. Prior to the EMI, Respondent 1 was anxious before going to the hospital and became hysterical prior to injections. He was a diagnosed with cancer. After the EMI treatment, Respondent 1's mother reported the following:

Respondent 1's mother:

“Before when we used to go to the hospital for chemo, Respondent 1 would cry and beg us not to go. After the EMI he did not show any resistance when we had to go to the hospital and even voluntarily held out his arm for the chemo injections.”

Literature correlates with this finding by explaining that anxiety often emerges as a result of a traumatic event (Cohen, Mannarino & Deblinger, 2008). When faced with emotional triggers of such an event, anxiety is often the symptom that is visible. After the traumatic memories are integrated and processed the accompanying anxiety reduces. Therefore when faced with triggers of the traumatic event after integration of the memories, the accompanying anxiety may have reduced as the brain has processed the trauma and integrated the memories with both positive and negative information. In the case of Respondent 1, the hospital was the place where he was initially traumatised by invasive medical procedures. When faced with similar situations, his anxiety would be high, as it would trigger his previous traumatic experience.

It therefore appears as if the EMI treatment had a significant effect on the reduction of the anxiety experienced by the respondents due to their traumatic experiences.

4.3.2 Depression

Quantitative results

A significant decrease was also noted in the median DEP levels of the children. Pre-test (Md=61,08) to post-test (Md= 51,67) ($p=0,0025$). According to the interviewing data, a decrease in DEP was reported for ten of the twelve children.

Qualitative results

From the content analysis it became evident that twelve of the caregivers/parents reported a decrease in depressive symptoms. Before EMI, Respondent 8 presented with symptoms of poor appetite, irregular sleep pattern, and isolation, which may have developed as a result of her mother's death. According to the father, Respondent 8 isolated herself at school and no longer enjoyed her usual daily activities. However, after the EMI treatment, Respondent 8 was able to discuss the

trauma of her mother's death. Her sleeping patterns and appetite improved and she also started participating in school activities and games.

Respondent 9 cried regularly prior to the EMI treatment. She often isolated herself and often did not speak for days after her father's death in a motor vehicle accident. Respondent 9 was present at the accident scene and her father died in her arms. After the incident she no longer showed interest in any of the activities that she previously enjoyed. She showed a decrease in academic functioning and no longer cared about her physical appearance. Respondent 9's mother reported the following:

Respondent 9's mother:

“After the EMI, Respondent 9 engaged in more activities. She even started talking to people about her father's death. She started showing interest in activities that she used to enjoy and even asked some of her friends over for a party, which has not happened ever since her father died. It is starting to feel as if I am getting my baby girl back.”

There is a correlation between childhood trauma and depression (Heim & Nemerhoff, 2001; Read, Van Os, Morrison & Ross, 2005). The APA (2001, p. 308), states that depression includes “feelings of worthlessness, excessive guilt, recurrent thoughts of death or suicide, a lack of interest in daily activities, weight loss/gain, disturbances in normal sleep patterns, and a lack of energy”. Read, Van Os, Morrison and Ross (2005), is in agreement with the statement made by Respondent 9's mother as they report that once traumatic experiences are integrated, depressive symptoms often subside. It therefore appears that the EMI treatment had a significant effect on the reduction of depressive symptoms..

4.3.3 Anger

Quantitative results

A significant decrease was measured in the pre-test ANG (Md= 58,33) and post-test ANG levels (Md=48,00) (p=0,003).

Qualitative results

The content analysis indicated that ten of the twelve caregivers/parents reported a reduction in ANG levels in the respondents, while two caregivers/parents reported the symptoms as unchanged. According to his mother, Respondent 3 was very aggressive prior to the EMI treatment. He would break his toys intentionally and got into physical fights at school on a daily basis. After the EMI treatment, Respondent 3's mother reported that he appeared very calm. He did not break his toys

and was not involved in a physical fight at school again. She reported that he became more obedient than he was before the treatment.

Respondent 7's caregiver reported that prior to the EMI, Respondent 7 was very aggressive. According to the caregiver, Respondent 7 used to get angry and upset over little things and that she pulled out her hair and hit adults. After the EMI, the caregiver reported the following:

Respondent 7's caregiver:

“She is much calmer. Although she still gets very angry, she no longer pulls out her hair or hits adults. She is also more obedient and respects the rules and boundaries.”

Anger is often an expected and normal way to release tension, however excessive anger may be detrimental to an individual's physical and mental functioning (APA, 2001). There is a strong link between anger and trauma and young children may manifest their anger through the following behaviours; non-compliant behaviour, self-harming behaviour, unpredictable tantrums, or physical aggression towards other people or possessions, temper outbursts, tantrums, throwing toys, hitting, bullying, biting, or kicking (Cohen, Mannarino & Deblinger, 2008; Levine & Kline, 2007).

The above statement is supported by literature that indicates that aggressive behaviours tend to subside once traumatic experiences are processed (Beaulieu, 2004; Levine & Kline, 2007). It therefore appears as if EMI had a significant effect on the reduction of anger in the participants.

4.3.4 Post Traumatic Stress (PTS)

Quantitative results

The results of the Wilcoxon signed-rank test indicated that the median PTS levels of eleven children reduced significantly from the pre-test (Md=68,57) to the post-test (Md=52,50) ($p=0,0015$). The PTS clinical scale is divided into three sub-scales namely PTS-I, PTS-AV, and PTS-AR. According to the Wilcoxon Signed-Rank test, all three median scores decreased significantly. PTS-I decreased from pre-test (Md= 67,08) to post-test (Md= 54,42) ($p=0,017$), PTS-AV decreased from pre-test (MD= 72,50) to post-test (Md=55,17) ($p=0,009$), whereas PTS-AR decreased from pre-test (Md=60,33) to post-test (Md= 48,75) ($p=0,004$). According to the findings it is evident that ten of the twelve children experienced a decrease in their PTS-I and PTS-AV levels, while nine of the twelve children experienced a decrease in their PTS-AR symptoms.

Qualitative results

The content analysis indicates that twelve of the caregivers/parents reported a reduction in PTS symptoms. Respondent 10, a cancer patient, used to avoid anything that reminded her of the hospital. When she was scheduled to take medication, she would cry and throw tantrums in order to avoid taking the medication. Respondent 10's mother stated that after the EMI treatment, she no longer experienced difficulty taking Respondent 10 to the hospital or administering her the medication. What was most remarkable for Respondent 10's mother subsequent to the EMI treatment, was that Respondent 10 now takes her own medication, whereas prior to the EMI treatment her mother would had to beg her and almost forced the medicines down her throat.

Prior to the EMI, Respondent 11 used to experience nightmares about being sick and in hospital, and she would wake up screaming. According to her mother, Respondent 11 constantly drew pictures depicting herself sick and in hospital with frightening equipment. During the interview Respondent 11's mother reported that:

Respondent 11's mother:

“After the EMI treatment Respondent 11 did not experience any nightmares. Her drawings have also changed from anxious drawings to happy drawings of butterflies, flowers and trees. My child seems to be happy and less troubled now.”

Not all individuals who are exposed to traumatic events may develop PTS symptoms. However those who do develop symptoms may manifest these symptoms in different ways (Levine & Kline, 2007). Children, for example, may express their PTS symptoms through play, drawings, and stories, and may display various symptoms, including fears unrelated to the event (for example monsters), separation anxiety, inattentiveness, impulsivity, withdrawal, and regressive behaviours (Carrion et al., 2002; Levendosky et al., 2002; Vickerman & Margolin, 2007; Wherry et al., 2008). Beaulie (2004) states that EMI is an effective technique to assist with the integration and processing of traumatic material, which then leads to the decrease of PTS symptoms. This is then in accord with the above findings which indicates a reduction of PTS symptoms.

4.3.5 Dissociation

Quantitative results

The Wilcoxon Signed-rank test indicates a reduction in the pre-test (Md= 57,58) and post-test (Md=52,50) (p=0,049) DIS levels. According to the negative ranks of the test, nine of the twelve children experienced a decrease in their DIS symptoms.

Qualitative results

From the content analysis it is evident that ten of the caregivers/parents reported a decrease in symptoms while two caregivers/parents reported the symptoms as unchanged. Prior to the EMI, Respondent 4 was described as often being engrossed in a fantasy world or absent minded. Often his caregiver had to repeat instructions or questions because he was in a daze and unaware of where he was, or what was going on around him. He also often had a blank expression on his face and stared into space. After the EMI, his caregiver reported that she no longer had to repeat questions or instructions often. She also stated that subsequent to the EMI treatment she no longer observed Respondent 4 staring into space with a blank expression.

According to Respondent 6's caregiver, Respondent 6 often mentioned that he saw his dead mother and father at different settings throughout the day. Respondent 6's caregiver stated:

Respondent 6's caregiver:

“His sightings of his deceased mother was very concerning and troubled everyone in the house. After the EMI however these sightings have decreased from about every second day, to only once since the EMI treatment. The other kids also now seem to include Respondent 6 more during play time due to this decrease in sightings.”

According to Cromer, Stevens, DePrince and Pears (2006, p. 136), dissociation involves a disruption in the usually integrated functions of consciousness, memory, identity and perception”. When a child is traumatised during early childhood, they are often unable to assimilate and process their experiences, leading to a fragmented sense of consciousness, memory, identity, and perception (Macfie et al., 2001). This statement coincides with Respondent 6's experiences and may therefore explain his behaviours.

Even though dissociation is a complex phenomenon to treat, researchers has found that in the case of trauma, once the traumatic experience is effectively integrated and processed by the individual, the dissociation lessens resulting in a more holistic and integrated individual (Beaulieu, 2004; Cromer, Stevens, DePrince & Pears, 2006; Macfie et al., 2001). This statement may therefore explain the reduction of dissociative symptoms seen in the above findings.

4.3.6 Sexual Concerns

Quantitative results

From the Wilcoxon signed-rank test it can be seen that there was a general decrease in the median SC scores from pre-test (Md=55,58) to post-test (Md=41,33) (P=0,051). This change is also significant. This reduction in SC symptoms is confirmed by the negative ranks of the test that indicates that four of the twelve children experienced such a reduction in symptoms.

Qualitative results

Eight of the twelve caregivers/parents reported that there were no SC behaviour prior to the treatment, which could explain their report that the symptoms remained unchanged.

During the interview, Respondent 12's parent reported that Respondent 12 was preoccupied with sex. She would often masturbate and ask questions about sexual intercourse. During the interview her mother stated that this behaviour decreased slightly since treatment, however, on the TSCYC the comparison between her pre- and post-test results indicated an increase in the behaviours. A possible explanation could be a lack of understanding of some concepts described by the TSCYC. The caregiver is Zulu-speaking and might have misunderstood some of the English concepts related to the SC. Another possibility could be that the caregiver possibly felt "obligated" to report positive results during the face-to-face interview.

Prior to the treatment, Respondent 5 was often involved in sexual play with his sister. Respondent 5's caregiver reported the following:

Respondent 5's caregiver:

"Before I would often find him with his sister, busy playing some sort of game that required him to touch her on inappropriate places. Also, he would masturbate quite frequently, you know, always touching his private parts. After the treatment, there has not been another incident yet."

Literature indicates that young children who have been sexually traumatised may display behaviours indicative of preoccupation with sexual behaviours, repetitive sexual behaviours like masturbation, compulsive sexual play, developmentally inappropriate knowledge, and interest in sexual activities (Levine & Kline, 2007; Spies, 2005). This is their way of ascribing meaning to their own experiences (Spies, 2005). These behaviours may decrease after the traumatic memory is processed and integrated, as the child may not need to ascribe meaning to his experiences anymore

(Beaulieu, 2004; Spies, 2005). This is evident in the above findings of the reduction of the sexual concerning behaviours after the EMI treatment.

Thus, the content analysis (qualitative tool) confirms a reduction in all nine symptoms as reported by the Wilcoxon-Signed Rank test (quantitative tool).

4.4 Clinical Issues Related to EMI

Upon completion of the analysis and triangulation of the data, additional themes were identified from the journal entries. This information, as experienced by the researcher, needs to be reported since it holds value to the effectiveness of EMI with young children.

4.4.1 Theme 1: Challenges during the EMI Session with young children

Many challenges arose during the various EMI sessions. Both Beaulieu (2004) and Struwig (2008) reported similar challenges and ascribed it to coping/defence mechanisms of the participant. Beaulieu (2004) states that often during EMI, clients unconsciously utilise similar coping/defence mechanism as that which they have been utilising since the traumatic incident. These coping/defence mechanisms often arouse during the most intense part of the session where the session replicated thoughts and feelings associated with the traumatic event (thus were the traumatic material was accessed).

4.4.1.1 Use of Finger Puppets

A pilot study was conducted with one participant. During this pilot study the researcher noticed that the respondent had difficulty following her fingers during the EMI movements. Also, the respondent quickly became distracted and lost interest. Therefore the researcher employed a parrot finger puppet to do the movements for this study. All of the children responded well to the finger puppets and managed to stay focused and interested for a longer duration than they had in the pilot study.

4.4.1.2 Somatic/Bodily Experiences

Beaulieu (2004) mentions that somatic reactions during EMI sessions are often considered a part of the client's defence mechanism when other methods of communication have been exhausted or where cognitive processes are overwhelmed by traumatic material. During the EMI session, Respondent 2 experienced intense stomach-ache when the traumatic material regarding his cancer diagnosis was accessed. Respondent 9 described a tingling sensation in both her arms during the EMI session. (She held her father in her arms at the scene of his motor vehicle accident. According

to her mother, her arms were covered in blood). Respondent 2 heard screaming babies during the session. (He was diagnosed with cancer and found the chemotherapy very traumatic. According to his mother, during his initial chemotherapy session he shared a room with a baby who was constantly crying due to pain). All three of the above respondents' physical symptoms diminished when the trauma information was integrated. This was often a few eye movements after the initial somatic reaction.

4.4.1.3 Lack of Concentration

Struwig (2008) recommend that the duration of the EMI sessions with children be approximately 45 minutes. During the pilot study the researcher found that the respondents found it challenging to follow eye movements and keep concentration after approximately 25 minutes. It was subsequently decided that the session duration would be decreased to approximately 15-20 minutes. Ten of the twelve respondents experienced difficulty following movements after 15 minutes. As soon as this lack of concentration was noted, the researcher prepared for the termination of the session. When the respondents showed signs of a lack of concentration through uneven eye tracking for example, the researcher added a "wiggle" to her fingers, which animated the parrot finger puppet. This seemed to assist all respondents to focus for the remainder of the session.

4.4.1.4 Dissociation

As with Struwig's (2008) study, Dissociation (DIS) seems to be a common coping/defence mechanism. DIS is considered to be an expected response to overwhelming traumatic material (Beaulieu, 2004) and for young children, even more so due to the fact that they tend to be enthralled in a fantasy world (Levine & Kline, 2007). This might then explain the high number of participants who dissociated during the session. DIS was noted in seven of the twelve children during the session. When a child states that he/she does not experience anything in any of the senses, the possibility of DIS should be explored (Struwig, 2008). However, the therapist should be able to determine whether the child is really experiencing nothing and/or dissociating. Struwig (2008) suggests asking the child whether or not he or she is still mentally at the scene of the trauma, for example the accident scene, and then urging him/her to remain in touch with that experience. Seven children responded that they were not mentally present at the scene of the trauma when the researcher tried to determine whether the child was dissociating. Respondent 7 actually expressed that she avoided thinking of the traumatic incident, regardless of her emotional distress during certain eye movements.

4.4.2 Theme 2: Management of Strong Reactions

Three of the respondents exhibited strong emotional reactions during the EMI. However, this is expected because the strong reactions are actually re-experiences of strong reactions experienced during the traumatic event (Beaulieu, 2004). The researcher identified the following effective techniques to manage strong reactions during the EMI.

- **Limiting Exposure**

Respondent 1 was diagnosed with cancer and found the diagnosis and treatment very traumatic. During the EMI he experienced intense emotions and at some stage even started crying. These reactions were triggered during movements in the lower area of the visual field. In order to prevent Respondent 1 from being overwhelmed and possibly dissociating, the researcher reduced the amount of movements in each segment from five movements to three. Additionally, when it was noted that Respondent 1 became overwhelmed, the researcher focused on areas in the visual field that were more comfortable for him. This seemed to calm him and allowed the integration of the memories to take place. Beaulieu (2004) is supportive of this and states that once the traumatic memory is activated, repeated exposure to the traumatic memory holds no benefit to the client.

- **Empowering the Client**

Respondent 9 was in a motor vehicle accident. Her father died on the scene as she held him in her arms. At some stage during the EMI session, Respondent 9 complained about her neck being so stiff that she could not move it. This was a body memory of the neck brace that she wore after the accident. In order to communicate to her body that she was now safe and healthy, the researcher asked her to move her neck gently from side to side. The purpose being, as described by Beaulieu (2004), for the effects of the remembered movements of the neck to “block” remembered restraints from the accidents. The constant reminder to the respondent to move her neck helped her to stay connected to the experience. After repetition of a few movements, Respondent 9’s distress levels decreased.

Respondent 2, a cancer patient whose chemotherapy experience was traumatic, complained about getting a “bad” taste in his mouth during certain movements. The gustatory memory of his medications appeared to distract and overwhelm him. The researcher empowered him by handing him an empty glass and telling him to spit in it whenever he had the bad taste. This seemed to work as he managed to continue with the sessions after “spitting”.

The above-mentioned techniques were helpful in managing the respondents' strong reactions. These techniques assisted in integrating and processing the traumatic material.

4.5 Summary

The previous section included an analysis and triangulation of the quantitative and qualitative data. By using a mixed methods approach, a wide range of data was collected and provided the researcher with the opportunity to answer the research question. All of the objectives were reached in order to meet the goal of the study, which was to explore the usefulness of EMI with children in early childhood.

In conclusion it would appear that EMI is a useful intervention strategy for addressing different trauma symptoms in young children. According to the findings, there were a significant decrease in the ANX, DEP, ANG, PTS-I, PTS-AV, PTS-AR, PTS-TOT, DIS and SC symptoms of the respondents.

From the results of the analysis, conclusions and recommendations was drawn and is discussed in the following chapter.

Chapter 5: Conclusions And Recommendations

5.1 Introduction

As mentioned in Chapter 1, trauma is an vivid reality in South Africa. With the high number of reported cases of violent crime in South Africa, it is expected that many children might be exposed to traumatic events. The aim of this research was to determine whether or not EMI can be useful in treating trauma in early childhood. The purpose of this research was to add to the existing knowledgebase regarding the treatment of trauma in early childhood. As stated earlier, children in early childhood lack the verbal ability to express their experiences. This often proves challenging in talk therapies. Therefore, therapy techniques that do not rely on verbalisation are required to assist children exposed to trauma in this developmental phase.

This study posed to answer the question of whether EMI is a useful intervention strategy for the treatment of trauma in early childhood. The research process was documented in Chapter 1, followed by a literature study in Chapter 2. In Chapter 3, an outline of the methodology followed was provided, thereafter a discussion of the results followed in Chapter 4. In this chapter focus is on the conclusions and limitations of the study.

5.2 Main Conclusions

As mentioned before, the student replicated Struwig's (2008) methodology, but with a younger population. For this reason, the conclusions drawn from the study, will be divided into similar categories as provided by Struwig (2008). These include methodological conclusions and contextual conclusions. Methodological conclusions focus on conclusions regarding the research methods that were followed. The contextual conclusions focus on the utilisation of EMI with young children.

5.2.1 Methodological Conclusions

A mixed method approach, using both quantitative and qualitative research methods, were followed in this study. The quantitative and qualitative data were collected simultaneously, implying that both quantitative and qualitative tools were executed at the same time. The mixed methods approach allowed for the triangulation of the data and so ensured the researcher's confidence in the results. It can therefore be concluded that this approach was successfully implemented.

Furthermore, the research met all the objectives of the study set out in Chapter 1. The TSCYC was completed by the twelve children's parents/caregivers prior to the EMI session. A single EMI

session was conducted with the twelve children. Two weeks after the session, the TSCYC was completed again to determine whether or not there was a reduction in trauma symptoms. A follow-up interview was simultaneously conducted with the parents/caregivers in order to gain in depth information regarding their perceptions of the reduction of the symptoms. Throughout the data collection process, the researcher kept a journal to record her own observations and experiences. Recommendations are made later in this chapter, based on all the collected data.

The conclusion is that the mixed method approach allowed for triangulation of data and contributed to answering the research question.

5.2.2 Contextual Conclusions

There are two contextual conclusions that can be drawn from this study. The first relates to the effectiveness of EMI to reduce trauma symptoms for children in early childhood, the second relates to clinical issues regarding the implementation of EMI with younger children.

5.2.2.1 Effectiveness of EMI

- The findings of the TSCYC suggest a significant reduction (pre-test (Md=65,42) to the post-test (Md=48,67) ($p=0,0055$), with a significant effect of change in the respondents' ANX levels. This reduction in ANX levels was also supported by the interviewing data where eleven of the twelve caregivers/parents also experienced a reduction in the ANX levels of the respondents.
- It is apparent that EMI reduced the depressive symptoms of the respondents (pre-test (Md=61,08) to post-test (Md= 51,67) ($p=0,0025$). The qualitative data supports this finding since ten of the twelve caregivers/parents also reported a decrease in depressive symptoms.
- According to the TSCYC results, the ANG levels of the respondents have also reduced (pre-test ANG (Md= 58,33) and post-test ANG levels (Md=48,00) ($p=0,003$). This reduction is confirmed by the interview results that indicated that ten of the twelve caregivers/parents experienced a reduction in the respondents' ANG symptoms.
- There is evidence that EMI has reduced the PTS levels of the children. All the sub-categories of PTS-I, (pre-test (Md= 67,08) to post-test (Md= 54,42) ($p=0,017$), PTS-AV, (pre-test (MD= 72,50) to post-test (Md=55,17) ($p=0,009$), PTS-AR (from pre-test (Md=60,33) to post-test (Md= 48,75) ($p=0,004$) and PTS-TOT pre-test (Md=68,57) to the post-test (Md=52,50) ($p=0,0015$) have reduced with significance. This reduction is supported by the qualitative data where all of the parents/caregivers reported a reduction in the above symptoms.
- According to the TSCYC findings and the interview data, the DIS levels of the respondents have reduced significantly pre-test (Md= 57,58) and post-test (Md=52,50) ($p=0,049$). However,

three parents/caregivers reported on the TSCYC and during the interview that the respondents' symptoms remained unchanged.

- Finally, the TSCYC results indicate that there was a significant reduction in the SC behaviours of the children, from pre-test (Md=55,58) to post-test (Md=41,33) ($P=0,051$). This correlates with the interviewing data. Important to mention is that eight of the parents/caregivers indicated that the level of SC behaviour remained unchanged. However, these eight parents/caregivers mentioned that prior to the EMI no SC behaviour was present. This could explain their response that the levels remained unchanged.

In conclusion it appears that EMI significantly reduced trauma symptoms in all twelve respondents, as indicated by the TSCYC.

5.2.2.2 Clinical Issues

During this study, two additional themes related to the EMI procedure were identified namely the challenges experienced and the management of strong reactions by the participants.

Challenges experienced

Many of these challenges can be ascribed to the developmental phase of the children, while others can be ascribed to defence mechanisms that were employed as a way of coping with the traumatic experiences. The children in the study are in the early childhood phase of development. Children in this phase of development have a short attention span and require visual/auditory stimulation in order to remain focused (Papalia et al., 2008). Therefore the researcher added a finger-puppet in order to keep the children interested, and shortened the duration of the sessions to between 15 and 20 minutes. Also, young children have a limited vocabulary (Papalia et al., 2008), which meant that the researcher had to determine what the participants' verbal cues (trauma words) were.

DIS was also a predominant challenge during the EMI. Seven of the twelve children dissociated during some stage of the session. The researcher dealt with this by urging the participants to stay connected to their experience. Despite their distress, the participants stayed connected to their experiences and allowed for the integration and processing of the trauma memories to occur. All of the participants expressed that their level of distress lowered after the EMI session.

Management of strong reactions

During the sessions some of the children experienced somatic/bodily reactions such as stomach-aches. These reactions however diminished as soon as the trauma was integrated. With regard to the

second theme of managing strong reactions during the session, Beaulieu (2004) suggests three techniques. The researcher however felt that for this study, only the two techniques of limiting the exposure to the traumatic experience and empowering the client were relevant.

Consequently, it can be said that EMI reduces trauma symptoms in young children and is also a useful intervention strategy for working with young children.

5.3 Limitations of The Study

Like many other research studies, this study also has certain shortcomings that arose during the process.

i) The researcher believes that language and cultural factors may have influenced some of the African parents/caregivers' answers. The researcher experienced that many of the African parents/caregivers were not familiar with certain terms of the TSCYC, for example DIS. Furthermore, the researcher believes that due to cultural issues some parents/caregivers did not respond honestly when it came to aspects related to SC. Thus, it is recommended that the exact meaning and sought-after behaviours that would be categorised under the term of SC be explained in more detail.

ii) The study was a small-scale exploratory study, hence a larger experimental design that includes a control group would be required to determine a definite conclusion regarding the effectiveness of EMI in reducing trauma in early childhood.

iii) Due to the two-week time frame of the study, all other variables that may have influenced the results could not be excluded. Many of the participants were still in the process of chemo-therapy. Aspects like the associated medication and how it influenced the limbic system (emotional behaviours) could not be ruled out.

5.4 Recommendations

The following recommendations are divided into two categories, namely recommendations for social work practice and recommendations for future research. These recommendations are based on insights gained during the process of this study.

5.4.1 Recommendations for Social Work Practice

As previously mentioned, trauma can be caused by various experiences, including natural disasters, violent crime, and illness. This implies that there are many different ways that children may be exposed to traumatic events. With young children especially, dealing with trauma is challenging for the social worker due to the young child's limited vocabulary (O'Tool & Chiat, 2006). EMI is recommended as an intervention strategy for social workers in a wide variety of settings. This brief intervention strategy can lighten the social workers' heavy caseloads, and can also provide social workers with an effective strategy to assist young children suffering from trauma.

EMI is a brief intervention strategy that will allow social workers to offer more services in a shorter amount of time, therefore allowing them to attend to more cases in a shorter period of time. This will result in a significant amount of services being rendered to families and communities, contributing to the overall mental health of the country. Additionally, EMI can be implemented by social workers in a variety of settings, for example, educational social workers, and social workers in the employ of the South African Police Services.

The fact that EMI does not rely on the verbal ability of the child, enables social workers to employ this strategy with young children. Social workers often feel inadequate or incompetent to deal with young children effectively due to their limited verbal ability and comprehension (De Young, Kenardy & Cobham 2011; Lochat & van Niekerk, 2000). With EMI, young children will not be overlooked but effectively assisted to deal with their traumatic experiences.

However, of prime importance is that social workers receive the proper training and supervision in order to implement EMI. This will allow the social worker to effectively deal with challenges that may arise during the EMI session. Training in the technique will also enable the social worker to determine whether or not a child could be a candidate for EMI treatment. According to Beaulieu (2004), not all children are candidates for EMI, for example, children who have been diagnosed with epilepsy, Attention Deficit Hyperactivity Disorder (ADHD), schizophrenia, and DID, etc. may not be suitable candidates, and a social worker with the appropriate training will be able to determine whether EMI is the most appropriate intervention. The influence of certain aspects such as mental status and medication should be considered. Beaulieu (2004) supports appropriate training and adds that the integration process may be interrupted if certain aspects or situations are not dealt with correctly during the EMI session.

For the purpose of this study, the researcher did not have a therapeutic relationship with the respondents prior to the EMI session. This was a necessary factor to avoid and eliminate the possible therapeutic effect of such a relationship on the results of the study. However, the researcher does recommend an established relationship between the social worker and client prior to the EMI session in normal clinical practice. This may add depth to the session and may help the client to feel comfortable, prepared, and secure during the EMI session. Hence, this might possibly eliminate the clients' defence mechanisms.

5.4.2 Recommendations for Future Research

The goal of this study was not to evaluate the effectiveness of EMI, but rather to determine the usefulness of this technique with younger children. Due to the positive findings of this study, a thorough evaluative study of EMI is recommended. Such a study could then incorporate a control group with members who do not receive EMI, or who get an alternative form of trauma counselling. This will be helpful in eliminating other possible variables that might contribute to the reduction of the symptoms.

For future research it may be interesting to determine whether or not cultural or gender factors influence the results in terms of the effectiveness or usefulness of EMI. From the results in this study, there do not appear to be any cultural or gender influences, except for TSCYC terminology. However, due to the small sample of this study, this may not be a completely accurate representation.

Literature supports that trauma has a significant impact on the developing brain (Kubeka, 2008; Sternberg, Lamb, Guterman, & Abott, 2006; Weber & Reynolds, 2004). Although there are hypotheses regarding how EMI 'works' to reduce trauma symptoms, exact evidence to support these hypotheses remains lacking. A study that utilises brain imaging pre- and post-treatment could be useful to determine the neurobiology of EMI.

From this research it was determined that EMI can be utilised to reduce trauma symptoms in children between the ages of five to seven years, despite their lack of verbal ability. It may be interesting to research whether or not EMI can be utilised with an even younger age group.

For this study, the short-term decrease of symptoms was measured. Whether the decrease in symptoms will change over time is undetermined, therefore a follow-up study to determine the long-term improvements of EMI is recommended.

5.5 Final Conclusion

The researcher is of the opinion that EMI is an effective strategy for the treatment of trauma in early childhood. This study has assisted in both the personal and professional growth of the researcher. The researcher is passionate about working with children and adamant to continuously stay up to date with the most recent practices in child mental health. The study did not only empower the researcher to gain in depth insight into the inner workings of a child's brain and development, but has also allowed the researcher to experience how traumatic experiences can alter a child's functioning. This experience has placed a responsibility on the researcher to always look out for the vulnerable and be their voice of hope. With this newfound passion the researcher believes that she will be more in tune to her clients and more adamant to facilitate change within their environments. This study and the children involved in this study, will always remain in a special place within the researcher's inner being. Every child deserves to grow up to their full potential. The researcher believes that this study will help not only her practice, but also other health care professionals to understand how traumatic experiences influence the developing brain and to offer every child the best service possible.

Although further research is required to strengthen the evidence base of EMI, the researcher is of opinion that this technique should be promoted. By providing training in EMI for more health care professions, a greater amount of children suffering from trauma can be reached, contributing to the overall mental health of the country.

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Appendixes

APPENDIX A: PARENTAL CONSENT FORM



PARENTAL CONSENT FORM

TREATING TRAUMA IN EARLY CHILDHOOD BY UTILISING EYE MOVEMENT INTEGRATION THERAPY (EMI)

Researcher: Charmaine van der Spuy, social worker.
Purpose of study: Part of fulfilment for Master's Degree in social work [M.A. (Soc.Sc) Clinical].
Institution: University of Johannesburg
Supervisor: Ms Laetitia Petersen

Dear Parent/Caregiver,

You and your child are being asked to participate in this study on treating trauma in early childhood through the utilisation of Eye Movement Integration Therapy (EMI). EMI is a neurotherapy and a useful treatment for trauma symptoms. In South Africa with the unique challenges, trauma has become an expected part of life. Children in early childhood are especially vulnerable as trauma in early childhood may have an impact on their developmental processes. Furthermore, treating trauma in early childhood has been challenging, as these children do not possess the verbal ability required in most talk therapies. It is therefore important to explore options and treatments that do not rely on verbal ability in order to assist children in early childhood who has been traumatised.

The goal of this study is to explore whether EMI can be utilised in the treatment of trauma experienced during early childhood. EMI is a brief therapy that uses eye movements in order to access traumatic memories that are stored in the brain. The criteria for this study is children between the ages of 5-7 years, who have experienced a traumatic event 4-6 weeks ago and is now presenting with trauma symptoms.

If you agree to this study you will be asked to complete the Trauma Symptom Checklist for Young Children (TSCYC). Thereafter I will conduct a single EMI session with your child. The session will be approximately 15-30 minutes. Then, 2 weeks after the EMI treatment, you will complete the TSCYC again in order for me to determine whether there has been a change in symptoms. I will then also conduct an interview with you in order to explore your perception in the change of symptoms.

The only risk involved in this study for your child, is the possibility of experiencing some discomfort directly after the treatment, due to the sensitive nature of the information. This is a normal reaction, as the trauma is being integrated and processed for the following 2 weeks after the treatment. Please note that participation is completely voluntary and may be withdrawn at any stage with no penalties or consequences. Also, if your child may require further treatment after the study, I will provide the needed therapeutic services at no cost.

All information will be kept confidential and a coding system will be used in order to protect you and your child's identity. Even though the sessions will be tape recorded, it will only be used for the research study and will be deleted at the completion of this study. The data gathered will be published in reports, presentation and publications but you or your child will not be individually identified .

If you have any question now or during the study, please feel free to contact me at the following numbers or e-mail address:

012-998 6661 / charmaine.scheepers@gmail.com

I.....herewith agree to both my child and my participation in this study. I understand the proses to be followed and all my questions have been answered. I understand that my participation is voluntary and that I can withdraw at any time. I have received a copy of this form.

Please check the box that applies:

- My child **may** be tape recorded
- My child **may not** be tape recorded

Name of Parent/Guardian of participant

Signature of Parent/Guardian

Date

APPENDIX B: CHILD ASSENT FORM



CHILD ASSENT AGREEMENT FORM

“My name is _____

I am doing a study to learn how Eye Movement Integration Therapy (EMI) can be used with young children who has experienced trauma. You are being asked to take part in this study as you are between the ages of 5-7 years and have experienced a traumatic event 4 weeks ago.

If you take part in this study, the following will happen:

- “I will complete a checklist with your parent/caregiver to see if you experience symptoms of trauma, and how intense these symptoms are if present.
- Directly thereafter you and I will do the EMI session. This will take approximately 15-30 minutes, but can be longer or shorter.
- 2 weeks after the session your parent/caregiver will complete the checklist again.
- I will also conduct an interview with your parent/guardian/housemother after our session to explore his/her perception of the change in symptoms.”

Initially after our session you may feel worse than you did before. This is normal as the trauma memory takes two weeks to be processed and integrated. You are welcome to talk this over with you parents or to ask me any questions before you decide to participate. If you parents agree to the study, you are still able to decide not to participate. If you decide against participating or withdraw at any time during the study, there will be no penalty.

Information to contact me:

Charmaine van der Spuy: 012 9986661 or email me Charmaine.scheepers@gmail.com

If you sign this form it means that you agree to participate in this study. Both you and you parents/caregivers will receive a copy of this form after you sign it.”

Name of Child (please print)

Signature of child

Date

Name of Researcher

Signature of researcher

Date

APPENDIX C: INTERVIEW SCHEDULE

ANXIETY

Although some worrying is part of normal development it becomes problematic when it tends to be excessive and uncontrollable. Anxious children often seem tense, irritable and more emotional than other children. Anxiety can take on a variety of forms from general to more specific. Some symptoms or behaviours that may be indicative that your child is anxious include:

- “Feeling afraid something bad might happen
- Getting scared all of a sudden and don’t know why
- Scared of men/women
- Feeling stupid or bad
- Feeling nervous or jumpy
- Being afraid of the dark
- Worry about things
- Is afraid that somebody will kill him/her” (Briere & Scott, 2006, p. 33).

What is your experience of your child’s symptoms of anxiety;

PRE INTERVENTION

VS

POST INTERVENTION

.....
.....
.....

DEPRESSION

Depression is often associated with excessive feelings of sadness and an unhappy mood. Some indications of depressive symptoms include:

- “Feeling lonely
- Feeling sad or unhappy
- Crying a lot and inappropriately
- Hurting him/her or talking about hurting him/herself
- Feeling like he/she did something wrong
- Feeling nobody likes him/her
- Have feelings of killing him/herself” (Briere & Scott, 2006, p. 33).

What is your experience of your child’s symptoms of depression;

PRE INTERVENTION

VS

POST INTERVENTION

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.....

ANGER

Anger as a symptom of trauma is often associated with irritable , hostile or aggressive behaviours. Some behaviours indicative of anger include:

- “Arguing to much
- Break things unnecessarily
- Want to hurt others or hurting others
- Getting into fights
- Feelings of hatred and being mad
- Aggressive” (Briere & Scott, 2006, p. 33).

What is your experience of your child’s symptoms of anger;

PRE INTERVENTION

VS

POST INTERVENTION

.....

.....

.....

POSTTRAUMATIC STRESS

The criteria for PTS require direct or indirect exposure to a traumatic event where the child reacts with intense fear and where his/her coping mechanisms are rendered ineffective. Signs and behaviours that indicate PTS include:

- “Get bad dreams of nightmares
- Scary ideas or pictures pops in his/her head
- Flashbacks of the traumatic experience/s
- Try to avoid certain aspect that reminds him/her about the trauma e.g. does not want to go to a shopping mall
- Gets startled easily
- Struggle to concentrate” (Briere & Scott, 2006, p. 33).

What is your experience of your child’s symptoms of PTS;

PRE INTERVENTION

VS

POST INTERVENTION

.....

.....

.....

DISSOCIATION

“Dissociation is when there is a disruption in memory, consciousness, identity and/or the child’s perception of his/her environment. It can also manifest in disturbances of sensation, movement and other bodily functions. Behaviours that may indicate dissociation include;

- Pretend to be someone else

- Feeling dizzy
- Feeling that things are not real
- Forgetting and can not remember things
- Say that feels that he/she is not in his/her body
- Daydreaming more than previously
- Try not to feel or think “(Briere & Scott, 2006, p. 33).

What is your experience of your child’s dissociation;

PRE INTERVENTION

VS

POST INTERVENTION

.....

.....

.....

SEXUAL CONCERNS

Many children, especially those exposed to sexual abuse/rape, develop certain concerns regarding sexuality and sexual issues. These concerns may vary from distress about sexual issues to preoccupation with sex. Signs and indications of sexual concerns include:

- “Think a lot about having sex
- Touching private parts a lot
- Think about touching other people’s private parts
- Getting scared or upset when I think about sex or if others talk about sex
- Talk a lot about sex “ (Briere & Scott, 2006, p. 33).

What is your experience of your child’s sexual concerns;

PRE INTERVENTION

VS

POST INTERVENTION

.....

.....

.....

ANNEXURE D: JOURNAL ENTRIES

Participant 1:

He is a 6-year-old white male. He was diagnosed with cancer and found the diagnosis, hospitalisation and treatment traumatic.

Trauma words: “Die hospital met dokters, naalde en pyn.”

He is a beautiful boy with lots of energy. His hair has only started to grow back and his head is still patchy and bald. I cannot deny the sudden sadness that I feel. I explain the process to him and he follows the puppet well. He measures his level of distress at a 9 out of 10 as we start. I notice that whenever I do movements in the bottom right quadrants (from my viewpoint), he breaks eye contact. I see that when I make small movements with the puppet he follows the movements easier in those uncomfortable areas. After the session I found out that he got his injections and medications in his left arm. This may explain his distress in the bottom right quadrant (from my viewpoint). As we came closer to the last few movements his distress had visibly reduced. He was less fidgety and his body less tense. He measured his level of distress at a level 3.

Modality in which the trauma was stored	Experience
Visual	He would only answer that he saw images of the hospital. As his distress levels reduces, this image changed to him playing outside.

Participant 2:

He is a 7-year-old white male who was diagnosed with cancer. The diagnosis and treatment of the cancer was very traumatic for him. He associated his cancer with stomach pain as he mentions that he felt sick one evening and had a stomach-ache. He was then taken to hospital and diagnosed with cancer.

Trauma words: “The cancer in my tummy and the hospital filled with pain”

As our session began he looked very uncomfortable and distressed. I tried to ease his anxiety by explaining what will happen. This seemed to calm him down a bit. He indicated that his level of distress was at a 7 out of 10 as we began. Initially he struggled to follow the movements and I had to repeat the instruction and movements. From his body language I could see that he was tense and

very distressed. He complained about stomach-ache whenever I did movements in the lower quadrants, and even started crying from pain. I paused the movements and focused on some resource activation in order for him to ground and stabilise. This seemed to work well. I ascribe meaning to his intense stomach-ache as a psychosomatic expression of the traumatic memory of his diagnosis. Perhaps his brain has stored the fragmented trauma information in his body which is leading to his somatic experiences. After the resource activation I continued with the movements and his distress seemed to lower. He measured his level of distress to a 3 as we terminated.

Modality in which the trauma was stored	Experience
Visual	He would see an image of him going to the hospital for the first time, in a lot of pain due to his stomach-ache. This image changed to him seeing himself as a healthy boy going to school.
Tactioception	He initially presented with extreme stomach-aches. As the treatment continued his pain faded.

Participant 3:

He is a 5-year-old white male who was attacked by a wild baboon. Ever since the attack he became very aggressive and avoids wild animals.

Trauma words: “ Die groot bobbejaan wat op my afstorm.”

His attention was limited and during the beginning of the session he kept asking irrelevant questions. I contained the situation by explaining to him that this session was in order for me to gather information on how people like me could help children like him to overcome bad things that happened to them. After this he managed to stay focused. As we started our session he indicated his level of distress as a 8. When asked about his experience after each movement, he repeatedly expressed hearing the baboon “screaming”. He also stated that he saw the baboon running towards him. He avoided the bottom left quadrant. I moved through this area slowly as an attempt to help him process. As we came closer to the end of the session, he indicated that his distress lowered to a 4.

Modality in which trauma was stored	Experience
Visual	He expressed seeing an image of the baboon storming towards him. As the session came to an end, this image changed to him playing in a field with a horse.
Auditory	He expressed that he heard the sound of the baboon “screaming” as he stormed towards him. This sound disappeared towards the end.

Participant 4

Participant 4 was a 5-year-old Zulu speaking male who was physically abused by his biological mother. His aunt accompanied him to the session.

Trauma words: “The blood on the floor after my mommy hit me.”

His English vocabulary was very limited and initially I did not think he would be an ideal candidate. I however decided to keep this participant since it would be interesting to see whether his lack of vocabulary would negatively influence the results. EMI is promoted as a neurotherapy and not a talk therapy, therefore I wanted to see whether I could substantiate this statement with my findings with participant 4. In retrospect as I looked at Participant 4’s findings from the TSCYC pre and post test, I was surprised to see that his symptoms have decreased. So despite my initial thoughts that Participant 4’s treatment may be unsuccessful due to his limited vocabulary, there was indeed a reduction in his symptoms.

As with the other participants, I had to help him formulate his trauma words. He indicated that his level of distress was a 9 when we started, and by the end it was down to a 4. Because of his limited vocabulary, he did not give any responses after each segment of movements.

Although he effectively followed the puppet with his eyes, I did not think the session would be effective. But as the results indicated, his symptoms did decrease.

Participant 5

Participant 5 and 6 are twin brothers. They are 6-year-old African males. Both have been sexually abused by their biological parents and placed in the care of their aunt. As we started the session participant 5 indicated that his level of distress was at an 8. Later this lowered to a 4. He tracked the movements well. During movements in the top quadrants he expressed seeing an image of his father pushing him to the ground. He later also mentioned hearing his brother scream. From his body language I sensed that he was angry. This reaction surprised me as I would have thought that he would have been scared of anxious instead. This just made me realise that every individual react, interpret and process trauma uniquely. Both the images and sounds disappeared later on.

Modality in which trauma was stored	Experience
Visual	He saw an image of him being pushed to the ground. This image changed to him playing with his brother.
Auditory	He heard his brother screaming. This disappeared to the end of the session.

Participant 6

Trauma words: “ My mother has left me.”

I sensed that he was the more sensitive one of the brothers. According to his aunt, he is a sweet child but his sightings of his deceased mother have been scaring his peers, which results in them isolating him. He did not have any difficulty with tracking the puppet. He indicated his level of distress at a level 8 and it later lowered to a 4. He did not verbalise any experiences but showed discomfort and distress in the top left quadrant.

Participant 7

Trauma words: “Blood on the ground after dad hurt mom and me.”

She is a 7-year-old white female. As we started she indicated that her level of distress is 7. This

lowered to a 3. Soon after we began I noticed that she struggled to stay focused. I realised that by moving the puppet and therefore animating it, she appeared to stay focused for longer. She mentioned seeing an image of her face being swollen and her lip bleeding. This image later changed to her playing at school.

Modality in which trauma was stored	Experience
Visual	She saw an image of her swollen face and bleeding lip. This image later changed to a happier image of herself playing at school.

Participant 8

A 6-year-old white female. She lost her mother due to illness.

Trauma words: “My mom lying in the hospital bed, skinny and pale.”

As the session started she became very emotional as the trauma words were repeated. Her eyes filled with tears and her shoulders drooped. As the session progressed she appeared to react less emotional to these words. She measured her level of distress as an 8. She struggled to stay focused but I found that she tracked the puppet easier if I moved the puppet slightly to make it appear as if it was real. She showed discomfort in the bottom two quadrants. She mentioned seeing an image of her mother lying in the hospital looking very skinny and pale. As the session came to an end this image changed to an image of her mother looking healthy and running in a field. As the session terminated she measured her distress level as a 3.

Modality in which trauma is stored	Experience
Visual	Saw her mother lying in the hospital bed looking pale and skinny. This image later changed to her mother looking healthy and running through a field laughing.

Participant 9

Trauma words: “My dad is dead. No one could save him”.

She is 7-year-old white female. Her father died in a motor vehicle accident. She was on the scene of the accident where he died in her arms. As I listened to her telling me her story, I could feel my own feelings of sadness. I took a deep breath and reminded myself that this was her feeling being projected onto me. Since this is not a therapeutic session, I did not comment on the projection but rather focused on explaining the procedure to her. As we began she measured her level of distress at a level of 10. At the end this score has lowered to a 5. She tracked all movements very well. Movements in the bottom right quadrant appeared to bring forth discomfort. It was evident in her facial expression, however she did try and compose herself after each reaction. She expressed some experiences in many modalities:

Modality in which trauma was stored	Experience
Visual	She expressed seeing an image of her father lying in her arms, covered in blood. This later changed to him sitting in heaven watching her and smiling at her.
Auditory	She expressed hearing the ambulance siren. This sound later disappeared.
Tactioception	She expressed during some movements in the bottom quadrants that her neck was feeling stiff and she could not move it. I did some resource activation and asked her to move her neck from side to side. This was again a possible somatic symptom. It could be that her body was remembering how she held her father at the scene of the accident and how her neck was in an awkward position then. The stiff neck disappeared during the end of the session.

Participant 10

Trauma words: “The hospital, needles and machines”.

She is a 5-year-old African female. She was diagnosed with cancer and found the treatment traumatising. She measured her levels of distress at a 8 and by the end this lowered to a 3. Although she tracked all the eye movements she did not engage in much verbal communication. She did show discomfort in the bottom right quadrant but did not verbalise her experiences.

Participant 11

Trauma words: “The scary hospital and doctors”.

A 6-year-old African female who was diagnosed with cancer. As we started she measured her level of distress at a level 9. This lowered to a level 4 as we terminated. She did not show any difficulty in tracking the movements. She did however during some movements in the top quadrants, slightly trembled as if in shock. She did not however verbalise any of these experiences. I wonder if she struggled to find the words to express these experiences? I did however notice that these trembles disappeared to the end of the treatment.

Participant 12

Trauma words: “The boy who pushed me to the ground and forced me to lick his private parts”.

She is a 5-year-old African Female who was sexually abused by a peer in her school. Her parents described her as “a sweet little girl” but her sexual preoccupation worried them and the school immensely. The child had a limited English/Afrikaans vocabulary and I had to ask her mother to translate. She then seemed to understand the concepts. As we began her level of distress was measured as a 6. At the end of the treatment it has lowered to a level 4. She struggled to verbalise her experiences though. She did however break eye contact in the bottom quadrants. She did mention to her mother that she heard the boy’s voice laughing. This did not happen again.

Modality in which the trauma was stored	Experience
Auditory	She heard the perpetrator laughing. This happened only once.

APPENDIX E: ETHICAL CLEARANCE



**The Faculty of Humanities
Academic Ethics Committee
University of Johannesburg
7th March 2014**

**Ms Laetitia Petersen (Supervisor)
Department of Social Work
Faculty of Humanities
University of Johannesburg**

ETHICAL CLEARANCE

Title of research: Treating Trauma in Early Childhood by Utilising Eye Movement Integration Therapy

Student name: Mrs C Van der Spuy

Student No. 201309510

Dear Ms Petersen

It is the judgement of the “Faculty of Humanities Academic Ethics Committee” that the research proposal, and the relevant documents submitted to us in support of a request for Ethical Clearance, has clearly indicated that the standard practice of ethical professionalism will be upheld in the research.

From a research ethics point of view, the Faculty of Humanities Academic Ethics Committee therefore endorses the proposed research.

Yours sincerely



**Professor Zelda G Knight
Chair: Faculty Ethics Committee**

CC: Chair of HDC, Professor A Van Breda

APPENDIX F: EMI TRAINING CERTIFICATES



The Milton H. Erickson
INSTITUTE OF SOUTH AFRICA

CERTIFICATE OF ATTENDANCE

This certifies that

Charmaine van der Spuy

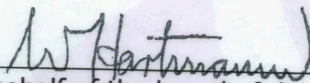
Completed 20 hours of CEU's (18 General and 2 Ethical) in
UPSP0003/05/02/2012

Fundamental Intensive Training
in
Eye Movement Integration
(EMI)

on

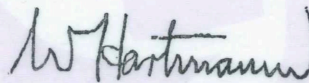
10 & 11 May 2012

**CONDUCTED BY THE MILTON H. ERICKSON
INSTITUTE OF SOUTH AFRICA**


On behalf of the board of directors
Woltemade Hartman Ph.D

11 May 2012

Date



Attested to by



The Milton H. Erickson
INSTITUTES OF SOUTH AFRICA

CERTIFICATE OF ATTENDANCE

This certifies that

Charmaine van der Spuy

was awarded 12 general and 4 ethical CEU's

for attending

Advanced Training in Eye Movement Integration

Accreditation number ~ UP/SP/0003/08/01/2012

on

2 and 3 August 2012

**CONDUCTED BY THE MILTON H. ERICKSON
INSTITUTES OF SOUTH AFRICA**

On behalf of the board of directors
Woltemade Hartman Ph.D