A COMPARATIVE FACTOR ANALYTIC STUDY OF THE CHILDHOOD TRAUMA QUESTIONNAIRE (CTQ) BETWEEN TRAUMA-EXPOSED AND NON TRAUMA-EXPOSED SCHOOL-GOING ADOLESCENTS IN THE GREATER CAPE TOWN AREA

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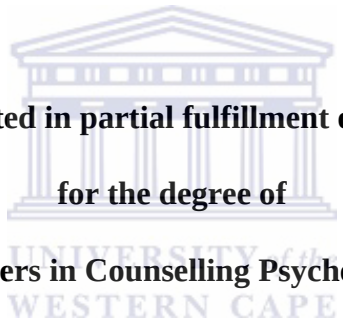

Mini-thesis submitted in partial fulfillment of the requirements

for the degree of

Masters in Counselling Psychology

in the

Department of Psychology

University of the Western Cape, Bellville.

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February 2010

UNIVERSITY of the
WESTERN CAPE

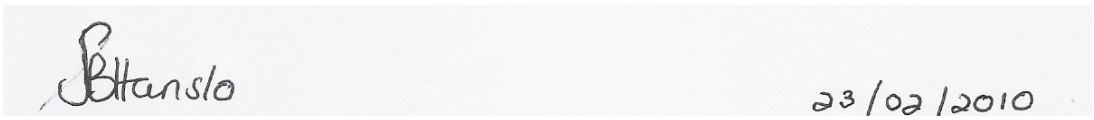
ABSTRACT

This study investigated the factor analytic structure of the Childhood Trauma Questionnaire (CTQ) in school-going adolescents in the greater Cape Town area. This questionnaire is a retrospective method, assessing childhood exposure to trauma in the form of emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect (Bernstein & Fink, 1998). The data used originated from a survey where several questionnaires including the Childhood Trauma Questionnaire were used to examine perceived stress and resilience in adolescence. The primary study found that there is extensive published research on trauma exposure in adolescents. However, the investigators found that there is a lack of research on actual perceived stress in the context of certain traumatic experiences. This study examined one of the questionnaires used in the primary study, the CTQ. The question of how the factors cluster in a sample of 631participants between the ages of 11 and 18 was answered by using exploratory factor analysis. Three factor analyses, using principal component analysis and Varimax rotation with Kaiser Normalisation were run. The three factor analyses are (i) the entire sample (adolescents, both trauma exposed and non trauma–exposed) (ii) the sample with moderate/severe childhood trauma and (iii) the sample with mild/no childhood trauma. The results of the current study revealed that for group one, five rotated factors were yielded that accounted for 59.22% of the variance among items, for group two, eight rotated factors was extracted that accounts for 62.47% of the variance among items and for group three, nine rotated factors which accounted for 65.38% of variance among the items was yielded. After conceptual analysis, it was found that only group two held to the five-factor stucture described in the CTQ's manual. This indicates that the severity of trauma exposure does affect the factor structure of the CTQ in this sample of school-going adolescents.

DECLARATION

I, Samantha Bernadine Hanslo of the Department of Psychology in the Faculty of Community and Health Sciences in the University of the Western Cape sincerely declare that: A comparative factor analytic study of the Childhood Trauma Questionnaire (CTQ) between trauma-exposed and non-trauma exposed school-going adolescents in the greater Cape Town area is my own work and the true result of my efforts.

This study used secondary data analysis and fully acknowledges the investigators of the original study.



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Signed: Samantha Bernadine Hanslo **Date:** February 2010

ACKNOWLEDGMENTS

Herewith follows my expression of gratitude to the following persons without whom this research would not have been possible:

- Firstly, my loving husband for his encouragement and patience.
- My family for their endless support and love.
- My supervisor, Professor P. Naidoo, for her invaluable insight and advice.
- My co-supervisor, Professor S. Seedat for her guidance.
- My fellow masters students for their able assistance and continued support.
- Isam Ysin Abd Elgadir Mohammed and Abu Elgasim Ahmed from the Department of Statistics at the University of the Western Cape for their assistance with statistical analysis.
- Lastly, I would like to acknowledge and thank the National Research Fund (NRF) for their financial assistance.

TABLE OF CONTENTS

CHAPTER SIX

CHAPTER SEVEN

LIST OF FIGURES AND TABLES

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Studies have revealed that South Africa currently rates as one of the most violent countries in the world (Bundy, 1992). Exposure to violence can have long lasting effects. This is indicated by studies that link exposure to violence to the occurrence of mental health difficulties such as depression, anxiety, post-traumatic stress, low self-esteem, self-destructive behaviour and aggression (Fitzpatrick & Boldizar, 1993; Giaconia, 1995; Polusny & Follette, 1995; Seedat, Njenga, Vythilingum & Stein, 2004).

Anxiety disorders are the most common of all psychiatric disorders and result in considerable functional impairments and distress. Posttraumatic stress disorder (PTSD) is categorised under the heading of anxiety disorders and is a condition marked by the development of symptoms after exposure to traumatising life events (Sadock & Sadock, 2007). Brunello, Davidson and Deahl (2001) estimated that approximately one third of the population will be exposed to a trauma severe enough to hold to the definition of PTSD. According to these authors, 80% to 90% of the individuals who were exposed to a traumatic event will later adapt and continue with their lives. Furthermore they postulate that since 10 to 20% of individuals exposed to severe trauma will develop PTSD, it is estimated that the prevalence of PTSD in general population will range from 3% to 6% (Brunello *et al.,* 2001). PTSD prevalence rates for children and adolescents are believed to be similar or even higher than those of adults who have suffered the same or similar trauma (Fletcher, Levin, Lachar, Kusnerik, Harward, Mendelson & Lilly, 1996). Studies on PTSD symptoms show that boys were as likely as girls

to meet PTSD symptom criteria (Seedat, Njenga, Vythilingum & Stein, 2004). The above-mentioned studies indicate that PTSD is a serious illness in adults as well as adolescents. If one takes into account the rate of crime and violence in South Africa, the prevalence of PTSD symptoms can also be assumed to be high. In order to support victims and adequately treat this illess the accuracy and suitablility of our screening devices must be addressed.

1.2 Background to this study

The larger study examined perceived stress and resilience after various types of trauma in a sample of school-going adolescents. The aims of the larger study were : (1) to investigate the extent and the way in which adolescents perceive certain traumatic experiences in the last month, taking demographic differences into account, and (2) to investigate the role of resilience in coping with traumatic experiences, taking demographic differences into account.

The rationale of the larger study was that most of the research on trauma exposure in adolescence focuses on the prevalence of PTSD, coping styles, social structures, family dynamics and education. The investigators, therefore proposed that it would be valuable to investigate the interactions between perceived stress, resilience, and social support of individuals who have been exposed to trauma, and to establish how these interactions might contribute to the presence of PTSD symptoms.

The hypothesis generated by the larger study was that there would be a positive association between perceived stress and the development of PTSD after traumatic exposure in adolescents. Adolescents with clinically significant PTSD symptoms will manifest higher levels of perceived stress than adolescents without clinically significant PTSD symptoms. Non-trauma exposed healthy adolescents will report the lowest level of stress. Similarly, resilience will be lower in adolescents with clinically significant PTSD symptoms than those without. Healthy, non-trauma exposed adolescents will endorse the highest levels of

resilience.

Research participants for the larger study included adolescents and young adults aged 11 to 23 years. The participants for the larger study were drawn from two groups: a clinic sample and a high school sample. The clinic sample included fifty adolescents from consecutive referrals to a youth stress clinic, which operates as a research clinic that offers free assessment and referral to adolescents exposed to violent traumas. For this sample a test battery that included a demographics questionnaire, a clinician-administered diagnostic interview (Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS) (Kaufman, Birmaher, Brent, Rao, Flynn, Moreci, Williamson & Ryan, 1997) and self-report measures of violence exposure, childhood trauma, PTSD, depression, and other psychopathology was administered. The Perceived Stress Scale (PSS) (Cohen, Kamarck & Mermelstein, 1983), the Childhood Trauma Questionnaire (CTQ) (Bernstein & Fink, 1998) Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003) and Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet & Farley, 1988) were also included.

The school sample for the larger study constituted 1500 adolescents and young adults between the ages of 11 and 23, drawn from several high schools in the Cape Town area. With the exception of the K-SADS, all the other measures mentioned above were administered to this sample. The demographic information included questions about participant's age, gender, ethnicity, composition of the home, parental marital status, parental occupation, family income and substance use.

Both samples were had to obtain written informed consent obtained from parents/ legal guardians as well as written assent from adolescents prior to the administration of study procedures. In addition ethical approval was obtained through the University of Stellenbosch Committee for Human Research.

The larger study was thus interested in perceived stress and resilience in the group of school

going adolescents who participated in the study. Several tools were used to investigate this question. This study investigated the usefulness of one of these tools, the CTQ, for use in the sample of school-going adolescents.

The present study is based on data captured from the school sample of the larger study in order to answer the research question posed in section 1.4 below. However, the present study will only use information on adolescents aged 11 to 18 years old. No norms have been established for South African users of the CTQ. This study investigated how data from South African participants compare to the original validity sample used in the CTQ's manual in terms of factor structure and how trauma exposed and non trauma exposed adolescent groups compare with each other.

The study was thus conducted within the background of the larger study. To better understand the setting within which the research was conducted, section 1,3 will briefly describe the demographic profile of Cape Town, the socio economic status of the population as well as the substance use of adolescents in the Cape Town area.

1.3 Rationale for study

The CTQ is a retrospective screening device for childhood maltreatment and can be used in both adolescent and adult populations. The instrument takes only five minutes to administer, can be administered to a large group of individuals and is easy to score and interpret. This makes it an ideal measure for use in low resourced areas of South Africa. It has been used in South African samples before (Fincham, Altes, Stein & Seedat, 2008). As yet, no norms have been established for South African users. It is therefore important to establish the psychometric properties of such a measure when used in South African samples.

1.4 The Cape metropole

Cape Town is the largest city in the Western Cape province of South Africa and continues to be the parliamentary capital (Pieterse, 2002). It is inhabited by almost 2.8 million people and reflects a totally different demographic profile than any other city in South Africa (see Table 1.1) (Pieterse, 2002).

Table 1.1: Population of the Cape Metropolitan Area in 1996

Race	Number of People	Percentage*
African	702034	26
Coloured	1313131	49
Indian/Asian	36717	1
White	630985	24
Total	2682866	100 *Percentages rounded-off

Source: Dorrington, 2000 cited in Pieterse, 2002.

The Coloured (mixed race) population makes up close to 50% of the population with Whites and Africans each comprising approximately 25% respectively. This is anomalous to the national trend according to which Coloureds and Whites each comprise only 9% of the total South African population and Africans constitute 77% (Pieterse, 2002).

Economically, the Cape Metropole Area (CMA) boasts economic diversity and experiences growth in the information, knowledge and service sectors (Pieterse, 2002). The economically active population of the CMA is stratified as follows: 18% in the informal sector; 22% unemployed; and 60% employed (CMC, 2001).

A study done in Cape Town with in grade 8 and eleven students attending public schools attempted to document the prevalence rates of cigarettes, alcohol and cannabis amongst high school students (Flisher, Parry, Evans, Muller & Lombard, 2003). They found that in a

sample of 2946 students from diverse backgrounds, race and gender that the prevalence rates for previous month (recent) use of tobacco, alcohol, and cannabis were 27%, 31%, and 7% respectively (Flisher *et al.*, 2003).

1.5 Research question

The present study seeks to answer the following question: What is the factor structure of the CTQ in trauma-exposed and non-trauma exposed school-going adolescents within the greater Cape Town area.

1.6 Aim

The aim of this study is:

1. to examine whether the factor structure of the CTQ differs in the trauma-exposed and non-trauma exposed groups.

1.7 Objectives

The objective in relation to aim one is to compare the two groups, (i) trauma exposed adolescents and (ii) non-trauma exposed adolescents, for differences in factor structures.

1.8 Hypothesis

1. The factor analysis for the two groups, moderate/severe childhood trauma and the mild/no childhood trauma will show significant difference.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 Introduction

In this chapter, the theoretical framework within which the CTQ was developed will be discussed. The definition of trauma, as well as the five subtypes of child abuse will be reviewed. Lastly, this chapter will briefly state the definition of PTSD as this is a disorder related to trauma.

2.2 Trauma

Although the literature on trauma is extensive, previous studies (Wright, Asmundson, McCreary, Scher, Hami & Stein, 2001; Gwadz, Nish, Leonard & Strauss, 2007; Van Wyk & Edwards, 2005) suggest that more work in this area is needed to adequately understand and provide support to sufferers of conditions such as PTSD which may develop as a direct result of exposure to trauma (APA, 2000).

2.3 Cognitive behavioural understanding of PTSD

The cognitive model of PTSD states that people affected by this disorder cannot process or rationalize the trauma that precipitated the disorder. They continue to experience the stress and attempt to avoid experiencing it by avoidance techniques. Consistent with their partial ability to cope with the event, persons experience alternating periods of acknowledging and blocking the event. It is thought that the brain attempts to process the massive amount of information provoked by the trauma creates these alternating periods (Sadock & Sadock,

2007). The behavioural model of PTSD posits two phases in its development. First, the trauma, also named an unconditioned stimulus produces a fear response. This fear response is paired through classical conditioning, with a conditioned stimulus such as physical or mental reminders of the trauma (e.g. sights, smells or sounds). Second, through instrumental learning, the conditioned stimuli elicit the fear response independent of the original unconditioned stimulus, and persons develop a pattern of avoiding both the conditioned stimulus and the unconditioned stimulus (Sadock & Sadock, 2007).

2.4 Subtypes of trauma

Trauma can be divided into subtypes namely interpersonal trauma and non-interpersonal trauma, chronic or long-lasting trauma and acute or one-time-only-experiences (Greene, Goodman, Krupnick, Corcoran, Petty, Stockton & Stern, 2000). Interpersonal types of trauma are of human design and include experiences of warfare and terrorism, witnessing domestic or community violence, and violent personal assault (physical and sexual abuse and neglect). Non-interpersonal trauma includes natural disasters, disasters related to human casualty, accidents or diagnosis with life-threatening illness. Greene *et al.* (2000) found that non-interpersonal trauma alone was not associated with elevated current trauma-related symptoms. Multiple interpersonal exposures were the category associated with the highest risk for current symptom distress, significantly higher than any other type (Greene *et al.*, 2000).

2.5 Child abuse and neglect as described by the CTQ

The CTQ identifies five types of abuse within which the developers understand childhood trauma. This section will state the manual's definition of these types of abuse as well as look at how others have defined, emotional abuse, physical abuse, sexual abuse, emotional and physical neglect.

The five constructs of child abuse and neglect used in the development of the CTQ are

defined as follows. *Emotional abuse* is described as a verbal assault on a child's sense of worth or well-being, or any humiliating, demeaning, or threatening behaviour directed toward a child by an older person. *Physical abuse* is defined as bodily assaults on a child by an older person that poses a risk , or result in injury. *Sexual abuse* refers to sexual contact or conduct between a child and an older person; explicit coercion is a frequent but not essential feature of these experiences. *Emotional neglect* refers to the failure of caretakers to provide a child's basic psychological and emotional needs, such as love, encouragement, belonging, and support. *Physical neglect* refers to the failure of caregivers to provide a child's basic physical needs, including food, shelter, safety and supervision, and health (Bernstein & Fink, 1998).

2.6 Definitions and prevalence rates and the effects of the five types of abuse

The next section will explore the prevalence of the five different types of abuse during childhood and adolescence. More detailed descriptions of these types of abuse will also be described.

2.6.1 Physical abuse

According to Wekerle and Wolfe (2003) the overall prevalence of physical abuse during childhood and adolescence is 10 to 25%, depending on the definition used, the populations studied and the cut-off point for the end of adolescence (Carr, 2006).

Physical abuse refers to deliberately inflicting injury and includes hitting, biting, burning, scalding, strangling, stabbing, suffocating, drowning, and poisoning (American Academy of Child and Adolescent Psychiatry, 1999; Browne, 2002; Emery & Laumann-Billings, 2002; Jones, 2000; MacDonald, 2001; Myers & Stern, 2002). In some countries, such as the USA,

Ireland and the UK, physical chastisement for example slapping and caning is common. In such cases punishment that leads to observable physical harm is defined as abuse and is

legally distinguished from normal chastisement. The battered child syndrome is an extreme outcome of physical abuse and refers to cases where young children present with multiple bruises, skeletal and head injuries, often accompanied by malnutrition and neglect and marked anxiety, and whose parents deny responsibility for these injuries (Kempe, Silverman, Steele, Droegemuller & Silver, 1962). Munchausen's syndrome by proxy may sometimes involve physical abuse. Young mothers with pre-school children usually present with this syndrome. It refers to parents who repeatedly bring their children for medical consultation for conditions that they have induced or fabricated symptoms. Where physical abuse is involved, parents may induce symptoms by poisoning or partially suffocating their children (Jones, 2000). There is a high co-morbidity for physical abuse and neglect that could be accounted for by some common contextual factors that are associated with both (Carr, 2006).

2.6.1.1 Effects of physical abuse

The physical consequences of physical abuse include scarring, disfigurement, neurological damage, visual or auditory impairment and failure of growth. The majority of these effects attenuate with time but most persist into adulthood (Carr, 2006). The short term psychological effects include negative self evaluative beliefs, problems with the development of linguistic and cognitive competencies, problems with affect regulation and associated excesses of internalising and externalising behaviour problems and relationship difficulties (Carr, 2006). The long-term consequences of physical abuse is that individuals abused as children have a higher risk of externalising and internalising behaviour problems during adolescence and adulthood. Externalising behaviour problems could include teenage delinquency, aggression, domestic violence, child abuse and substance abuse. Internalising behaviour problems could include self-injury, suicide, anxiety, depression and somatisation. Other long-term

consequences of physical abuse could include difficulties in making and maintaining intimate relationships or long-term educational and vocational problems due to short term cognitive

and language delays (Carr, 2006). The majority of physically abused children do not develop serious long-term problems. For those who do, the difficulties seem to be related to the characteristics of the abuse, the characteristics of the family network and the way the placement and legal proceedings related to the abuse were managed.

2.6.2 Emotional neglect

A review of international incidence studies confirms that neglect is the most common form of child maltreatment and that emotional abuse is less common (Creighton, 2004). There is not an international consensus as to what constitutes emotional abuse and neglect. Emotional abuse and neglect are two forms of maltreatment in which particular parenting practices, usually spanning over a substantial time period lead to adverse consequences for the child, such as attachment difficulties and non-organic failure to thrive. Based on recent reviews a working definition is presented as follows (Browne, 2002; Glaser, 2002a; Jones, 2000; MacDonald, 2001; Hilyard & Wolfe, 2002, Iwaniec, 2004; Hart *et al.*, 2002; Smith & Fong, 2004, Wekerle & Wolfe, 2003). Neglect is defined as a passive, ignoring of the child's needs, including physical needs for feeding, clothing and shelter, safety needs for protection, emotional needs for nurturance and a secure base, intellectual needs for stimulation, social interaction and conversation, the need for age appropriate limit setting and discipline and the need for age appropriate opportunities for autonomy and independence (Carr, 2006). Typically parents do not neglect their children intentionally; rather it arises through parent's lack of resources or lack of awareness of their children's needs. Physical neglect involves failing to meet the child's need for food, clothing and shelter and failing to protect the child from harm, including environmental hazards, infections and illnesses. This is the most common form of neglect and is related to social disadvantage and poverty. Emotional neglect refers to when parents fail to meet the child's need for nurturance, stimulation, limits and independence. This is often related to lack of knowledge, skills, emotional maturity and

mental health. Furthermore, contextual factors such as lack of exposure to good parenting models in childhood, personal experience of abuse or neglect, personal incapacities such as depression, impulsivity or alcohol and drug abuse, poor social problem-solving skills, marital discord or violence, a chaotic family lifestyle and a high level of stress involving poverty and isolation (Carr, 2006).

2.6.3 Emotional abuse

Emotional abuse in contrast to neglect involves intentionally carrying out some of the following actions with respect to the child. These include: Frequent punishment for minor misdemeanours, frequent punishment for positive behaviours such as smiling, playing or problem solving, frequent criticism, ridicule, humiliation and threats, frequent rejection, discouragement of attachment and exclusion from family life and frequent blocking the development of appropriate peer relationships. Further actions such as frequent corruption through parents involving the child in drug use, prostitution or theft and lastly, frequent attitudinal corruption through encouraging prejudicial hatred of specific groups of people or family members (on the basis of race, gender, religious beliefs, etc.) may also be included in the definition (Carr, 2006). Persistent punishment, criticism and rejection may be motivated by negative parental mis-attributions or inaccurate developmental expectations. The parents may inaccurately attribute negative intentions to the child, such as assuming that the child is not eating or crying to intentionally punish them. Alternatively the parents may behave in a punitive or critical way towards the child because of a lack of accurate knowledge about the child's development believing that criticism and punishment is character building or that young children should be capable of a high degree of emotional and physical self-control. Rejection may reflect parental unavailability due to depression or drug use.

2.6.3.1 Levels of neglect and emotional abuse

According to Browne (2002) there are four levels of severity of neglect and emotional abuse: less severe, moderately severe, very severe and life threatening. With less severe emotional abuse, there are occasional verbal assaults, denigration, humiliation, scapegoating and a confusing family atmosphere. With moderately severe emotional abuse, there are frequent verbal assaults, denigration, humiliation and occasional rejection. The child may also witness occasional family violence and parental intoxication. With severe emotional abuse, there is frequent rejection, occasional withholding of food and drink, enforced isolation and restriction of movement. A child will frequently witness family violence and parental intoxication. With life threatening emotional abuse, there is frequent rejection, failure to nurture, frequent withholding of food and drink, enforced isolation and restriction of movement. Furthermore, parents terrorize and confine the child, and the child frequently witnesses parental psychotic episodes.

2.6.3.2 Effects of emotional abuse and neglect

The process of mis-attribution and inaccurate expectations which lead to parental punishment, criticism and rejection leads to the child developing both negative self-evaluative beliefs and to internalise punitive internal models of care giving relationships. Some parents use their children to meet their emotional needs by over-identifying with them and treating them as a confidant. In these situations the child becomes triangulated between the over involved parent and the other parent or adults in their lives, have difficult developing a clear sense of autonomy and may internalise over involved models of care giving relationships. Deviant socialization processes underpin parents' acts of corruption whereby they involve children in criminal activities and lead the child to develop internal standards that will foster the

development of conduct disorders (Carr, 2006).

Short-term effects of neglect and abuse can lead to parent-child attachment problems, non-organic failure to thrive, psychosocial dwarfism and developmental delays. In parent-child

attachment problems, two types of reactive attachment disorders are recognised in the DSM-IV TR. These are inhibited reactive attachment disorder and disinhibited reactive attachment disorder. Inhibited reactive attachment disorder is characterised by a rejecting or punitive parenting style or a parenting style where the parent is not promptly or appropriately responsive to the child's signals. The child's reaction may take the form of constantly failing to initiate and respond to most social interactions in a developmentally appropriate way (Sadock & Sadock, 2007). The disinhibited reactive attachment type is associated with institutional upbringing or multiple placements experiences. This type is characterised by clinging behaviour in infancy, diffuseness of selective attachments in preschool years, indiscriminately friendly attention-seeking behaviour in middle childhood and a difficulty in forming confiding peer relationships in childhood and adolescence (Carr, 2006; Sadock & Sadock, 2007).

2.6.4 Sexual abuse

According to Carr (2006), there is an international consensus that child sexual abuse represents unacceptable childcare and a violation of a child's human rights as outline in the United Nations Convention on the Rights of the Child (1992). Child sexual abuse (CSA) refers to the use of a child for sexual gratification (American Academy of Child and Adolescent Psychiatry, 1997, 1999; Berliner & Elliot, 2002; Glaser, 2002b; Wekerle & Wolfe, 2003). Sexual abuse actions may vary in intrusiveness (firm non-contact viewing or exposure to contact, ranging from touching to penetration) and frequency (from a single episode to frequent and chronic abuse). A distinction is made between intra-familial sexual abuse, the most common form of which is father-daughter incest, and extra familial sexual abuse where the abuser resides outside the familial home (Carr, 2006).

In community-based, random sample, self report studies of CSA conducted in Europe, the USA and New Zealand from the 1980's up to the first decade of the twenty-first century

overall prevalence rates for contact and non-contact forms of sexual abuse were 3% to 25% for males and 8% to 42% for females (Creighton, 2004). About 10% of cases that come to the attention of child protection services had suffered CSA rather than neglect, or physical and emotional abuse (Carr, 2006). CSA occurs with children of all ages but there is a peak for girls at six to seven years and at the onset of adolescence. Compared to with the normal population, rates of abuse are two times higher among physical and intellectually disabled children. According to Carr (2006), more girls than boys are sexually abused and most abusers are male. It is reported that girls are more commonly abused intrafamilially and boys are more commonly abused extra familially.

Intrafamilial cases are over-represented in clinical studies. Fathers, stepfathers and siblings most commonly perpetrate intrafamilial sexual abuse. People whom the family trust, such as baby-sitters, club leaders, teachers, residential care staff, neighbours and friends most commonly perpetrate extrafamilial sexual abuse. CSA usually entails threats of violence; co morbidity with physical child abuse is only 20%. Some sexual abuse occurs in isolation, but in a significant number of cases abuse is organised and may involve recruitment of children for paedophile rings, pornography, prostitution and sadistic or satanic practices (Carr, 2006).

2.6.4.1 Effects of sexual abuse

CSA has profound short term and long-term effects on psychological functioning (Berliner & Elliot, 2002; Browne & Finklehor, 1986; Glaser, 2002b; Jones, 2000; Kendall-Tackett, Williams & Finklehor, 1993; Paolucci, Genuis & Violato, 2001; Putnam, 2003; Sequeira & Hollis, 2003). About two thirds of sexually abused children develop psychological symptoms.

Behaviour problems shown by children who have experienced CSA typically include sexualised behaviour, excessive internalising or externalising behaviour problems and school based attainment problems (Carr, 2006). Paolucci *et al.* (2001), in a meta-analysis of thirty seven studies found outweighed effect sizes of 0.5 for PTSD, 0.6 for depression and suicide,

0.5 for sexual promiscuity, 4 for victim perpetrators cycle and 0.2 for deterioration in academic performance.

Browne and Finklehor (1986) identified the intrapsychic processes that underpin the behaviour problems or symptoms that arise from sexual abuse called traumagenic dynamics formulation. This formulation is characterised by traumatic sexualisation, stigmatisation, betrayal and powerlessness as four distinct yet related dynamics that account for the wide variety of symptoms shown by children who have been sexually abused. With traumatic sexualisation, the perpetrator transmits misconceptions about normal sexual behaviour and morality to the child (Carr, 2006). Stigmatisation involves the blaming and denigration of the child by the perpetrator who coerces the child into maintaining secrecy. The dynamics of betrayal begin when the trust child has in the perpetrator is violated and the expectation that other adults will be protective is not met. The dynamic of powerlessness have their roots in the child's experience of being unable to prevent the abuse because of the perpetrator's use of physical and force and psychological coercion. This may be compounded by the refusal of the other members of the network to believe the child or take effective professional action (Carr, 2006).

2.7 Child abuse in South Africa

Townstead and Dawes (2004) suggests that one form of abuse, child sexual abuse, is on the increase when one looks at reports in popular media and research literature. However, the question of whether there has indeed been an increase in child abuse or whether reporting rates have increased is raised. The authors of this review agree that it is highly probable that both are correct. She further postulates that the rise in reporting may be due to the broadening of the definition of abuse (Munro, 2002).

Definitions of abuse differ across studies (Madu & Peltzer, 2000). Also if populations from which data is gathered differ, and if study samples are not representative of the populations

from which they are drawn, establishing the prevalence of abuse become very difficult (Townstead & Dawes, 2004). Munro (2002) suggests that what adds to the difficulty in gathering accurate estimates of prevalence and estimates of child abuse, is that due to the nature of the crime it is often concealed. This is not exclusive to South Africa, gathering accurate data on the incients of abuse is recognised as a challenge internationally. In South Africa, research by Collings (1997) found that of the sample of 640 female undergraduates, 34.80% of participants asserted that they have experienced abuse of a sexual nature. Madu and Peltzer (2000) found that in their study of 414 male and female school students with a mean age of 18 years, 56% of male students and 53% of female students have experienced childhood abuse. In another study (Madu, 2002) standards nine and ten (or grade eleven and twelve) secondary (high) school students in three schools in the Northern Province found that a large number of its participants form both rural and urban areas indicated that they have been exposed to sexual, physical and emotional abuse Madu (2002) found that 225 (54.2%) of participants have been exposed to (physical) contact sexual abuse. Eighty two (19.8%) respondents indicated that they have been physically abused by parent/stepparent/foster-parent/other adult in charge of the respondent as a child. One hundred and nine (26.3%) respondents indicated that they have been emotional abuse as a child by parent/stepparent/foster-parent/other adult in charge of them (Madu, 2002).

A recent Soth African study (Dawes, Borel-Saladin & Parker, 2004) conducted in Atlantis, Western Cape generated data from case dockets gleaned from the South African Police Services (SAPS). Atlantis is an impoverished former “coloured Group Area” created by the apartheid regime some 30 years ago about 70 km from Cape Town. Between 1 January and 30 June 2001 the most common crime against children in Atlantis for this period was “common assualt” (48%). “Assault with the intent to inflict grievous bodily harm” was totalled to (17%), “child abuse” and “indecent assault” cases together formed 28% of the total number of crimes against children in the audit period . Furthermore, this study suggests that

parental or caregivers abuse of alcohol, levels of unemployment and population demographics all have an impact on the incidence and prevalence of child abuse in communities (Dawes *et al.*, 2004).

It is clear that child abuse in South Africa and crimes against children in the Western Cape is a worrying issue. One of the effects of exposure to traumatic events such as these is PTSD. This disoder will be further discussed in section 2.8.

2.8 Posttraumatic Stress Disorder (PTSD)

The primary study use questionnaires that detect the presence of symptoms of PTSD. The group of adolescents who present as moderate or severe would have a high likelihood of suffering from symptoms of PTSD. PTSD is categorised under the anxiety disorders in the Diagnostic and Statistical Manual of Mental Disorders (DSM-VI-TR). PTSD is classified as follows: The essential feature (criterion A) of PTSD is exposure to an extremely traumatic stressor. A DSM-VI-TR diagnosis is made when criterion A is experienced and when three clusters of symptoms are present for more than one month after the traumatic event: (1) intrusive re-experiencing of the trauma (criterion B), (2) persistent avoidance of stimuli associated with the traumas (criterion C), and (3) persistent avoidance of increased physiological arousal (criterion D). Criterion E states that symptoms persist for at least 1 month, and criterion F requires that the symptoms impair functioning in school, socially, occupationally or other important areas of functioning (APA, 2000).

This theory describes the symptoms associated with PTSD and the conditions necessary to be diagnosed with the disorder. These criteria are useful in diagnosis of PTSD but do not describe why someone would react in the above mentioned ways or how to go about determining the source of the current discomfort experienced by the individual. Research and literature related to trauma exposure will be reviewed in the next chapter.

CHAPTER THREE

LITERATURE REVIEW

3.1 Posttraumatic stress disorder (PTSD) in children and adolescents

In studies that focused on exposure to traumatic events in adolescence and childhood, the prevalence is indicated to be high. Costello, Erkanli and Fairbank (2002) reveal that in a longitudinal, general population study of youth in western North Carolina a sample of 1420 children, adolescents and their parents/guardians reported that 25% of children had experienced at least one DSM stressor by the age of 16. De Bellis and Van Dillen (2005) found that interpersonal types of trauma are the most common causes of posttraumatic stress disorder in children and adolescents. Physical abuse or witnessing domestic violence was found to be the strongest contributors to PTSD in a inner-city child psychiatric clinic, where more than half the traumatized children were classified with syndromal or subsyndromal PTSD (Silva, Alpert & Munoz, 2000). Studies show that PTSD prevalence rates for children and adolescents are believed to be similar or even higher than those of adults who have suffered same or similar trauma (Fletcher, Levin, Lachar, Kusnerik, Harward, Mendelson & Lilly, 1996). In South Africa this is confirmed by studies with groups such as rural children (Peltzer, 1999) and school-attending adolescents (Suliman, Kaminer, Seedat & Stein, 2005). Adolescence is thus a crucial age in which to screen for PTSD and studies in this field will allow for better screening and subsequent treatment of this illness.

3.2 Trauma exposure and post-traumatic stress symptoms in urban African

schools

Trauma exposure and post-traumatic stress symptoms in urban African schools were investigated by a survey in Cape Town and Nairobi. Seedat *et al.* (2004) assessed trauma-exposure, post-traumatic stress symptoms and gender differences in adolescents from these two African countries. The study of 2041 boys and girls from 18 schools in Cape Town and Nairobi who completed anonymous self-report questionnaires. The results indicated that more than 80% reported exposure to severe trauma either as victims or witnesses. Kenyan adolescents, had significantly higher rates of exposure to witnessing violence than their South African counterparts (69% vs. 58%), physical assault by a family member (27% vs. 14%) and sexual assault (18% vs. 14%). Rates of current full-symptom post-traumatic stress disorder (PTSD) (22.2% vs. 5%) and current partial-symptom PTSD (12% vs. 8%)were significantly higher in the South African sample (Seedat *et al.*, 2004).

Interviews and self-report scales of school-going adolescents in SA reveal that 86% and 91% respectively reported having been exposed to a traumatic event and 19% and 38% respectively reported symptoms severe enough to be classified as PTSD (Suliman *et al.*, 2005). These studies, especially the latter one, expose the high prevalence of PTSD in adolescents in Africa and South Africa. The current study will assess the psychometric properties on a particular sample of school-going adolescents.

3.3 Exploratory and Confirmatory factor analysis of the CTQ

In previous studies that used the CTQ to examine the childhood trauma experienced by adults and adolescents, the factorial validity and psychometric properties of the CTQ revealed mixed results. One study using university students found significant differences in the factor structure for men and women (Wright, Asmundson, McCreary, Scher, Hami & Stein, 2001). For women the items from the physical abuse subscale did not create a stable factor,

appearing to be not conceptually valid. Results for this subset suggest that in women, information that is derived from the Physical Abuse may be of questionable validity (Wright *et al.,* 2001). This study suggests that for women, the CTQ items regarding physical abuse history do not hold together conceptually. For men the five factor model provided a relatively good fit to the data. In a study where the CTQ was subjected to a confirmatory analysis (CFA) and exploratory factor analysis (EFA) using a sample of female street based sex workers, a poor fit was found by the CFA between this data and the established five-factor structure of the CTQ (Villano, Cleland, Rosenblum, Fong, Nuttbrock, Marthol & Wallace, 2004). It is suggested that the cross loading of many CTQ items on more than one factor most likely produced the poor CFA fit. Results indicated that abuse/neglect constructs were not conceptually distinct in this sample. An EFA was then performed that yielded four stable (emotional abuse, emotional neglect, physical abuse and sexual abuse subscales) and one unstable factor (physical neglect subscale) on the CTQ. The researchers postulates that participants may have had difficulty distinguising between the various subtypes of trauma represented by the CTQ's constructs as multiple forms of abuse occur concurrently (Villano *et al.,*2004). A Canadian undergraduate sample found that a CFA that was run on the 70-item CTQ (Paivio & Cramer, 2004) revealed neither the hypothesized four-factor or five-factor model fit the data. An EFA on this sample revealed that when using principal component analysis (PCA) yielded five rotated factors that accounted for 53% of the variance among items. The five factors were interpreted as Emotional Abuse, Emotional Neglect, Physical Abuse, Sexual Abuse and Physical Neglect. The EFA thus found that the factor structure for this study largely replicated results reported for an adolescent clinical sample in previous studies (Bernstein *et al.,* 1997).

When reviewing the literature about the factor structure of the CTQ, a few issues seems important factors to note. Firstly, It is clear from the above-mentioned examples that differences in factor structure may exist amongst subsets of samples such as for men and

women. Previous studies also found the possible instability of the Physical neglect subscale in some samples. Difficulties with interpretation of the various types of abuse and distinguishing between the various types of abuse may also affect the factor structure.

3.4 Criticism of the CTQ

In a retrospective assessment of childhood sexual and physical abuse comparing the Computer Assisted Maltreatment Inventory (CAMI) and the CTQ. DiLillo, Fortier, Hayes, Trask, Perry, Messman-Moore, Fauchier, and Nash (2006), suggest caution in using the CTQ subscales dichotomously except for screening purposes, although its strong psychometrics, including its well-established factor structure, are a clear asset. This instrument has been criticised for its view of abuse as an abstract construct rather than viewing the phenomenon as a set of behaviours (DiLillo *et al.,* 2006). This study found that when comparing the CAMI and the CTQ the results indicated that participants who reported abuse on only one measure did not differ from each other on any of the characteristics examined (age, gender, or ethnicity). These findings support the possibility that the differences in detection status between the CAMI and the CTQ are likely related to the approach of the two measures (i.e., behaviourally specific vs. scaled) rather than to demographic characteristics of the participants (DiLillo *et al.,*2006). These authors suggest that researchers should take into account their goals when employing retrospective assessments of abuse. When assessing sexual abuse history, for example, the low-end cutoff score of the CTQ may be best used as a screening device rather than for the strict classification of individuals into victim and non victim groups. Bernstein & Fink (1998) acknowledged that CTQ cutoff scores were established to maximize sensitivity and, therefore, may yield some false positive classifications. DiLillo *et al.,* (2006) findings support this view. Their study found, however, that the continuous scores produced by the CTQ sexual and physical abuse subscales offer researchers greater conceptual and statistical flexibility in measuring the gradations of severity associated with each form of

abuse (DiLillo *et al.*, 2006).

3.5 CTQ used in a community sample

Scher, Stein, Asmundson, McCreary and Forde (2001) found that the CTQ has demonstrated strong psychometric properties in clinical samples and that limited information exists on its psychometric properties in community samples. Therefore, they explored the factor structure and reliability of the CTQ in a community sample and calculated normative data. Consistent with previous literature, a five-factor model best described the CTQ, with a hierarchical model also providing excellent fit. Additionally, the CTQ demonstrated acceptable internal consistency. Overall, their findings suggest that the CTQ is appropriate for use in a community sample (Scher *et al.*, 2001).This community sample however explored the use of the CTQ in the United States of America and may not reflect the diversity present in the population of South African youth at present.

One of the aims of the larger study is to investigate the way in which adolescents perceive certain traumatic experiences in a month, taking demographic differences into account. The present study is thus both important in its contribution to the addressing of a prevalent and potentially damaging phenomenon of trauma exposure in South Africa. It is also valuable in its contribution to the testing of the possible accuracy and suitability of the CTQ in the context of a subsection of South African youth.

The present study used data collected during the execution of the larger study in order to test the hypothesis described in chapter one.

CHAPTER FOUR

METHODOLOGY

This chapter deals with how the study was conducted in order to answer the research question.

4.1 Research design

The larger study is quantitative in nature. Data used in this study, originated from the larger study, which used the survey method of data collection. According to Durrheim (2002) the survey method of data collection is best suited for the purpose of answering the research question of the larger study. This study used secondary data in order to examine the factor structure of the CTQ, one of the tools employed in the larger study.

4.2 Population and sampling

The population studied by the larger study was female and male school-going adolescents aged 11 to 23 years in the Cape Metropole region. Non-probability, convenience sampling was used to extract participants from five specific schools within the Cape Town Metropole area. The sample was thus stratified in strata of an equal share of previously disadvantaged, middle and upper income bracket geographical areas**.** Cluster sampling, also called 'two-stage sampling' or 'multistage sampling' was used to further choose participants. In the first stage a sample of areas (five specific schools) was chosen; in the second stage a sample of respondents (grade 8-12, aged 11-18) within those areas was selected. The samples were also 'clustered' in time as only participants who were present on the day of administration was included.

4.3 Participants

Participants for the primary study included 1500 adolescents from five public schools in the Cape Town Metropole as well as approximately 50 adolescents who were recruited from a local youth centre. The original data set consisted of participants with ages ranging from 11 to 23 years old. For the purpose of this study, only participants between the ages of 11 and 18 were used in order to answer the research question. The sample size used for the current study is 631 and included adolescents, males and females, aged 11 to 18 years old in grade 8 to 12 from the school sample. In South Africa a person is legally considered an adult from the age of eighteen years old. Participants who were 18 years olds were included in this study in order to ensure the sample size is large enough to successfully perform a factor analysis on the data.

4.4 Procedure

This study was ethically approved. The details of this approval will be discussed in section 4.12. Researchers approached several schools in the Cape metropole area. Those schools who accepted the invitation to participate in the study were then asked to send letters of information about the study, together with letters of consent, to parents in grades 8-11. Letters of assent were then given to the participants who received consent from their parents. The participants were then approached, during class time, at a time convenient to the school. Only participants who were present on the day of administration were included. The researcher and a research assistant gave participants standardised instructions. The test battery took approximately 45 minutes to complete. All the tests were administered in combination with a short questionnaire to obtain demographic information on age, sex, race, composition of the home, parental marital status, parental occupation, family income and substance abuse. The CTQ was administered as part of a test battery within the primary study. Only fully completed CTQ's were included in the present study.

4.5 Ethical considerations

The University of the Western Cape ethically approved the current study. Written, informed consent was obtained from the participant's parents and assent was obtained from the participants. Participants in this study were informed that they may withdraw from study at any time and were assured of confidentiality when working with data collected. Permission to conduct the research was granted by the Western Cape Department of Education and the principals of all five schools. Ethical approval for the original study was obtained from the University of Stellenbosch Committee for Human Research, and the ethics reference number is 98/030. Data set files used in this secondary study was used anonymously and treated with confidentiality. Although it is intended that the results of this study be disseminated, anonymity and confidentiality will still be ensured.

4.6 Data collection tool (CTQ)

A number of tools were utilised in the original study (refer to section 1.2 of chapter one). The current investigation only used the CTQ. The Childhood Trauma Questionnaire (CTQ) is a 28 item retrospective self-report, screening device used for screening histories of abuse and neglect. This inventory is appropriate for use with adolescents (aged 12 and above) and adults. The five types of maltreatment: emotional, physical, and sexual abuse and emotional and physical neglect are screened for. Five items representing each type of maltreatment are represented. This questionnaire also includes a three-item Minimization/Denial Scale for

detecting false-negative reports of trauma. The CTQ takes about five minutes to complete. A five point Likert scale is used to endorse a series of responses of statements about childhood events according to their frequency. Response options are: (1) Never true, (2) Rarely true, (3) Sometimes True, (4) Often True, (5)Very Often True. The raw scores are then added and converted to scaled scores that quantify the severity of maltreatment in each of the five areas

tested and can then be compared to clinical data. Thresholds or cut scores for detecting possible cases of neglect and abuse are also provided (Bernstein & Fink, 1998).

4.7 History of the CTQ

The CTQ was originally developed as a 70-item scale and was later revised in a shortened form consisting of 28 items. The shortened form was used in the original study and analysis was thus performed using this form of the CTQ. Bernstien, Stein, Newcomb, Walker,Pogge, Ahluvalia, Stokes, Handelsman, Madrano, Desmond and Zule (2003) conducted a study to develop and validate a short form of the Childhood Trauma Questionnaire (the CTQ-SF) as a screening measure for maltreatment histories in both clinical and non referred groups. Exploratory and confirmatory factor analyses of the 70 original CTQ items were used to create a 28-item version of the scale (25 clinical items and three validity items) and test the measurement invariance of the 25 clinical items across four samples. The results of this study revealed that the CTQ-SF's items held essentially the same meaning across all four samples (i.e., measurement invariance). Moreover, the scale demonstrated good criterion-related validity in a subsample of adolescents on whom corroborative data were available.

4.8 The short form CTQ

The results of the confirmatory factor analyses indicate that with few exceptions the items on the CTQ short form performed equivalently across four diverse populations with differing maltreatment histories, supporting the measurement invariance of the scale (Bernstein *et al.*,

2003). In the initial analyses where each sample was examined separately, the proposed five-factor structure of the CTQ short form (i.e., physical, sexual, and emotional abuse, and physical and emotional neglect) provided a good fit for the data in all four groups: adult substance abusing patients in New York City, adolescent psychiatric inpatients, adult substance abusers in the Southwest, and normative community sample members (Bernstein *et*

al., 2003). Principal components analysis of the CTQ items yielded four rotated factors which were labeled, physical and emotional abuse, emotional neglect, sexual abuse, and physical neglect (Bernstein *et al*., 1994). Similar factor analytic results were obtained in a study of adolescent psychiatric patients, with the exception that physical and emotional abuse items loaded on separate factors, rather than a single factor, and that the numbers of items loading highly on each respective factor were somewhat different than in the original study (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997). Although each of the items on the original CTQ was intended to represent only one factor, many loaded highly on more than one factor. The initial goal of the data analysis was therefore to identify five items from each of the five hypothesized factors of the CTQ that would load

highly together and overlap only moderately with the other factors, leaving a briefer (25 items plus the three-item validity scale) and more easily interpretable form of the questionnaire.

To provide a more stringent test of measurement invariance, the four groups were compared directly, first using an unconstrained baseline model and then introducing equality constraints on the model. When the factor structure was constrained (i.e., the relationships between items and their latent variables) to equality, the model provided a good fit for the data, once a few constraints were released. Thus, individuals in the four groups, which differed widely in terms of age, sex, ethnicity, SES, psychopathology, and life experiences, responded to the scale's items in a reasonably equivalent manner, indicating that the items held essentially the same meaning across diverse populations (Berstein *et al.*, 2003). Importantly, the main precondition for the utility of a scale across different groups is the invariance of its factor structure (Byrne, 1994). For example, a scale with an invariant factor structure can be used to perform latent means analyses, even when its covariance structure shows some nonequivalence between groups (Byrne *et al.*, 1989). Thus, despite small differences in the covariance structure of the scale particularly in the community sample, the results of this study support the use of the

CTQ short form as a screening instrument for maltreatment in both clinical and nonreferred groups (Bernstein *et al.*, 2003).

The CTQ short form also showed good evidence of criterion-related validity in a subgroup of psychiatrically referred adolescents on whom corroborative data were available (Bernstein *et al.*, 2003). When the CTQ short form's latent maltreatment variables were compared to analogous therapists' ratings of abuse and neglect based on all available information about the

patients, the correspondence between the two sets of measures was quite precise, supporting the convergent and discriminant validity of the CTQ short form. Although the CTQ short form's physical abuse factor was related to both physical and emotional abuse ratings made by the therapists, this was not unexpected. Indeed, the high intercorrelation between the physical and emotional abuse factors across the four samples supports the clinical observation that physical abuse almost always occurs in the context of emotional abuse (Claussen & Crittenden, 1991). However, the converse, emotional abuse in the absence of physical abuse, is more common. Moreover, the physical abuse factor was significantly more highly associated with therapists' physical abuse ratings than with their emotional abuse ratings, supporting the discriminant validity of the physical abuse factor (Bernstein *et al.*, 2003).

4.9 Reliability and validity

Test-retest reliability was shown to be high with values ranging from 0.79 to 0.81 (Bernstein & Fink, 1998). Internal consistency reliability coefficients for the CTQ were computed with Cronbach's alpha for all the validation samples used in the development of the instrument. Total scale reliability was acceptable (Cronbach's x = 0.77). Reliability co-efficients ranged from satisfactory to excellent, with the highest for the Sexual Abuse Scale (median = 0.92) and the lowest for the Physical Neglect Scale (median =0.66). Validity of the 28-item, short version of the CTQ was found to be satisfactory (Bernstein & Fink, 1998). Construct validity

was measured by confirmatory factor analysis for three groups (adult substance abusers, adolescent psychiatric inpatients and female HMO members) and initial, as well as more rigorous analysis indicated a good fit according to the five-factor model (Bernstein & Fink, 1998).

The original study found that the CTQ yielded a Cronbach alpha of 0.74 indicating good internal consistency for this sample (Fincham, Altes, Stein & Seedat, 2008)

4.10 Data analysis

In keeping with the study's specific aims the current study made use of secondary data analysis. An exploratory analysis (EFA) on all fully completed CTQ data was run. EFA is a statistical procedure that is used to uncover the underlying structure of a relatively large set of variables (Everitt, 1996).

This study ran three separate factor analyses for each of the three groups. The three groups are: (i) the group consisting of the total sample, (ii) a subgroup of the total sample consisting of participants who based on their scores on the CTQ reported mild to no trauma exposure and (iii) a subgroup of the total sample consisting of participants who's scores indicate moderate to severe trauma exposure. A cut-off score on the CTQ of 56 was used to delineate these groups. This means that after scoring the results of the participants on the CTQ, two groups were formed. Those with scores adding up to 56 and below was grouped in the mild to no trauma group. Those participants whose scores add up to more than 56 were grouped in the moderate to severe group trauma exposure group.

Firstly, a factor analysis on the total sample (trauma-exposed and non-trauma -exposed adolescents) was run. In future this group will be referred to this to as group one. Secondly, two separate factor analysis on (i) the sample with mild/no childhood trauma was run. This group will be referred to as group two. Thirdly a factor analysis was performed on the group

moderate to severe childhood trauma exposure which will be referred to as group three. The final part of analysis included a comparison between group one and two in terms of the exploratory factor analyses results. Furthermore a comparison was made between the factor structure described in the CTQ's manual and the results from this study (Berstein & Fink, 1998).The data was be analysed using the SPSS 14.0 (Statistical Package for Social Sciences).

Principal component analysis (PCA) was used as the method of extracting the factors from the set of data. PCA seeks to simplify multivariate data by reducing the number of variables needed for their description (Everitt, 1996). The rotation method used was Varimax with Kaiser Normalisation. This method has been described as the “most popular method of rotating factors orthogonally to simple structure” (Kaiser, 1958 cited in ten Berge, 1984; Thompson, 2004). The Rotated Matrix tables (see section 5.2, section 5.3 and section 5.4) were used to identify the factor loadings. These factor loadings was used to confirm the strength of the various factor extracted together with conceptual analysis of the specific items. Items that loaded >0.4 was retained and factors that loaded on more that one factor was assigned to the highest loading factor.

4.11 Factor analysis

A factor analysis is in essence a multivariate, linear reduction, statistical technique that is used to investigate the observed conceptual and empirical relationships among variables. This allows for minimizing the amount of variables handled, while increasing the conceptual understanding of the domains measured by the instrument (Gorsuch, 1974). It provides a holistic method of extracting a parsimonious set of underlying dimensions from an incomprehensible mass of variables (Thompson, 2004).

According to Campbell, Walker and Farell (2003) , factor analysis is in essence a procedure

for minimizing the complexity of data by attempting to identify an underlying set of relationships between variables. It is a statistical method that had not been widely used until the advent of computer-based computation because of the size and complexity of calculations that needed to be undertaken. Conceptually there are two broad approaches to data reduction using factor analytic techniques, comfirmatory and exploratory factor analysis (Campbell et al., 2003; Everitt, 1996). The most widely used of the two is exploratory factor analysis (EFA). When using this method the data to be analysed is approached from an atheoretical position and the various factors that are extracted are identified and named 'post facto' (Campbell *et al.*, 2003). Other authors have described factor analysis as follows. Factor analysis involves a number of major decisions between possible procedures, resulting in a large number of possible analysis combinations from which to choose. It is therefore suggested to perform multiple combinations of analysis on the same data, and retain only those that appear consistently amongst the different analytical combinations (Gorsuch, 1974; Thompson, 2004).

Factor analysis is commonly used to investigate construct validity, as a tool for empirical development of theory regarding the nature of constructs, and summarise a mass of correlates (covariance matrixes are also sometimes used) variables into smaller set of factor scores that allow for easier subsequent analysis (Thompson, 2004). It is believed that Spearman (1904) was a pioneer of factor analytic methods and made extensive use of factor analysis in his work on the structure of intelligence as well as others such as Thurstone and Thurstone (1941).

According to Thompson (2004), 18% to 27% of the research published in some journal articles used some form of factor analysis. Factor analysis has received hearty support researchers. Cartell cited in Thompson (2004) describes factor analysis as "the furtherist logical development and reigning queen of correlational methods" (p.6).

4.12 Exploratory factor analysis

Exploratory factor analysis (EFA) attempts to explain the correlations between a set of variables in a smaller number of dimensions than the original data. It begins with a hypothesis about the data, that a small set of latent variables is enough to account for the interrelationships of the manifest variables but not for their full variances (Child, 1990; Everitt, 1996). EFA is also called data reduction technique as one could use the outcome to choose a smaller set of variables than those initially measured, for use in future studies.EFA is purely descriptive and is used to show how many different factors are required to represent the data, which variables are influenced by each factor and gives a score for each person on each factor (Cooper, 2003). EFA is able to establish whether one or more factors underlie a larger number of variable and if so, identifies which of the variables make up which factor. This can be done using SPSS (Brace, Kemp & Snelgar, 2003). EFA does not test hypotheses by means of a formal test of significance, instead it explores the possibility of a factor structure underlying the variables. A large amount of information is provided which researchers can use to specify factors (Brace *et al.*, 2003).

The most simple type of factor analysis is principal component analysis. It extracts components which is sometimes also called factors. Terms such as eigenvalue, scree plots, rotation and factor loadings are terms used to follow the output from most basic factor analyses. A measure of how much variance in all the data is explained by a single factor is called an eigenvalue (Brace *et al.*, 2003). The magnitude of the eigenvalue can be used to determine whether the factor explains sufficient variance for it to be a useful factor. Factor loadings is another term used when describing the output of a factor analysis using SPSS. It is calculated for each combination of variable and factor (Brace *et al.*, 2003). A scree plot is a graph of the eigenvalues of all the factors initially considered and may be used to decide on the number of factors that may be extracted (Brace *et al.*, 2003). An 'elbow' in the plot is often

indicative of the appropriate number of components or factors (Everitt, 1996). The factor loading can be explained as being the coefficient of the correlation between the component or factor and the variable. Therefore, the larger the number, the more likely it may be that the component underlies that variable. Loadings may be positive or negative (Brace *et al.*, 2003). Initail factor loadings can be scrutinised for patterns, however, a rotation is oftern used for the pattern to become more useful (Brace *et al.*, 2003; Smith *et al.*, 1995).

Exploratory factor solutions can be subjected to the process of rotation in order to make the solutions more interpretable. Rotated solutions aim to achieve simple structure and such solutions may be either orthogonal or oblique (Everitt, 1996, Smith *et al.*, 1995). Orthogonal methods give factors that are not correlated with one another. Oblique methods on the other hand, do allow correlations between factors (Brace *et al*., 2003). Orthogonal means that the factors will remain "orthogonal" or uncorrelated after the rotation (Thompson, 2004). This method maximises the sum of the within-factor variances of squared factor loadings. Kaiser's varimax rotation method is successive as it increases the object function by rotating all pairs of factors in succession (ten Berge, 1984).

In conclusion, chapter four discussed the method used in operationalising the investigation stated in the research question stated in section 1.3. The next chapter will describe the participants in terms of demographic information and present the results of the factor analyses described in section 4.10.

CHAPTER FIVE

RESULTS

5.1 Introduction

Section 5.2 describes the data using descriptive analysis. In section 5.3 the outcome of the factor analytic study is presented. Firstly the factor analysis done on the whole group (group one) is presented. Secondly the factor analysis of the group consisting of mild to no trauma exposure (group two) is presented. Thirdly the group of severe to moderate trauma exposure (group three) will be presented. After each of the factor analyses, a scree plots for each of the groups will be plotted. Using a cut off score of 56 delineates these groups. This means that participants with an overall score of 56 and below are grouped together to form group two and participants with a score greater than 56 will be grouped in group three. The factor loadings on each factor analysis is described.

5.2 Descriptive analysis

The ages of participants range from 11 to 18 years old. The mean age for this sample is 15.7 and the standard deviation is stated as 1.26.When presenting the ages of the participants, two age groups were allocated. The majority of the participants, 68.94% of the participants falls within the 15 to 18 year age group. The participants who fall into the 11 to15 year age group represents 31.06% of the sample. In terms of sex, the majority of participants, 56.70% were female and that 43.30% of participants were male. The majority, 39.80% of the participants described themselves as African, while 34.50% described themselves as White. The participants who described themselves as Coloured consisted of 23.90%. The least

represented race group was Asian at only 0.20%. The column described as other with a total of 1.60%, represents those participants who chose not to answer this question.

Five schools were represented in this study. All were high schools in the Cape Town Metropole. School A is situated in a middle class area, school B in an upper class/middle class area and school C in a middle class area. School D is in an inner city area fed from the surrounding suburbs and E is situated in a poor/working class neighbourhood. The majority of participants were from school B representing 53.60% of the participants used in the study. School D (5.70%) had the least participants represented in the study.

Participants were also asked to describe their parent's marital status under the four groups related to parental marital status. Half of the participants described their parents' marital status as married or living together (50.10%), while participants who described their parents as widowed was least represented at 6.90%. Descriptive analysis of this demographic information states that 5.70% of participants did not answer this question.

In terms of composition of the participant's homes the greatest percentage (49.20%) of participant's lives with their parents, with or without siblings. The results indicate that 53.40% lives with only one parent with or without siblings. The smallest percentage of participants (2.00%) indicated that they live with relatives where no parents are present, some with and some without siblings. The category entitled "Mixed/other" represents 1.80% of participants who did choose to represent themselves in the categories presented to them. A total of 5.70% did not answer this question.

Information on cigarette smoking, alcohol and cannabis use was included and represented in the tables above. The results of information gathered by this study in terms of substance use do not differ distinctly from the results of the studies presented in section 1.3. Participants

was asked about whether or not the smoke cigarettes. The majority (83.80%) of the participants indicated that they do not engage in cigarette smoking. Only 16.20% indicated that they do smoke cigarettes. This percentage does not differ distinctly from previous studies (discussed in section 1.3) that found that 27% of adolescents engage in cigarette smoking (Flisher *et al.,* 2003) . It was noticeable that 38.50% of participants do engage in alcohol use while the all the participants are under the legal age for alcohol use in this country and that 4.40% have not answered this question. The largest percentage of participants (61.50%) indicated that they are not currently using alcohol. Previous studies found that 31% of students of similar ages drink alcohol (Flisher *et al.,* 2003). This is discussed in section 1.3. The percentage of participant in this study who engages in the use of cannabis show that 11.90% of participants use cannabis and 6.50% did not answer this question. A larger percentage (88.10%) of participants indicated that they do not use cannabis. In other studies 7% of students in this age group indicated that they use cannabis (Flisher *et al.,* 2003).

In conclusion, this section described age, sex and race classifications of the participants. A description of the number of participants of the five schools presented as well as a description of the participant's parent's marital status was also presented. Additionally the composition of the homes of the participants were described as well as information on the prevalence of substance use in this sample was described. Information on race classifications and substance use was compared to previous studies done on this population. Accurate information on soio-economic status and parental or household income could not be sourced form data as these questions were not adequately answered by participants.

Table 5.1 Demographic and behavioural characteristics

Category	Description	Frequency	Percent	Valid percent
Age in years	11 to 15	196	31.06	31.06
	15 to 18	435	68.94	68.94
	Total	631		
Sex of participants	Male	263	41.70	43.30
	Female	345	54.70	56.70
	Missing	23	3.60	
Race	White	215	34.10	34.50
	Coloured	149	23.60	23.90
	African	248	39.30	39.80
	Asian	1	0.20	0.20
	Other	10	1.60	1.60
	Missing	8	1.30	
Schools represented	School A	100	15.80	15.80
	School B	338	53.60	53.60
	School C	91	14.40	14.40
	School D	36	5.70	5.70
	School E	66	10.50	10.50
Parental marital status	Married/Living together	298	47.20	50.10
	Divorced/Separated	155	24.60	26.10
	Never married/Single	101	16.00	17.00
	Widow(ed)	41	6.50	6.90
	Missing	36	5.70	
Composition of home	Parents, with or without siblings	318	50.40	53.40
	One parent, with or without siblings	230	36.50	38.70
	No parents or siblings	24	3.80	4.00
	No parents but living with relatives with or without siblings	12	1.90	2.00
	Mixed/Other	11	1.70	1.80
	Missing	36	5.70	
Cigarette smoking	No	519	82.30	83.80
	Yes	100	15.80	16.20
Alcohol use	No	371	58.80	61.50
	Yes	232	36.80	38.50
	Missing	28	4.40	
Cannabis use	No	520	82.40	88.10
	Yes	70	11.10	11.90
	Missing	41	6.50	

5.3 Factor analysis study of the CTQ

5.3.1 Factor analysis for group one

Table 5.1 depicts the factor analysis total variance of the whole group of participants. Figure 1.1 depicts the scree plot for group one. This is a visual representation of the factors extracted. The initial eigenvalues, extraction sums of squared loadings and extraction sums of squared loadings is also stated. The rotation method used was Varimax with Kaiser Normalisation. The PCA for this group yielded five rotated factors that accounted for 59.22% of the variance among items.

For a print out of the rotation matrix for this group see Appendix D. Ten items loaded under the first factor. Five of these items fall under the theme of Emotional Neglect (EN). These factors loaded above 0.6 on this factor. Three items (10, 16 and 22) which fall under the Minimization Scale also loaded on this factor. These items cross loaded above with factor loadings above 0.5 . Item 26 and 2 relate to the theme of Physical Neglect (PN) also loaded on this factor with a reading of 0.69 and 0.69 respectively. These items ask about, “There was someone to take me to the doctor when I needed it” and “I knew there was someone to take care of me and protect me” respectively. These items may seem to present the theme of Emotional Neglect (EN) to participants.

Factor two loaded with seven items. All five of the items correspond with the Sexual Abuse theme (SA) with a factor loading of above 0.7. One item that themed around physical abuse loaded on this factor (0.56)and one item that themed emotional abuse with a factor loading of (0.51) was also found.

Factor three loaded with five items with physical abuse theme. Factor loadings for these items range from 0.54 to 0.68. One item, “I've been beaten so bad that someone noticed” cross loaded on factor two. Factor four and five loaded with three and two items respectively and

was themed with emotional abuse and physical neglect items. Here factor loadings ranged from 0.55 to 0.71 for factor four and the two items of factor five loaded as 0.66 and 0.74. The factor analysis for group one thus reveals that only three of the five factors extracted were distinctively presented in the themes of these factors although all factor loadings may be deemed high as they were above 0.5. These factors were Emotional Neglect (EN), Sexual Abuse (SA) and Physical Abuse (PA). The fourth factor showed mixed loadings of Emotional Abuse (EA) and Physical neglect (PN).

Figure 1.1 Scree plot for group one

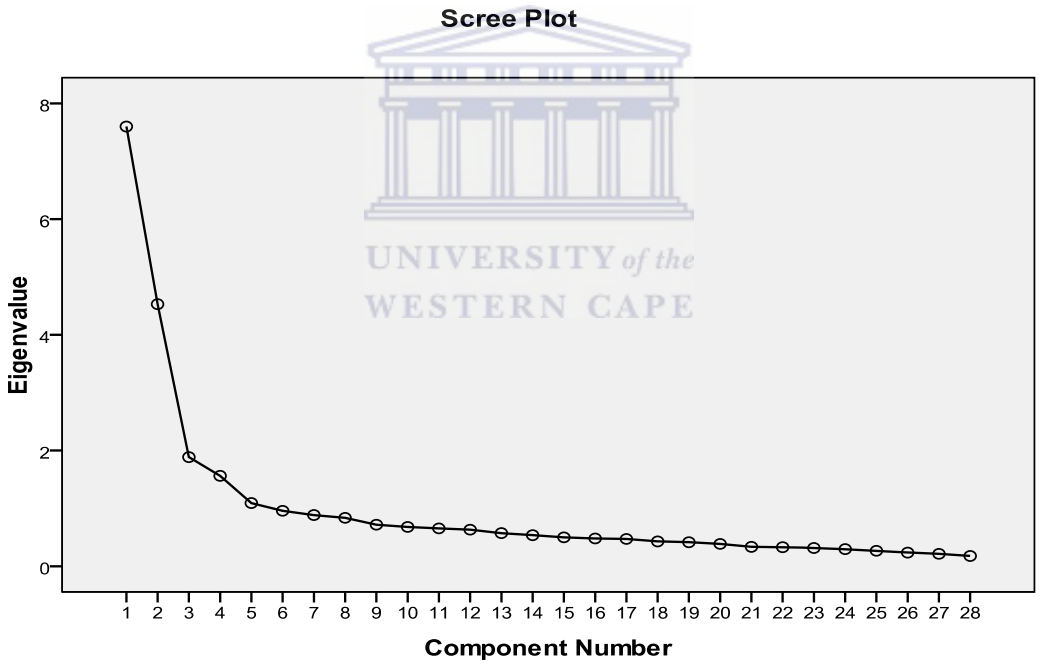

Table 5.1: Factor analysis for group one

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%
1	8.19	29.27	29.27	8.19	29.27	29.27	5.14	18.38	18.38
2	4.473	15.97	45.25	4.47	15.97	45.25	4.37	15.615	33.996
3	1.747	6.248	51.49	1.75	6.24	51.49	2.82	10.072	44.067
4	1.152	4.113	55.60	1.15	4.11	55.61	2.66	9.521	53.589
5	1.012	3.614	59.22	1.01	3.61	59.22	1.57	5.631	59.22
6	0.86	3.07	62.29						
7	0.808	2.885	65.17						
8	0.777	2.775	67.95						
9	0.726	2.594	70.544						
10	0.686	2.451	72.99						
11	0.657	2.345	75.34						
12	0.619	2.211	77.55						
13	0.582	2.079	79.63						
14	0.551	1.968	81.59						
15	0.515	1.841	83.43						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%
16	0.488	1.742	85.182						
17	0.464	1.656	86.837						
18	0.452	1.613	88.45						
19	0.446	1.591	90.041						
20	0.411	1.467	91.508						
21	0.385	1.375	92.883						
22	0.352	1.256	94.139						
23	0.33	1.18	95.319						
24	0.309	1.102	96.421						
25	0.303	1.08	97.502						
26	0.263	0.94	98.441						
27	0.257	0.919	99.36						
28	0.179	0.64	100						

Extraction Method: Principal Component Analysis.

5.3.2 Factor analysis for group two

Table 5.2 represents the factor analysis for the mild to no trauma exposure group. Figure 1.2 depicts the scree plot for group one. This is a visual representation of the factors extracted. The initial eigenvalues, extraction sums of squared loadings and extraction sums of squared loadings is also stated. For this group eight rotated factors was extracted that accounts for 62.47% of the variance amongst items using principal component analysis (PCA). On analysis, only five factors was found to be conceptually valid. These are Emotional Neglect (EN), Emotional Abuse (EA), Sexual Abuse (SA), Physical Abuse (PA) and Physical Neglect (PN). The rotation method used was Varimax with Kaiser Normalisation.

The rotation matrix for this group see Appendix 4. Factor one loaded ten items. Five of these items can be grouped under an emotional neglect theme. Factor loadings for these ranged from 0.69 to 0.84. The three minimization scale items loaded on this factor with negative factor loadings of above 0.5. The remaining two factors can be described as falling under a physical neglect theme with factor loadings of 0.72 and 0.71.

Factor two loaded four factors, all with an Emotional Abuse (EA) theme and factor loadings of 0.56 and above. Factor three loaded four items with a sexual abuse theme. Factor loadings for this factor ranged from 0.62 to 0.85. Factor eight loaded with one item which reads “Someone tried to touch me in a sexual way, or tried to make me touch them”, and has a sexual abuse theme. These two factors can thus be collapsed into one factor, namely Sexual Abuse (SA). Factors four and five loaded two items each and together forms four items with a Physical Abuse (PA) theme. Factor loadings for these two factors ranged from 0.62 to 0.81 Factor four and five can thus be collapsed to form one factor with a PA theme.

Factors six and seven loaded with two items each. Factor loadings for these items were 0.67 and 0.79 for factor six and 0.52 and 0.89 for factor seven. Three of these factors have a physical neglect

theme and one has an emotional abuse theme. Factors six and seven can be collapsed into a PN theme.

Thus the eight factors when analysed can be described as five factors with all factor loadings above 0.5 under the following headings: Emotional Neglect, Emotional Abuse, Sexual Abuse, Physical Abuse and Physical Neglect.

Figure 1.2 Scree plot for group two

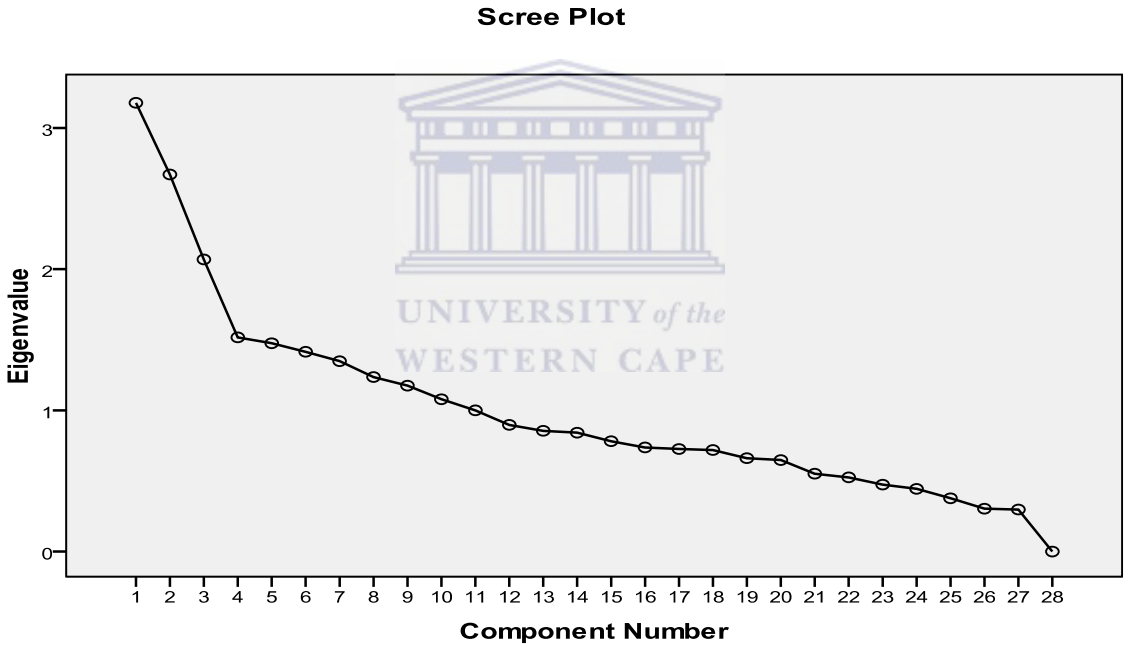

Table 5.2: Factor analysis for group two

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%
1	5.438	19.421	19.421	5.44	19.421	19.421	5.33	19.036	19.036
2	3.561	12.719	32.14	3.56	12.719	32.14	2.669	9.533	28.569
3	2.314	8.265	40.405	2.31	8.265	40.405	2.565	9.16	37.729
4	1.613	5.761	46.166	1.61	5.761	46.166	1.571	5.611	43.34
5	1.277	4.559	50.725	1.28	4.559	50.725	1.562	5.58	48.92
6	1.165	4.162	54.887	1.17	4.162	54.887	1.342	4.794	53.713
7	1.089	3.89	58.778	1.09	3.89	58.778	1.273	4.547	58.261
8	1.036	3.698	62.476	1.04	3.698	62.476	1.18	4.215	62.476
9	0.949	3.389	65.865						
10	0.873	3.117	68.983						
11	0.804	2.873	71.855						
12	0.793	2.831	74.686						
13	0.729	2.605	77.291						
14	0.694	2.479	79.77						
15	0.627	2.239	82.01						
16	0.567	2.024	84.034						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%
17	0.526	1.879	85.912						
18	0.511	1.824	87.736						
19	0.482	1.723	89.459						
20	0.451	1.611	91.07						
21	0.423	1.509	92.579						
22	0.389	1.39	93.969						
23	0.372	1.328	95.296						
24	0.319	1.138	96.435						
25	0.306	1.094	97.529						
26	0.28	0.998	98.527						
27	0.243	0.869	99.397						
28	0.169	0.603	100						

Extraction Method: Principal Component Analysis.

5.3.3 Factor analysis for group three

Table 5.3 represents the factor analysis for the severe to moderate trauma exposure group. Figure 1.3 depicts the scree plot for group one. This is a visual representation of the factors extracted. The initial eigenvalues, extraction sums of squared loadings and extraction sums of squared loadings is also stated. This group's PCA yielded nine rotated factors which accounted for 65.38% of variance amoung the items. The rotation method used was Varimax with Kaiser Normalisation.

The rotation matrix for this group is presented in Appendix 5. Factor one loaded six items clustered around the theme of sexual abuse. Five of these items corresponded well with the Sexual Abuse scale in the instruments manual. Factor loadings for factor one ranged form 0.66 to 0.73. Item 25, “I believe I was emotionally abused” loaded worth 0.58 on this factor as well.

Three items loaded in the second factor with two items describing emotional neglect loading 0.64 and 0.74 and one item physical neglect with a factor loading of 0.75. Factor three loaded four items with two items themed around physical abuse and one item each themed around emotional neglect, physical neglect respectively. These items all carried a factor loading of above 0.5 with item 28 and item 26 loading negatively. Factor four loaded two items with a physical abuse theme with factor loadings of 0.67 and 0.82.

Factor five loaded three items with a emotional abuse theme with factor loadings of between 0.59 and 0.72. Factor six loaded two items with physical neglect themes and one with an emotional neglect theme. Factor seven loaded one minimization item with a factor loading of 0.78 and one emotional neglect themed item with a negative factor loading of -0.6. Factor eight and nine loaded one item each. One factor themed around physical neglect with a factor loading of 0.75 and the other was a minimization item with a factor loading of 0.81.

An analysis of the factor analysis of group three reveals only two separate and identifiable factors.

Factor loadings are all above 0.5 for the two respective factors with negative factor loadings suggesting negative loadings which are usually caused by questions that are negatively oriented to the factor viz. items on the CTQ that have are 'negatively' oriented.

Figure 1.3 Scree plot for group three

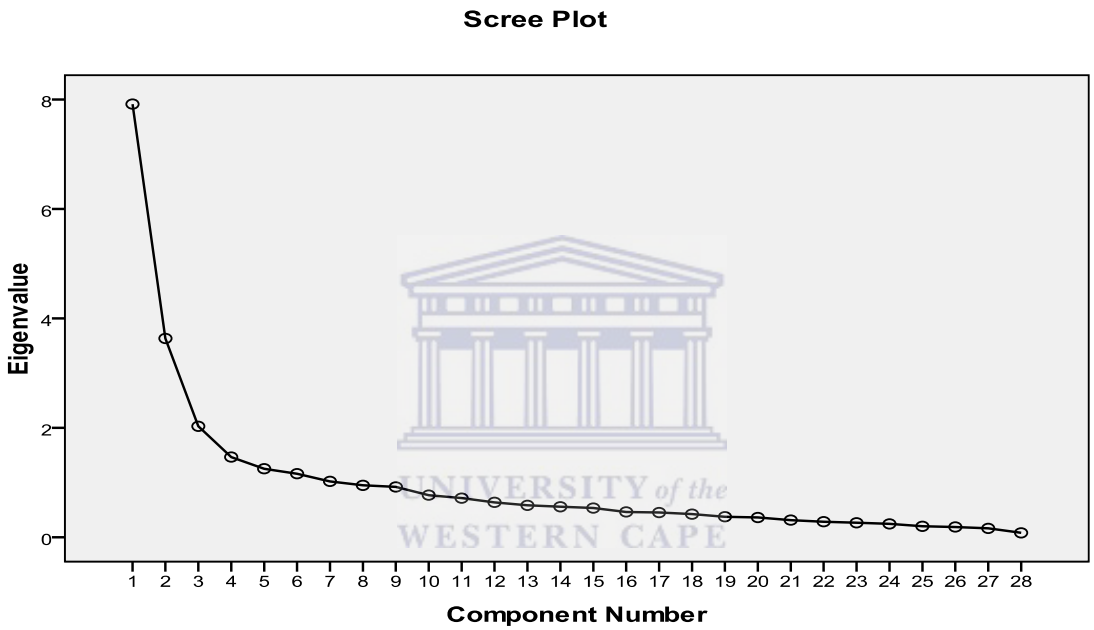

Table 5.3: Factor analysis for group three

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative%
1	6.099	21.782	21.782	6.099	21.782	21.782	3.274	11.694	11.694
2	2.903	10.369	32.151	2.903	10.369	32.151	2.38	8.498	20.192
3	1.943	6.939	39.091	1.943	6.939	39.091	2.283	8.153	28.345
4	1.51	5.395	44.485	1.51	5.395	44.485	2.082	7.436	35.781
5	1.455	5.197	49.683	1.455	5.197	49.683	1.955	6.983	42.764
6	1.233	4.403	54.086	1.233	4.403	54.086	1.887	6.74	49.504
7	1.082	3.863	57.949	1.082	3.863	57.949	1.793	6.403	55.908
8	1.062	3.792	61.741	1.062	3.792	61.741	1.363	4.87	60.777
9	1.02	3.643	65.384	1.02	3.643	65.384	1.29	4.607	65.384
10	0.926	3.307	68.691						
11	0.849	3.032	71.723						
12	0.825	2.945	74.668						
13	0.794	2.836	77.504						
14	0.683	2.44	79.944						
15	0.669	2.389	82.334						
16	0.608	2.17	84.503						
17	0.573	2.045	86.548						
18	0.526	1.88	88.428						
19	0.478	1.707	90.135						
20	0.435	1.553	91.688						
21	0.407	1.453	93.141						
22	0.39	1.394	94.535						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative%
23	0.363	1.295	95.83						
24	0.34	1.213	97.043						
25	0.273	0.976	98.019						
26	0.226	0.806	98.825						
27	0.17	0.608	99.433						
28	0.159	0.567	100						

Extraction Method: Principal Component Analysis.

In conclusion, the results of the three factor analyses run revealed that group one extracted three clearly distinct factors entitled Emotional Neglect (EN), Sexual Abuse (SA) and Physical Abuse (PA). Group two initially extracted eight factors. When these where analysed as to their conceptual consistency they were described as five factors under the following headings: Emotional Neglect, Emotional Abuse, Sexual Abuse, Physical Abuse and Physical Neglect. The last factor analysis, group three, extracted nine factors with items not generally following distinct patterns. For this group, only two separate and identifiable factors were found. These are the Sexual Abuse factor and the Emotional Abuse factor.

CHAPTER SIX

DISCUSSION

6.1 Introduction

This chapter will discuss the results presented in chapter five. Firstly, a comparison between the EFA results and the five factor model described in the CTQ's manual will be made. The results will then be discussed in relation to the objective outlined in section 1.2. Thirdly the results will be compared to the literature reviewed in chapter three.

6.2 A comparison of the FA in this study to the five factor model described in the CTQ's manual

When comparing the results of the exploratory factor analysis described in sections 5.3.1, 5.3.2 and 5.3.3 with the five factor model described in the CTQ's manual the following was found.

Firstly, in group one described in section 5.31, five factors were extracted. Only three of the five factors described in the CTQ's manual were distinctively presented in the themes of these factors. These factors were Emotional Neglect (EN), Sexual Abuse (SA) and Physical Abuse (PA). Ten items loaded under the first factor. Five of these items correspond with the Emotional Neglect Scale as described by the CTQ manual. Factor two loaded with seven items. All five items that corresponds with the Sexual Abuse Scale as described by the CTQ manual loaded on this factor. Factor three loaded with five items with and physical abuse theme. All five of these items correspond with the Physical Abuse Scale in the CTQ manual.

For group two descibed in section 5.3.2, which represents the factor analysis for the mild to no

trauma exposure group. Eight factors was extracted using principal component analysis but on analysis only five factors was found to be conceptually valid. These are Emotional Neglect (EN), Emotional Abuse (EA), Sexual Abuse (SA), Physical Abuse (PA) and Physical Neglect (PN). Factor one loaded ten items. Five of these items can be grouped under an emotional neglect theme. All five items corresponds with Emotional Neglect scale described in the CTQ manual. Factor two loaded four factors, all with an Emotional Abuse (EA) theme which corresponded directly with the Emotional Abuse scale in the manual. Factor three loaded four items with a sexual abuse theme. All four items corresponds with the manual's Sexual abuse scale. Factors four and five can be grouped together with two items each with a Physical Abuse (PA) theme which correspond with the PA scale in the manual. The rest of the factors loaded mixed themes without a recognisable theme.

Group three (see section 5.3.3) represents the severe to moderate trauma exposure group. An analysis of the factor analysis of group three reveals only two separate and identifiable factors. These are the Sexual Abuse factor and the Emotional Abuse factor. Factor one loaded six items clustered around the theme of sexual abuse. Five of these items corresponded well with the Sexual Abuse scale in the instruments manual. Factor five loaded three items of emotional abuse which all corresponded with the Emotional Abuse Scale of the CTQ's manual.

When comparing the three group's findings with the five factor model described by the CTQ some similarities were found. All three groups revealed that the Sexual abuse factor matched the findings of the CTQ's manual. Emotional Neglect and Physical Abuse in group one and two also compared well with the CTQ's manual. Group two also matched the PN factor of the the CTQ's manual and group three matched EA as well.

6.3 Comparing the factor analysis of group two and three

The factor analysis of group two extracted eight factors. Careful analysis of the results revealed that collapsing factors that have similar themes reduced these eight factors into five. The five factors were entitled, Emotional Neglect, Emotional Abuse, Sexual Abuse, Physical Abuse and Physical Neglect. These five factors followed the five-factor model described in the CTQ's manual.

In group two the Emotional Neglect and Emotional Abuse proved stable. All five items responding with these two factors matched the factors described in the CTQ's manual. The minimization items also clustered around the Emotional Neglect factor with all three items matching the Minimization Scale used in the manual. The sexual abuse factor also presented as stable with three items matching the Sexual Abuse Scale in the manual. The Physical Abuse factor was divided between two factors. Physical Neglect factor in this sample was divided into two factors as well. The later two factors was thus presented as not as stable as the first three.

The factor analysis of group three reveals only two separate and identifiable factors. These are the Sexual Abuse factor and the Emotional Abuse factor. The rest of the seven factors do not seem to hold a noticeable theme. Items with physical and emotional neglect do seem to load together more often but does not form a distinct pattern. Thus this group did not follow the five-factor model as described by the CTQ's manual.

The Sexual Abuse and Emotional Abuse factor proved most stable in this group with five and three items corresponding to the Sexual abuse and Emotional Abuse Scale respectively. The Emotional Neglect factor also loaded three items that responded to the Emotional Neglect scale of the manual. The Physical Neglect and Physical Abuse did not form stable factors but mixed with minimization factors. Results from the factor analysis of this group found that although emotional abuse and

physical abuse clustered together, emotional and physical neglect was also presented.

When comparing the results of the two groups (group two and three) the group two extracted five factors and confirmed the factor structure described in the CTQ's manual but the group of severe to moderate trauma exposure did not. The factor structure between the two groups therefore significantly differed. In group three the CTQ was not able to elicit five conceptually distinct factors as described by the instrument's manual.

6.4 Study findings and existing literature

The occurrence of inconsistent results was similarly found by previous studies (Claussen & Crittenden, 1991; Bernstein *et al.,* 2003). In one study the CTQ short form's physical abuse factor was related to both physical and emotional abuse ratings made by the therapists (Bernstein *et al.,* 2003). They found that the high intercorrelation between the physical and emotional abuse factors across the four samples they studied supports the clinical observation that physical abuse almost always occurs in the context of emotional abuse. However, results from the factor analysis of this group found that although emotional abuse and physical abuse clustered together, emotional and physical neglect was also presented. Villano *et al.* (2004) found that the CFA they conducted revealed a poor fit between the data from a sample of female street-based sex workers An EFA revealed the Physical Neglect subscale as an unstable factor. These researchers suggested that the cross loading of many CTQ items on more than one factor most likely produced the poor CFA fit. This, according to the researchers of this study, indicated that abuse/neglect constructs were not conceptually distinct in this sample. These findings corresponds with the present study's findings where specific types of abuse was clearly distinct, namely sexual abuse and physical abuse. Emotional abuse/neglect and physical neglect items cross loaded in all three subgroups and were not interpreted as conceptually distinct in group one and three.

Wright *et al.* (2001) found that for women the physical abuse subscale did not create a stable factor,

appearing to be not conceptually valid. Instability of the physical abuse subscale is therefore not uncommon. Results from group three found that physical abuse did not load as a conceptual construct for this subgroup. In group one, the combined group, the abuse and neglect themes merged.

Structural ambiquity in CTQ constructs has been reported previously (Villano *et al.*, 2004; Wright *et al.*, 2001). As various forms of abuse and neglect occur similtaneously, it may have been difficult for participants to differentiate trauma subtypes as represented by the CTQ's items. This may account for the small amount of factors extracted from group one and three as these groups included participants who scored moderate to severe trauma exposure.

In the present study, only the second group extracted five conceptually valid constructs. This corresponds those of Paivio & Camer (2004) who examined the factor structure and reliability of the CTQ in a Canadian undergraduate students. This study found that a PCA revealed five factors that were interpreted as Emotional Neglect, Emotional Abuse, Physical Abuse, Sexual Abuse and Physical Neglect.

When the CTQ was compared to the generally accepted five-factor model by Wright *et al* (2004) a decent fit was revealed for women and a poor fit for men. These results suggests that when comparing samples, how participants experience childhood maltreatment and how they interpret these experiences may differ, especially between men and women. It will also be important to note the participant's undestanding of the abuse in terms of language. The CTQ was administered in English to all participants. However, their undestanding of abuse in their prefered language may still have influenced their understanding and may have influenced how they answered the questions. Different definitions of child abuse as indicated by various authors (Munro, 2002;Tomison, 1995; Madu & Peltzer, 2000) accoss different populations, may also play a role as to how individuals answer the CTQ items. The factor structure may thus also differ. This study confirms this

suggestion as the three groups differed in factor structure based at least in part due to the trauma exposure they have experienced.

Other factors, such as geographical, social, and contextual factors such as the high rate of crime in South Africa compared to other counties, especially Cape Town (Pieterse, 2002) may have a influence on how the participants answer the questionnaire. Furthermore, Madu (2002) found that South African youths are exposed to high levels of abuse, often within families, increasing the likelihood of cross loadings as many forms of abuse could be experienced simultaneously. Other authors found that parental or caregivers abuse of alcohol, levels of unemployment and population demographics all have an impact on the incidence and prevalence of child abuse in communities (Dawes, Borel-Saladin & Parker, 2004).

In conclusion, the factor analyses of the three groups revealed some consistencies in amongt the groups and the CTQ's manual. Emotional Ause was a stable factor in all three groups and Sexual abuse was clearly distinct in group one and two. Group two corresponded with the CTQ's manual's five factor model while group one and three did not follow this model. This may suggest that severe to moderate trauma exposure does affect the factor structure of the CTQ in the sample presented. These results was compared to previous studies and discussed in terms of cross loading and contextual factors that may have influenced these results.

6.5 **Contributions, Limitations and Recommendations**

Contributions

This study found that when comparing the results of the CTQ between a sample of trauma exposed and non-trauma exposed school-going adolescents in the greater Cape Town area, inconsistent results was found. Only three stable factors were extracted when analysing the first group wich included the entire sample. The second group, the non-trauma exposed group, revealed five factors

corresponding to the CTQ's manual. The third group, which included the severe to moderatly trauma exposed group extracted only two conceptually valid factors. The results suggests that for this sample there was a difference in factor structure between the trauma exposed and non trauma-exposed group. Group two's factor structure adhered to the five factor model and group three did not. This could be due to cross loadings on several factors such as physical abuse and physical neglect due to the high levels of abuse experienced by this group. Greater exposure to trauma in the forms of violence may have influenced the way participant's experiences and lead to cross loadings and create unstable factors such as physical abuse and neglect presented in the results of this study. These results suggest that exposure to trauma did have an effect on the factor structure of the CTQ in this community sample. This information can contribute to the knowledge base regarding the factor structure of the CTQ in school-going adolescents in Cape Town Metropole schools and help to better inform future researchers about how appropriate this instrument may be in this specific setting and with this age group.

Limitations

The study focussed on participants residing in the Cape Town Metropole, using a non-probability sampling technique, which limits the generalisability of results, found in this study to school-going adolescents in these specific communities. Due to the self-reporting nature of the questionnaire information gained from the tool relies heavily on the accuracy of the participants in recalling events from the past. The reliability of retrospective, self reported information was questioned by various authors (Loftus, 1993; Reid & Baker, 2008). Some limitations of retrospective studies include recall bias when participants may simply forget about events, feelings or they may have trouble recalling it (Ruspini, 2003). Participants may also reinterpret their own past as it is influenced by subsequent events in their lives. One might interpret and re-interpret events, opinions and feelings so that they fit in with your current perceptions of one's life. This is often done so that

one's past experiences constitute a sequence of events that "bears some logic" (van der Kamp & Bijlveld, 1998). Social desirability may be another limitation of self report questionnaires, where participants may find that some answers to questions are more socially desirable than others (Bless & Higson-Smith, 1995; Anastasi, 1968). Other factors can that may affect the accuracy of recollections for childhood events may be degradation of memories over time as well as pathological ones, such as dissociation and repression (Allen, 1995; Bernstein, Fink, Handelsman, Foote, Lovejoy, Wenzel, Sapareto, Ruggiero, 1995; Rogers, 1995). The "false memory syndrome" is another example of inaccurate recall (Loftus, 1993). Some authors have noted, however, that memories for childhood experiences may actually be enhanced in cases where events are unusual, unexpected, or consequential, such as childhood trauma (Brewin, Andrews, & Gotlib, 1993).

Bernstein and Fink (1998) have developed a Minimization/Denial scale for the CTQ in order to account for some of the limitations presented by self reported and retrospective information. Bless and Higson-Smith (1995) pointed to the potential difficulty that is inherent in questionnaire that may be administered in groups of being unable to certain whether participant has enough information to answer the questions posed in the questionnaire. In this study the possibility of participants having difficulty in differentiating between the five types of abuse enquired about by the questionnaire which could have added to the unstable factors reported in the results of this study.

Recommendations

It is recommended that the factor structure of the CTQ is investigated using samples from a larger population in various areas of South Africa in order to draw more conclusive results about how appropriate the use of the CTQ is in communities in South Africa. How language affect the adolescent's understanding of abuse should also be clearly defined and investigated. Comparing the results found in this study with other tools such as the Life Events Questionnaire will allow for a

richer understanding of the results.

REFERENCES

Allen, J. (1995). The spectrum of accuracy in memories of childhood trauma. *Harvard Review of Psychiatry*, 3,84–95.

Anastasi, A. (1968) *Psychological testing*. (3rd edition). London: The MacMillan Company, Collier-MacMillan Limited.

American Academy of Child and Adolescent Psychiatry (1997). Practice parameters for the forensic evaluation of children and adolescents who may have been physically or sexually abused. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36 (Supplement). htpp://www.aacap.org/clinical/parameters/

American Academy of Child and Adolescent Psychiatry (1999). Practice parameter for the assessment and treatment of children and adolescents who are sexually abusive of others. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38 (Supplement)http://www.aacap.org/clinical/parameters/

American Psychiatric Association (APA). (2000). *Diagnostic and Statistical Manual for Mental Disorders*. (4th edition Text Revision). Washington DC: American Psychiatric Association.

Berliner, L. & Elliot, D. (2002). Sexual abuse of children. In J. Myers, L. Berliner, J. J. Briere, C. Hendrix, C. Jenny & T. Reid (eds.) *APSAC Handbook on Maltreatment.* (2nd edition). Thousand Oaks, CA: Sage.

Bernstein, D. P., Ahluvalia, T., Pogge, D., & Handelsman, L. (1997). Validity of the Childhood Trauma Questionnaire in an adolescent psychiatric population. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 340–348.

Bernstein, D.P. & Fink, L. (1998). *Childhood Trauma Questionnaire. A Retrospective Self-Report. Manual.* San Antonio, Texas: Psychological Corporation.

Bernstein, D. P., Fink, L., Handelsman, L. & Foote, J. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *American Journal of Psychiatry*, 151, 1132-1136.

Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M.,Wenzel, K., Sapareto, E., & Ruggiero, J. (1995).Validity of child abuse measurements: Dr. Bernstein and colleagues reply. *American Journal of Psychiatry*, *152*, 1535–1537.

Bernstein, D.P., Stein, J.A., Newcomb, M.D., Walker, E., Pogge, D., Ahluvalia,T., Strokes, J., Handelsman, L. & Desmond, D. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse and Neglect,* 27(2), 169-190.

Bless, C. & Higson-Smith, C. (1995). *Fundamentals of social research methods. An African perspective.* (2nd edition). Cape Town: Juta & Co, Ltd.

Brace, N., Kemp, R. &Snelgar, R. (2003). SPSS for psychologist. A guide to data analysis using SPSS for windows. Second edition. London: Lawrence Erlbaum Associates.

Brewin, C. R., Andrews, B., & Gotlib, I. H. (1993). Psychopathology and early experience:

A reappraisal of retrospective reports. *Psychological Bulletin*, *113*, 82–98.

Browne, K. (2002). Child protection. In M. Rutter & E. Taylor (eds.) *Child and Adolescent*

Psychiatry. (4th edition). Oxford: Blackwell.

Browne, A. & Finklehor, D. (1986). The impact of child sexual abuse. A review of the research. *Psychological Bulletin*, 99, 66-77.

Brunello, N., Davidson, J.R.T. & Deahl, M. (2001). Post traumatic stress disorder: Diagnosis and Epidemiology, Co morbidity and Social Consequences, Biology and Treatment. *Neuropsychobiology*, 43, 150-162.

Bundy, C. (1992). Introduction. In D. Everatt & E. Sisulu (eds.) *Black youth in crisis*. Braamfontein: Ravan Press.

Byrne, B.M., Shavelson, R.J. & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin*, 105, 456–466.

Byrne, B.M. (1994). *Structural equation modeling with EQS and EQS/Windows*. Thousand Oaks, CA: Sage.

Campbell, A., Walker, J. & Farrell, G. (2003). Confirmatory factor analysis of the GHQ-12: can I see that again? *Australian and New Zealand Journal of Psychiatry*, 37, 475-483.

Carr, A. (2006). *The handbook of child and adolescent clinical psychology. A contextual approach. (*2nd edition). London: Routledge.

CMC (Cape Metropolitan Council), 2001: Socio-economic Profile of the CMA: An analysis of the 10 percent sample of the 1996 census. Cape Town: *Development Information Centre.*

Child, D. (1990). The essentials of factor analysis, second edition. London: Cassel Educational Limited.

Claussen, A. & Crittenden, P. (1991). Physical and psychological maltreatment: Relations among types of maltreatment. *Child Abuse and Neglect*, 15, 5–18.

Cohen, S., Kamarck, T, & Mermelstein, R.A. (1983). global measure of perceived stress. *Journal of Health Social Behaviour*, 24, 385-96.

Connor, K.M. & Davidson, J.R.T. (2003). Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety,* 18(2), 76-82.

Costello, E.J., Erkanli, A. & Fairbank, J.A. (2002).The prevalence of potentially traumatic events in childhood and adolescence. *Journal of Trauma Stress,* 15, 99-112.

Cooper, C. (2003). Factor analysis. In Miller, R.L. & Brewer, J.D. (eds). The A-Z of social research. A dictionary of key social science research concepts. Thousand oaks: Sage.

Creighton, S. (2004). Prevalence and Incidence of Child Abuse: International Comparisons. NSPCC Information Briefings. UK: NSPCC Research Department. http://www.nspcc.org.uk/inform.

De Bellis, M.D. & Van Dillen, T. (2005). Childhood Post-Traumatic Stress Disorder: An overview. *Child Adolescent Psychiatric Clinical Neurological Am,* 14, 745-772.

DiLillo, D., Fortier, A.F., Hayes, S.A., Trask, E., Perry, A.R., Messman-Moore, T., Fauchier, A. & Nash, C. (2006). Retrospective Assessment of Childhood Sexual and Physical Abuse. A Comparison of Scaled and Behaviorally Specific Approaches. *Assessment,* 13(3), 297-312.

Durrheim, K. (2002). Research Design. In M. Terre Blanche & K. Durrheim (eds.) *Research in Practice. Applied methods for Social Sciences.* Cape Town: University of Cape Town Press.

Emery, R. & Laumann-Billings, L. (2002). Child abuse. In M. Rutter & E. Taylor (eds.) *Child and Adolescent Psychiatry*. (4th edition). Oxford: Blackwell.

Everitt, B.S. (1996). *Making sense of statistics in psychology: A second level course.* Oxford: Oxford University Press.

Fincham, D.S., Altes, L.K., Stein, D.J. & Seedat, S. (2008). Posttraumatic stress disorder Symptoms in adolescents: risk factors versus resilience moderation. *Comprehensive Psychiatry*.

www.sciencedirect.com.

Fitzpatrick, K.M. & Boldizar, J. P. (1993) The prevalence and consequences of exposure to violence among African-American youth. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 424-430.

Fletcher, J.M., Levin, H.S., Lachar, D., Kusnerik, L., Harward, H., Mendelson, D. & Lilly, M.A. (1996). Behavioral outcomes after pediatric closed head injury: relationships with age, severity, and lesion size. *Journal of Child Neurology*, 11, 283-290.

Flisher, A.J., Parry, C. D.H., Evans, J. Muller, M. & Lombard, C. (2003). Substance Use by Adolescents in Cape Town: Prevalence and Correlates. *Journal of Adolescent Health,* 32, 58–65.

Giaconia, R.M.,Reinherz, H.Z., Silverman, A. B., Pakiz, B., Frost, A.K. & Cohen, E.(1995). Traumas and posttraumatic stress disorder in a community population of older adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 1369-1380.

Gorsuch, R. (1974). *Factor analysis*. London: Landon Ect. Saunders.

Glaser, D. (2002a). Emotional abuse and neglect (psychological maltreatment): A conceptual framework. *Child Abuse and Neglect*, 26, 297-714.

Glaser, D. (2002b). Child abuse. In M. Rutter & E. Taylor (eds.) *Child and Adolescent Psychiatry.* (4th edition). Oxford: Blackwell.

Greene, B.L., Goodman, L.A., Krupnick, J.L., Corcoran, C.B, Petty, R.M., Stockton, P. & Stern, N.M. (2000). Outcomes of Single Versus Multiple Trauma Exposure in a Screening Sample. *Journal of Traumatic Stress*, 13, 2.

Gwadz, M.V., Nish, D., Leonard, N. & Strauss, S.M. (2007). Gender differences in rates in post-traumatic stress disorder among homeless youth. *Journal of Adolescence,* 30, 117-129.

Hilyard, K. & Wolfe, D. (2002). Child neglect: Developmental issues and outcomes. *Child Abuse and Neglect*, 26, 697-695.

Hart, S., Brassard, M., Binggeli, N. & Davidson, H. (2002). Psychological maltreatment. In J. Meyers, L. Berliner, J. Briere, C. Hendrix, C. Jenny& T. Reid (eds.), *APSAC Handbook on Child Maltreatment* (Second edition). Thousand Oaks, CA: Sage.

Iwaniec, D. (2004). *Children who fail to Thrive: A Practice Guide*. Chichester: Wiley.

Jones, D. (2000). Child abuse and neglect. In M. Gelder, J. Lopez-Ibor & N. Andreasen (eds.) *New Oxford Textbook of Psychiatry*. Oxford: Oxford University Press.

Kaufman, J., Birmaher, B., Brent, D., Rao, U., Flynn, C., Moreci, P., Williamson, D. & Ryan, N. (1997). Schedule for affective disorders and schizophrenia for school-age children - present and lifetime version (K-SADS-PL): initial reliability and validity data. *Journal of American Academic Child and Adolescent Psychiatry*, 36, 980–988.

Kempe, H., Silverman, E., Steele, B., Droegemuller, W. & Silver, H. (1962). The battered child syndrome. *Journal of the American Medical Association*, 181, 17-24.

Kendall-Tackett, K.A., Williams, L.M. & Finkelhor, D. (1993). Impact of sexual abuse on children: A review an synthesis of recent empirical studies. *Psychological Bulletin*, 113(1), 164-180.

Loftus, E. (1993). The reality of repressed memories. *American Psychologist*, 48(5), 518-537.

MacDonald, G. (2001). *Effective Interventions for Child Abuse and Neglect. An Evidence-based Approach to Planning and Evaluating Interventions.* Chichester: Wiles.

Madu, S.N. (2002). The relationship between perceived parental physical availability and child sexual, physical and emotional abuse among high school students in the Northern Province, South Africa. *The Social Science Journal*, 39, 639–645.

Madu, S.N. & Peltzer, K. (2000). Risk factors and child sexual abuse amoung secondary school students in the northern province (South Africa). *Child Abuse & Neglect*, 24, 259-268.

Munro, E. (2002). Effective child protection. London: Sage.

Myers, J. & Stern, P. (2002). Expert testimony. In J. Myers, L. Berliner, J.J. Briere, C. Hendrix, C. Jenny & T. Reid (eds.) *APSAC Handbook on Maltreatment.* (2nd edition). Thousand Oaks, CA: Sage.

Paivio, S.C. & Cramer, K.M. (2004). Factor structure and reliability of the Childhood Trauma Questionnaire in a Canadian undergraduate student sample. *Child Abuse and Neglect,* 2, 89-904.

Paolucci, E., Genuis, M. & Violato, C. (2001). A meta-analysis of the published research on the effects of child sexual abuse. *Journal of Psychology,* 135, 17-36.

Peltzer, K. (1999) Post traumatic stress symptoms in a population of rural children in South Africa. *Psychological Reports*, 85, 646-650.

Pieterse, E. (2002). From divided to integrated city? Critical overview of the emerging metropolitan governance system in Cape Town. *Urban forum,* 13, 3-37.

Polusny, M. A. & Follette,V. M. (1995). Long term correlates of child sexual abuse: Theory and review of the empirical literature. *Applied and Preventive Psychology, 4*, 143–166.

Putnam, F. (2003). Ten-year research update review: Child sexual abuse. *Journal of the American Academy of Child and Adolescent Psychiatry,* 42, 269-278.

Reid, A. & Baker, F. (2008). Perceived sleep quality and sleepiness in South African university students. *South African Journal of Psychology,* 38(2), 287-303.

Ruspini, E. (2003). Longitudinal research. In Miller, R.L. & Brewer, J.D. (eds.) *A-Z of Social*

Research. London: Sage Publications.

Rogers, M. (1995). Factors influencing recall of childhood sexual abuse. *Journal of Traumatic Stress, 8*, 691–716.

Sadock, B.J. & Sadock, V.A. (2007). *Synopsis of psychiatry: Behavioural Sciences/Clinical Psychiatry*. (10th edition). Philadelphia: Lippincott Williams & Wilkins.

Seedat, S., Njenga, N.F., Vythilingum & Stein, D.J. (2004). Trauma exposure and post-traumatic stress symptoms in urban African schools. Survey in Cape Town and Nairobi. *British Journal of Psychiatry,* 184, 169-175.

Sequeira, H. & Hollis, S. (2003). Clinical effects of sexual abuse on people with learning dificulty. *British Journal of Psychiatry,* 182, 13-19.

Silva, R.R., Alpert, M. & Munoz, D.M. (2000). Stress and vulnerability to post traumatic stress disorder in children and adolescents. *American Journal of Psychiatry,* 157, 1229-1235.

Smith, M. & Fong,R. (2004). *The children of neglect*. London: Brunner-Routledge.

Suliman, S., Kaminer, D., Seedat, S. & Stein, D. (2005). Assessing post-traumatic stress disorder in South African adolescents: using the child and adolescent trauma survey (CATS) as a screening tool. *Annual General Psychiatry,* 4, 2.

Ten Berge, J.M. F. (1984) A joint treatment of varimax rotation and the problem of diagonalizing symmetric matrices simultaneously in the least-squares sense. *Psychometrika*,49, 3.

Townstead, L. & Dawes, A. (2004). Individual and contextual factors associated with the sexual abuse of children under 12: a review of recent literature. In Richter, L., Dawes, A., Higson-Smith, C. (eds). *Sexual abuse of young children in southern africa*. Cape Town: Human Sciences Research Council.

Thompson, B. (2004). *Exploratory and confirmatory analysis: understanding concepts and applications.* (1st edition). Washington, DC: American Psychological Association.

Thurstone, L. & Thurstone, L. (1941). *Factorial studies of intelligence*. Chicago: University of Chicago Press.

Van Wyk, G. & Edwards, D. (2005). From trauma support: A South African experience of responding to individuals and communities in the aftermath of traumatising events. *Journal of Psychology in Africa*, 15(2), 135-142.

Van der Kamp, L.J. & Bijleveld, C.J.H. (1998). Methodological issues in longitudinal research. In C.J.H., Bijleveld, L. J. Th., van der Kamp, A.B. Mooijaart, W. A. van der Kloot, R. van der Leerden & E. van der Berg. *Longitudinal data analysis: designs, moels and methods.* London: Sage.

Villano, C.L., Cleland, C., Rosenblum, A., Fong, C., Nuttbrock, L., Marthol, M. & Wallace, J. (2004). Psychometric Utility of the Childhood Trauma Questionnaire with Female Street-Based Sex Workers. *Journal of Trauma Dissociation*, 5(3), 33-41.

Wekerle, C. & Wolfe, D. (2003). Child Maltreatment. In E. Mash & R. Barkley (eds.) *Child Psychopathology*. (2nd edition). New York: Guilford.

Wright, K.D., Asmundson, G.J.G., McCreary, D.R., Scher, C., Hami, S. & Stein, M.B. (2001). Factorial Validity of the Childhood Trauma Questionnaire in Men and Women. *Depression and Anxiety*, 13, 179-183.

Zimet, G.D., Dahlem, N.W., Zimet, S.G. & Farley, G.K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52, 30-41.

Appendix A

PATIENT INFORMATION: POST TRAUMATIC STRESS DISORDER IN CHILDREN AND ADOLESCENTS

The Medical Research Council (MRC) and the Department of Psychiatry at the University of Stellenbosch and the universities of the Western Cape and Cape Town are currently conducting research on children and adolescents who were have been exposed to severe violence and trauma.

2. Aim

This study aims to investigate how children and adolescents cope after experiencing a severely traumatic event. We aim to interview 100 such patients over a period of three years.

This research involves an interview with a doctor/ psychologist. You will be asked about different kinds of problems you may be having. If you have symptoms of posttraumatic stress disorder (PTSD), you may wish to be treated with medication. PTSD is a medical disorder which develops

after exposure to a life threatening event and is associated with such symptoms as reliving of the traumatic event, nightmares, avoiding situations or places associated with the event, irritability and difficulty concentrating.

Participation in this project is voluntary, and you may withdraw at any time. All information will be considered strictly confidential.

3. The procedure is as follows:

Interview

You will be asked a series of questions about the trauma you experienced and about problems you may be experiencing as a result. You will also be asked to give a small amount of blood (about four tablespoons) to test the body's reaction to stress. The doctor/ psychologist will then advise about the best place for you to go for treatment (if this is needed).

4. Risks

Possible risks of this study are:

Psychological pain experienced while answering questions about the trauma.

5. Scientific Merit

This study may help determine the nature and treatment of dysfunctional responses to stress.

Appendix B

CONSENT FORM: POSTTRAUMATIC STRESS DISORDER IN CHILDREN AND ADOLESCENTS

I, the undersigned …….. the patient or in my capacity as the …….. of the patient, have read and understood the attached patient information sheet describing the study of the Department of Psychiatry of the University of Stellenbosch, and consent to the study of posttraumatic stress disorder in children and adolescents.

I understand that the results will be used for research purposes and that all information will be treated as strictly confidential.

I have been informed that I / the patient may refuse to take part in this research project (also that I / the patient may withdraw from the study at any time) and that such refusal or withdrawal will not impact negatively on my / the patient's current or future treatment at this or any other institution. I also understand that the researcher may withdraw me/ the patient from this research project if he/ she deems it to be in my/ the patient's interest.

I understand that my / the patient's participation in this research project involves no additional costs to myself / the patient. **I hereby willingly agree** to my/ the patient's participation in the above-mentioned project.

Signed/ confirmed at ……. on ……/……./20…..

……. …….
Patient's/ representative of patient's Signature or right thumb print — Witness

DECLARATION BY RESEARCHER OR REPRESENTATIVE OF RESEARCHER

I, …….., declare that:

2. The information contained in this document has been explained to the participant Mr/Ms…….
3. The participant has been invited to ask me questions about anything that may be unclear about this study.
4. That this conversation took place in English, Afrikaans, Xhosa* other (……..) and that an interpreter was not used / that this conversation was interpreted in (……..) by Dr/Mr/Ms……..

Signed at …….. on ……/……./20……..

……. …….
Researcher/ representative of researcher Witness

* Delete where not applicable

DECLARATION BY INTERPRETER

I,…….., confirm that I:

Interpreted the contents of this document from English, Afrikaans, Xhosa, other (……) into …… and relayed this to the participant. I also interpreted questions by the participant addressed to the researcher …..……..……. as well as this persons reply;

and that the information which I conveyed in this manner is an accurate and factually correct version of what was given to me.

Signed at…… on ……/……../1920……..

…….. ……
Signature of interpreter Signature of witness

IMPORTANT INFORMATION

Dear participant

Thank you for your participation in this research study. In the event of you requiring any further information about this study, or in the event of any situation arising as a direct result of this study, such as worsening or sudden onset of stress or anxiety symptoms, please call the Mental Health Information Centre Bathuthuzele Youth Stress Clinic at telephone number

(021) 9389229 938 9162. They will be able to put you in contact with the researcher or refer you to an appropriate professional.

Appendix C

CTQ

Ready Score® Answer Document

Instructions

These questions ask about some of your experiences growing up as a child and a teenager. Although these questions are of a personal nature, please try to answer as honestly as you can. For each question, circle the dot under the response that best describes how you feel. If you wish to change your response, put an *X* through it and circle your new choice.

Example of corrected response:

Original Response

Never True	Rarely True	Sometimes True	Often True	Very Often True
(•)	•	•	•	•

Changed Response

Never True	Rarely True	Sometimes True	Often True	Very Often True
X	•	(•)	•	•

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CTQ Name: ______ Age: ______ Sex: ______

Ready Score® Answer Document

When I was growing up ...	Never True	Rarely True	Sometimes True	Often True	Very Often True
1. I didn't have enough to eat.	•	•	•	•	•
2. I knew that there was someone to take care of me and protect me.	•	•	•	•	•
3. People in my family called me things like "stupid," "lazy," or "ugly."	•	•	•	•	•
4. My parents were too drunk or high to take care of the family.	•	•	•	•	•
5. There was someone in my family who helped me feel that I was important or special.	•	•	•	•	•
6. I had to wear dirty clothes.	•	•	•	•	•
7. I felt loved.	•	•	•	•	•
8. I thought that my parents wished I had never been born.	•	•	•	•	•
9. I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	•	•	•	•	•
10. There was nothing I wanted to change about my family.	•	•	•	•	•
11. People in my family hit me so hard that it left me with bruises or marks.	•	•	•	•	•
12. I was punished with a belt, a board, a cord, or some other hard object.	•	•	•	•	•
13. People in my family looked out for each other.	•	•	•	•	•
14. People in my family said hurtful or insulting things to me.	•	•	•	•	•
15. I believe that I was physically abused.	•	•	•	•	•
16. I had the perfect childhood.	•	•	•	•	•
17. I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor.	•	•	•	•	•
18. I felt that someone in my family hated me.	•	•	•	•	•
19. People in my family felt close to each other.	•	•	•	•	•
20. Someone tried to touch me in a sexual way, or tried to make me touch them.	•	•	•	•	•
21. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.	•	•	•	•	•
22. I had the best family in the world.	•	•	•	•	•
23. Someone tried to make me do sexual things or watch sexual things.	•	•	•	•	•
24. Someone molested me.	•	•	•	•	•
25. I believe that I was emotionally abused.	•	•	•	•	•
26. There was someone to take me to the doctor if I needed it.	•	•	•	•	•
27. I believe that I was sexually abused.	•	•	•	•	•
28. My family was a source of strength and support.	•	•	•	•	•

2

CTQ

Ready Score® Answer Document

Scoring

1. For each item, transfer the numerical score for the response that is circled to the corresponding box to the left of the item. Note that Items 2, 5, 7, 13, 19, 26, and 28 are reverse scored. For example, for these items, an endorsement of Very Often True is scored 1 rather than 5.
2. For each maltreatment scale, add the values in the boxes that appear in the column for the scale and enter the sum in the box at the bottom of the column. This number is the Scale Total Score. The range of scores in parentheses underneath the Scale Total Score indicates the minimum and maximum sums for the scale. The higher the score is, the more maltreatment is being reported.
3. For the Minimization/Denial Scale (Items 10, 16, and 22), score the responses as follows:
   - For an item endorsed with a 5 (Very Often True), circle the 1 in the box to the right of the item.
   - For an item endorsed with a 1-4, circle the 0 in the box to the right of the item.

   Add the values for these 3 items and enter the sum at the bottom of that column to derive the Minimization/Denial Scale Total Score. This score reflects the tendency of the respondent to give exaggerated, desirable responses. The range of scores in parentheses indicates the minimum and maximum sums for the scale.
4. In the space below each Scale Total Score, enter the classification for that score. Use Table B.1 in Appendix B.
5. A percentile rank for each Scale Total Score may be entered below the classification. Use Tables C.1–C.3 in Appendix C according to the reference group chosen.

3

CTQ Name: ______ Age: ______ Sex: ______

Ready Score® Answer Document

Scales

Emotional Abuse	Physical Abuse	Sexual Abuse	Emotional Neglect	Physical Neglect
Emotional Abuse Scale Total Score (5–25)	Physical Abuse Scale Total Score (5–25)	Sexual Abuse Scale Total Score (5–25)	Emotional Neglect Scale Total Score (5–25)	Physical Neglect Scale Total Score (5–25)

______ ______ ______ ______ ______ Classification

______% ______% ______% ______% ______% Percentile

Item Response Scores

	Never True	Rarely True	Sometimes True	Often True	Very Often True	M/D Score of 5 on item = 1; a score of ≤4 on an item = 0
1.	1	2	3	4	5	
2.	5	4	3	2	1	
3.	1	2	3	4	5	
4.	1	2	3	4	5	
5.	5	4	3	2	1	
6.	1	2	3	4	5	
7.	5	4	3	2	1	
8.	1	2	3	4	5	
9.	1	2	3	4	5	
10.	1	2	3	4	5	0 1
11.	1	2	3	4	5	
12.	1	2	3	4	5	
13.	5	4	3	2	1	
14.	1	2	3	4	5	
15.	1	2	3	4	5	
16.	1	2	3	4	5	0 1
17.	1	2	3	4	5	
18.	1	2	3	4	5	
19.	5	4	3	2	1	
20.	1	2	3	4	5	
21.	1	2	3	4	5	
22.	1	2	3	4	5	0 1
23.	1	2	3	4	5	
24.	1	2	3	4	5	
25.	1	2	3	4	5	
26.	5	4	3	2	1	
27.	1	2	3	4	5	
28.	5	4	3	2	1	

Appendix D

Rotated Component Matrix of group one

	1	2	3	4	5
My family was a source of support - T28	0.79				
people in family felt close to each other - T19	0.76				
I felt loved - T7	0.75				
people in family looked out for each other - T13	0.74				
someone in family helped me - T5	0.71				
I had the perfect childhood - T16	-0.71				
there was someone to take me to the doctor - T26	0.69				
someone to take care of me - T2	0.69				
I had the best family in the world - T22	-0.69				
nothing I want to change about family - T10	-0.53				
someone threatened me unless sexual handlings - T21		0.8			
someone molested me - T24		0.77			
someone tried to make me do sexual handlings - T23		0.75			
I believe that I was sexually abused - T27		0.74			
someone forced me sexual handlings - T20		0.69			
I believe I was emotionally abused - T25		0.57			
I got hit real hard - T9			0.68		
got bruises from being hit - T11			0.68		
Beaten so bad that someone noticed - T17		0.51	0.6		
punished with a belt - T12			0.56		
I believe I was physically abused - T15			0.54		
parents too drunk or high to take care of family - T4					
family said hurtful things to me - T14				0.71	
people in family called me crazy - T3				0.7	
felt like someone in family hated me - T18				0.55	
thought parents wished I was never born - T8					
enough to eat - T1					0.74
I had to wear dirty clothes - T6					0.66

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Appendix E

Rotated Component Matrix of group two

	Component							
	1	2	3	4	5	6	7	8
My family was a source of support - T28	0.84							
people in family felt close to each other - T19	0.77							
I felt loved - T7	0.76							
I had the best family in the world - T22	-0.74							
people in family looked out for each other - T13	0.73							
I had the perfect childhood - T16	-0.72							
there was someone to take me to the doctor - T26	0.72							
someone to take care of me - T2	0.71							
someone in family helped me - T5	0.69							
nothing I want to change about family - T10	-0.56							
family said hurtful things to me - T14		0.75						
people in family called me crazy - T3		0.74						
felt like someone in family hated me - T18		0.71						
thought parents wished I was never born - T8		0.56						
someone threatened me unless sexual handlings - T21			0.85					
someone molested me - T24			0.75					
I believe that I was sexually abused - T27			0.74					
someone tried to make me do sexual handlings - T23			0.63					
I believe I was physically abused - T15				0.73				
punished with a belt - T12				0.62				
I got hit real hard - T9					0.81			
Beaten so bad that someone noticed - T17					0.73			
I had t wear dirty clothes - T6						0.79		
enough to eat - T1						0.68		

parents too drunk or high to take care of family - T4							0.89	
I believe I was emotionally abused - T25							0.52	
someone forced me sexual handlings - T20								0.77
got bruises from being hit - T11								

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 8 iterations.
b. Only cases for which CTQ_group = Low score are used in the analysis phase.

Appendix F

Rotated Component of group three

	Component								
	1	2	3	4	5	6	7	8	9
someone molested me - T24	0.73								
I believe that I was sexually abused - T27	0.7								
someone forced me sexual handlings - T20	0.69								
someone threatened me unless sexual handlings - T21	0.69								
someone tried to make me do sexual handlings - T23	0.67								
I believe I was emotionally abused - T25	0.58								
someone to take care of me - T2		0.75							
I felt loved - T7		0.75							
someone in family helped me - T5		0.65							
got bruises from being hit - T11			0.72						
My family was a source of support - T28			-0.59						
punished with a belt - T12			0.55						
there was someone to take me to the doctor - T26			-0.5						
felt like someone in family hated me - T18									
Beaten so bad that someone noticed - T17				0.82					
I got hit real hard - T9				0.67					
I believe I was physically abused - T15									
I had the perfect childhood - T16									
people in family called me crazy - T3					0.72				
family said hurtful things to me - T14					0.64				
thought parents wished I was never born - T8					0.59				
parents too drunk or high to take care of family - T4						0.79			

people in family looked out for each other - T13						-0.58			
I had t wear dirty clothes - T6						0.55			
I had the best family in the world - T22							0.78		
people in family felt close to each other - T19							-0.6		
enough to eat - T1								0.75	
nothing I want to change about family - T10									0.81

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 12 iterations.
b. Only cases for which CTQ_group = High score are used in the analysis phase.