



**Psychological distress amongst orphaned, neglected and former street children in institutional care homes in Arusha, Tanzania**

Rebecca Tyrer

Supervised by: Brian Swallow

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**Abstract**

Orphanhood, neglect and life on the streets are common risk factors that lead to children entering institutional care in Tanzania. This study set out to explore the relationship between these risks and mental health outcomes. It also examined whether there were any differences in terms of psychological problems associated with the different risks. One hundred and four black African, Kiswahili speaking participants aged 8-17 years were recruited from institutional care homes in Arusha, Tanzania. They were interviewed using standardised mental health scales in order to assess levels of depression, anxiety and PTSD. Data were analysed with multivariate analysis, chi square analysis, unrelated t-tests and one sample t-tests. Children in this study were found to score significantly higher on a measure of posttraumatic stress disorder than the published norms. This was not the case however on measures of anxiety and depression. Multivariate analysis revealed no significant differences in scores of posttraumatic stress, anxiety and depression between groups of children. This study shows clear evidence of trauma for children living in institutional care homes; it also contradicts the general assumption of poor mental health of vulnerable children in terms of anxiety and depression highlighting children's resilience and indicating possible areas for intervention.

Key Words:	Orphans	Neglected	Street Children	Mental Health	Institutional Care
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<b><u>Contents page:</u></b>	<b>Page</b>
<b>Abstract</b>	<b>2</b>
<b>Contents</b>	<b>3</b>
<b>Tables and Figures</b>	<b>5</b>
<b>Acknowledgments</b>	<b>6</b>
<b>1. Introduction</b>	<b>7</b>
1.1. Risk of pathological development among orphans	8
1.2. Risk of pathological development among neglected children	9
1.3. Risk of pathological development among street children	10
1.4. Theoretical Framework	10
1.5. Hypotheses	12
<b>2. Method</b>	<b>13</b>
2.1. Participants and inclusion criteria	13
2.2. Materials	14
2.2.1. Revised Children's Manifest Anxiety Scale (RCMAS-2)	14
2.2.2. The Child PTSD Symptom Scale (CPSS)	15
2.2.3. Children's Depression Inventory (CDI)	15
2.3. Design	16
2.4. Procedures	16
2.5. Analysis	16
2.6. Ethical considerations	17
2.6.1. Child and Caregiver Consent	17
2.6.2. Informed Consent from Children	17
2.6.3. Confidentiality	17
<b>3. Results</b>	<b>18</b>
3.1. Comparison between mean scores in the present study and the published norms	18
3.1.1. Revised Children's Manifest Anxiety Scale (RCMAS-2)	18
3.1.2. Child PTSD Symptom Scale (CPSS)	20
3.1.3. Children's Depression Inventory (CDI)	22
3.2. Double orphaned verses neglected children on measures of well being	24
3.2.1. Revised Children's Manifest Anxiety Scale (RCMAS-2)	24
3.2.2. Child PTSD Symptom Scale (CPSS)	25
3.2.3. Children's Depression Inventory (CDI)	26
3.3. Former children of the streets verses non former children of the streets on measure of well-being	26
3.3.1. Revised Children's Manifest Anxiety Scale (RCMAS-2)	26
3.3.2. Child PTSD Symptom Scale (CPSS)	27
3.3.3. Children's Depression Inventory (CDI)	28
<b>4. Discussion</b>	<b>30</b>
4.1. Psychological distress of children in institutional care homes in Tanzania	30
4.2. Psychological distress outcomes for orphaned and neglected children	31

4.3. Psychological distress outcomes for children previously living full time on the streets	31
4.4. Implications for practice	32
4.5. Methodological issues	33
4.6. Future research	34
4.7. Conclusion	34
<b>References</b>	<b>35</b>

## Lists of tables and figures

### Tables:

Table 1: Mean age and gender frequencies for each sub-group of participants	Page 10
Table 2: Comparison between means and standard deviations calculated using one sample t-tests on the RCMAS-2 for the published norms (Reynolds & Richmond, 2008) and the present study for boys and girls.	Page 18
Table 3: Comparison between means and standard deviations calculated using one sample t-tests on the CPSS for the published norms (Foe <i>et al.</i> , 2001) and the present study for boys and girls.	Page 20
Table 4: Comparison between means and standard deviations calculated using one sample t-tests on the CDI for the published norms (Kovacs, 1992) and the present study for boys and girls.	Page 22
Table 5: Means and standard deviation scores on the RCMAS-2 for orphaned versus neglected children.	Page 23
Table 6: Means and standard deviation scores on the CPSS for orphaned versus neglected children.	Page 24
Table 7: Observed and expected frequencies for orphaned versus neglected children on PTSD event.	Page 25
Table 8: Means and standard deviations scores on the CDI for orphaned versus neglected children.	Page 26
Table 9: Means and standard deviation scores on the RCMAS-2 for former children of the streets versus non former children of the streets.	Page 27
Table 10: Mean and standard deviation scores on the CPSS for former children of the streets versus non former children of the streets.	Page 28
Table 11: Observed and expected frequencies for former child of the streets versus non former child of the streets on PTSD event.	Page 29
Table 12: Mean and standard deviation scores on the CDI for former children of the streets versus non former children of the streets.	Page 29

### Figures:

Figure 1: Bronfenbrenner's Ecological Framework	Page 6
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## **1. Introduction**

Children living in institutional care homes in Tanzania are in a vulnerable position in terms of pathological development because of the adverse risks they have been exposed to. A significant number of the children will have come from abusive and neglectful families, a life on the streets or have experienced the death of a close family member. Unfortunately the number of vulnerable children exceeds the capacity of care homes throughout Tanzania, resulting in overcrowded environments that cannot provide either the physical or emotional settings needed for healthy psychological development. Clarke and Clarke (1976) were of the opinion that institutional settings can cause unhealthy psychological development when they provide insufficient emotional stimulation. Bronfenbrenner suggested "... the physical setting restricts opportunities for locomotion and contains few objects that the child can utilize in spontaneous activity" (Bronfenbrenner 1979, p.143). Aviezer, Van Ijzendoorn, Sagi and Schuengal (1994) found that collective sleeping arrangements, which are prevalent in Tanzanian care homes, correlate strongly with an increased incidence of insecure attachments. John Bowlby was the first person to pioneer work in attachment theory, advocating that, "What is believed to be essential for mental health is that the infant and young child should experience a warm, intimate and continuous relationship with his mother (or permanent mother-substitute-one person who steadily 'mothers' him) in which both find satisfaction and enjoyment" (Bowlby 1953, p.106). Bowlby (1965) went on to claim a secure attachment to a parental figure was necessary for healthy psychological development.

Roy, Rutter and Pickles (2000) found evidence that continuity of care and individualised care-giving is important to a child's healthy development, they compared children in institutional care with those in foster care, who experienced fewer changes of carers and more individual care. They reported that children cared for in foster homes scored significantly lower levels of unsociability, hyperactivity and inattention than those from institutional care homes. It should be noted however that because all the children came from severely disturbed families, these results may be confounded by genetic factors or be a reflection of prior adverse experiences.

Bowlby (1951) argued maternal deprivation is the vital condition that increases the likelihood of disturbed personality development. Disruption of an emotional bond usually formed between a parent and infant has been shown to be associated with negative consequences. A number of studies have been carried out with nonhuman primates to discover the consequences of early physical and social environments on behavioural and physiological development. Suomi (1997) disrupted the attachment relationships formed between infant rhesus monkeys and their parents by separating them and raising infant monkeys with their peers. He reported that the monkeys experienced emotional and behavioural difficulties in adolescence, whereas those reared by their mothers did not. Suomi claimed that "Peer-reared monkeys become insecurely attached because they cannot serve each other as either secure bases or reliable fear-reducing soothing sources of stimulation nearly as effective as can a mother" (Suomi 1997, p.110). These findings clearly show the importance of a parent figure in the rearing process although they must be viewed with caution when applied to humans.

### **1.1. Risk of pathological development among orphans**

The United Nations Children's Fund (UNICEF, 2007) estimated that there were 2,600,000 orphans in the Republic of Tanzania. UNICEF (2009) uses the term orphan to mean children who have lost one or both parents. They recognise that this definition is different to the concept of orphans in many industrialised countries, which use the term to mean a child has lost both parents. During the 1990's, UNICEF decided to distinguish between 'orphans' (children who have lost one parent) and 'double orphans' (children who have lost both parents) in response to the heavily increasing number of children growing up without one or both parents due to the AIDS pandemic. This study therefore uses the term 'double orphan' when referring to children who have lost both parents.

Trauma theories suggest complicated or violent bereavement can act as a contributing factor for posttraumatic stress disorder (PTSD). The International Statistical Classification of Diseases and Related Health Problems (10th revision) (ICD-10) defines PTSD as "... a delayed or protracted response to a stressful event or situation (of either brief or long duration) of an exceptionally threatening or catastrophic nature, which is likely to cause pervasive distress in almost anyone" (World Health Organisation (WHO) 1992, p.334). Trauma theorists recognise that cause of death is an important factor in mediating the onset of distress, and as Zisook, Chentsova-Dutton and Shuchter (1998) point out 'normal' bereavement is not considered to be a risk factor in the diagnosis of PTSD. The number of bereaved children in Tanzania who have become orphaned as a result of AIDS has been estimated by UNICEF (2007) at 970,000. Bereavement by AIDS can be particularly difficult for children in Tanzania, who are often left to take over the parental role as well as look after their sick parents, and might therefore be seen as traumatic, "the death of a parent (and potentially long illness preceding it if the parent has died of AIDS) may have various impacts on a child's wellbeing" (Parikh, DeSilva, Cakwe, Quinlan, Simon, Skalicky and Zhuwau 2007, p.96). Evidence has shown that bereavement may be manifested in different ways dependent on a child's age. Dowdney, Wilson, Maughan, Allerton, Schofield and Skuse (1999) reported that younger children had greater incidence of bedwetting and showed more signs of separation anxiety. Weller, Weller, Fristad and Boweres (1991) found adolescents on the other hand to express feelings of guilt and symptoms of depression.

The ICD-10 defines 'generalised anxiety disorder' as "generalized and persistent but not restricted to, or even strongly predominating in, any particular environmental circumstances (i.e. it is 'free-floating'). The dominant symptoms are variable but include complaints of persistent nervousness, trembling, muscular tensions, sweating, lightheaded, palpitations, dizziness, and epigastric discomfort" (WHO 1992, p.341). As anxiety is one of the symptoms of PTSD, it is arguably likely to emerge among orphaned children who have been bereaved following the complicated or violent death of a parent. Cluver (2007) found some support for this claim, she interviewed 425 children orphaned by AIDS, 241 children orphaned by non-AIDS causes and 278 non-orphaned controls aged 10-19 in urban settlements of Cape Town, South Africa. Controlling for socio-demographic factors a higher proportion of children orphaned by AIDS (10%) were found to fulfil clinical criteria for anxiety than both children orphaned by non-AIDS causes (8%) and non-orphaned children (8%), although this difference was not found to be significant.



Makame, Ani and McGreger (2002) conducted a study with 41 orphans and 41 non- orphan controls in urban Tanzania. This study found a significant difference between orphans and non-orphans in reports of contemplating suicide in the past year ( $p < .016$ ). Their figures revealed that 34% of orphaned children had contemplated suicide compared with only 12% of non-orphans. A significant number of people contemplating suicide will suffer from depression, “Patient suicide and nonfatal suicidal behaviours are occupational hazards for mental health professionals, because they reflect the major life-threatening complications of mental disorders, notably depression” (Gotlib and Hammen 2002, p.510). Furthermore children who are orphaned may suffer a loss of a former secure attachment, which Liu (2006) suggested could put them at heightened risk of developing depression. The ICD-10 defines a depressive episode as “lowering of mood, reduction of energy, and decrease in activity.” (WHO 1992, p.335).

### **1.2. Risk of pathological development among neglected children**

Child neglect is also a problem of concern in Tanzania, although when defining neglect it is important to recognise that it is deeply rooted in social, economic and cultural practises that vary around the world. Neglect is often included as one of the manifestations of child abuse (ICD-10, 1992) and it is generally agreed that it involves the failure of the carer to provide for the basic physical, emotional and cognitive needs of a child. WHO suggests “Neglect refers to the failure of a parent to provide for the development of the child – where the parent is in a position to do so – in one or more of the following areas: health, education, emotional development, nutrition, shelter and safe living conditions. Neglect is thus distinguished from circumstances of poverty in that neglect can occur only in cases where reasonable resources are available to the family or caregiver.” (Runyan, Wattam, Ikeda, Hassan and Ramiro 2002, p.60). This definition excludes many poor children from being officially defined as neglected because of the inability of their caregiver to provide for them, although the risk of psychopathological development is still possible because of the lack of basic needs they experience.

Rutter (2000) found that poor parenting, including neglect and abuse have been consistently linked to an increased risk of psychopathology. In a number of epidemiological and clinical studies it has been argued that neglect can lead to anxiety, depression and PTSD. Bowlby (1989) was of the opinion that the lack of secure attachment can lead to atypical development including anxiety, delinquency, depressive illness and personality deviations. Widom (1999) investigated the consequences of childhood abuse and neglect on later development of PTSD, enrolling 1,196 participants from a Midwestern metropolitan county Widom revealed abused and neglected children were 1.75 times more likely than matched control subjects to develop PTSD.

One theory for psychopathological development among neglected children is the ‘Parental Acceptance Rejection Theory’ (PARTtheory), constructed following substantial research by Rohner (1960). PARTtheory looks at how far individuals perceive themselves to be accepted or rejected within interpersonal relationships and relate this to a specific form of psychological maladjustment. A child who has been neglected may not develop pathologically therefore, if they do not feel rejected.

The idea that perceived parental rejection may lead to negative pathological development including personality and behavioural functioning is supported by extensive research. Khaleque and Rohner (2002) give support to PARTheory's claim that psychological adjustment is directly associated with perceived parental acceptance/rejection. They carried out a meta-analysis of 43 studies worldwide and found that all the studies reported a significant correlation between scores on the Personality Assessment Questionnaire (PAQ – a measure of psychological adjustment) and the Parental Acceptance-Rejection Questionnaire (PARQ – a measure of perceived acceptance/rejection), with a significance level of .05 or less. Hale, VanderValk, Akse and Meevs (2008) investigated the interaction of early adolescents' depressive symptoms, aggression and perceived parental rejection. They found a bidirectional relationship in which perceived parental rejection was strongly associated with depressive symptoms ( $\beta = .16, P < .01$ ).

### **1.3. Risk of pathological development among street children**

One of the major problems facing Tanzania is the expanding number of street children in almost all urban centres. The term 'street children' is used to describe children who live both full time and part time on the streets. UNICEF (1986) made the distinction between children who have no home other than the streets (usually termed children 'of' the streets) and children who spend their days on the streets, often begging or working as vendors but who return home at night (usually termed children 'on' the streets). Children of the streets live without adult supervision or care and work, eat and sleep on the streets. McAlpine (2005), the director of Mkombozi, an AID agency working with vulnerable children and youths in Northern Tanzania, reported on the census' conducted in 2003 and 2005, comparing the incidence rates of street children in Arusha. This comparison identified an increase in the number of full time children of the streets in Arusha, from 195 in 2003 to 354 in 2005.

Children and youths both on and of the streets have to devote most of their time coping with harsh conditions by day and by night, and constantly need to be vigilant against danger. McAlpine (2005) reported that street children are in constant risk of being verbally, physically and sexually abused, have little or no access to social services including schools, are socially excluded and lack a parental figure to with whom to form a secure attachment. Compas, Orosan and Grunt (1993) documented that such stresses are linked with experiences of stress and depression. These findings are also in line with Rutter (2000) who claimed that it is not necessarily the risk of losing a parent that mediates the onset of adverse mental health but the risks that sometimes derive from that parental loss e.g. becoming a child of the streets. A number of factors are involved in forcing children onto the streets and sometimes involve a combination of elements, including physical and emotional abuse, neglect and abandonment. Children in institutionalised care in Tanzania who have lived on the streets are clearly at heightened risk of developing a mental health problem, although it is important to note that only roughly a quarter of individuals who experience trauma go on to develop PTSD (Breslau, Davis, Andreski, Federman and Anthony, 1998).

### **1.4. Theoretical Framework**

Bronfenbrenner (1979) designed an Ecological Framework that has been used as a model to show how the developmental problems of children can be seen as context

embedded. The Ecological Framework identifies a series of interconnected levels that emphasise social and physical contexts that influence children's development. This study focuses on potential risks in the development of mental health problems of children at the four interrelated levels of the Framework, the Microsystem, Mesosystem, Exosystem and Macrosystem (See figure one).

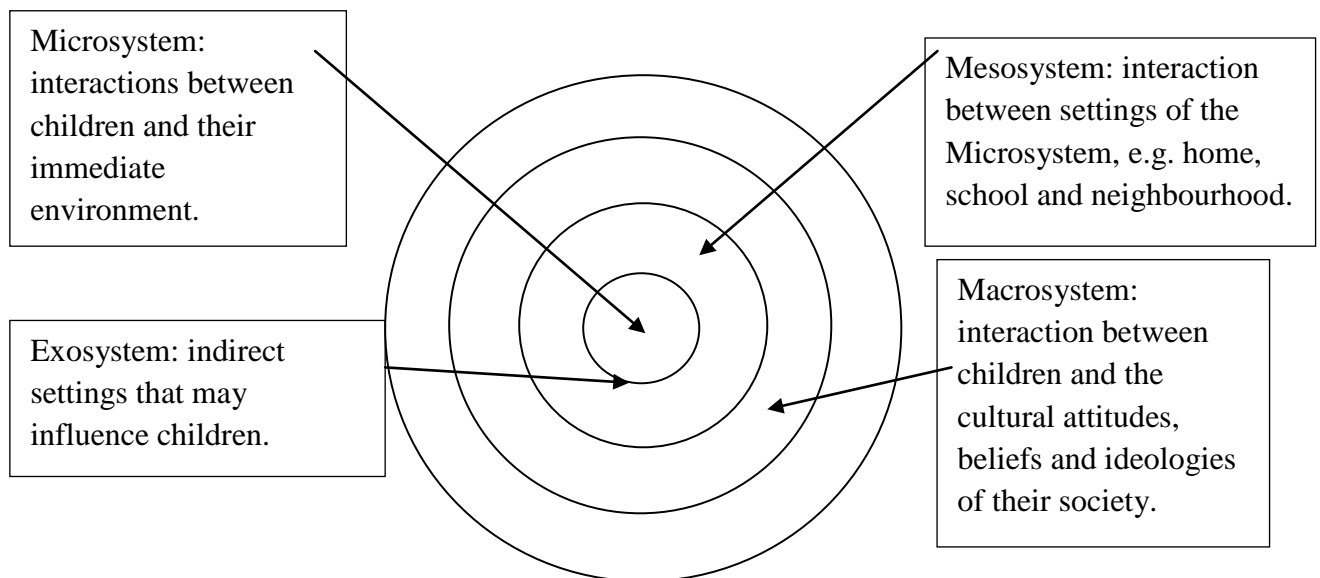


Figure 1: Bronfenbrenner's Ecological Framework

The Microsystem explores the interaction between children and their immediate environment, including their roles within the family, neighbourhood, school and peer groups. Orphaned or neglected children in Tanzania are increasingly being placed in institutional care because their extended family is too old or ill to care for them. Institutional care homes are more formal structures than conventional family homes, run by professionals or paraprofessionals and the roles and relationships they encourage are different from those of conventional families, which may affect the mental wellbeing of the children who live in them.

The Mesosystem is concerned with the relationships between the various settings which make up the Microsystem for each child, for example the relationship between their home and school or their immediate neighbourhood. Children in institutional care homes are generally more isolated from these settings and the relationships between them are consequently less intimate. This may lead to institutionalised children being less able to gain support and experience from these environments.

The Exosystem is made up of the indirect social settings that surround children including community services, extended family and parent's workplace. Institutions are less susceptible to influence from these types of structures leaving children from care homes less adaptive to them.

The Macrosystem is concerned with the culture and social values that surround the child. The ideologies, beliefs and attitudes of the society in which a child lives all have an impact on their development. One risk for children in institutional care in Tanzania is the stigma and prejudice their surrounding community often holds for

them, which may lead to the children feeling unaccepted and isolated (McAlpine, 2005).

### **1.5. Hypotheses**

Research indicates that children entering institutional care homes in Tanzania are exposed to risks concerning their mental health. This study set out to add to the research into the implications for the mental health of such children and to further the debate amongst professionals working with them, so they will be better able to produce conditions that have a positive impact on psychological development for the children in their care.

Based on support for Attachment Theory (Bowlby, 1953) and Bronfenbrenner's Ecological Framework (Bronfenbrenner, 1979), all children living in institutional care homes in Tanzania are at heightened risk of pathological development and therefore it is predicted that all children in the present study will score significantly higher anxiety and depression scores than a normative sample of children who participated in the standardisation for the instruments measuring these concepts. Furthermore it is predicted that there will be no significant difference between children in this study and the clinical sample of children who participated in the standardisation of the instrument measuring PTSD.

Based on findings by Dowdney (1999) that orphaned children may express signs of separation anxiety following the death of a parent with whom they may have formed a secure attachment and following Bowlby's (1989) assertion that lack of a secure attachment to a parental figure can lead to anxiety, it is predicted that there will be no significant difference in anxiety scores between those children double orphaned and neglected. Trauma theorists suggest complicated or violent bereavement may give rise to PTSD. Furthermore Widom (1999) showed that incidences of child abuse and neglect can lead to an increased risk of later PTSD. It is therefore predicted that there will be no significant difference in PTSD traits between double orphaned and neglected children. Based on findings by Makame, Ani and McGreger (2002) that orphaned children exhibit greater internalising and suicide contemplations than non orphaned children and research by Hale, VanderValk, Akse and Meevs (2008) who found evidence that perceived parental rejection was significantly associated with depressive symptoms, it is predicted that there will be no significant differences in depression scores between double orphaned and neglected children

Following McAlpine's (2005) observations of the dangers street children face, it is predicted that anxiety scores will be higher for former children of the streets than those children who have not previously lived full time on the streets. Given that children of the streets will often experience traumatic experiences such as verbal, physical and sexual abuse it is predicted that former children of the streets will have higher PTSD scores than those who have not previously lived on the streets. Finally based on Compas, Orosan and Grunt's (1993) report that children living on the streets are at an increased risk of depression it is predicted that depression scores will be higher for former children of the streets than non-former children of the streets.

## **2. Method**

### **2.1. Participants and inclusion criteria**

A sample of 104 black African, Kiswahili speaking participants aged 8-17 years were recruited through institutional care homes in Arusha, Tanzania. Any child who had been parentally bereaved in the previous 6 months was not included in the sample groups in order to prevent the potential confounding factor of acute bereavement on children's mental health. Furthermore any child who was known to be HIV Positive was not included in the sample groups as they present a potentially confounding factor, largely because of the stigma attached to HIV/AIDS (Richter, Foster, and Sherr, 2006). Participants were identified by social workers for suitability and they were all naive to the study. Out of the 104 participants, 68 were male and 36 were female and their mean age was 12.65 (see table 1 for proportions of sex and age within each sub-group). The sample size was determined using a 0.05 significance criterion ( $\alpha$ ), and assuming a large population effect size and a power of 80% ( $1 - \beta$ ), it was calculated that a sample size of approximately 26 participants per group would be required (Cohen, 1992).

Table 1: Mean age and gender frequencies for each sub-group of participants

Group	Mean age	Male	Female
Neglected, not a former child of the streets	12.58 (range 8-17)	16	10
Neglected, a former child of the streets	13.15 (range 8-17)	20	6
Double orphaned, not a former child of the streets	10.81 (range 8-17)	16	10
Double orphaned, a former child of the streets	13.96 (range 8-17)	16	10

The inclusion criteria for each of the four groups were established using the following definitions:

The distinction made by UNICEF (2009) between orphaned and double orphaned children was used to place only those children who had lost both parents in the 'double orphaned' group. 'Double orphan' was defined in the present study as the loss of both parents (UNICEF, 2009). Hence, some of the children in the neglected group had lost one parent.

The term child neglect in this study is based on WHO's definition, "failure of a parent to provide for the development of the child ... in one or more of the following areas: health, education, emotional development, nutrition, shelter and safe living conditions" (Runyan, Wattam, Ikeda, Hassan and Ramiro 2002, p.60).

The term 'child of the streets' was first used by UNICEF (1986) to describe children who live full time on the streets, working, eating and sleeping there, with no adult supervision or care. This study enrolled 'former children of the streets', who had lived full time on the streets but were currently living in institutional care homes.

## **2.2. Materials**

Three standardised mental health scales were used: The Child Depression Inventory – Short Form (Kovacs, 1992), The Revised Children's Manifest Anxiety Scale (Reynolds and Richmond, 2008) and The Child PTSD Symptom Scale (Foa, Johnson, Feeny and Treadwell, 2001). Scales were presented in a child friendly questionnaire, which also included socio-demographic questions (see appendix one for English version). A copy of the questionnaire was sent to a clinical psychologist at Mt. Meru Regional Hospital, Arusha, Tanzania where it was checked and verified for social and cultural appropriateness.

The questionnaire was translated into Kiswahili by the Regular Course Coordinator at the Computing Center, University of Dar es Salaam, Tanzania, who is bilingual in English and Kiswahili (see appendix two for Kiswahili version). The original consent form (see appendix three) was translated into Kiswahili (see appendix four) as was the debrief form (see appendix five and six). The Director of the African Children's Fund Tanzania (who was also bilingual in English and Kiswahili) back translated the documents and found no documents fared badly in back translation.

### **2.2.1. Revised Children's Manifest Anxiety Scale (RCMAS-2)**

The Revised Children's Manifest Anxiety Scale (RCMAS-2; Reynolds and Richmond, 2008) was used to measure anxiety. This scales consisted of 3 sub scales used to assess children's ratings on physiological anxiety made up of 12 items assessing physiological responses of somatic concerns often co-occurring with anxiety, worry made up of 16 items, assessing obsessive concerns including oversensitive reactions to environmental stress and social anxiety made up of 12 items used to assess children's anxiety in social and performance situations. The measure also included a defensive validity score made up of 9 items and an inconsistent responding index (INC). In accordance with Reynolds and Richmond (2008) any participant scoring 5 or more on the defensive (DEF) scale or 6 or more on the inconsistent responding (INC) index would have been omitted from the analysis, in order to help reveal invalid or biased responses. This 49 item self-rated questionnaire is suitable for children aged 6-19. Reynolds and Richmond (2008) found the RCMAS-2 to have good internal consistency with Cronbach's alpha  $\alpha = .92$  and test-retest reliability of .76 after one week supporting the general stability of the RCMAS-2 scores. The RCMAS has also been shown to have sound construct validity (Reynolds and Paget, 1981).

The RCMAS-2 has been widely used across ethnic groups and standardised scores have been developed using a group of 3086 children from the United States aged 6 -

19. The group was made up of approximately equal numbers of males and females and included 874 Black/African Americans and 495 Hispanic Latino students (Reynolds and Richmond, 2008). Although the RCMAS-2 is not known to have been standardized in Tanzania, a number of studies carried out throughout Sub-Saharan Africa have used the RCMAS (Cluver, 2007; Kodero, 2001). The RCMAS has been observed to be consistent across ethnic groups. For example, Argulewicz (1984) found no significant differences in reliability coefficients for the total anxiety scores of white, African American and Hispanic children.

### **2.2.2. The Child PTSD Symptom Scale (CPSS)**

The Child PTSD Symptom Scale (CPSS; Foa, Johnson, Feeny and Treadwell, 2001) was used to measure posttraumatic stress disorder symptoms in children exposed to traumatic experiences. This scale consisted of 2 event items, used to gather information about the traumatic experience. The scale also assesses children's symptoms as a result of a traumatic experience, taken from three clusters of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994) symptom criteria. Firstly re-experiencing, assessing recurrent distressing recollections of the event, made of 5 items, avoidance, looking at children's efforts to avoid stimuli associated with the traumatic experience, consisting of 7 items and finally hyperarousal, investigating a persistent increase of arousal, made up of 5 items. Furthermore although not relevant for this research the instrument also consisted of 7 items for measuring functional impairment. This 26 item self report measure is appropriate for children aged 8-18. Internal consistency was found to be high for the total score and the three subscales. Foa, *et al.*, (2001) found coefficient alphas were .89 for total score, .80 for re-experiencing, .73 for avoidance and .70 for arousal. Test- retest reliability was moderate, with a kappa of .55 percentage agreement between diagnoses agreement at two time points was 84%, indicating a moderately high degree of reliability. Convergent validity with other PTSD measures was also found to be good.

The CPSS was standardized in California with 75 school children aged 8-15, 89% of whom were Caucasian and 11% were other ethnicities. Participants were enrolled approximately two years after the 1994 Northridge, Californian earthquake. In order to maximise children's understanding of the items used in the CPSS, the scale incorporates developmentally appropriate language. The CPSS corresponds to DSM-IV criteria for PTSD (American Psychological Association, 1994), although there are no known standardised scales measuring PTSD in Tanzania, other scales including the Child PTSD Checklist (Amaya-Jackson, 1995) also deriving criteria from DSM-IV have been used in Sub-Saharan Africa (Cluver, 2007).

### **2.2.3. Children's Depression Inventory (CDI)**

The Children's Depression Inventory short form (CDI; Kovacs, 1992) was used to measure depression. This is a 10 item self rated questionnaire suitable for children aged 7-17. Internal consistency was found to be good on the 27 item version of the CDI with Cronbach's alpha  $\alpha = .86$ . The CDI short form correlates with the long inventory  $r = .89$  and its alpha is equal to  $\alpha = .80$ , suggesting its compatibility with the full CDI content at a reasonable level (Kovacs, 1992). Test re-test reliability was found to be much more varied ranging from .38 in the community sample to .87 among psychotic patients (Saylor, Finch, Spirito & Bennett, 1984), suggesting

stability of the CDI differs among populations. The CDI has also been shown to have good construct validity (Kovacs, 1992).

The CDI short version was administered to 1148 students attending a public school in Florida. 77% of the children were Caucasian and the remaining 23% of children were African American, Native American or Hispanic (Kovacs, 1992). Although the CDI is not known to have been standardised in Tanzania, the CDI has been used in Sub-Saharan Africa (Cluver, 2007).

### **2.3. Design**

An independent measures design was used in this study. The present study had two independent variables, firstly whether participants were in the 'former child of the streets' or 'non former child of the streets' group and secondly whether participants were in the 'double orphaned' or 'neglected' group. The study had three dependent variables; these were the participant's scores on the 'Children's Depression Inventory', 'Revised Children's Manifest Anxiety Scale' and The 'Child PTSD Symptom Scale'.

### **2.4. Procedures**

Suitable children were first identified by social workers working within the institutional care homes. Informed consent was then gained for all children from their primary caregiver at their care home. All participants also gave their informed consent to take part in the study.

After informed consent was gained, participants completed the questionnaire (with assistance if needed) in a quiet indoor location away from the distraction of others. Social casework files were used as a means for inter-rater reliability checking. Although this was not a systematic determinant of data reliability, it was a useful measure during fieldwork for checking demographic information and children's family circumstances.

Participants were fully debriefed after they completed the questionnaire, and were provided with the author's contact details if they had any further questions. The results of the report were distributed to the institutional care homes from which the children came.

### **2.5. Analysis**

Data were entered into SPSS version 17.0 where one-factorial MANOVA's were carried out separately on two dependent variables; the 'Revised Children's Manifest Anxiety Scale' and the 'Child PTSD Symptom Scale', this was in order to investigate whether groups would differ significantly in terms of overall scores on two measures of well-being. An unrelated t-test was carried out to investigate group differences for the 'Children's Depression Inventory'. One sample t-tests were also used to compare scores of the present study with published norms. A Chi Square ( $\chi^2$ ) analysis was carried out to investigate whether traumatic events differed significantly between groups.



## **2.6. Ethical considerations**

This study was granted ethical approval from the designated authority within the faculty of Health and Social Sciences at the University of Lincoln (see appendix seven) following the submission of the University's Ethical Approval Form. Ethical clearance for conducting medical research in Tanzania from the National Institute for Medical Research Tanzania was also obtained (see appendix eight). The questionnaire was checked for child friendliness by an appropriately qualified practitioner.

### ***2.6.1. Child and caregiver consent***

Following the British Psychological Society Guidelines (2000) that consent should be obtained from parents or from those in loco parentis for any person under the age of sixteen, consent was obtained for all children participating in the study from their primary caregiver at their institutional care home. Children aged 16 and 17 did not require parental consent, but because children involved in this study were vulnerable, permission was sought for all participating children.

### ***2.6.2. Informed Consent from Children***

All the children were told that they were free to withdraw from the research at any point, and that this would have no negative consequences. Children were given information about the study before being asked to provide their informed consent.

### ***2.6.3. Confidentiality***

All data was treated as confidential. If any child was identified during the interviews as needing support, it was suggested to them that they might benefit from talking to an outside professional. Contact had already been made with the Clinical Psychologist at Arusha District Hospital, who agreed to provide any necessary intervention.

### **3. Results**

In order to test the first hypothesis, all the children in the present study were compared to the published norms on each of the three standardised mental health scales used. Secondly the relationships between orphaned (N=52) and neglected children (N=52) were analysed on the three standardised mental health scales and finally relationships between former children of the streets (N=52) and non former children of the street (N=52) were also analysed (see appendix nine) for the raw scores of each participant.

#### **3.1. Comparison between mean scores in the present study and the published norms**

##### **3.1.1. Revised Children's Manifest Anxiety Scale (RCMAS-2)**

As no child scored six or greater on the INC index or five or more on the DEF scale, no participants were omitted from the analysis due to inconsistent or defensive responding. Analysis using a one sample t-test revealed mixed levels of morbidity between children in the present study and the normative sample of children in the United States, who participated in the standardization of the RCMAS-2 (published norms), by Reynolds & Richmond (2008). Overall a significant difference was found in total anxiety between the present study and published norms [ $t(104) = 1.86, p < 0.05$ , one tailed], the means revealed children who took part in the standardization scored significantly higher ( $M = 15.7$ ) than children in the present study ( $M = 14.58$ ). Significant differences were found on sub-scale item scores. Children in the present study scored significantly higher than children who took part in the standardization of the RCMAS-2 on measures of worry [ $t(103) = 4.82, p < 0.001$ , one tailed], whereas children who took part in the standardization of RCMAS-2 scored significantly higher on measures of physiological anxiety [ $t(103) = 10.70, p < 0.001$ , one tailed] and social anxiety [ $t(103) = 2.06, p < 0.05$ , one tailed] than children in the present study. Table 2 shows the mean and standard deviation for the published norms and the present study for girls, boys and total scores on the RCMAS-2 (see appendix ten).

Thus compared to a US normative sample, children in the present study were significantly less likely to display high levels of anxiety.

Table 2: Comparison between means on the RCMAS-2 for the published norms (Reynolds & Richmond, 2008) and the present study for boys and girls, standard deviations are in parenthesis. t results are calculated using one sample t – tests.

	Girls Tyrer		Reynolds & Richmond			Boys Tyrer		Reynolds & Richmond			Total Tyrer		Reynolds & Richmond		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>
Physiological Anxiety	2.33	(1.43)	5.3	(2.7)	12.41***	3.21	(2.19)	4.7	(2.6)	5.63***	2.90	(2.00)	5.0	(2.7)	10.70***
Worry	7.56	(2.42)	7.1	(3.9)	1.13 ns	7.85	(3.07)	5.6	(3.7)	6.05***	7.75	(2.85)	6.4	(3.9)	4.82***
Social Anxiety	3.47	(2.70)	4.5	(2.9)	2.29*	3.93	(2.60)	4.1	(2.8)	0.55 ns	3.77	(2.63)	4.3	(2.9)	2.06*
Total Anxiety	13.31	(5.28)	16.9	(8.1)	4.08***	15.25	(6.51)	14.4	(7.8)	1.08 ns	14.58	(6.16)	15.7	(8.0)	1.86 *

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$ ; \*\*\* =  $p < 0.001$

### **3.1.2. Child PTSD Symptom Scale (CPSS)**

A one sampled t-test was carried out to compare scores in the present study with children used for the published norms (Foa *et al.*, 2001) who were enrolled approximately two years after the 1994 Northridge; Californian earthquake. This analysis revealed an overall significant difference in total PTSD between the present study and the published norms [ $t(103) = 7.79, p < 0.001$ , one tailed], the means revealed children in the present study scored significantly higher ( $M = 14$ ) than the published norms ( $M = 7.6$ ). Significant differences were also found on sub-scale item scores, children in the present study scored significantly higher than the published norms on measures of re-experiencing [ $t(103) = 6.78, p < 0.001$ , one tailed], avoidance [ $t(103) = 8.63, p < 0.001$ , one tailed] and hyperarousal [ $t(103) = 4.31, p < 0.001$ , one tailed]. Table 3 shows the mean and standard deviation for the published norms and the present study for girls, boys and total scores on the CPSS (see appendix eleven).

Thus, compared to the clinical sample used for the standardisation of the CPSS (Foa *et al.*, 2001) children in the present study were significantly more likely to report symptoms of PTSD.

Table 3: Comparison between means on the CPSS for the published norms (Foa *et al.*, 2001) and the present study for boys and girls, standard deviations are in parenthesis.

t results are calculated using one sample t-tests.

	Girls					Boys					Total				
	Tyrer <i>M</i>	<i>SD</i>	Foa <i>M</i>	<i>SD</i>	<i>t</i>	Tyrer <i>M</i>	<i>SD</i>	Foa <i>M</i>	<i>SD</i>	<i>t</i>	Tyrer <i>M</i>	<i>SD</i>	Foa <i>M</i>	<i>SD</i>	<i>t</i>
Re-experiencing	4.25	(2.64)	2.8	(3.1)	3.29***	4.16	(3.83)	0.6	(1.1)	7.68***	4.19	(3.45)	1.9	(2.7)	6.78***
Avoidance	6.22	(3.52)	3.7	(3.9)	4.30***	5.44	(3.57)	1.5	(2.0)	9.10***	5.7	(6.22)	2.7	(3.4)	8.63***
Hyperarousal	4.0	(3.05)	3.5	(2.9)	0.98 (ns)	4.15	(3.45)	1.5	(1.9)	6.32***	4.09	(4.0)	2.7	(2.7)	4.31 ***
Total	14.47	(6.07)	10.3	(9.2)	4.12***	13.75	(9.41)	3.7	(4.1)	8.80***	14	(8.38)	7.6	(8.1)	7.79***

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$ ; \*\*\* =  $p < 0.001$

### **3.1.3. Children's Depression Inventory (CDI)**

Analysis using a one sampled t-test revealed that the normative sample of children in Florida who participated in the standardization of the CDI (published norms) by Kovacs (1992) scored significantly higher ( $M = 3.14$ ) on the CDI than children in the present study ( $M = 2.43$ ) [ $t(103) = 2.71, p < 0.01$ , one tailed]. Table 4 shows the mean and standard deviation for girls and boys scores on the CDI for the published norms and the present study and the total mean and standard deviation scores for the CDI (see appendix twelve).

Thus compared to a US normative sample, children in the present study were significantly less likely to display high levels of depression.

Table 4: Comparison between means on the Children's Depression Inventory (CDI) for the published norms (Kovacs, 1992) and the present study. Standard deviations are in parenthesis. *t* results are using a one sample *t*-test.

	Girls					Boys					Total				
	Tyrer		Kovacs		<i>t</i>	Tyrer		Kovacs		<i>t</i>	Tyrer		Kovacs		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Short version	2.33	(2.66)	3.07	(3.16)	1.66 (ns)	2.49	(2.68)	3.22	(3.30)	2.26*	2.43	(2.67)	3.14	(3.22)	2.71**

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$ ; \*\*\* =  $p < 0.001$

### 3.2. Double orphaned verses neglected children on measures of well being

#### 3.2.1. Revised Children's Manifest Anxiety Scale (RCMAS-2) (see appendix thirteen)

The means revealed that the neglected group scored higher on the physiological scale ( $M = 3.31$ ) than the orphaned group ( $M = 2.50$ ), whereas the orphaned group scored higher on the worry scale ( $M = 7.79$ ) than the neglected group ( $M = 7.71$ ). The orphaned group also scored higher on the social scale ( $M = 3.81$ ) than the neglected group ( $M = 3.73$ ) (see table 5).

Table 5: Mean scores on the RCMAS-2 for orphaned versus neglected children. Standard deviations are in parenthesis.

	Orphaned		Neglected	
	<i>M</i>	( <i>SD</i> )	<i>M</i>	( <i>SD</i> )
Physiological Anxiety	2.50	(1.69)	3.31	(2.21)
Worry	7.79	(2.89)	7.71	(2.85)
Social Anxiety	3.81	(2.66)	3.73	(2.63)
Total Anxiety	14.37	(5.77)	14.79	(6.57)

The data for anxiety were analysed with a one-way unrelated MANOVA (double orphaned versus neglected) with 'physiological anxiety', 'worry' and 'social anxiety' as the dependent variables. Box M test indicated that there was no violation of the assumption of homogeneity of variance and covariance [Box M = 5.47;  $F < 1$ ;  $p = 0.506$ ]. Pearson's correlation coefficients between the three dependent variables revealed a linear relationship between psychological anxiety and worry ( $r = 0.547$ ,  $p < 0.001$ ), psychological anxiety and social anxiety ( $r = 0.549$ ,  $p < 0.001$ ) and between worry and social anxiety ( $r = 0.567$ ,  $p < 0.001$ ). Each of these components therefore do not independently contribute to the overall multivariate analysis, showing that all scales of the RCMAS-2 contribute to the overall MANOVA. The MANOVA revealed that there was no significant multivariate difference between the two groups [ $F(3,100) = 2.659$ , Wilks'  $\lambda = 0.926$ ;  $p = 0.052$ ].

To investigate the two groups in more detail, independent one-way ANOVA's were conducted on the three dependent variables separately. This revealed a significant difference in terms of physiological anxiety [ $F(1,102) = 4.390$ ;  $p = 0.039$ ], and the means revealed that the neglected group scored higher on this measure ( $M = 3.31$ ) than the orphaned group ( $M = 2.50$ ). However the difference between the two groups did not differ significantly in terms of worry [ $F(1, 102) = 0.019$ ;  $p = 0.892$ ] and social anxiety [ $F(1, 102) = 0.022$ ;  $p = 0.882$ ].

These findings indicate that there was no overall difference between orphaned and neglected children in their presentation of anxiety on the RCMAS-2 although neglected children were found to score significantly higher than the orphaned group on physiological anxiety, one subscale of the RCMAS-2.



### 3.2.2. The Child PTSD Symptom Scale (CPSS) (see appendix fourteen)

The means revealed that the double orphaned group scored higher on each subscale, re-experiencing ( $M = 4.36$ ), avoidance ( $M = 5.92$ ) and hyperarousal ( $M = 4.11$ ) than the neglected group who revealed ( $M = 4.02$ ) for re-experiencing, ( $M = 5.50$ ) for avoidance and ( $M = 4.08$ ) for hyperarousal (see table 6).

Table 6: Mean scores on the CPSS for orphaned versus neglected children. Standard deviations are in parenthesis.

	Orphaned		Neglected	
	<i>M</i>	( <i>SD</i> )	<i>M</i>	( <i>SD</i> )
PTSD re-experiencing	4.37	(3.76)	4.02	(3.13)
PTSD avoidance	5.92	(3.78)	5.50	(3.34)
PTSD hyperarousal	4.12	(3.39)	4.08	(3.25)
PTSD Total	14.40	(9.32)	13.60	(7.39)

The data for the CPSS were analysed with a one-way unrelated MANOVA (double orphaned versus neglected) with 're-experiencing', 'avoidance' and 'hyperarousal' as the dependent variables. Box M test indicated that there was no violation of the assumption of homogeneity of variance and covariance [Box M = 4.822;  $F < 1$ ;  $p = 0.587$ ]. Pearson's correlation coefficients between the three dependent variables revealed a linear relationship between re-experiencing and avoidance ( $r = 0.546$ ,  $p < 0.001$ ), re-experiencing and hyperarousal ( $r = 0.447$ ,  $p < 0.001$ ) and between avoidance and hyperarousal ( $r = 0.445$ ,  $p < 0.001$ ) showing internal validity between each of these components, it may therefore be assumed all factors contribute to the overall multivariate analysis. The MANOVA revealed that there was no significant multivariate difference between the two groups [ $F(3,100) = 0.168$ , Wilks'  $\lambda = 0.995$ ;  $p = 0.918$ ].

To investigate the two groups in more detail, independent one-way ANOVA's were conducted on the three dependent variables separately. The results showed that differences between the two groups did not differ significantly in terms of re-experiencing [ $F(1,102) = 0.366$ ;  $p = 0.547$ ], avoidance [ $F(1,102) = 0.366$ ;  $p = 0.547$ ] and hyperarousal [ $F(1,102) = 0.003$ ;  $p = 0.953$ ].

This indicates that there was no difference between orphaned and neglected children in their presentation of PTSD on the CPSS.

A  $\chi^2$  analysis of the difference between traumatic event experience frequencies across double orphaned and neglected children revealed no significant difference,  $\chi^2(2, 104) = 2.77$ ,  $p > .05$ , two tailed) (see appendix fifteen). The most common PTSD events were relative's death and violence. The miscellaneous category was made up of a collection of various types of traumatic experiences, including separation, living on the streets and contact with dangerous animals (see table 7).

Table 7: Observed frequencies for orphaned versus neglected children on PTSD event, expected frequencies are in parenthesis

	Double orphaned N= 52	Neglected N = 52
Miscellaneous	6 (9)	12 (9)
Relative's death	38 (34.5)	31(34.5)
Violence	8 (8.5)	9 (8.5)

### 3.2.3. Children's Depression Inventory (CDI) (see appendix sixteen)

Table eight shows the mean CDI total score was higher for neglected children ( $M = 2.71$ ) than for double orphaned children ( $M = 2.15$ ).

Table 8: Mean scores on the CDI for orphaned versus neglected children. Standard deviations are in parenthesis.

	Orphaned		Neglected	
	<i>M</i>	( <i>SD</i> )	<i>M</i>	( <i>SD</i> )
CDI total	2.15	(2.04)	2.71	(3.16)

The unrelated t-test showed no significant difference between orphaned and neglected children [ $t(102) = 1.068$ ;  $p = 0.288$ ].

This indicates that there was no difference between orphaned and neglected children in their presentation of depression on the CDI.

### 3.3. Former children of the streets verses non former children of the streets on measures of well being

#### 3.3.1. Revised Children's Manifest Anxiety Scale (RCMAS-2) (see appendix seventeen)

The means revealed that the former child of the streets group scored higher on the physiological scale ( $M = 3.06$ ) than the non former child of the streets group ( $M = 2.75$ ). The former child of the streets group also scored higher on a measure of worry ( $M = 7.98$ ) than the non former child of the streets group ( $M = 7.52$ ), whereas the non former child of the streets group scored higher on the social scale ( $M = 4.08$ ) than the former child of the streets group ( $M = 3.46$ ) (see table 9).

Table 9: Mean scores on the RCMAS-2 for former children of the streets versus non former children of the streets, standard deviations are in parenthesis.

	Former child of the streets		Non former child of the streets	
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>
Physiological Anxiety	3.05	(1.69)	2.75	(2.27)
Worry	7.98	(2.83)	7.52	(2.89)
Social Anxiety	3.46	(2.68)	4.08	(2.57)
Total Anxiety	14.77	(5.78)	14.38	(6.57)

The data for anxiety were analysed with a one-way unrelated MANOVA (former children of the streets versus non former children of the streets) with 'physiological anxiety', 'worry' and 'social anxiety' as the dependent variables. Box M test indicated that there was no violation of the assumption of homogeneity of variance and covariance [Box M = 6.09;  $F < 1$ ;  $p = 0.435$ ]. As stated above Pearson's correlation coefficients between the dependent variables revealed a linear relationship ( $p < 0.001$ ), and therefore all factors contribute to the overall multivariate analysis. The MANOVA revealed that there was no significant multivariate difference between the two groups [ $F(3,100) = 2.099$ , Wilks'  $\lambda = 0.941$ ;  $p = 0.105$ ].

To investigate the two groups in more detail, independent one-way ANOVA's were conducted on the three dependent variables separately. The results showed that the difference between the two groups did not differ significantly in terms of physiological anxiety [ $F(1,102) = 0.615$ ;  $p = 0.435$ ], worry [ $F(1, 102) = 0.677$ ;  $p = 0.412$ ] and social anxiety [ $F(1, 102) = 1.425$ ;  $p = 0.235$ ].

This indicated that there was no significant difference between former children of the streets and non former children of the streets in their presentation of anxiety on the RCMAS-2.

### 3.3.2. The Child PTSD Symptom Scale (CPSS) (see appendix eighteen)

The means revealed that the former child of the streets group scored higher on each subscale, re-experiencing ( $M = 4.83$ ), avoidance ( $M = 6.54$ ) and hyperarousal ( $M = 4.60$ ) as opposed to the non former child of the streets group who revealed lower scores of re-experiencing ( $M = 3.56$ ), avoidance ( $M = 4.88$ ) and hyperarousal ( $M = 3.60$ ) (see table 10).

Table 10: Mean scores on the CPSS for former children of the streets versus non former children of the streets, standard deviations are in parenthesis.

	Former child of the streets		Non former child of the streets	
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>
PSTD re-experiencing	4.83	(3.80)	3.56	(2.97)
PTSD avoidance	6.54	(3.99)	4.88	(2.87)
PTSD hyperarousal	4.60	(3.65)	3.60	(2.86)
PTSD total	15.96	(9.46)	12.04	(6.67)

The data for the CPSS were analysed with a one-way unrelated MANOVA (former children of the streets versus non former children of the streets) with 're-experiencing', 'avoidance' and 'hyperarousal' as the dependent variables. Box M test indicated that there was no violation of the assumption of homogeneity of variance and covariance [Box M = 8.876;  $F > 1$ ;  $p = 0.198$ ]. As stated above Pearson's correlation coefficients between the three dependent variables revealed a linear relationship ( $p < 0.001$ ), and therefore do not independently contribute to the overall multivariate analysis. The MANOVA revealed that there was no significant multivariate difference between the two groups [ $F(3,100) = 2.142$ , Wilks'  $\lambda = 0.940$ ;  $p = 0.100$ ].

Independent one-way ANOVA's were conducted on the dependent variables separately. The results revealed a significant differences between groups on avoidance [ $F(1, 102) = 5.887$ ;  $p = 0.017$ ], the means showed that the former children of the streets group scored significantly higher on the avoidance subscale ( $M = 6.54$ ) than the non former children of the streets group ( $M = 4.88$ ). Significant differences were not found in terms of re-experiencing [ $F(1, 102) = 3.607$ ;  $p = 0.060$ ] and hyperarousal [ $F(1, 102) = 2.413$ ;  $p = 0.123$ ].

This indicates that former children were found to score higher on the CPSS than non former children of the streets, although this only reached significance on avoidance, one subscale of the CPSS.

A  $\chi^2$  analysis of the difference between traumatic event experience frequencies across former children of the streets and non former children of the streets revealed no significant difference,  $\chi^2(2, 104) = 2.4$ ,  $p > .05$ , two tailed) (see appendix nineteen). The miscellaneous category was made up of a collection of various types of traumatic experiences, including separation, living on the streets and contact with dangerous animals (see table 11).

Table 11: Observed frequencies for former child of the streets versus non former child of the streets on PTSD event, expected frequencies are in parenthesis

	Former child of the streets N= 52	Not a former child of the streets N = 52
Miscellaneous	10 (9)	8 (9)
Relatives death	31 (34.5)	38 (34.5)
Violence	11 (8.5)	6 (8.5)

### 3.3.3. Children's Depression Inventory (CDI) (see appendix twenty)

Table 12 shows the mean CDI total score was higher for children who had not previously lived on the streets ( $M = 2.73$ ) than children who had previously lived on the streets ( $M = 2.13$ ).

Table 12: Mean scores on the CDI for former children of the streets versus non former children of the streets, standard deviations are in parenthesis.

	Former child of the streets		Non former child of the streets	
	<i>M</i>	<i>(SD)</i>	<i>M</i>	<i>(SD)</i>
CDI total	2.13	(2.11)	2.73	(3.12)

The unrelated t-test revealed no significant difference between former children of the streets and non former children of the streets on a measure of depression [ $t(102) = 1.142$ ;  $p = 0.256$ ].

This indicates that there was no difference between former children of the streets and non former children of the streets in their presentation of depression on the CDI.

#### **4. Discussion**

The results indicate that children in this study exhibit significantly less psychological and social anxiety than a normative population, although they scored significantly higher on the worry subscale. Overall anxiety scores however were significantly lower than the normative population. Posttraumatic stress symptomatology was significantly higher amongst children in the present study, with higher scores on the subscales of re-experiencing, avoidance and hyperarousal. Finally, these children expressed significantly less depressive symptomatology than the standardised normative scores. In the analysis between double orphaned and neglected children, it was found that there was no significant difference on measures of anxiety (RCMAS-2), PTSD (CPSS) and depression (CDI). Neglected children however were found to score significantly higher on 'physiological anxiety', one subscale of the RCMAS-2 than orphaned children. Analysis between former children of the streets and non former children of the streets also revealed no significant differences on measures of anxiety (RCMAS-2), PTSD (CPSS) and depression (CDI). Former children of the streets however were found to score significantly higher on 'avoidance', one subscale of the CPSS, than non former children of the streets.

##### **4.1. Psychological distress of children in institutional care homes in Tanzania**

The first hypothesis predicted that children in the present study would score significantly higher on measures of anxiety and depression than a normative population. It was also predicted that there would be no significant difference on a measure of PTSD between children in this study and a clinical population. The results of the one sample t-tests revealed a significant difference between total scores in the present study and the published clinical sample on a measure of PTSD (CPSS). The means revealed that children in this study scored significantly higher than the clinical population, suggesting they might be suffering from posttraumatic stress symptomatology. The high rates of PTSD found amongst these children may provide support for Bronfenbrenner's (1975) Ecological Framework, which emphasises the ways in which interaction between social structures can affect human development. Children in institutional care are often isolated from the social structures that may have helped them cope with traumatic experiences without going on to develop symptoms of PTSD. Significant differences were also found between children in the present study and the published norms on measures of anxiety (RCMAS-2) and depression (CDI), however, contrary to the expectations of the study the means revealed that this was only in the direction of the hypothesis for overall scores on the 'worry' sub scale of the RCMAS-2.

These results are surprising given the co-morbidity of PTSD with other psychiatric disorders, specifically anxiety and depression (Ginzburg, Ein-Dor and Solomon 2009). The lack of co-morbidity found between scores for PTSD and anxiety correspond to those found by Cluver (2007) who investigated well-being among children living in urban settlements of Cape Town, South Africa, revealing significantly higher percentage rates for children fulfilling criteria for PTSD than anxiety. These findings suggest that the RCMAS may not be appropriate for use in Sub-Saharan Africa, or that children may not respond to cultural manifestations of anxiety in the same way. Good and Kleinman (1985) reported that although anxiety disorders are in existence throughout civilization, the manner of expression, communication, phenomenology and social structuring are widely differing.

The low depression scores for children in this study may also reflect the inappropriateness of the CDI for measuring depression amongst the sample population. Sow (1980) reported that depressive symptoms of guilt are rare because of an external attribution bias among African people, and if it is experienced it is conceptualised and communicated differently than people from Europe or America. These findings suggest that due to a lack of a universal conception of depression (Marsella, 1980) children in the present study may manifest symptoms of depression which are not picked up in a scale developed and standardised in the West.

Findings of a study conducted by Hale *et al.*, (2008) showed that symptoms of depression were significantly higher for females than males in those children who reported perceived parental rejection, suggesting that the low results on the CDI in this study may reflect the low number of females (N = 36) in comparison to males (N = 68) who participated. Another possible explanation for children's unexpectedly low results on the CDI is that depression is often a re-emerging disorder caused by adverse psychosocial influences (Judd, 1997). It may be that children in the present study now feel optimistic about their future, preventing the risk of relapse. In part, this may be due to their opportunities for schooling. Douki, Zineb, Nacef and Halbreich (2007) documented the importance of education in improving mental health and increasing self esteem and confidence.

#### **4.2. Psychological distress outcomes for orphaned and neglected children**

In the second hypothesis it was predicted that there would be no significant difference between orphaned and neglected children in traits of anxiety, PTSD and depression. The results from this study support this prediction. No significant differences were found between the two groups on a measure of anxiety, although when investigating the groups in more detail, it was revealed that the neglected children scored significantly higher on physiological anxiety than the orphaned children. The results from measures of PTSD support the predictions of this study revealing no significant difference between the two groups. Further analysis investigating traumatic event frequencies also revealed no significant differences between the two groups. Finally no significant differences were found between the two groups on measures of depression. Although these findings illustrate the need for organisations and welfare agencies to focus on all vulnerable children living in institutional care, it is important to note that these children overall did not score significantly above the standardized norms on the measure of anxiety and depression.

#### **4.3. Psychological distress outcomes for children previously living full time on the streets**

The third hypothesis predicted that former children of the streets would score significantly higher on measures of anxiety, PTSD and depression. However the results revealed no significant differences between the two groups on the measure of anxiety. Methodological limitations may provide a possible explanation for these results. For example many, if not all of the children in the present study came from families affected by poverty, and although this in itself may not mediate pathological development, it often increases the risk of family adversity and poor parenting. Therefore, all children in the present study were at risk of family adversity including

forms of abuse such as physical, sexual and domestic violence, which may have mediated pathological development, as these factors were not controlled for in the present study.

Contrary to this study's predictions, analysis revealed no significant differences between the two groups on an overall measure of PTSD. Analysis investigating traumatic event frequencies also revealed no significant difference between the two groups. Again these findings may be a result of confounding variables such as abuse, which were not controlled for in the present study. Furthermore it is worth noting that children who have lived on the streets often lie as a means of protection (Felsman, 1989), and therefore former children of the streets may have lied in order to come across as less vulnerable. However further analysis did reveal a significant difference between the two groups in terms of avoidance and the means revealed this was in the direction of the hypothesis, with former children of the streets scoring significantly higher levels of avoidance than non former children of the streets.

Finally the result of this study also revealed no significant difference between the former children of the streets and non former children of the streets on a measure of depression. These findings are similar to those of DeSouza, Koller, Hutz, and Forster (1995) who found no significant differences in levels of depressive effect between current street children, orphans in institutional care and a control group of students, in an urban city of Southern Brazil. These findings may point to a possible resilience among street children to depressive symptoms or they may simply mean street children have a tendency to lie in order to protect themselves.

#### **4.4. Implications for practice**

This research clearly demonstrates that children living in institutional care homes in Tanzania may be suffering from symptoms associated with PTSD as a result of exposure to traumatic life events. Care workers should therefore be trained to recognise symptoms of PTSD for the children in their care. Goodwin (1988) distinguished various features that are more likely to occur among adolescents suffering with chronic PTSD, including feeling that one's surroundings are not real, self-injurious behaviours, irregular outbursts of anger or aggression and substance abuse. Prepubertal children on the other hand are more likely to display posttraumatic stress re-enactments through drawings, play, verbalizations or in the form of nightmares causing sleep disturbance (Benedek, 1985). By making staff aware of the symptoms associated with potentially more serious mental health problems such as PTSD, children who may benefit from therapeutic interventions can be identified.

One possible intervention for children affected by traumatic experiences is Eye Movement Desensitization and Reprocessing (EMDR). This therapy incorporates elements of exposure and cognitive therapy with direct movements of the eye (Shapiro, 1996). The therapy is primarily used for disorders arising from distressing life experiences and has been found to be an effective intervention for alleviating symptoms of trauma among the youth (Chemtob, Nakashima, Hamada, and Carlson, 2002).



Despite the low scores found for traits of depression and anxiety in the present study, staff should be aware that major depression is the most commonly occurring condition accompanying PTSD, along with several other disorders including anxiety (Foa, Keane and Friedman, 2000). Low scores on measures of anxiety and depression may point to high resilience amongst children exposed to appalling mistreatment, indicating that staff may be able to improve the general wellbeing of those in their care by showing them they are accepted, valued and appreciated, teaching them to make decisions and problem solve, helping them set realistic goals, listen and communicate effectively.

#### **4.5. Methodological issues**

Self report measures such as those used in this study, ask people to be introspective about their behaviour and may therefore be inaccurate for a number of reasons. Participants may misremember their true feelings or try to convey a more socially desirable impression of themselves. Rutter (2000) stated that retrospective recall can result in errors and biases due to individual's attempts to attribute meaning to events. Factors such as an individual's mood can also influence responses. An interviewer was present to offer assistance while data was collected and although this was essential, as many of the children would have struggled to participate without, it may have affected the way children responded. Children who had experienced traumatic events including physical and sexual abuse for example, may have felt ashamed, embarrassed or worried they may be blamed for allowing themselves to be victimized, which may have affected the quality and accuracy of the data.

Limitations have also been acknowledged regarding the participants used in the present study. Firstly, enrolling participants aged 8 - 17 years is very broad, particularly considering that this is the age when the developmental change from childhood to adolescence occurs. Secondly, increasing evidence is presenting a link between AIDS diagnosis and adverse mental health outcomes (Cluver, 2007). The present study did not isolate AIDS related from other causes of parental death which may have acted as a confounding variable. However, it should be noted that no child known to be HIV+ participated in the present study. Finally as all the participants may have experienced a number of forms of abuse or neglect, the groups in this study were not mutually exclusive.

Methodological problems can also arise from using scales in cultures other than where they were initially developed and standardised. As none of the scales used in the present study had been designed or standardised in Tanzania, procedures by Kazarian and Evens (1998) in their book 'Cultural Clinical Psychology – Theory, Research and Practice' were followed in order to maintain test validity in the target culture. Firstly in order to avoid translation problems the questionnaire was translated by Daudi J. Mlaule (Regular Course Coordinator, University of Dar es Salaam Computing Center) a bilingual in both English and the target language (Kiswahili); the questionnaire was further back translated by Consolata Kinabo also bilingual in English and Kiswahili. Doctor Sheila, a Clinical Psychologist verified the linguistic and social appropriateness of the questionnaire. As some of the children may have been illiterate, a tape-recorded version of the test was also available. Methodological problems may have arisen however as a result of the children's

unfamiliarity with the paper-pencil, limited-option format used for completing the questionnaire which may have affected its validity.

#### **4.6. Further research**

More studies are warranted to examine whether the mediating factor for vulnerable children's mental health problems stem from the adverse experience itself or from children's perceptions of what has happened. It could be argued that because of high levels of poverty and consequential lower levels of expectations in Tanzania, children are less likely to perceive themselves as neglected or rejected than children from wealthier social backgrounds. Furthermore, it is possible that because children in Tanzania are more exposed to orphanhood, partly due to the AIDS pandemic, it is less likely to have such a pathological effect on them as it would on children who are less exposed. It would be useful to measure children's perceptions of parental rejection using the "Parental Acceptance-Rejection Questionnaire" (Rohner, 2005) and examine how this reflects their mental health. If results were to come back showing that more mental health problems were exhibited in those children who felt rejected by their parents, these findings would demonstrate the importance of perception of traumatic experiences and explain why some children exposed to highly negative situations develop 'normally' (Bentall, 2004).

Another interesting area for further research is into the effect institutional care homes themselves have on children's mental health, irrespective of the conditions children have been exposed to before entering them. Studies such as those by Clarke and Clarke (1976) and Aviezer *et al.*, (1994) indicate that conditions in institutional care homes can have a negative effect on a child's psychological development. More information regarding such effects would further inform professionals about strategies they might take to alleviate negative symptoms.

#### **4.7. Conclusion**

This study reveals that many children entering institutional care in Tanzania will exhibit signs of trauma as a result of their experiences. It is important that people working and caring for these children are given training to recognise the signs of trauma among adolescents and prepubertal children so that further intervention can be offered to those who may benefit. Despite low scores found for depression and anxiety, these conditions are frequently found to accompany PTSD, staff should be aware of this but also acknowledge that symptoms may not manifest themselves in ways typically reported in books and journals from the West. Staff should also acknowledge children's potential resilience and work to strengthen this by reinforcing children's self-worth and competence in order to promote their general well-being including happiness, sense of achievement, solid friendships and satisfaction with life.

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