Violent childhood experiences -

Consequences on mental health and approaches to intervention

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Contents

Tables

Figures

Summary

In order to develop in a healthy manner, a child requires a secure environment and a steady bond with a close caregiver (Johnson, Browne, & Hamilton-Giachritsis, 2006). However, experiences of violence may interfere with this process of healthy development. The present thesis examined the consequences of exposure to family, institutional and organized violence on the mental health of children in Sub-Saharan Africa, living either in institutional care or being associated with armed forces. Subsequently, intervention approaches to reduce psychological suffering and to prevent children from further exposure to violence were developed and evaluated.

Children in Sub-Saharan Africa are exposed to high rates of corporal punishment within their families and schools (UNICEF, 2010, 2011). Studies from other settings have found that family violence is strongly related to mental health problems, including trauma spectrum disorders as well as internalizing and externalizing psychological problems (e.g. Catani, Jacob, Schauer, Kohila, & Neuner, 2008; Elbert et al., 2009; Gámez-Guadix, Straus, Carrobles, Muñoz-Rivas, & Almendros, 2010). In Sub-Saharan Africa, institutional care is part of the support system for orphans and vulnerable children (McCall, 2013; Wolff & Fesseha, 1998). The few existing studies investigating these contexts have indicated that the quality of caregiving in such institutions is poor and that the caregivers are often undereducated and overburdened (e.g. Espié et al., 2011; Levin & Haines, 2007; Wolff & Fesseha, 1999). To date, little is known about the occurrence of violence toward children in institutional care in Sub-Saharan Africa. Interventions in institutional care worldwide have successfully improved the quality of caregiving (e.g. Levin & Haines, 2007; St. Petersburg-USA Orphanage Research Team, 2008; Wolff & Fesseha, 1999), yet none of them specifically targeted violence in institutional care. In regions of war and conflict, children are exposed to additional stressors in form of organized violence. This is especially true if they are recruited as child soldiers, during which time they experience and perpetrate massive amounts of violence (Schauer & Elbert, 2010) and suffer heavily from the consequences resulting in trauma spectrum disorders and aggressive behavior (Maclure & Denov, 2006; Schauer & Elbert, 2010; Stott, 2009). These mental health problems can pose challenges to the reintegration process (Betancourt et al., 2010; Boyden, 2003). It is therefore important to support the reintegration process by addressing individual psychological suffering (Stott, 2009).

The present thesis focused on family and institutional violence in Tanzania and on organized violence in the Democratic Republic of the Congo (DRC). The first article investigated corporal punishment and its consequences on Tanzanian primary school children and found

alarmingly high rates: More than 95% of the children reported experiencing corporal punishment in the family and at school. More than half of the children reported incidents of corporal punishment in the family within the last year. Experiences of corporal punishment were related to externalizing problems, such as aggression and hyperactivity. The findings were in line with reports from UNICEF (2011) and research from other countries (Ani & Grantham-McGregor, 1998; Schilling, Aseltine, & Gore, 2007). The second and the third article revealed that corporal punishment and violence were equally common in institutional care. Experiences of violence in institutional care were more strongly related to mental health problems than were experiences in the family of origin. The most affected children were institutionalized at a very young age. Thus, adverse experiences in institutional care compounded with adverse experiences in the family of origin and distant and unresponsive caregiving in institutional care (Johnson et al., 2006; McCall, 2013). Subsequently, a two-component intervention was developed in the third article that addressed individual psychological suffering as well as prevention from further exposure to violence. Children suffering from traumatic stress were treated with KIDNET (Ruf et al., 2007). To reduce further exposure to violence and to improve caregiving all caregivers were trained in parenting skills and nonviolent discipline strategies. A six-month follow-up demonstrated this intervention's feasibility and showed initial positive outcomes. Traumatic stress and experiences of violence in institutional care substantially decreased post treatment.

The fourth article shifted the focus from family violence to organized violence in the DRC and examined the experiences of violence and mental health of former child soldiers. Results revealed that child soldiers experienced and perpetrated higher amounts of violence compared to adult combatants. Additionally, they suffered more from the consequences of being both victim and perpetrator, resulting in higher rates of traumatic stress and aggression. In accordance with the literature (Betancourt et al., 2010), aggressive behavior was linked to failed integration attempts. Based on these findings, the fifth article described the development and evaluation of a two-component intervention, addressing mental health problems as well as aiming to reduce exposure to further violence by supporting the integration of former child soldiers into civil society. The intervention was embedded within a reintegration program offering vocational training and social support and was tested in a randomized-controlled trial against treatment as usual. An advanced version of NET (Schauer, Neuner, & Elbert, 2011) focusing on traumatic experiences as well as perpetrated violence was implemented. Individual sessions were followed by a group session, which dealt with the role change from combatant to civilian. A six-month follow-up confirmed feasibility and found initial positive outcomes. Traumatic stress decreased substantially in the treatment group, whereas aggression decreased in both groups. Closeness to combatants

was used as an inverse index of integration and this index showed a specific decline as a result of the intervention.

The present thesis showed that exposure to violence, namely violence in families and institutions as well as organized and perpetrated violence in armed conflict, has detrimental consequences for children's mental health. Consequently, the present thesis developed and successfully tested two interventions designed to reduce the children's psychological suffering as well as to protect them from further exposure to violence. The interventions targeted children in institutional care and former child soldiers in reintegration programs. Thus, the present thesis showed that intervention approaches focusing on both individual psychological support and prevention of further exposure to violence promise to support affected children in overcoming their psychological suffering, providing them the opportunity to grow up in a secure and supportive environment.

Zusammenfassung

Für eine gesunde Entwicklung benötigt ein Kind ein sicheres Umfeld und eine stabile Beziehung zu einer engen Bezugsperson (Johnson et al., 2006). Gewalterfahrungen können eine gesunde Entwicklung jedoch gefährden. Die vorliegende Arbeit untersuchte die Folgen von Gewalterfahrungen in der Familie oder in Fürsorgeeinrichtungen sowie von organisierter Gewalt auf die psychische Gesundheit von Kindern in Sub-Sahara Afrika, die entweder in Fürsorgeeinrichtungen lebten oder in bewaffneten Gruppen aufwuchsen. Im Anschluss wurden Interventionsansätze zur Verringerung von psychischem Leiden und zur Prävention von weiteren Gewalterfahrungen entwickelt und getestet.

In Sub-Sahara Afrika sind Kinder hohen Raten von körperlicher Bestrafung in Familien und Schulen ausgesetzt (UNICEF, 2010, 2011). Studien aus anderen Kontexten haben gezeigt, dass familiäre Gewalt eng mit psychischen Problemen, wie Störungen aus dem Traumaspektrum oder auch mit anderen internalisierenden und externalisierenden psychischen Problemen, zusammenhängt (z.B. Catani, Jacob, Schauer, Kohila, & Neuner, 2008; Elbert et al., 2009; Gámez-Guadix, Straus, Carrobles, Muñoz-Rivas, & Almendros, 2010). In Sub-Sahara Afrika sind Fürsorgeeinrichtungen ein Teil des Unterstützungssystems für Waisen und vulnerable Kinder (McCall, 2013; Wolff & Fesseha, 1998). Die wenigen existierenden Studien aus diesem Kontext weisen darauf hin, dass die Betreuungsqualität in diesen Einrichtungen gering ist und Betreuer häufig schlecht ausgebildet und überfordert sind (z.B. Espié et al., 2011; Levin & Haines, 2007; Wolff & Fesseha, 1999). Bisher ist wenig über die Verbreitung von Gewalt gegenüber Kindern in Fürsorgeeinrichtungen in Sub-Sahara Afrika bekannt. Interventionen in Fürsorgeeinrichtungen weltweit verbesserten die Betreuungsqualität erfolgreich (z.B. Levin & Haines, 2007; St. Petersburg-USA Orphanage Research Team, 2008; Wolff & Fesseha, 1999), doch zielte keine Intervention spezifisch auf die Reduzierung von Gewalt in Fürsorgeeinrichtungen ab.

In Kriegs- und Konfliktregionen sind Kinder zusätzlich organisierter Gewalt ausgesetzt. Besonders wenn sie als Kindersoldaten rekrutiert werden, erleben und üben sie regelmäßig extreme Formen von Gewalt aus (Schauer & Elbert, 2010) und leiden oftmals sehr unter den Konsequenzen der Gewalterfahrungen. Dies führt oft zu Störungen des Traumaspektrums und zu aggressivem Verhalten (Maclure & Denov, 2006; Schauer & Elbert, 2010; Stott, 2009). Diese psychischen Probleme können wiederum den Reintegrationsprozess erschweren (Betancourt et al., 2010; Boyden, 2003), weshalb es wichtig ist diesen durch individuelle psychologische Hilfe zu unterstützen (Stott, 2009).

Die vorliegende Arbeit konzentrierte sich auf Gewalt in der Familie und in Fürsorgeeinrichtungen in Tansania und auf organisierte Gewalt in der Demokratischen Republik (DR) Kongo. Der erste Artikel untersuchte körperliche Bestrafung und deren Folgen

bei tansanischen Grundschulkindern und fand alarmierend hohe Raten: Mehr als 95% der Kinder berichteten körperliche Bestrafung in der Familie und in der Schule. Über die Hälfte der Kinder berichteten Erlebnisse von körperlicher Bestrafung in der Familie im letzten Jahr. Erfahrungen von körperlicher Bestrafung hingen mit externalisierenden psychischen Problemen, wie Aggression und Hyperaktivität, zusammen. Die Befunde stimmen mit Berichten von UNICEF (2011) und Studien aus anderen Ländern überein (Ani & Grantham-McGregor, 1998; Schilling et al., 2007). Der zweite und dritte Artikel zeigten, dass körperliche Bestrafung und Gewalt ebenfalls in Fürsorgeeinrichtungen verbreitet sind. Gewalterfahrungen in Fürsorgeeinrichtungen waren stärker mit den psychischen Problemen der Kinder assoziiert als Gewalterfahrungen in der Ursprungsfamilie. Die am stärksten belasteten Kinder waren sehr früh institutionalisiert worden. Folglich addieren sich die schädigenden Erfahrungen in Fürsorgeeinrichtungen zu den schlechten Erfahrungen in der Ursprungsfamilie und dem distanzierten und teilnahmslosen Erziehungsstil in Fürsorgeeinrichtungen (Johnson et al., 2006; McCall, 2013). Im Anschluss wurde im dritten Artikel eine Zwei-Komponenten Intervention entwickelt, die sowohl das individuelle psychische Leiden als auch die Prävention weiterer Gewalterfahrungen umfasste. Kinder, die unter traumatischem Stress litten, wurden mit KIDNET (Ruf et al., 2007) behandelt. Um weitere Gewalterfahrungen zu verhindern und die Betreuungsqualität zu verbessern, wurden alle Betreuer in Erziehungsfertigkeiten und gewaltfreien Disziplinierungsstrategien trainiert. Eine Folgeuntersuchung nach sechs Monaten bestätigte die Umsetzbarkeit dieser Intervention und präsentierte erste positive Effekte. Der traumatische Stress der Kinder und die Gewalterfahrungen in der Fürsorgeeinrichtung verringerten sich substantiell.

Der vierte Artikel verschob den Fokus von familiärer auf organisierte Gewalt in der DR Kongo und untersuchte die Gewalterfahrungen und die psychische Gesundheit von ehemaligen Kindersoldaten. Die Ergebnisse zeigten, dass Kindersoldaten mehr Gewalt erlebten und ausübten als erwachsene Soldaten. Zusätzlich litten sie ebenfalls stärker darunter sowohl Opfer als auch Täter zu sein, was in höheren Raten von traumatischem Stress und Aggression resultierte. Übereinstimmend mit der Literatur (Betancourt et al., 2010) hing aggressives Verhalten mit gescheiterten Integrationsversuchen zusammen. Basierend auf diesen Erkenntnissen beschrieb der fünfte Artikel die Entwicklung und Evaluation einer Zwei-Komponenten Intervention, welche sowohl auf die Behandlung von individuellen psychischen Problemen als auch auf die Reduktion weiterer Gewalterfahrungen abzielte, indem die Integration ehemaliger Kindersoldaten in die zivile Gesellschaft unterstützt wurde. Die Intervention wurde in ein Reintegrationsprogramm eingebettet, das berufliches Training und soziale Unterstützung anbot. Die Intervention wurde in einer randomisierten Kontrollgruppenstudie im Vergleich zum üblichen Reintegrationsprogramm getestet. Eine erweiterte Version von NET (Schauer, Neuner, & Elbert, 2011) wurde eingesetzt, welche

traumatische Erfahrungen und ausgeübte Gewalt miteinschließt. Eine Gruppensitzung, welche den Rollenwechsel vom Kombattanten zum Zivilisten unterstützte, schloss sich an die Einzelsitzungen an. Eine Folgeuntersuchung nach sechs Monaten bestätigte die Durchführbarkeit und zeigte erste positive Effekte. Traumatischer Stress verringerte sich substantiell in der Interventionsgruppe, während Aggression sich in beiden Gruppen reduzierte. Die Nähe zu Kombattanten wurde als invertierter Integrationsindex eingesetzt und zeigte einen interventionsspezifischen Rückgang des Kontakts zu Kombattanten.

Die vorliegende Arbeit zeigte, dass Gewalterfahrungen, und zwar Erfahrungen sowohl von familiärer und institutioneller Gewalt als auch von organisierter und selbst ausgeübter Gewalt in bewaffneten Konflikten, schädliche Folgen für die psychische Gesundheit von Kindern haben. Daraus folgend entwickelte und testete die vorliegende Arbeit erfolgreich zwei Interventionen, mit dem Ziel das psychische Leiden der Kinder zu reduzieren und sie vor weiteren Gewalterfahrungen zu schützen. Die Zielgruppen der Interventionen waren Kinder in Fürsorgeeinrichtungen und ehemalige Kindersoldaten in Reintegrationsprogrammen. Dadurch zeigte die vorliegende Arbeit, dass Interventionsansätze, die sich auf die individuelle psychologische Unterstützung und die Prävention weiterer Gewalterfahrungen konzentrieren, vielversprechend sind, um betroffenen Kinder bei der Bewältigung ihres psychischen Leidens zu unterstützen und ihnen eine Chance zu geben in einem sicheren und unterstützenden Umfeld aufzuwachsen.

Record of achievement

The articles in this thesis were realized with the support of a number of colleagues. In the following, I list the submitted articles and my independent research contributions.

Article 1: Corporal punishment and children's externalizing problems: A cross-sectional study of Tanzanian primary school students. (published in *Child Abuse and Neglect, 2014, 38 (5), 884-892.* doi: 10.1016/j.chiabu.2013.11.007)
Tobias Hecker, Katharin Hermenau, Dorothea Isele, Thomas Elbert
My contributions:

- designed the study
- carried out a large number of clinical interviews
- supervised clinical interviews
- supported the statistical analysis
- supported the drafting of the manuscript.

Article 2: Maltreatment and mental health in institutional care – Comparing early and late institutionalized children in Tanzania (published in *Infant Mental Health Journal, 2014, 35 (2), 102-110. doi*: 10.1002/imhj.21440)
Katharin Hermenau, Tobias Hecker, Thomas Elbert, Martina Ruf-Leuschner
My contributions:

- designed the study
- carried out clinical interviews
- supervised clinical interviews
- conducted the statistical analysis
- drafted the manuscript.

Article 3: Childhood adversity, mental ill-health and aggressive behavior in an African orphanage: Changes in response to trauma-focused therapy and the implementation of a new instructional system (published in *Child and Adolescent Psychiatry and Mental Health*, 2011, *5*: 29. doi: 10.1186/1753-2000-5-29)
Katharin Hermenau, Tobias Hecker, Martina Ruf, Elisabeth Schauer, Thomas Elbert, Maggie Schauer

My contributions:

- participated in the design of the study
- carried out clinical interviews
- conducted the statistical analysis
- drafted the manuscript.

Article 4: Growing up in armed groups: Trauma and aggression among child soldiers in DR Congo (published in *European Journal of Psychotraumatology, 2013, 4:* 21408*.* doi: 10.3402/ejpt. v4i0.21408)

Katharin Hermenau, Tobias Hecker, Anna Maedl, Maggie Schauer, Thomas Elbert

My contributions:

- participated in the design of the study
- carried out a large number of clinical interviews
- conducted the statistical analysis
- drafted the manuscript.

Article 5: Addressing post-traumatic stress and aggression by means of narrative exposure – A randomized controlled trial with ex-combatants in the eastern DRC (published in *Journal of Maltreatment, Aggression, and Trauma, 2013, 22 (8), 916-934*. doi: 10.1080/10926771.2013. 824057)

Katharin Hermenau, Tobias Hecker, Susanne Schaal, Anna Maedl, Thomas Elbert

My contributions:

- designed the study
- carried out a large number of clinical interviews
- conducted a large number of FORNET therapies
- conducted the statistical analysis
- drafted the manuscript.

1 Introduction

In order to grow up and to develop in a healthy manner, a child requires a warm and responding caregiver as well as a secure environment (Johnson et al., 2006). Feeling safe and having a reliable caregiver who supports and comforts the child when needed serves as the base for the child's development, exploration, and learning. These preconditions for healthy development should be available for any child. However, in many families around the world children are violated by neglect and violence: Corporal punishment is still common in many countries and is often seen as a necessary measure to educate a child (Gershoff, 2002; Straus, 2010). Additionally, the potential for child abuse and neglect is heightened if the family struggles with economic or social problems like poverty, high workload or parental death (Benjet, 2010; Fazel, Reed, Panter-Brick, & Stein, 2012; Hjern, Angel, & Jeppson, 1998). These conditions are exacerbated, even further endangering the development of the child, if the family lives in a conflict zone, where organized violence is a daily occurrence. Previous studies have shown that living in war and conflict zones often goes along with enhanced levels of family violence (Catani et al., 2008; Saile, Ertl, Neuner, & Catani, 2014). Thus, children in conflict zones might be at an increased risk of experiencing both organized and family violence.

Experiences of violence and insecurity impair the child's development on several levels. Children may show delayed physical and cognitive development, as well as delayed speech and motor development (Johnson et al., 2006; McCall, 2013). Concerning mental health, several studies found adverse effects of violent experiences in children (e.g. Catani et al., 2008; Connor, Doerfler, Volungis, Steingard, & Melloni, 2003; Gámez-Guadix, Straus, Carrobles, Muñoz-Rivas, & Almendros, 2010; Makame, Ani, & Grantham-McGregor, 2002). Violence both within and outside of the family can be experienced as traumatic and thus lead to the development of posttraumatic stress disorder (PTSD; Catani et al., 2008; Copeland, Keeler, Angold, & Costello, 2007; Elbert et al., 2009). Furthermore, children who have experienced violence show more internalizing problems, such as depressive symptoms as well as externalizing problems and aggressive behavior (Connor et al., 2003; Elbert et al., 2009; Gámez-Guadix et al., 2010; Schilling et al., 2007). In summary, the consequences of violence on the mental health of children are manifold and alarming.

Both, family and organized violence are common in many countries across Sub-Saharan Africa. Unfortunately, little is known about the children's experiences of these phenomena and the consequences for their development in this context. Furthermore, evidence-based

interventions aiming at improving the mental health of children and reducing their exposure to violence are still lacking. Therefore, the present thesis will both examine the consequences of family and organized violence on the mental health of children in Sub-Saharan Africa as well as develop and evaluate two novel intervention approaches.

1.1 Family violence in Sub-Saharan Africa

In Sub-Saharan Africa, corporal punishment is still very common (UNICEF, 2010). Corporal punishment is defined as 'the use of physical force with the intention of causing (bodily) pain, but not necessarily injury, for purposes of correction or control of the child's behavior' (Straus, 2010, pp. 1–2). Most parents still perceive corporal punishment as a necessary measure to discipline children and to teach them respect. UNICEF reported on the use of corporal punishment against children in 35 middle- and low-income countries and six of the 10 countries with the highest rates of corporal punishment are in Sub-Saharan Africa (UNICEF, 2010). More than 80% of the children in these countries reported frequent use of corporal punishment at home. Additionally, research has shown the extensive use of corporal punishment in schools in resource-poor countries (Anderson & Payne, 1994).

In Tanzania corporal punishment is still lawful as a means for correction and discipline not only at home but also at school. In 2009, a national survey with a representative sample of more than 3,700 youths between the ages of 13 and 24 found that almost three-quarters of both girls and boys had experienced physical violence by a relative or an authority figure prior to the age of 18 (UNICEF, 2011). The vast majority of these experiences consisted of being punched, whipped, or kicked. Further, more than half of girls and boys aged 13 to 17 years reported that they had experienced physical violence during the past year.

Beyond corporal punishment, little is known about the epidemiology of abuse and neglect of children in Sub-Saharan Africa, especially if we take not only physical but also emotional abuse into account (Stoltenborgh, Bakermans-Kranenburg, Alink, & van IJzendoorn, 2012; Stoltenborgh, Bakermans-Kranenburg, van IJzendoorn, & Alink, 2013). Studies from other regions and contexts show that abuse and neglect in families are often linked to dysfunctional family systems, poverty, mental illness, drug abuse and stressful events like illness, death, conflict or war (Benjet, 2010; Catani et al., 2008; Daud, af Klinteberg, & Rydelius, 2008; Elbert, Rockstroh, Kolassa, Schauer, & Neuner, 2006; Euser, van IJzendoorn, Prinzie, & Bakermans-Kranenburg, 2011). Children from such burdened families are often transferred into institutional care in order to remove them from these harmful environments (McCall, 2013). In Sub-Saharan Africa institutional care is quite common for children from abusive family backgrounds as well as for orphans. Due to the HIV crisis, the number of orphans and vulnerable children (OVC) is rising (Boris, Thurman, Snider,

Spencer, & Brown, 2006; Wolff & Fesseha, 1998). Parental death often means not only losing the caregiver and attachment figure, but also losing the family breadwinner. Extended families often struggle economically to care for the children that remain, resulting in poverty and child-headed households (Boris et al., 2006). The institutions step in where the extended family fails or is otherwise unable to care for the OVC (Li et al., 2008; Mmbando et al., 2009). However, the placement in an institution does not directly result in protection from further harmful experiences. While most institutions succeed in providing food and accommodation, they fail to provide a warm and supporting environment for the development of the children. In resource poor countries, caregivers are often untrained and overburdened, which can lead to unresponsive and emotionally distant caregiving (Oliveira et al., 2012; St. Petersburg-USA Orphanage Research Team, 2008). Few studies have investigated African orphanages, but all of them reported a lack of adequate caregiving (Espié et al., 2011; Levin & Haines, 2007; Makame et al., 2002; Wolff & Fesseha, 1998, 1999). For example, a study from South Africa showed that the development of communication skills was severely delayed in institutionalized infants due to the non-interactive caregiving (Levin & Haines, 2007).
Hence, in countries in which corporal punishment is common, OVC may also be confronted with exposure to violent discipline strategies in institutional care. Moreover, the high workload and the low level of education of the caregivers can heighten the risk of further abuse and neglect. Thus, OVC who are already burdened by violent and stressful experiences in their family of origin are at risk to endure even further harmful experiences in institutional care (Johnson et al., 2006; McCall, 2013). Studies from other settings have shown that corporal punishment, abuse and neglect during childhood often lead to mental health problems like aggressive behavior, conduct disorder, PTSD, anxiety, depression, reduced self-esteem, and suicidal behavior (Catani et al., 2008; Connor et al., 2003; Connor, Steingard, Cunningham, & Anderson, 2004; Elbert et al., 2009; Fantuzo & Mohr, 1999; Felitti et al., 1998; Gámez-Guadix et al., 2010; Gershoff, 2002, 2010, 2013; Makame et al., 2002; Repetti, Taylor, & Seeman, 2002; Schilling et al., 2007). Correspondingly, a study conducted in Nigeria linked exposure to corporal punishment both at home and in school to aggressive behavior in children (Ani & Grantham-McGregor, 1998). To date, however, insights into the consequences of violence in families and institutional care in Sub-Saharan Africa are still sparse and further studies examining the consequences of violence in families and institutional care are needed.

In summary, children from difficult family background and orphans are especially at risk of experiencing not only corporal punishment, but other forms of abuse and neglect as well. Combined with the lack of warm and supporting caregiving in institutional care, the potential implications for children's mental health in these contexts are alarming. Consequently, there

is a pressing need to develop interventions to improve children's mental health, to prevent them from experiencing further violence as well as to improve the caregiving quality within institutions.

1.2 Organized violence in Sub-Saharan Africa

In regions that suffer from war and conflict, parents' exposure to violence adds to the factors influencing family violence. Catani and colleagues showed in Sri Lanka that parents' experiences of war and conflict were correlated with family violence (Catani et al., 2008). Correspondingly, studies from Rwanda and northern Uganda point to a relationship between traumatic and violent experiences of parents and family violence (Rieder & Elbert, 2013; Saile et al., 2014).

In many conflict regions not only the parents, but also the children experience massive forms of violence. This is especially true if they are recruited as child soldiers. Child soldiers are defined as individuals under the age of 18 associated with armed forces (Coalition to stop the use of child soldiers, 2008; UNICEF, 1997, 2007) and are known to be involved in conflicts in at least 86 countries and territories worldwide (Coalition to stop the use of child soldiers, 2008; Guy, 2009; Maedl, Schauer, Odenwald, & Elbert, 2010; Shaw, 2000). In the eastern Democratic Republic of the Congo (DRC), a region, that has a long history of ongoing conflict, an estimated 7,000 child soldiers still remained in armed groups in 2007. Despite new laws prohibiting the recruitment of children and banning child soldiering, child recruitment continues to rise (Coalition to stop the use of child soldiers, 2008, 2010; Guy, 2009).

While some minors join armed groups or militias after being persuaded that there is an imperative of self-defense, others are brutally and violently abducted (Coalition to stop the use of child soldiers, 2010; Romkema, 2007). After the potentially traumatic abduction, they frequently have to carry out the most dangerous and gruesome tasks, in which they experience and perpetrate significant amounts of violence (Pham, Vinck, & Stover, 2009; Schauer & Elbert, 2010). They suffer heavily from the consequences of being both victims and perpetrators in on-going conflicts (Betancourt, Simmons, Borisova, & Brewer, 2008; Derluyn, Broekaert, Schuyten, & De Temmerman, 2004; Schauer & Elbert, 2010; Stott, 2009) and are at high risk of suffering from trauma spectrum disorders, such as PTSD (Annan, Brier, & Aryemo, 2009; Elbert et al., 2006; Ertl, Pfeiffer, Schauer, Elbert, & Neuner, 2011; Hill & Langholtz, 2003; Stott, 2009). If they are abducted they tend to perceive the experienced violence as particularly traumatic (Hecker, Hermenau, Maedl, Hinkel, et al., 2013). These psychological disorders have further impacts on functionality, physical health, and mortality (Schauer & Elbert, 2010; Vinck, Pham, Stover, & Weinstein, 2007). Additionally, life in a

violent environment can also result in higher rates of aggressive behavior (Betancourt et al., 2010; Schauer & Elbert, 2010), independent of PTSD. Young men formerly associated with armed groups often report that they became habituated to perpetrating violence and even started to perceive such acts as fascinating and appealing (Elbert, Weierstall, & Schauer, 2010; Maclure & Denov, 2006). Based on their research with former child soldiers in Uganda, Elbert and colleagues (2010) introduced the concept of appetitive aggression, defined as perceiving aggressive behavior towards others as positive and fascinating, even without gaining any immediate external benefit as a result (Hecker, Hermenau, Maedl, Elbert, & Schauer, 2012).

These changes in the behavior and mental state of child soldiers caused by war experiences can pose a serious challenge to integration into civil society (Betancourt et al., 2010; Boyden, 2003; Medeiros, 2007; Pham et al., 2009). PTSD symptoms like concentration problems, flashbacks, and hyperarousal as well as aggressive behavior heighten the risk of failure in reintegration programs (Annan et al., 2009; Betancourt et al., 2008; Boyden, 2003; Mogapi, 2004). Consequently, child soldiers need support to improve their mental health as well as to reduce their aggressiveness. Unfortunately reintegration programs rarely include individual psychological support (Maedl et al., 2010). They often concentrate on economic, educational and community support (Stott, 2009). While each of these are important components of reintegration, they might fail if the mental health of the individual is neglected (Betancourt et al., 2008; Mogapi, 2004; Stott, 2009). Failed reintegration, in turn, heightens the risk for child soldiers to return to armed conflict and to experience further violence (Betancourt et al., 2008).

Hence, successful reintegration should not only aim at improving the economic and social situation, but also the former child soldiers' mental health in order to protect them from future experiences of violence and armed conflict.

1.3 Interventions to improve children's mental health

As detailed above, children's mental health is known to be adversely affected by experiences of family violence and organized violence. Often, violent experiences qualify as traumatic events and can lead to the development of PTSD. Children with trauma spectrum disorders show an impaired functionality, decreased physical health, and often develop comorbid disorders like depression or externalizing problems (Catani et al., 2008; Elbert et al., 2009; Schauer & Elbert, 2010; Vinck et al., 2007). As a result, it is essential that an intervention addresses the traumatic stress endured by children in these contexts and helps them to integrate their traumatic experiences into their memory.

Narrative Exposure Therapy (NET), an evidence-based short-term intervention for PTSD, has proven to be successful in different settings (Ertl et al., 2011; Hoge, 2011; Schauer, Neuner, & Elbert, 2011). In brief, during NET the client, with the assistance of the therapist, constructs a chronological narrative of his or her whole life with the focus on exposure to traumatic stress. For traumatic experiences the therapist asks in detail for emotions, cognitions, sensory information and physiological reactions linking them to an autobiographical context, namely time and place. Several studies have shown that NET can be effective within four to six sessions (Hijazi et al., 2014; Neuner et al., 2008; Neuner, Schauer, Klaschik, Karunakara, & Elbert, 2004; Schaal, Elbert, & Neuner, 2009). The effectiveness as a short-term intervention is essential for implementing NET in unstable and resource-poor environments like refugee camps or regions of on-going conflict (Neuner et al., 2008).

The child-friendly version KIDNET (Onyut et al., 2005; Ruf et al., 2007, 2010) fits exactly to the needs of traumatized OVC in institutional care. This adaption of NET uses symbols and techniques like drawing for a more child-appropriate trauma exposure. It can be successfully applied within a few sessions and with little resources by a trained therapist.

The treatment of trauma spectrum disorders is an important component to improve the mental health of children who suffer from the exposure to violence. However, even the most successful treatment will not protect the children from further violent experiences if the abusive environment does not change. Therefore, an intervention component is needed that reduces the exposure to further violence.

Studies from other countries have already shown that it is possible to improve the caregiving quality in institutional care (Levin & Haines, 2007; McCall, 2013; Muhamedrahimov, Palmov, Nikiforova, Groark, & McCall, 2004; St. Petersburg-USA Orphanage Research Team, 2008; Taneja et al., 2002; Wolff & Fesseha, 1999). However, in countries in which corporal punishment is still common, programs improving caregiving in institutional care also need to address potential corporal punishment. It is mandatory to end all forms of corporal punishment, abuse, and neglect and to equip undereducated staff with non-abusive caregiving skills. Therefore, in the context of the present thesis we developed and tested a caregiver training that can be implemented despite a dearth of resources common to these institutions. This training program contains many practice units and role-plays that aim to be applicable in everyday contexts. The training concept focuses on theoretically and practically educating caregivers on topics like child development, attachment and bonding, communication with children, non-abusive caregiving strategies and supporting children suffering from mental health problems or HIV/AIDS. Culture undeniably influences the upbringing of children. However, the content of the training focuses on the universal needs of

children, e.g. safety from physical and emotional harm, that are independent of cultural specificities.

In regions of armed conflict it may be very difficult to curtail the exposure of children to violence. However, even in this context a two-component approach focusing on improving the children's mental health as well as protecting them from further exposure to violence is applicable.

NET has proven to be successful with former child soldiers (Ertl et al., 2011). However, child soldiers were mostly treated as victims of violence, neglecting that they also reported positive feelings during the perpetration of violent acts (Elbert et al., 2010; Maclure & Denov, 2006). As Medeiros (2007) stated, it is crucial to overcome the dichotomy of victim and perpetrator to address the complexity of the former combatants' feelings and experiences. Consistent with this line of thought, a study comparing non-responders and responders to NET treatment in a sample of refugees in Norway showed that especially male refugees who reported to have perpetrated violent acts were less likely to respond to NET treatment (Stenmark, Guzey, Elbert, & Holen, 2014). Correspondingly, in the course of this thesis an advanced version of NET was developed that takes both traumatic experiences and perpetrated violent acts into account. This adapted version of NET is called Narrative Exposure Therapy for Forensic Offender Rehabilitation (FORNET; Elbert, Hermenau, Hecker, Weierstall, & Schauer, 2012). FORNET helps the former combatant to anchor not only fearful and traumatic experiences but also positive feelings that might have been linked to various forms of aggressive behavior in the past. Thus it aims to reduce both PTSD symptomology and appetitive aggression through narrative exposure.

In order to reduce the exposure of former child soldiers to violence, it is necessary to prevent them from returning to armed conflict. This is best achieved by successful integration into civil society. In order to successfully integrate former child soldiers they need to find closure with their past as well as change their self-image from "combatant" to "civilian" (Boyden, 2003; Williamson, 2006). In order to help them to find closure with their past, FORNET includes a group component, in which the role change is addressed and reinforced and the group discusses perspectives for the future.

In addition to psychological support, former child soldiers need future economic prospects. Without the opportunity for an improved living situation the risk remains high that some of them will choose to return to armed conflict, despite the suffering they bear from the consequences of violent experiences on their mental health (Annan et al., 2009; Betancourt et al., 2008; Boyden, 2003; Stott, 2009). The combination of reintegration components, such as social and economic support with psychological support might be most effective in targeting successful reintegration (Betancourt et al., 2008; Mogapi, 2004; Stott, 2009).

In summary, psychological interventions promise to be more effective if they not only include an individual component reducing trauma-related suffering, but also a component reducing risk of the children to be continuously exposed to violence. The present thesis describes the development and evaluation of two psychological interventions addressing the needs of children in institutional care and former child soldiers in Sub-Saharan Africa.

1.4 The rationale of the present thesis

With the present thesis I focused on the consequences of organized and family violence on children's mental health. Hereby, I concentrated specifically on two highly burdened groups: Institutionalized children and former child soldiers. Furthermore, the present research lead to the development of interventions aiming at both improving the mental health of the children as well as reducing the risk of further exposure to violence occurring in different settings. In the different studies and articles I test the following research hypotheses:

1. Experiences of violence in the family and in institutional care have a negative impact on the mental health of children in Tanzania.
2. An intervention aiming to improve individual mental health as well as to reduce the risk of being exposed to violence can be successfully implemented with little resources in institutional care.
3. Organized violence in the ongoing conflict in the eastern DRC is particularly injurious to the mental health of children associated with armed forces.
4. An intervention for former child soldiers aiming to improve their mental health and to support their integration into civil society, and thereby prevent them from taking up arms again can be successfully implemented in the reintegration process.

In the five articles that constitute this thesis I will test these hypotheses. The first article investigates the association between exposure to family violence and externalizing problems in primary school students in Tanzania. The second article focuses on experiences of violence and the mental health of institutionalized children in Tanzania. The third article examines the relationship between exposure to violence and mental health in a Tanzanian institution. Furthermore, the third article describes the development and evaluation of a two-component intervention addressing posttraumatic stress in children as well as aiming to reduce the exposure to further violence through educating caregivers. The fourth article shifts the focus from family violence to organized violence and examines the experiences of violence and mental health of former child soldiers in the ongoing conflict in the eastern DRC. Based on these findings, the fifth article describes the development and evaluation of an intervention, addressing traumatic experiences and perpetrated violence as well as

aiming to reduce further exposure to violence by supporting integration into civil society of former child soldiers from the eastern DRC. In the last section of this thesis I will discuss all findings of the five articles and present conclusions and implications for further research and clinical practice.

2 Corporal punishment and children's externalizing problems: A cross-sectional study of Tanzanian primary school aged children

2.1 Abstract

The adverse effect of harsh corporal punishment on mental health and psychosocial functioning in children has been repeatedly suggested by studies in industrialized countries. Nevertheless, corporal punishment has remained common practice not only in many homes, but is also regularly practiced in schools, particularly in low-income countries, as a measure to maintain discipline. Proponents of corporal punishment have argued that the differences in culture and industrial development might also be reflected in a positive relationship between the use of corporal punishment and improving behavioral problems in low-income nations. In the present study we assessed the occurrence of corporal punishment at home and in school in Tanzanian primary school students. We also examined the association between corporal punishment and externalizing problems. The 409 children (52% boys) from grade 2 to 7 had a mean age of 10.49 (*SD* = 1.89) years. Nearly all children had experienced corporal punishment at some point during their lifetime both in family and school contexts. Half of the respondents reported having experienced corporal punishment within the last year from a family member. A multiple sequential regression analysis revealed that corporal punishment by parents or by caregivers was positively related to children's externalizing problems. The present study provides evidence that Tanzanian children of primary school age are frequently exposed to extreme levels of corporal punishment, with detrimental consequences for externalizing behavior. Our findings emphasize the need to inform parents, teachers and governmental organizations, especially in low-income countries, about the adverse consequences of using corporal punishment be it at home or at school.

Keywords: *corporal punishment, externalizing problems, aggressive behavior, children, Sub-Saharan Africa, Tanzania*

2.2 Background

2.2.1 Prevalence of corporal punishment in Tanzania and other low-income countries

The prevalence and effects of corporal punishment have been controversial topics for decades (Gámez-Guadix et al., 2010; Gershoff, 2002, 2010, 2013; Straus, 2001). Corporal punishment is commonly defined as 'the use of physical force with the intention of causing (bodily) pain, but not necessarily injury, for purposes of correction or control of the child's behavior' (Straus, 2010, pp. 1–2).

Research conducted in multiple countries has indicated that corporal punishment by parents is both more prevalent and more severe than is generally realized (Straus, 2010). In a study encompassing 32 countries on six continents, the rates of corporal punishment ranged from less than 20% in Sweden and the Netherlands to almost 75% in China. Research has shown the extensive use of corporal punishment in schools in resource-poor countries (Anderson & Payne, 1994). For example in a UNICEF report on the use of corporal punishment against children in 35 middle- and low-income countries, six of the 10 countries in which corporal punishment was found to be very common are in Sub-Saharan Africa (UNICEF, 2010). In these countries more than 80% of the children reported frequent use of corporal punishment at home. In a study conducted in Nigeria, Ani and Grantham-McGregor (1998) described high levels of corporal punishment both at home and in school.

In Tanzania corporal punishment is still lawful not only at home but also at school. Although the law prohibits torture or other cruel or inhuman punishment, it allows corporal punishment as a means for justifiable correction. While only head teachers used to be allowed to punish corporally in Tanzanian schools, corporal punishment has just recently been re-introduced as a corrective measure usable by all teachers (Global Initiative to End All Corporal Punishment of Children, 2012; Tanzania Daily News, 2013). Therefore, it is not surprising that only 28% of secondary school students strongly disagreed that they were spanked or hit often before the age of 12 (Straus, 2010). In a study conducted at secondary schools in Tanzania, 40% of the teachers reported the frequent use of corporal punishment, defined as more than ten times a week. Interviews with teachers and students confirmed that caning (i.e. being beaten with a stick) was the most frequently used method of corporal punishment in schools (Feinstein & Mwahombela, 2010). In 2009, a national survey concerning violence against children with a representative sample of more than 3,700 youths between the ages of 13 and 24 found that almost three-quarters of both girls and boys had experienced physical violence by a relative or an authority figure prior to the age of 18 (UNICEF, 2011). The vast majority of this corporal punishment consisted of being punched, whipped, or kicked. More than half of

girls and boys aged 13 to 17 years reported that they had experienced physical violence by either a relative or authority figure during the past year. However, while much of the research has focused on the adolescent years little is known about the occurrence of corporal punishment at home for children of primary school age.

Proponents of corporal punishment have argued that the differences in culture and industrial development might be reflected in a positive relationship between the use of corporal punishment and improving behavioral problems in low-income nations. For example, Lansford (2010) argues that parents and children in different cultures may interpret corporal punishment as either an appropriate and effective discipline strategy or not, depending on the normativeness of corporal punishment within their group. She states that although corporal punishment is generally related to more behavior problems regardless of cultural group, this association is weaker in countries in which corporal punishment is the norm. Yet cultures in which corporal punishment is the norm also have higher levels of societal violence (Lansford, Malone, Dodge, & Deater-Deckard, 2010). Ellison and Bradshaw (2009) even claim that within cultural communities in which this practice is common and normative, its effects are less harmful. Vittrup and Holden (2010), however, have shown that children with high levels of exposure to corporal punishment were not likely to regard it as an effective disciplinary technique. Hence, they argue that the more prevalent the practice of corporal punishment is, the less likely it is that children perceive it as a fair and effective way to punish misbehavior. It may be perceived as too punitive if it occurs too often, and children who have many friends and siblings who experience corporal punishment may be exposed more to the negative comments about it from those friends and siblings (Vittrup & Holden, 2010).
Furthermore, frequent use of corporal punishment in Tanzania and other countries may also be reinforced by the belief of many parents that their children intentionally misbehave and need to learn to respect the parent's authority to avoid long-term behavior problems (Burchinal, Skinner, & Reznick, 2010) as well as by conservative religious and sociopolitical beliefs (Ellison & Bradshaw, 2009).

2.2.2 Externalizing problems in low-income countries

Most studies on externalizing problems have been conducted in Western samples. However, one cross-cultural systematical review including different studies from Pakistan, Israel, Japan, and the United States concluded that many dimensions of aggressive behavior are universal. However, it also revealed some cultural distinctiveness, the most common type of aggressive behavior for example, as well as the meaning and the justification for the use of aggressive behavior (Severance et al., 2013). Savina, Coulacoglou, Sanyal, and Zhang

(2011) suggested that children's externalizing and internalizing problems also have some specific cultural features. Findings from DR Congo, Ethopia and Nigeria showed that externalizing problems such as conduct disorder, antisocial disorder and hyperactivity are also a common phenomenon in Sub-Saharan Africa (Adelekan, Ndom, Ekpo, & Oluboka, 1999; Ashenafi, Kebede, Desta, & Alem, 2001; Kashala, Elgen, Sommerfelt, & Tylleskar, 2005). In a representative sample from Ethopia using parent reports of 1477 children, Ashenafi et al. (2001) reported a prevalence rate of attention deficit hyperactivity disorder of 1.5% and of conduct disorder of 0.7%. Adelekan et al. (1999) indicated a prevalence rate of antisocial disorders of 8% in a representative sample from Nigeria consisting of 846 parent reports. Kashala et al. (2005) compared their findings in a study with a representative sample in DR Congo using the teacher report version of the Strength and Difficulties Questionnaire (Goodman, Meltzer, & Bailey, 1998) with prior findings from Great Britain. They found that the mean scores of the conduct problems subscale and the hyperactivity subscale were significantly higher than the British mean scores of a comparable sample. Hence, Cortina, Sodha, Fazel, and Ramchandani (2012) concluded that internalizing and externalizing mental problems are common in children in low and middle income countries such as some of those in Sub-Saharan Africa, and range overall from 12% to 29%.

2.2.3 Corporal punishment and its relation to externalizing problems

Most available research indicated that there are few, if any, positive developmental outcomes associated with corporal punishment. In fact, detrimental effects of corporal punishment on the quality of the child-parent relationship, the children's mental health, and on children's externalizing behavior problems have been demonstrated repeatedly in a number of studies in populations mainly from Western countries (e.g. Gershoff, 2002, 2010, 2013). For example in addition to physical injury, corporal punishment and family violence are associated with a number of emotional and behavioral problems that begin in childhood but may last through adolescence and adulthood. Adverse effects include aggressive or delinquent behavior, conduct disorder, substance abuse, post-traumatic stress disorder, anxiety, depression, reduced self-esteem, and suicidal behavior (Catani et al., 2008; Hermenau et al., 2011; Hermenau, Hecker, Elbert, & Ruf-Leuschner, 2014; Repetti et al., 2002).

Of these links, the strongest has been shown to exist between corporal punishment and externalizing behavior problems, especially aggressive behavior (Gershoff, 2002, 2010, 2013; Straus & Kantor, 1994). For example, Strassberg et al. (1994) found in a study with 273 kindergarten children and their parents that children whose parents reported that they have spanked their children in the last year showed higher levels of aggressive behavior towards their kindergarten peers. Trained observers who were unaware how the children

have been disciplined rated the children's behavior in the classroom. Consequently, the researchers concluded that, in spite of parents' goals, corporal punishment failed to promote prosocial development and was instead associated with higher rates of aggressiveness toward peers. Other studies were able to replicate these findings, confirming the relationship between family violence or corporal punishment and both reactive and proactive aggression as well as delinquent and antisocial behavior in children and adolescents (Connor et al., 2004; Fantuzo & Mohr, 1999; Schilling et al., 2007).

A longitudinal study conducted by Mulvaney and Mebert (2007) revealed that early corporal punishment was associated with increased externalizing behavior problems both in toddlerhood (36 months) and in first grade. Berlin et al. (2009) reported similar results from a large longitudinal study with low-income white, African American and Mexican American toddlers. Concordantly, experiencing corporal punishment at age 10 predicted violent behavior and delinquency in adolescence (Weaver, Borkowski, & Thomas, 2008).
A meta-analysis provided further evidence of the association between corporal punishment and numerous forms of undesirable behavior: Corporal punishment was associated with, among others, an increase in child aggression, child delinquent and antisocial behavior, and an increase of aggression, criminal and antisocial behavior in adulthood (Gershoff, 2002). Despite controlling for children's temperament and earlier levels of aggression, parental use of corporal punishment continued to significantly predict children's later aggression (Weiss, Dodge, Bates, & Pettit, 1992). Although it may lead to immediate compliance, corporal punishment is associated with less long-term compliance and prosocial behavior (Gershoff, 2002, 2013).

Thus, most studies in high-income countries have consistently linked corporal punishment with current and future aggressive behavior. The very few studies in low-income countries so far point at similar relations: For example in a study conducted in Nigeria, Ani and Grantham-McGregor (1998) linked exposure to corporal punishment both at home and in school to aggressive behavior in children. Moreover, in a study with orphans and vulnerable children in Tanzania, Hermenau et al. (2011) reported a positive relation between exposure to violence and aggressive behavior displayed by the child. However, the link between exposure to corporal punishment and children's aggressive behavior has not been systematically examined in Sub-Saharan Africa, where caregivers and teachers have argued that corporal punishment may have different effects than in the industrialized world due to its role as part of "African culture".

In the present study, we investigated the occurrence of corporal punishment in the home and at school using a sample of Tanzanian primary school students. Vittrup and Holden (2010) confirmed that young children are able to articulate their views about corporal punishment. Therefore, we think it is important to add their voices to the debate, since children are the major recipients of corporal punishment. The occurrence of corporal punishment at home or at school for children of primary school age has not been systematically examined in Tanzania. However, based on prior reports that have focused on the adolescent years (e.g. Feinstein & Mwahombela, 2010; UNICEF, 2011) and our extensive work with teachers and caregivers who have argued that corporal punishment is part of "African culture", we expected that corporal punishment is common and even normative in Tanzania. Therefore, we hypothesized that a) primary school students in Tanzania experience frequent and severe corporal punishment in their home and at school.

Furthermore, we examined the relationship between corporal punishment at home and children's externalizing problems. Prior research has shown such a relationship for high-income countries (e.g. Gershoff, 2002, 2010, 2013; Weaver et al., 2008). Proponents of corporal punishment have argued that the detrimental effects of corporal punishment are weaker in countries in which corporal punishment is the norm (Ellison & Bradshaw, 2009; Lansford, 2010). However, studies using children's reports give first evidence that this might not be the case (Vittrup & Holden, 2010). In line with this, we argue that frequent corporal punishment will affect the children's well being despite being normative in Tanzania. We thus predicted b) that exposure to corporal punishment is positively related to children's externalizing problems after controlling for possible confounding influences, such as sex and age. Furthermore, we expected that corporal punishment failed to promote prosocial behavior. Therefore, we hypothesized c) a negative correlation between corporal punishment and prosocial behavior.

2.3 Method

2.3.1 Participants

The children participating in this study were enrolled at a private primary school in a town of approximately 100,000 inhabitants in southern Tanzania. We interviewed 409 children (52% boys) from class 2 to class 7 with a mean age of 10.49 (*SD* = 1.89, range: 6 - 15) years. The majority of the children lived together with their families. We asked the children to list all persons with whom they stayed together in one household. For example 67% (*n* = 273) of the children reported living together in one household with their mother and 59% (*n* = 242)

with their father. Sixty-five children (16%) lived in institutional care and 10 children (2.4%) in foster families. In total, 89 (22%) children reported that at least one parent had died.

2.3.2 Procedure

A team of five Tanzanian psychologists, five German psychologists, and two Tanzanian psychology students conducted structured interviews with the children. All interviews were conducted in Swahili. The project leaders (TH and KH) were present throughout the training and data collection phases. The interviewers were qualified in the use of interview skills, conducting interviews with children, and the concepts of mental disorders and aggression, including role-plays and interview observation. The interviewers received instruction for these skills during a two-week training session. They were also trained in the translation of the instruments from English to Swahili and the translation of the participants' responses from Swahili to English for the German psychologists. All instruments were translated in written form to Swahili by committee and were intensely discussed to guarantee a precise translation. A written, blind back-translation into English ensured valid and accurate translation. One of the authors speaks Swahili fluently (TH) and thus could ensure valid translation as well as supervise the work of the Tanzanian staff. In addition, the project leaders supervised the research team throughout all stages of the study. Interview teams either consisted of one German and one Tanzanian or one or two Tanzanian staff members. The interview teams rotated their pairings continuously. The interviewers had standardized the form of assessment by conducting joint and double-rated interviews to achieve a high level of inter-rater reliability. In the total sample, 33 interviews were double-rated to assess and ensure high inter-rater reliability.

Our study was conducted in close cooperation with the school. Before data collection we sent a letter and a written informed consent form to all parents or caregivers of the children from class 2 to 7 explaining the purpose of the study. The letter clarified that the participation of the children would be entirely voluntary, no monetary compensation would be offered, and invited them to call or meet the project leaders in case of additional questions. Approximately 80% of the parents and caregivers signed the informed consent and sent it back. Only children with an informed consent signed by their caregivers were included in the study. Additionally, the children gave their informed consent orally. Every child was interviewed individually in a calm setting. Girls were interviewed by a female interviewer. To ensure safety of the children we assured them that the interview was completely confidential and that they were free to end the interview at any time. The interview took 1.5 hours on average. The Tanzanian Commission for Science and Technology and the Ethical Review Board of

the University of Konstanz approved the study. Following the study we convinced the school to hire a school psychologist to help the children suffering from psychological problems and to raise awareness in teachers, parents and caregivers about the detrimental effects of child maltreatment.

2.3.3 Measures

All instruments were applied as a structured interview. In this way, even young children could be interviewed using all instruments. The first part of the interview consisted of socio-demographic information, including age, grade and sex.

Corporal punishment was assessed with a checklist of four questions covering possible forms of corporal punishment by parents and caregivers (see Table 2.2). In the present sample the score for corporal punishment types ranges from 0 – 4 (see Table 2.1 for descriptive statistics and inter-correlations). Additionally, we asked two questions regarding exposure to and observation of corporal punishment by teachers at school. Cronbach's Alpha coefficient was .42 and the Cohen's Kappa coefficient measuring the inter-rater reliability was > .99 (.99- 1). Cronbach's Alpha coefficient is highly dependent on the number and the homogeneity of the items. Considering the limited number of items in this scale and the broad range of different forms of corporal punishment, the size of the Cronbach's Alpha coefficient can be viewed as sufficient.

Current aggressive behavior was assessed with the Reactive-Proactive Questionnaire (RPQ; Raine et al., 2006). The questionnaire assesses how often the child has shown a specific aggressive behavior in the previous four weeks. Possible answer categories are *never (0), sometimes (1) and often (2).* Following Hermenau et al. (2011) one of the original 23 items was removed, as it was not appropriate for the conditions in Tanzania (Item 18: *Made obscene phone calls for fun*) and one item was slightly rephrased for a better understanding (Item 9: *gang fight* replaced with *fight*). This study used the current aggression score, which ranges from 0 to 44 (see Table 2.1 for descriptive statistic and inter-correlations). In the present sample the Cronbach's Alpha coefficient was .85 and the Cohen's Kappa coefficient was .99 (.94 – 1).

We assessed lifetime aggression and delinquent behavior with a checklist of 14 questions covering possible aggressive and delinquent actions during the child's life. Sample items include *"Have you ever taken things from others against their will?", "Have you ever physically attacked another person (e.g. punched, beaten up, kicked or hit with an object)?"* or *"Have you ever injured another person dangerously?"* In a manner similar to a trauma checklist we assessed the presence of different categories of aggression and delinquent behavior but not the number of occurrences. Therefore, the interviewer rated the child's

report as never happened in life (0) or happened at least one time (1). This checklist has been successfully used in a sample of Burundian street children (Crombach & Elbert, 2014). We calculated a sum score by totaling up all of the question responses. The score of lifetime aggression types ranged from 0 to 14 (see Table 2.1 for descriptive statistic and inter-correlations). In the present sample the Cronbach's Alpha coefficient was .77 and the Cohen's Kappa coefficient was >.99 (.94 – 1).

The self-evaluation of internalizing and externalizing problems was assessed with the Strengths and Difficulties Questionnaire (SDQ; Goodman, Meltzer, & Bailey, 1998). The SDQ comes with good psychometric properties and is utilized internationally (Goodman, Ford, Simmons, Gatward, & Meltzer, 2003). We used the self-report version for children in the structured interview. It consists of 25 statements with corresponding response categories of *not true (0), somewhat true (1) or certainly true (2).* Each of the five subscales (conduct problems, hyperactivity, emotional symptoms, peer problems and prosocial behavior) consists of five items. The total difficulties score is generated by summing the scores of all items, except the items for prosocial behavior, and ranges from 0 to 40. On average, the participants reported a SDQ total score of M = 10.08 (SD = 5.58, range: 0 - 31). In the present sample the Cronbach's Alpha coefficient of the total score was .67 and the Cohen's Kappa coefficient was .99 (.94 – 1). The heterogeneity of the total score, including two subscales of internalizing and two subscales of externalizing problems explains the moderate level of Cronbach's Alpha coefficient.

In the present study we focused on the two subscales measuring externalizing problems (i.e. conduct problems subscale and hyperactivity subscale) as well as the prosocial behavior scale (see Table 2.1 for descriptive statistic and inter-correlations). Each subscale ranges from 0 to 10. A score of 4 on the conduct problem scale indicates an enhanced level of conduct problems and a score higher than 4 indicates an abnormal level. In total, 323 (79%) showed a normal level of conduct problems, 36 (9%) showed an enhanced level and 50 (12%) showed an abnormal level of conduct problems. In the present sample the Cronbach's Alpha coefficient of the conduct problems scale was .54 and the Cohen's Kappa coefficient was .99 (.94 – 1). A score of 6 on the hyperactivity scale indicates an enhanced level of hyperactivity and a score higher than 6 indicates an abnormal level. In total, 373 (91%) showed a normal level of hyperactivity, 21 (5%) showed an enhanced level and 15 (4%) showed an abnormal level of hyperactivity. In the present sample the Cronbach's Alpha coefficient of the hyperactivity scale was .51 and the Cohen's Kappa coefficient was .98 (.96 – 1). A score of 5 on the prosocial behavior scale indicates a lowered level of prosocial behavior and a score lower than 5 indicates an abnormal level. In total, 367 (89%) showed a normal level of prosocial behavior, 27 (7%) showed a lowered level and 15 (4%) showed an abnormal level of prosocial behavior. In the present sample the Cronbach's Alpha coefficient

of the conduct problems scale was .52 and the Cohen's Kappa coefficient was >.99 (.99 – 1). The size of the Cronbach's Alpha coefficient depends on the number of items. Since all subscales consist of only five items the size of Cronbach's Alpha for the subscales is satisfactory. All in all, we found very similar patterns and results as Kashala et al. (2005) who used the teacher report version in an urban sample in DR Congo.

2.3.4 Data analysis

For logistical reasons, thirteen interviews could not be completed. This resulted in all thirteen cases missing data concerning lifetime aggression and, in one case, missing data concerning current aggressive behavior. These data sets were excluded from all analyses that included these measures.

To test the relationship between corporal punishment and different measures of externalizing problems (e.g. current and lifetime aggressive behavior, conduct problems and hyperactivity) as well as prosocial behavior we used Pearson's correlation coefficient. Furthermore, we wanted to examine the impact of corporal punishment on externalizing problems in general. Therefore, we computed a global externalizing problems score. As all scores measuring externalizing problems are significantly correlated (see Table 2.1), we z-standardized the current aggression score (RPQ), the lifetime aggression score, the hyperactivity score (SDQ) and the conduct problem score (SDQ) and calculated an externalizing problems score by summing up these four z-scores (see Table 2.1 for descriptive statistics and inter-correlations). To test the relationship between corporal punishment and externalizing problems we conducted a multiple sequential regression analysis. First, we included only the potentially confounding variables sex (female: 0; male: 1) and age as predictors. After controlling for these influences, we added 'corporal punishment types' to the model. The regression model fulfilled all necessary quality criteria for linear regression analyses. The residuals did not deviate significantly from normality (*Kolmogorow-Smirnov-Z* = 0.99, p = .285), linearity, or homoscedasticity. Following Stevens (2002), we defined values that deviate more than 3 standard deviations from the mean as outliers. That way we identified two univariate and eight multivariate (Cook's Distance) outliers. Consequently, all outliers were excluded resulting in a sample size of n = 386. The maximum Variance Inflation Factor did not exceed 1.05. As a result, we did not need to take multicollinearity into account. All analyses used a two-tailed $\alpha = .05$. Our metric for a small effect size was $f^2 \geq .02$, for a medium effect $f^2 \geq .15$, and for a large effect $f^2 \geq .35$ (Cohen, 1992). Data was analyzed with IBM SPSS Statistics Version 21 for Mac.

Table 2.1

Descriptive statistics and inter-correlations of all relevant variables

	n	*M*	*SD*	Range	1	2	3	4	5	6	7	8
1. Corporal punishment types	409	2.29	1.07	0 – 4	1							
2. Current aggressive behavior	408	8.53	5.74	0 – 31	.33***	1						
3. Lifetime aggression types score	396	3.62	2.75	0 – 12	.35***	.56***	1					
4. Conduct problems (SDQ)	409	2.18	1.84	0 – 8	.28***	.40***	.34***	1				
5. Hyperactivity score (SDQ)	409	2.64	2.00	0 – 9	.24***	.35***	.32***	.49***	1			
6. Externalizing problems score	396	-0.03	2.35	-5.3 – 9.2	.40***	.77***	.75***	.74***	.72***	1		
7. Prosocial behavior score (SDQ)	409	7.88	1.72	2 - 10	-.11*	-.13**	-.14**	-.23***	-.27***	-.27***	1	
8. Age	409	10.49	1.89	6 – 15	-.10*	-.14**	-.08	.07	<.01	-.06	-.08	1

Note. M = mean, SD = standard deviation, *p ≤ .05, **p ≤ .01, *** p ≤ .001.

Table 2.2

Occurrence of corporal punishment during the children's lifetime and within the last 12 months for boys (*n* = 214) and girls (*n* = 195)

	Last year			Lifetime		
	Boys	Girls		Boys	Girls	
	% (*n*)	% (*n*)	Chi^2	% (*n*)	% (*n*)	Chi^2
1) Has your parent/caregiver intentionally pinched, slapped, punched or kicked you?	27 (58)	27 (53)	<0.01	69 (148)	63 (122)	1.98
2) Has your parent/caregiver spanked you with the palm of his/her hand on your buttocks, arms or legs?	23 (49)	24 (48)	0.08	55 (117)	59 (114)	0.60
3) Has your parent/caregiver spanked you with an object such as a strap, belt, stick, tube, broom, wooden spoon, etc?	36 (76)	37 (72)	0.09	83 (178)	81 (158)	0.32
4) Has any parent/caregiver hit you so hard that you were injured?	7 (14)	3 (6)	2.63	26 (56)	22 (43)	0.94
5) Has your teacher intentionally pinched, slapped, punched or spanked (including with an object, e.g. a stick) you?	-	-	-	98 (210)	91 (178)	9.83**
6) Have you witnessed that your teacher intentionally pinched, slapped, punched or spanked (including with an object, e.g. a stick) another student?	-	-	-	98 (209)	99 (192)	0.34

Note. Chi^2*: Pearsons Chi-Square statistics. **p ≤ .01.*

2.4 Results

2.4.1 Occurrence of corporal punishment

Accounting for all forms of corporal punishment reviewed in the present study, 95% of the children reported that they have experienced at least one type of corporal punishment by their parents or caregivers during their lifetime (51% within the previous 12 months). The majority of the children have been punished with objects like sticks or belts (82%) or by being slapped, hit or pinched (66%). Almost one quarter (24%) has been hit so hard that he/she was injured. Additionally, about 95% reported having experienced corporal punishment at school and 98% having witnessed corporal punishment used against other children at school. Boys reported that they have experienced corporal punishment by teachers at school significantly more often (98%) than girls (91%; $Chi^2 = 9.83$, $p = .003$). Table 2.1 displays the frequencies of all different types of corporal punishment during the children's lifetime and within the last 12 months separately for boys and girls.

2.4.2 Corporal punishment and externalizing problems

Corporal punishment correlated significantly positively with current and lifetime aggressive behavior, conduct problems, and hyperactivity (see Table 2.1). Furthermore, corporal punishment was significantly negatively correlated with prosocial behavior (see Table 2.1).

The first regression model with sex and age as predictors explained 2% of the variance of the externalizing problems score ($R^2 = .02$, $F(2, 383) = 4.61$, $p = .011$, $f^2 = .02$). Adding the corporal punishment score as additional predictor improved the model significantly ($\Delta R^2 = .16$, $F(1, 382) = 76.55$, $p < .001$, $f^2 = .19$). As shown in Table 2.3, 'corporal punishment types' were positively related to the externalizing problems score. The total regression model explained 18% of the variability of the externalizing problem score.

Table 2.3

Results of regression analysis predicting the externalizing problems score

Predictor variables	Externalizing problems score			
	B	*SE of B*	β	*T*
Step 1				
Sex	0.80	0.28	.14	2.81**
Age	-0.12	0.08	-.08	-1.63
Step 2				
Sex	0.60	0.26	.11	2.31*
Age	-0.05	0.07	-.03	-0.70
Corporal punishment types	1.07	0.12	.41	8.75***

Note. $adjR^2$ = .18, f^2 = 0.22, *n* = 386,

B: unstandardized regression weight, SE: standard error, β = standardized regression weight, *T*: t-test statistics. *$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

2.5 Discussion

In accordance with our hypothesis we found very high rates of exposure to corporal punishment in our sample. Almost all children reported having experienced at least one type of corporal punishment at home. In addition, more than half of the children indicated having experienced at least one type of corporal punishment by a parent or a caregiver in the past 12 months. The majority of the children (82%) stated that they have been punished with sticks, belts or other objects, and almost one quarter of the entire sample has been punished so severely that they have been injured as a result. In addition to the in-home findings, we also found high rates of corporal punishment by teachers in school. Our findings are in concordance with prior research concerning corporal punishment in Tanzania (Feinstein & Mwahombela, 2010; UNICEF, 2011) and other countries (Straus, 2010; UNICEF, 2010). Using a systematic approach to completely assess grades 2 through 7 in one primary school, for the first time we provide evidence that high rates of corporal punishment at home seem to be not only common for adolescents but also for primary school-aged children in Tanzania. We can thus conclude that corporal punishment is the norm rather than an exception in such schools.

All types of externalizing problems (current and lifetime aggressive behavior, conduct problems and hyperactivity) correlated positively with corporal punishment, whereas prosocial behavior correlated negatively with corporal punishment. Even after controlling for the possible influences of sex and age, corporal punishment by parents or caregivers substantially predicted the children's externalizing problems. The more children had reported experiencing corporal punishment the higher were their rates of externalizing problems. Our findings were in concordance with prior reports from Sub-Saharan Africa (Ani & Grantham-McGregor, 1998; Hermenau et al., 2011). Similar relations between corporal punishment or family violence and externalizing problems have been reported in other countries worldwide (Connor et al., 2004; Fantuzo & Mohr, 1999; Schilling et al., 2007). Our results stand in contrast to the common assumptions made by many parents and caregivers as well as researchers (Ellison & Bradshaw, 2009; Lansford, 2010) that corporal punishment promotes prosocial behavior. Instead, our findings suggest the opposite, with a robust positive association between any amount of corporal punishment and children's externalizing problems including aggressive behavior and a negative relationship between corporal punishment and children's prosocial behavior. These results match prior research with a focus on Western countries (Berlin et al., 2009; Gershoff, 2002; Strassberg et al., 1994).

Furthermore, our results contradict the common assumption made by proponents of corporal punishment that it does no or less harm in countries or cultural groups in which corporal punishment is the norm rather than the exception (e.g. Ellison & Bradshaw, 2009; Lansford, 2010). In the present study the effect size of this association implies a marked influence. Considering that 95% of the children in our sample have experienced at least one type of corporal punishment, the effects on the level of externalizing problems of so many children may manifest into a considerable cause for concern at the societal level (Straus, 2001). That is even more troubling when one considers the cumulative effect of corporal punishment on a child's overall well-being, including increased aggression, and decreased mental health (Catani et al., 2008; Felitti et al., 1998; Gershoff, 2002; Straus, 2001). Longitudinal research suggests that exposure to corporal punishment during childhood predicts aggression and antisocial or delinquent behavior in adolescence and adulthood (Berlin et al., 2009; Dodge, Pettit, Bates, & Valente, 1995; Mulvaney & Mebert, 2007; Weaver et al., 2008). High rates of corporal punishment hold the risk that victimized children may grow into adolescents or adults with increased aggressive behavior, conduct problems, and other mental health issues. Thus, further longitudinal studies are needed to investigate the causal relationship between corporal punishment and externalizing problems such as aggressive behavior, particularly in countries and societies with high levels of corporal punishment. Bearing the extremely high rates of corporal punishment in this study in mind, the link between corporal

punishment and externalizing problems has the potential to pose serious challenges to societies in which it is widely practiced, such as the society in Tanzania.

Our findings indicate that effective prevention of corporal punishment may be required to help prevent children from developing externalizing problems. Preventative measures could focus on positive parenting and nonviolent caregiving strategies. The reasons for using corporal punishment provided to researchers seem to be the lack of nonviolent caregiving skills, excessive demands, and helplessness (Burchinal et al., 2010; Hermenau et al., 2011). Therefore parents and teachers may profit from learning nonviolent parenting and disciplinary skills (for a possible approach see Hermenau et al., 2011). With this aim in mind, future research should focus on developing and testing culturally appropriate prevention programs for corporal punishment addressing both families and schools.

There are several limitations of the study that should be noted: First, the cross-sectional study design does not allow for the establishment of causality. For instance, it may be argued that those who display more externalizing problems would have deserved and received greater punishment. This, however, seems unlikely since we assessed corporal punishment that had occurred during the entire lifespan of the children and it correlates with the current externalizing problems (see Table 2.1). If children's aggressive behavior would have been penalized in their past and if the use of corporal punishment had been successful, children reporting having experienced high levels of corporal punishment during the course of their entire lifetime should not report current aggressive behavior and other externalizing problems. Second, we studied only one primary school in Tanzania and although it included children from varied social backgrounds, general prevalence rates cannot be derived from the present data alone. However, results are consistent with previous findings and in line with observations the authors have made during the course of visits to a number of schools in rural Tanzania and elsewhere in East Africa. This study also did not focus on the details of corporal punishment carried out by teachers. While this study provides some insight, further research, particularly in public schools, is needed to investigate the association between corporal punishment by teachers and externalizing problems. Generally, the children talked very openly about their experiences and feelings. However, potential biases, such as social desirability, can never be completely ruled out for subjective reports.

2.6 Conclusion

The present study provides evidence for the first time that Tanzanian children of primary school age experience high rates of corporal punishment. Furthermore, the results revealed that corporal punishment is closely linked to children's externalizing problems.

The findings of the present study emphasize the need to inform caregivers, governmental organizations and the population at large, especially in low-income countries, about the adverse consequences associated with using corporal punishment both at home and at school. Further, our findings underscore the need to implement preventative measures against the use of corporal punishment both at home and at school, in resource-poor countries as well as in industrialized nations. Therefore, we advocate for developing and testing culturally appropriate prevention programs that effectively replace corporal punishment by forms of educational measures that do not harm the children. Through these efforts, reducing corporal punishment in their home and school environments combined with the fostering of positive parenting skills would enable more children to grow up in a respectful and supportive atmosphere, thereby strengthening their development.

2.7 Acknowledgements

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3 Maltreatment and mental health in institutional care – Comparing early and late institutionalized children in Tanzania

3.1 Abstract

Research has shown the harmful potential of institutional care on young children; however, little is known about the consequences of institutional care on infants in Sub-Saharan Africa. We compared 35 Tanzanian children who were institutionalized at birth to 4 years of age with a matched group of 35 children who were institutionalized at 5 to 14 years of age. We examined adverse childhood experiences over the course of their entire lives, in their family of origin and in institutional care, and mental health problems at primary school age, such as depressive symptoms, aggressive behavior, and internalizing and externalizing problems. Results showed that early institutionalized children reported more adverse experiences during their time in institutional care and a greater variety of mental health problems than did late institutionalized children. Moreover, maltreatment in institutional care was positively related to mental health problems only in early institutionalized children. We conclude that adverse experiences in institutional care play an important role for early institutionalized children who need special care from adequately educated caregivers. Therefore, training concepts focusing on the needs of the youngest children have to be developed, tested, and established. Countries such as Tanzania need policies that apply to all orphanages to ensure an adequate standard of quality in childcare.

Keywords: institutional care, mental health, Sub-Sahara Africa, infants, childhood adversity

3.2 Background

The harmful potential of institutional care for orphans and other vulnerable children (OVC) is already known and has been documented in American and European orphanages over the last few decades (Johnson et al., 2006; McCall, 2013; Smyke, Zeanah, Fox, Nelson, & Guthrie, 2010; St. Petersburg-USA Orphanage Research Team, 2008). Institutionalized children are often delayed in motoric and speech development and show higher rates of combined diurnal and nocturnal enuresis than non-institutionalized children (Barroso et al., 2006; Dobrova-Krol, van IJzendoorn, Bakermans-Kranenburg, & Juffer, 2010). Moreover, they suffer from behavioral and psychological problems and often present indiscriminate

attachment behavior (Groark, Muhamedraminov, Palmov, Nikiforova, & McCall, 2005; Oliveira et al., 2012).

Many studies reported that, besides biological and environmental factors, the caregiving conditions in institutional care are one reason for the developmental delay and the difficulties of institutionalized children (McCall et al., 2012; Muhamedrahimov et al., 2004; Oliveira et al., 2012; Sparling, Dragomir, Ramey, & Florescu, 2005; Taneja et al., 2002). The first few years of life are most crucial for brain development and therefore infants are particularly sensitive to environmental factors (Sheridan, Fox, Zeanah, McLaughlin, & Nelson, 2012). Good-quality care and the absence of intensive stress and maltreatment are critical in this sensitive period (Julian, 2013; Smyke et al., 2010; Teicher, Andersen, Polcari, Anderson, & Navalta, 2002)Unfortunately caregivers in orphanages are often untrained and overstrained, which can lead to unresponsive and emotionally distant caregiving (Oliveira et al., 2012; St. Petersburg-USA Orphanage Research Team, 2008). This often is associated with unhealthy caregiver-child ratios, where few caregivers are responsible for many children (McCall, 2013).

3.2.1 Institutional care in Sub-Saharan Africa

There has been little research on the circumstances in African orphanages and other institutionalized care centers for OVC. As a result of poverty, political conflicts, and the HIV/AIDS pandemic, extended families and community-based care programs in many African countries are overburdened by the rising numbers of OVC (Li et al., 2008; UNICEF, 2009; Wolff & Fesseha, 1998). Thus, orphanages and other facilities of institutional care are widespread and care for many OVC in Sub-Saharan Africa (Wolff & Fesseha, 1998). The few studies that have investigated African orphanages have reported a lack of adequate caregiving (Espié et al., 2011; Hermenau et al., 2011; Levin & Haines, 2007; Wolff & Fesseha, 1998, 1999).

3.2.2 Corporal punishment in African orphanages

Besides this lack of experienced and well-trained caregivers, OVC in African countries are additionally confronted with exposure to violent discipline strategies. A study in a Tanzanian orphanage, has found that untrained and undereducated caregivers frequently used severe corporal punishment to discipline the children (Hermenau et al., 2011). Exposure to violence was linked to mental health problems and aggressive behavior in children. In particular, the violence that children experienced in the orphanage (vs. the violence that children experienced in the family of origin) was positively correlated with mental health problems.

Physical abuse, maltreatment, and neglect during childhood often lead to mental health problems and aggressive behavior in children, as studies from other settings have shown (Catani et al., 2008; Connor et al., 2003; Felitti et al., 1998). In countries such as Tanzania, in which corporal punishment is a very common way to discipline children (Feinstein & Mwahombela, 2010; Straus, 2010; UNICEF, 2011), uneducated and untrained caregivers, in particular, physically maltreat children and frequently use corporal punishment for disciplinary reasons. Thus, in addition to possible maltreatment in the family of origin and the often unresponsive and distant caregiving in institutional care, OVC are burdened with further experiences of maltreatment and corporal punishment in orphanages and other facilities of institutional care (Hermenau et al., 2011).

3.2.3 Infants in institutional care

Children placed in institutional care are at high risk for developmental delay and psychological problems. This risk is exacerbated if the children are placed in institutional care at a very young age. In support of this, studies with infants in institutional care have shown that they are especially affected because they already have spent the first years of their lives without the requisite warm, supportive, and responsive caregiving (Johnson et al., 2006; McCall, 2013; Smyke et al., 2010; Taneja, Beri, & Puliyel, 2004). A study from South Africa has shown that the development of communicative skills was severely delayed in institutionalized infants due to the non-interactive caregiving (Levin & Haines, 2007). However, there are few data concerning mental health and its relation to the conditions of caregiving in Sub-Saharan African orphanages, especially concerning infants.

3.2.4 Objectives

In the present study, we studied Tanzanian children in institutional care. We specifically examined whether they differed in their mental health status and in experiences of maltreatment over the course of their entire lives, in the family of origin and in institutional care, depending on the age of their institutionalization. Based on research on the harmful potential of institutional care especially for infants (Johnson et al., 2006; McCall, 2013; Smyke et al., 2010), we hypothesized that children who were institutionalized in the first 4 years of life, would show more mental health problems at primary school age and experience more maltreatment in institutional care than would children who were institutionalized at a later age. Furthermore, we predicted that we would replicate the correlation between mental health problems and maltreatment in institutional care found in a previous study in a Tanzanian orphanage (Hermenau et al., 2011). Finally, we predicted that the relation

between mental health problems and maltreatment in institutional care is stronger for children who were institutionalized as infants than it is for children who were institutionalized later.

3.3 Method

3.3.1 Sample

All interviews were conducted in a primary school in a small town in southern Tanzania. The school is a private, led by the Catholic Church, and supports orphans and children from difficult family backgrounds. The majority of the supported children lived in one of several institutional care facilities or in foster families. Reasons for institutionalization included death of a parent, unknown location of the parents, and inability of the parents to care for the child because of their work location, illness, drug abuse, poverty, or similar contexts. Some children were institutionalized at a very young age and stayed in the institution or were transferred to foster families; others lived first with their parents, then with distant relatives, and subsequently were institutionalized, because of poverty, death of the caregiver, or illness.

Of a full sample of 409 children, we selected all children who had been in institutional care in their first 4 years of life. We matched this group according to current age and sex with a group of children who were placed in institutional care after the age of 4 years. Thus, each group consisted of 35 children (19 male, 16 female). Mean age of the children was 10.53 years (*SD* = 1.67, range 8 – 15). Early institutionalized children were institutionalized at an average age of 2.34 years (*SD* = 1.16, range 0 – 4) and spent an average of 8.28 years (*SD* = 2.79, range 1 – 15) in institutional care. Twenty-eight (80%) of them still lived in institutional care at the time of the study. Twenty-six (74%) had lost at least one parent. Late institutionalized children were institutionalized at an average age of 7.91 years (*SD* = 2.29, range 5 – 14) and spent an average of 2.86 years (SD = 1.91, range 1 – 8) in institutional care. Twenty-two (63%) still lived in institutional care at the time of the study. Only 10 (29%) reported that at least one parent had passed away.

3.3.2 Instruments

All instruments were applied as a structured interview. In this way, even young children could be interviewed using all instruments. From the total sample, 33 interviews were double-rated to assess inter-rater reliability. Thus, we could obtain measures of internal consistency as

well as inter-rater reliability. The first part of the interview consisted of socio-demographic information, including age, class, and sex.

Adverse childhood experiences: These experiences were assessed with the Maltreatment and Abuse Chronology of Exposure - Pediatric Interview (pedMACE; Isele et al., 2013). The pedMACE consists of 55 questions covering lifetime physical, emotional, and sexual abuse; neglect; and parental loss during childhood and is the child-appropriate version of the Maltreatment and Abuse Chronology of Exposure (MACE; Teicher & Parigger, 2011) based on the Adverse Childhood Experience Scale (Felitti et al., 1998). For analysis, we only used 16 questions concerning different types of physical, emotional, and sexual abuse by caregivers, and witnessed abuse of siblings and other children in the family of origin and institutional care over the whole lifetime. The intensity or number of times that a type of abuse occurred was not assessed. All parental figures and caregivers- who lived for some time with the child- were included. Correspondingly, blood siblings as well as all children who lived together with the interviewed child for some time were included. We computed a lifetime score of experienced and witnessed adverse childhood experience (ACE) types, including experiences in the family of origin and in institutional care. In the present sample the Cronbach's Alpha coefficient was .65 and the Cohen's Kappa coefficient measuring the inter-rater reliability was >.99 (range .99 – 1). Questions not only assessed the lifetime occurrence of different types of abuse and violence but also the age of the child at the time of occurrence. Using the reported age, we computed one score of different experienced and witnessed ACE types during the time in the family of origin and one score of different experienced and witnessed ACE types during the time in institutional care. All three scores range from 0 to 16 and reflect the number of experienced and witnessed types of physical, emotional, and sexual maltreatment by caregivers toward children.

Depressive symptoms: The severity of depressive symptoms was assessed with the Children's Depression Inventory (CDI). The CDI is a reliable and well-tested clinical research instrument designed for school-aged children and adolescents (Sitarenios & Kovacs, 1999). It has been successfully implemented in Tanzanian settings (Traube, Dukay, Kaaya, Reyes, & Mellins, 2010; Wallis & Dukay, 2009). Originally, it was administered as a self-report instrument and evaluates the severity of specific depressive symptoms. In this study, it was applied as an interview. It contains 27 items with three statements each, and the child chooses which statement fits best. For each item, the points range from 0 to 2, where higher values represent more clinically severe symptoms. Thus, the possible maximum score is 54. In the present sample, the Cronbach's Alpha coefficient was .77 and the Cohen's Kappa coefficient was .99 (range .93 – 1).

Aggressive behavior: Aggressive behavior was assessed with the Reactive-Proactive Questionnaire (RPQ; Raine et al., 2006). In this study, it was applied as an interview. The

questions assess how often a child has shown a specific aggressive behavior and answers are rated on a scale of 0 (*never*), 1 (*sometimes*), and 2 (*often*). Following Hermenau et al. (2011), one item of the original 23 items was removed because it was not appropriate for the conditions in Tanzania (Item 18: "Made obscene phone calls for fun") and one item was slightly rephrased for better understanding (Item 9: "gang fight" replaced with "fight"). This study used the total aggression score, which ranges from 0 to 44. In the present sample the Cronbach's Alpha coefficient was .84 and the Cohen's Kappa coefficient was .99 (range .94 – 1).

Internalizing and externalizing problems: The self-evaluation of strengths and difficulties was assessed with the Strengths and Difficulties Questionnaire (SDQ; Goodman et al., 1998). The SDQ comes with good psychometric properties and has been internationally implemented (Goodman et al., 2003). We used the self-report version for children, which was applied as an interview in this study. It consists of 25 statements with the corresponding answer categories *not true* (0), *somewhat true* (1), or *certainly true* (2). Each of the five subscales (conduct problems, hyperactivity, emotional symptoms, peer problems, and prosocial behavior) consists of five items. The total difficulties score is generated by summing the scores of all items, except the items of the prosocial behavior scale, and ranges from 0 to 40. In the present sample the Cronbach's Alpha coefficient was .58 due to the heterogeneity of the subscales, and the Cohen's Kappa coefficient was .99 (range .94 - 1).

3.3.3 Procedure

Via a letter in English and Swahili, we informed the caregivers of each child about the objectives and procedure of the survey, which was conducted in close cooperation with the school. The letter explained in detail that the participation by the child would be entirely voluntary, that data would be processed anonymously, and that no monetary compensation would be offered. In the letter, we also invited them to call or meet the project leaders if they had any additional questions. By signing the letter, the caregivers gave their written informed consent for the participation of the child. Only children with an informed consent signed by their caregivers were included in the survey. All children from class 2 to class 7 were asked to participate in the survey. Overall, the participation rate of the children was 80%. The Ethical Review Board of the University of Konstanz and the Tanzanian Commission for Science and Technology approved the study.

The research team consisted of five German psychologists, five Tanzanian psychologists and community workers, and two Tanzanian psychology students. The project leaders were present throughout the entire phase of training of local staff and data collection. Tanzanian staff members were trained in interview skills, interviews with children, and the concepts of

mental disorders and aggression, including role-playing and interview observation, in a two-week training course. They were trained in translating interviews from English to Swahili and back for the German psychologists as well as conducting interviews directly in Swahili. All instruments were translated in written form into Swahili. A blind, written back translation into English assured accuracy. One of the authors is fluent in Swahili and thus could assure valid translation. In addition, all staff members were constantly supervised by the project leaders.
Interviewers had standardized the form of assessment by practicing in joint and double-rated interviews to achieve a high inter-rater reliability. Interview teams consisted of one German psychologist and one Tanzanian or of one or two Tanzanians. The pairing of interview teams rotated continuously.
Each child was interviewed individually in a calm and quiet setting within the school grounds. The interview took, on average, one and a half hours. To provide a trustworthy environment, the girls were interviewed by a female interviewer. The children were assured that the whole interview was confidential and that they were free to end the interview at any time.

3.3.4 Data analysis

To check for possible influences on mental health of the time spent in institutional care, we separately computed Pearson correlations for early and for late institutionalized children. Time spent in institutional care did not correlate significantly with the SDQ total difficulties score, the RPQ total aggression score and the CDI score in either early institutionalized children, SDQ: r = .04, p = .832; RPQ: r = .05, p = .780; CDI: r = .26, p = .137, or in late institutionalized children, SDQ: r = .04, p = .840, RPQ: r = .01, p = .950; CDI: r = .03, p = .875.
To test the hypotheses of group differences, a multivariate analysis of variance (MANOVA) was conducted. Kurtosis was between K = -0.65 and K = 2.15 and skewness was between S = -0.14 and S = 1.45. Thus, no variable deviated from a normal distribution. No univariate or multivariate outliers were detected, and a Box-M-Test showed homogeneity of variance-covariance matrices, $F(21, 17007) = 0.82$, p = .694. Subsequently, we performed simple ANOVAs on the dependent variables to investigate the contribution of each dependent variable. Levene's tests did not indicate any significant deviation from homogeneity. Pearson correlations between experienced and witnessed childhood adversity and mental health variables were computed. Two-tailed analyses were computed on an alpha-level of α = .05, unless otherwise specified. In cases of multiple testing, we adjusted the alpha-level using Bonferroni-Holm correction to avoid alpha-inflation. Concerning the effect size, $\eta^2 \geq .01$ indicates a small effect, $\eta^2 \geq .06$ a medium effect, and $\eta^2 \geq .14$ a large effect. Data were analyzed with IBM SPSS Statistics Version 21 for Mac.

3.4 Results

Table 3.1 shows the descriptive data concerning early and late institutionalized children. Sixty-two (89%) children reported that they did experience at least one ACE type in institutional care. Of the sample, 38 (54%) experienced at least one ACE type in the family of origin.

Table 3.1

Descriptive data concerning mental health variables and adverse childhood experience types in early and late institutionalized children

	Early institutionalized children			Late institutionalized children		
	M	*SD*	Range	*M*	*SD*	Range
SDQ score	11.54	5.97	0 - 24	8.49	4.96	0 - 19
RPQ score	10.63	5.45	0 - 21	7.37	5.41	0 - 22
CDI score	8.86	5.44	1 - 25	5.40	4.45	1 - 23
ACE types lifetime	5.69	2.26	1 - 10	4.60	2.23	0 - 08
In the family	1.06	1.94	0 - 06	2.37	2.10	0 - 06
In institutional care	5.20	2.63	0 - 10	3.43	2.43	0 - 08

Note. *M* = mean, *SD* = standard deviation

According to Wilks' criterion, at least one of the dependent group variables, including SDQ total difficulties score, RPQ total aggression score, CDI score, ACE types in lifetime, ACE types in the family of origin, and ACE types in institutional care differed between early and late institutionalized children, $F(6, 63) = 3.08$, $p = .010$, $\eta^2 = .23$. Subsequently, simple ANOVAs were performed on corrected alpha-levels using Bonferroni-Holm corrections. As shown in Table 3.2, groups differed significantly in all dependent variables except ACE types in lifetime. Early institutionalized children reported less ACE types in the family of origin and more ACE types in institutional care than did late institutionalized children (see Table 3.1). In addition, Table 3.1 shows that early institutionalized children reported higher average SDQ, RPQ, and CDI scores than did late institutionalized children. Concerning ACE types across the whole lifetime, we only found a non-significant trend that early institutionalized children reported more types over the course of their whole lives.

Table 3.2

ANOVAs comparing early and late institutionalized children on mental health variables and adverse childhood experience types

	F	*df 1*	*df 2*	*p*	α-*level*	η^2
SDQ score	5.44	1	68	.023	.050	.07
RPQ score	6.30	1	68	.014	.025	.09
CDI score	8.46	1	68	.005	.017	.11
ACE types lifetime	4.10	1	68	.047	.013	.06
In the family	7.39	1	68	.008	.010	.10
In institutional care	8.56	1	68	.005	.008	.11

Note. α-level = adjusted alpha-level according to Bonferroni-Holm correction

To test the significance of correlations between reported ACE types and mental health indicators, a Bonferroni-Holm correction was used. As shown in Table 3.3, ACE types in institutional care correlated positively with the reported SDQ total difficulties score on an adjusted alpha-level of α = .05, with the RPQ total aggression score on an adjusted alpha-level of α = .025 and with the CDI score on an adjusted alpha-level of α = .017 for early institutionalized children. For late institutionalized children, ACE types in institutional care did not correlate significantly with any of the mental health variables. Moreover, ACE types in the family of origin did not correlate significantly with any mental health variable for either early or late institutionalized children.

Table 3.3

Correlations of ACE types in institutional care with mental health variables in early- and late-institutionalized children

	Early institutionalized children		*Late institutionalized children*		
	ACE	p	*ACE*	p	α-*level*
SDQ score	*.35*	*.041*	*.30*	*.083*	*.050*
RPQ score	*.40*	*.016*	*.23*	*.190*	*.025*
CDI score	*.51*	*.002*	*.11*	*.534*	*.017*

Note. α-level = adjusted alpha-level according to Bonferroni-Holm correction, ACE: ACE types in institutional care

3.5 Discussion

Research has shown that institutional care can lead to developmental delay and mental health problems in children (Hermenau et al., 2011; Johnson et al., 2006; Levin & Haines, 2007; St. Petersburg-USA Orphanage Research Team, 2008). To bridge the gap in research concerning consequences of institutional care in Sub-Saharan African countries, we compared early and late institutionalized Tanzanian children regarding adverse childhood experiences over their entire lifetimes in the family of origin and in institutional care and mental health at primary school age.

Consistent with our hypotheses, we found that early institutionalized children reported more types of adverse childhood experiences in institutional care than did late institutionalized children. However, concerning the lifetime amount of adverse childhood experience types, we only found a non-significant slightly higher amount reported by early institutionalized children. Although the groups did not differ significantly in the lifetime amount of adverse childhood experience types, they differed in the amount of mental health problems. Early institutionalized children reported more depressive symptoms, more aggressive behavior and more internalizing and externalizing problems at primary school age. These findings are in accord with research from other countries (Johnson et al., 2006; Levin & Haines, 2007; McCall, 2013) stating that early institutionalized children are highly burdened.

Accordingly, we replicated our previous findings (Hermenau et al., 2011) that adverse childhood experiences in institutional care (e.g., exposure to violence) were positively related to mental health problems, but this was only true for early institutionalized children. Therefore we conclude that adverse childhood experiences in institutional care play an especially important role in children who are institutionalized at a very young age and that children who are institutionalized very early in life may need special attention and care.

A great majority of the whole sample of institutionalized children reported at least one adverse childhood experience type from their time in institutional care. In countries such as Tanzania in which corporal punishment is still common (UNICEF, 2011) placement in institutional care does not represent a protection from further maltreatment. On the contrary, corporal punishment in institutional care can add to the psychological burden of prior parental loss and possible adverse experiences in the family of origin. It hits early institutionalized children in an important phase of their physical, social, and emotional development (Smyke et al., 2010; Teicher et al., 2002). Combined with the lack of adequate caregiving in many African orphanages (Hermenau et al., 2011; Levin & Haines, 2007; Wolff & Fesseha, 1999), it puts early institutionalized children at very high risk of developing mental health problems.

As the numbers of OVC are continuously rising, institutional care will continue to be part of the support system for OVC (McCall, 2013; Wolff & Fesseha, 1998). Some studies already

have shown that it is possible to improve the caregiving quality in institutional care, especially for infants (Levin & Haines, 2007; McCall, 2013; Muhamedrahimov et al., 2004; St. Petersburg-USA Orphanage Research Team, 2008; Taneja et al., 2002; Wolff & Fesseha, 1999). However, in countries in which corporal punishment is still common, programs improving caregiving in institutional care also need to address potential corporal punishment and maltreatment. In a study in a Tanzanian nongovernmental orphanage, we showed that maltreatment in caregiving decreased after restructuring the orphanage and training the staff in nonviolent caregiving strategies (Hermenau et al., 2011). Yet, this training did not focus solely on the needs of infants. However, maltreatment and corporal punishment in institutional care in Sub-Saharan Africa is still a common and neglected topic that requires further research.

The demand for a change of policies and for guidelines on institutional care in Sub-Saharan Africa is great. However, the first step is to raise awareness of the consequences of poor caregiving in institutional care among governmental agencies, child welfare systems, and nongovernmental organizations. The common belief is that providing accommodation, food, and sometimes education equals good caregiving. Through improved knowledge about potential adverse consequences, caregiving may be improved. It also may strengthen the future productivity of the children and would save the costs of treating and caring for children with mental disorders or impaired cognitive functioning. However, many orphanages are nongovernmental, and there is no overall structure to ensure at least a minimal quality standard. We think that countries such as Tanzania need common practices and guidelines that apply to all orphanages to ensure a minimum of quality in childcare. For example, a mandatory caregiver-child ratio for all institutions is needed. More caregivers are required for institutions housing infants than for those with older children. Infants need more attention and positive emotional and physical care by their caregivers because they need more assistance in daily tasks like eating and hygiene. If the caregiver-child ratio is in poor balance and caregivers are overstrained, they are more likely to react violently toward young children who need more assistance, are slower, or try to get their attention. On the other hand, it can also result in neglecting children, particularly emotionally. Moreover, policies should include an obligation to adequately train caregivers. Training for caregivers dealing with infants needs to emphasize the importance of attachment. Caregivers should learn about the development of children to form age-appropriate expectations because often maltreatment stems from age-inappropriate expectations. Nursing teachers should become aware that caregiving is more than feeding and housing children, and that warm and responsive caregiving lays the foundation for healthy emotional and cognitive development.

The present study demonstrated once more that use of corporal punishment is common in Tanzania and that its consequences have not been adequately addressed by policies. On

one hand, governments and people need to be educated about the adverse consequences of corporal punishment and emotional neglect and abuse. On the other hand, nursery teachers need to be educated in positive parenting and nonviolent caregiving strategies to provide them with action alternatives such as reward systems.

To provide successful interventions for improving institutional care in African countries, we need to fully understand the situation and the struggles in African orphanages. Based on this knowledge, we need to develop and test culturally adequate caregiving concepts and strategies for institutional care in Africa to protect the most vulnerable - the infants in institutional care.

Some methodological aspects limit the generalization of these findings. The cross-sectional design does not allow us to establish causality. While representativeness for other settings in Tanzania or other African countries cannot be claimed, the consistency with previous findings from another setting in Tanzania lends some support to the idea that similar relationships between maltreatment in institutional care and mental health problems also would be found in other settings. The present sample was heterogeneous concerning the reasons for institutionalization and the length of time spent in institutional care. This reflects a realistic setting, but makes it more difficult to exclude other potential influences. Even though time spent in institutional care did not correlate with mental health problems, we cannot entirely rule out a potential influence of this confound. Longitudinal data are necessary to establish causality and to control for time spent in institutional care. The children talked very openly about their experiences and feelings, however potential bias, like social desirability, can never be entirely ruled out for subjective reports.

3.6 Conclusion

In the present study, we found that Tanzanian children who were institutionalized in the first 4 years of life reported more types of maltreatment in institutional care and more mental health problems at primary school age than did children who were placed later into institutional care. Moreover, the maltreatment in institutional care was positively related to mental health problems in early institutionalized children. We conclude that maltreatment in institutional care in Tanzania is a common and often neglected problem that heightens the potential harm of institutional care on the child's mental health. Further research on maltreatment in institutional care is crucial for developing and testing culturally adequate interventions boosting nonviolent caregiving to protect infants in institutional care and to foster their development.

3.7 Acknowledgements

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4 Childhood adversity, mental ill-health and aggressive behavior in an African orphanage: Changes in response to trauma-focused therapy and the implementation of a new instructional system

4.1 Abstract

Background: The number of orphans in Sub-Saharan Africa is constantly rising. While it is known that family or community care is preferable over institutional care of African orphans, little is known about the quality of care in orphanages and possibilities of improvement.

Study 1:

Methods: Exposure to traumatic stress, experiences of violence in the home, school, and orphanage, as well as mental ill-health and aggression of 38 children (mean age of *M* = 8.64 years) living in an orphanage in rural Tanzania were assessed at two time points. The severity of post-traumatic stress disorder symptoms (PTSD), depressive symptoms, and internalizing and externalizing problems were used as indicators of mental ill-health.

Results: Violence experienced in the orphanage correlated more strongly with all indicators of mental ill-health than violence in the former home, school or neighborhood at time point 1. Additionally, violence experienced in the orphanage had a positive relationship with the aggressive behavior of the children at time point 2.

Study 2

Methods: With the help of the pre-post assessment of Study 1, the implementation of a new instructional system and psychotherapeutic treatment (KIDNET) for trauma-related illness were evaluated.

Results: In response to both, a change in the instructional system and psychotherapeutic treatment of PTSD, a massive decline in experienced violence and in the severity of PTSD-symptoms was found, whereas depressive symptoms and internalizing and externalizing problems exhibited little change.

Conclusions: These studies show that violence, especially in the orphanage, can severely contribute to mental ill-health in orphans and that mental health can be improved by implementing a new instructional system and psychotherapeutic treatment in an orphanage. Moreover, the results indicate that the experience of violence in an orphanage also plays a crucial role in aggressive behavior of the orphans.

Keywords: violence, aggression, PTSD, mental health, orphans, Tanzania, KIDNET

4.2 Background

In Sub-Saharan Africa the consequences of poverty and the AIDS pandemic have led to constantly rising numbers of orphans and vulnerable children (OVC), as is the case for Tanzania and its 2.6 million orphans as of 2008 (UNICEF, 2009). These children live either in extended families, foster families, orphanages, or just on the streets (Cluver, Gardner, & Operario, 2008; Traube et al., 2010). While there has been some research on community care (Schenk, 2009; Skovdal, Mwasiaji, Webale, & Tomkins, 2011) little is known about conditions in African orphanages. Some studies from different countries suggest important factors determining the well-being of children in orphanages, such as a secure bonding with a caregiver or living in family-like groups (St. Petersburg-USA Orphanage Research Team, 2008; Taneja et al., 2002; Wolff & Fesseha, 1998, 1999). Secure attachment is hindered if caregivers extensively employ adverse conditions including violence in parenting. However, there has been no research to date on the interrelation between violence and mental ill-health in children living in orphanages.

Traditionally, OVC stay with extended family. But due to rising numbers of OVC, families' resources are over- strained (Li et al., 2008; Mmbando et al., 2009). As a consequence, most experts argue in favor of supporting families through community-based care and focus on the evaluation of these programs (Leyenaar, 2005; Skovdal et al., 2011). Furthermore, it is known that institutional care may lead to detrimental effects concerning the child's development (Johnson et al., 2006). Although many orphanages exist and care for OVC a detailed evaluation of education and care in orphanages lacks in most cases. However, some studies have examined aspects of how orphanages could be improved (St. Petersburg-USA Orphanage Research Team, 2008; Wolff & Fesseha, 1999). For example, Wolff, Dawit and Zere (1995) restructured an orphanage in Eritrea overtly in order to improve the well-being of its resident children. A stable bond with a caregiver and a particular approach of caregiving seemed to be especially important (Wolff & Fesseha, 1999). Studies from other countries like India and Russia support these findings (St. Petersburg-USA Orphanage Research Team, 2008; Taneja et al., 2002). It is obvious that a caregiver's violent behavior could endanger the development of a predictable, emotionally safe connection. Additionally, OVC often experienced violence and neglect in their family of origin and in neighborhood or school (Benjet, 2010). Corporal punishment is still used worldwide in homes and schools (Gershoff, 2002; Straus, 2010), although studies show that corporal punishment is linked to mental ill-health and aggression in children (Gámez-Guadix et al., 2010; Gershoff, 2002; Makame et al., 2002). Corporal punishment is not explicitly prohibited at home and school in Tanzania (Global Initiative to End All Corporal Punishment of Children, 2012). To date no prevalence rates for Tanzania are available (Global Initiative to

End All Corporal Punishment of Children, 2012), but Straus (2010) reported that more than two thirds of Tanzanian students did not strongly disagree that they were frequently spanked or hit before the age of 12 years. In comparison with students from other countries, Tanzanian students reported the second highest percentage.

It has been repeatedly shown that experiences of violence or neglect in childhood often lead to mental ill- health, like post-traumatic stress disorder (PTSD) or depression (Catani et al., 2008; Copeland et al., 2007; Elbert et al., 2009; Schilling et al., 2007). Due to their living conditions, OVC are often exposed to several traumatic stressors. According to the building block effect, repeated traumatic experiences culminate into a higher risk for PTSD (Neuner, Schauer, Karunakara, et al., 2004). Moreover, abuse and neglect can lead to aggressive behavior in the children themselves (Connor et al., 2003; Elbert et al., 2006). Without secure attachment a child might have problems developing strategies of self-regulation (Allen, 2011; van der Kolk & Fisler, 1994). Therefore, it is important to know which adverse conditions, and violent punishment in particular, may have the biggest impact on mental health of children, who are living in orphanages, and how types of care affect healthy development, mental well-being and a child's preparedness for aggressive behavior.

The first study examined the relations of exposure to violence and mental ill-health in an orphanage in Tanzania. It was hypothesized that violence experienced in the family of origin, the school, neighborhood, or in the orphanage relates positively to the mental ill-health of the orphans. Additionally, the children's aggressive behavior was examined. A positive relationship between exposure to violent acts and aggressive behavior in the children was expected. The second study dealt with the evaluation of an intervention in the same orphanage. To improve the living conditions of the children a new instructional system was implemented that placed a ban on any violent punishment by caregivers and introduced positive parenting strategies. Furthermore, all children with a PTSD, diagnosed according to DSM IV criteria, received KIDNET (Neuner et al., 2008), a child-friendly version of narrative exposure therapy (NET; Schauer et al., 2011). A time period of six months allowed the caregivers to get used to the new strategies and the children to profit from the changes, but also to recover from PTSD. A decline in reported violence in the orphanage as well as in mental ill-health was expected six months later.

4.3 Study 1

4.3.1 Methods

Participants

The examined children live in a non-governmental orphanage in the Southern Highlands of Tanzania, situated near a small village in a rural area. The orphanage consists of four houses with nine to twelve children of different ages and sexes with two caregivers for each house. The caregivers had mostly no preparatory qualification for their jobs as caregivers and only primary school education. Children were either full or partial orphans or had been severely abused or neglected by their families and were therefore taken into orphan care. Children, who were seven years or older, were interviewed for two hours on average at time point 1 (*t1*) and six months later at time point 2 (*t2*). The younger children could only answer part of the questions. Further qualitative information concerning mental ill- health, especially of the younger children, was gained through behavioral observation by the investigators who lived five weeks (during *t1*) and three weeks (during *t2*) with the children. In general, the analyses included all children (N = 38; 53% boys) who were in the orphanage during both assessment periods. The mean age was M = 8.64 years (range 3 - 16) at *t1* and M = 9.16 years (range 3 - 16) at *t2*. The Tanzanian and German board of the organization managing the orphanage gave their consent and ethical approval.

Materials

The interview sets were basically identical for both assessments. All instruments were applied as a structured interview by clinicians with extensive working experience including an East African context. This experience and the application through an interview allowed the interviewers to complete the interview with many children of seven years or older.

Socio-demographic data: The first part of the interview consisted of socio-demographic information, in which the children were also asked about their parents, the reason for death of the parents and about relationship to relatives.

Physical health: The children were interviewed about their physical health in the past four weeks based on a checklist (concerning cough, stomach pain, tuberculosis, headache, malaria, flu, pain, diarrhea, fever/shivering, skin rush/scabies, and vomiting) (Ertl et al., 2010).

Stressful and traumatic experiences: In the subsequent section of the interview, the children were asked about their experiences of violence. This included physical, psychological and sexual violence as well as neglect and witnessed violence. The children were asked 41 questions about violence (following C. Catani at http://www. vivo.org). At *t1* they were asked

about the experienced violence at home, in school or neighborhood, and in the orphanage during their whole lifetime. At *t2* they were only interviewed about experienced violence in neighborhood or school and the orphanage in the last six months.

Mental health: Concerning the mental health of the children, internalizing and externalizing problems, PTSD, and depression were assessed.

Internalizing and externalizing problems: The self-evaluation of strengths and difficulties was assessed with the Strengths and Difficulties Questionnaire (SDQ; Goodman et al., 1998). The SDQ comes with good psychometric properties and is internationally implemented (Goodman et al., 2003). This study uses the self-report version for children from 11 to 17 years. It consists of 25 statements with the possible responses that the statement is not true, somewhat true or certainly true for themselves. Each of the five subscales (conduct problems, hyperactivity, emotional symptoms, peer problems and prosocial behavior) consists of five items. The total difficulties score is generated by summing the scores of all items, except the items for prosocial behavior, and ranges from 0 to 40. A score over 20 indicates an abnormal amount of internalizing and externalizing problems. The total difficulties score is a good measure for a general impression of internalizing and externalizing problems and is, therefore, a sufficient measure for this study.

Post-traumatic stress disorder: The UCLA PTSD Index for Children DSM IV (Steinberg, Brymer, Decker, & Pynoos, 2004) was used to screen for exposure to traumatic events and for symptoms of PTSD. This instrument was originally constructed as a self-report and assesses the severity of symptoms based on the frequency of symptoms reported by the child. The occurrence of each DSM-IV symptom within the last month is scored on a scale ranging from none of the time to most of the time. Thus, an overall PTSD severity score can be calculated by summing the scores for each question, which results in a maximum possible score of 68. The UCLA PTSD Index shows good psychometric properties and has been successfully utilized in non-western settings (Catani et al., 2008; Elbert et al., 2009).

Depression and suicidality: Depression and suicidality were assessed with the Mini-International Neuropsychiatric Interview kid for children and adolescents (M.I.N.I.; Section A and C; Sheehan et al., 1998). Additionally, the severity of depressive symptoms was assessed by means of the Children's Depression Inventory (CDI; Sitarenios & Kovacs, 1999). The CDI is a reliable and well-tested clinical research instrument designed for school-aged children and adolescents. It has been successfully implemented in Tanzanian settings (Traube et al., 2010; Wallis & Dukay, 2009). Originally it is administered as a self-report instrument and evaluates the severity of specific depressive symptoms. It contains 27 items with three statements each and the child has to choose which statement fits best. For each item, the points range from 0 to 2, where higher values represent more clinically severe symptoms. Thus, the possible maximum score is 54.

Aggression: Aggressive behavior was assessed at t2 with the Reactive-Proactive Questionnaire (Raine et al., 2006). The children were asked how often they have exhibited a specific aggressive behavior, in which they have to choose between never, sometimes and often. One item of originally 23 items was removed, because it was not appropriate for the conditions in rural Tanzania (Item 18: “Made obscene phone calls for fun”) and two items were slightly rephrased for a better understanding (Item 4: “students” replaced with “children” and Item 9: “gang” fight replaced with “fight”). The sum of the points assigned to the answer represents the total aggression and ranges from 0 to 44.

Procedure

The first assessment in March 2010 was carried out by four of the authors. They worked together with trained translators and stayed for five weeks in the orphanage. The second assessment was carried out in September 2010, six month after the first assessment, by the two other authors (KH and TH) again with trained, but now different translators. This second team of interviewers was blind with respect to any information gathered during the first assessment and did not know who had received psychotherapeutic assistance. The second assessment was completed after three weeks. The translators were trained before both assessments and the interviewers had standardized the form of assessment by practicing in joint interviews to achieve high inter-rater reliability. All instruments were translated word- by-word into Kiswahili and the translation was intensely discussed to guarantee a precise translation.

Every child of seven years or older was interviewed alone in a quiet place by one interviewer and one translator. To provide a trustworthy environment, the girls were interviewed by at least one woman. The interview took two hours on average. Children were assured that the whole interview was confidential and that there would be no punishment for whatever information was given. The amount of breaks varied with the child’s ability to concentrate. Children received drinking water and a fixed number of sweets during the interview to help them to stay focused. Children were encouraged to draw a picture or to play their favorite game at the end of the interview. In addition, the behavior of all children was observed in their typical daily surrounding. During the periods of assessment, interviewers and translators stayed in the orphanage and shared the meals with the children and played with them in their free time.

Analyses

All variables except one met the preconditions for the analyses. The sum of depressive symptoms at *t1* was not distributed normally. Therefore, the Spearman coefficient was computed for correlations using the sum of depressive symptoms at *t1*. The Pearson

coefficient was calculated for all other correlations. The Bonferroni correction was used in cases of multiple testing to prevent alpha-inflation. All hypotheses about mental health were subdivided in specific hypotheses for PTSD, depression, and internalizing and externalizing problems. Due to the directional hypotheses, analyses were computed one-tailed. According to the age of the children, *n* = 22 children could be included in the analyses of the severity of PTSD symptoms, whereas *n* = 33 children were included concerning the severity of depressive symptoms and internalizing and externalizing problems. The analysis of the relation between experienced violence in the orphanage and aggression included *n* = 29 children.

4.3.2 Results

Experiences of violence

At *t1* the children reported a mean of *M* = 5.59 (*SD* = 5.42, range 0 - 19) different forms of violence experienced in the family of origin before entering the orphanage. On average they reported to have experienced *M* = 2.30 (*SD* = 1.98, range 0 - 7) different forms of violence in school or neighborhood. Concerning the violence experienced in the orphanage children specified an average of *M* = 4.03 (*SD* = 3.99, range 0 - 17) different forms of violent events. At *t2* the children reported that they had experienced on average *M* = 2.57 (*SD* = 1.81, range 0 - 6) different forms of violence in school or neighborhood and *M* = 1.93 (*SD* = 2.40, range 0 - 8) different forms of violence in the orphanage in the past six months.

Mental health

At *t1* 14 children fulfilled the criteria for PTSD, seven of which still fulfilled the diagnosis at *t2*. Additionally, one child was diagnosed with PTSD at *t2* who did not fulfill the criteria at *t1*. Of the five children, who were diagnosed with a Major Depression episode at t1, only one child fulfilled the criteria for a diagnosis at *t2*. At *t1* six children showed an abnormal amount of internalizing and externalizing problems. The criteria were still fulfilled by five children at *t2*.

Correlations at t1

At *t1* a positive relationship between experienced violence and mental ill-health was expected. Within each specific directional hypothesis the correlation with experienced violence in the orphanage, in neighborhood or school, and the home was tested. All analyses were performed with an alpha-level of significance of α = .017 due to the Bonferroni correction within each specific hypothesis. A significant correlation was found between the experienced violence in the orphanage and the severity of PTSD symptoms (r = .60, p < .01) and between experienced violence in the home and severity of PTSD symptoms (r = .50,

p < .01). However, no significant correlation between experienced violence in neighborhood and school and PTSD symptoms (r = .20, p > .18) was found.

The relationship between experienced violence and the severity of depressive symptoms was confirmed by a significant correlation between the sum of violence experienced in the orphanage and the severity of depressive symptoms (r = .43, p < .01). There was no such relationship with violence experienced in school and neighborhood (r = .14, p = .22) or in the former home (r = .37, p >.017).

There was a significant correlation between violence experienced in the orphanage and internalizing and externalizing problems (r = .61, p < .01) as well as between violence experienced in the former home and internalizing and externalizing problems (r = .52, p < .01). Additionally, a significant correlation between violence experienced in neighborhood or school and internalizing and externalizing problems (r = .38, p = .015) was found.

Aggression

To test the assumption of a positive correlation between violence experienced in the orphanage and aggressive behavior at *t2*, the alpha-level was set to α = .05. The analysis showed a significant positive correlation between violence experienced in the orphanage and aggressive behavior at *t2* (r = .48, p < .01). The relationship is shown in Figure 4.1.

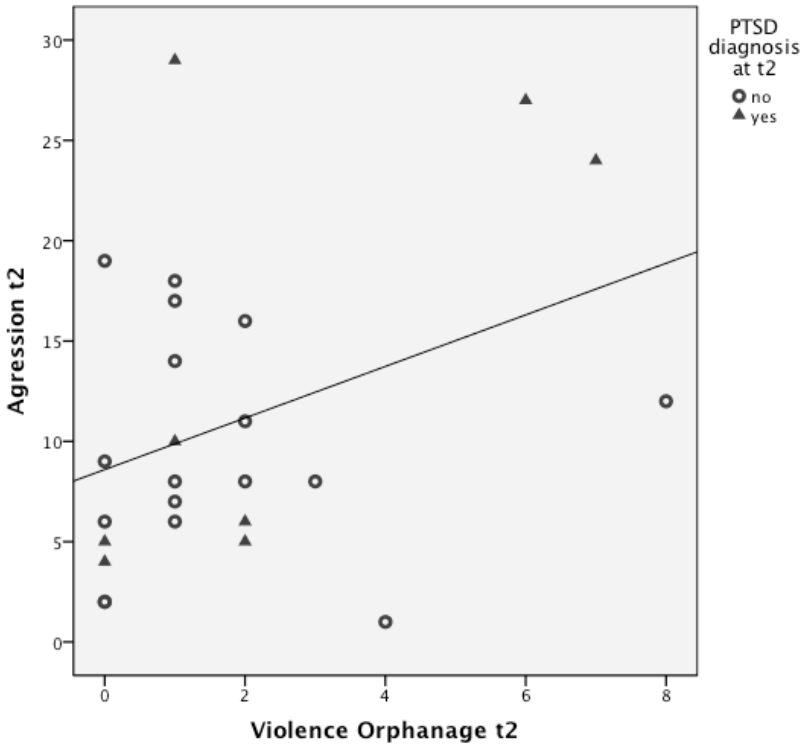

Figure 4.1: Scatter plot of the sum of violence experienced in the orphanage and the sum of aggressive behavior at *t2*.
The line represents the relationship between experienced violence and aggressive behavior at *t2*.

4.4 Study 2

4.4.1 Methods

Participants

Study 2 included the same participants as Study 1. Their characteristics were described above.

Materials

For the evaluation of the intervention the same interviews were used as described in Study 1.

New instructional system

The new instructional system included training sessions for the caregivers that aimed for a better understanding toward the children and for a positive relationship between caregiver and child in order to reduce violent punishment and to foster secure bonding.

1. HIV: As many children were orphaned due to HIV/AIDS, caregivers were trained on possible ways of transmission. It turned out that many of them were not at all informed and therefore avoided, for example, skin-to-skin contact with children, whose parents died due to

HIV/AIDS. The aim was to reduce prejudices und insecurity of the caregivers in order to support a close relationship to the children.

2. Developmental Stages, Windows of Opportunity, Attachment, and Bonding: Some theoretical knowledge about developmental stages, attachment, and bonding was given to the caregivers to foster their understanding and empathy towards the children.

3. Grief: As many of the children have lost their parents also some knowledge about grief in children was given in theoretical lectures. Again the aim was to foster the understanding of the caregivers for the children's experiences.

4. Positive Parenting Strategies according to the Oregon Model (Forgatch, Bullock, & Patterson, 2004) were taught. Giving good directions, establishing clear and age-appropriate expectations and rules, tracking of directions and cooperation, positive reinforcement, effective discipline strategies, and the establishment of a token system had primary focus. Theoretical lectures and practice in role-plays were used to teach the positive parenting strategies. Additional handouts were prepared and translated into Kiswahili to ensure retention.

After the workshop a special needs teacher, who graduated at a German college, supervised the implementation of the newly developed instructional system for six months. In addition, any form of physical punishment was banned and all caregivers were informed that any use of physical punishment and other forms of maltreatment, such as punishing children by sleeping on the floor, would lead to instant dismissal. Moreover, all boys and girls of twelve years or older were also informed about this ban and about zero tolerance of violence, also among peers, and received sex education, including information on HIV/AIDS.

KIDNET - Narrative Exposure Therapy for children

The theoretical background and treatment rationale is described in detail elsewhere (Neuner et al., 2008; Ruf et al., 2010; Schauer et al., 2011). In brief, during KIDNET the child, with the assistance of the therapist, constructs a chronological narrative of his or her whole life with a focus on exposure to traumatic stress. Empathic understanding, active listening, congruency and unconditional positive regard are key components of the therapist's behavior. For traumatic experiences the therapist asks in detail for emotions, cognitions, sensory information and physiological reactions and records these meticulously, linking them to an autobiographical context, namely time and place. In order to meet the needs of children, illustrative and creative elements are employed to pursue the goal of memory reorganization.

Procedure

Based on the findings of the first assessment and in cooperation with the administration of the orphanage, a new instructional system was introduced in March 2010 that included

nonviolent, positive parenting strategies based on reinforcement learning. New strategies to handle difficult situations without violence were trained with the caregivers. During two weeks of training all caregivers of the orphanage were trained in 10 one-hour sessions. In addition, the authors treated only children with PTSD, diagnosed according to DSM IV criteria, with Narrative Exposure Therapy for children (KIDNET; Neuner et al., 2008; Ruf et al., 2010; Schauer et al., 2011). Each of these children received 5 to 6 sessions of 90 minutes. While the psychotherapeutic treatment was administered to reduce the symptoms of children diagnosed with PTSD, the instructional changes aimed at providing a good atmosphere to all children and at preventing them from new experiences of violence. As described above, a second assessment was carried out six month after the first assessment in order to evaluate the new instructional system.

Analyses

As described for Study 1, the sum of depressive symptoms at *t1* was not distributed normally. Thus, the Wilcoxon rank-sum test was computed to compare the two times of measurement of this variable. All other comparisons of *t1* and *t2* were analyzed by computing t- tests for dependent variables. To test the specific hypotheses an alpha-level of α = .05 was used. In cases of directional hypotheses, analyses were computed one-tailed. According to the completeness of datasets for *t1* and *t2*, the analyses of the severity of PTSD symptoms included *n* = 20 children, whereas the analyses concerning the severity of depressive symptoms included *n* = 22 children and concerning internalizing and externalizing problems *n* = 26 children. The analyses of correlations between the severity of PTSD symptoms and different types of experienced violence included *n* = 25 children.

4.4.2 Results

Differences between t1 and t2

There was a significant drop of violence experienced in the orphanage from *M* = 4.48 (*SD* = 4.14) at *t1* to *M* = 1.93 (*SD* = 2.40) at *t2* (*t*[28] = 3.42, *p* < .01). Cohen's *d* indicated a large effect (*d* = 0.86).

The assumption of a decline in mental ill-health comparing t1 and t2 was subdivided into specific hypotheses. Between *t1* (*M* = 21.95, *SD* = 17.43) and *t2* (*M* = 14.65, *SD* = 10.95) a significant decline (*t*[19] = 2.46, *p* = .01) in the severity of PTSD symptoms was found. An average effect was found with Cohen's *d* = 0.50. However, there was no significant decline in the mean severity of depressive symptoms using Wilcoxon rank-sum test (*z* = -0.28, *p* = .78) between *t1* (*M* = 7.36, *SD* = 7.54) and t2 (*M* = 6.36, *SD* = 4.16). Comparing the average sum of internalizing and externalizing problems at *t1* (*M* = 11.88, SD = 5.27) and *t2* (*M* = 9.73,

SD = 7.89) no significant difference was found (*t*[25] = 1.12, *p* = .14). Correspondingly, Cohen's *d* showed a small effect with *d* = 0.32.

Correlations at t2

It was assumed that no correlation between violence experienced in the orphanage and mental ill-health at *t2* exists. A level of significance of α = .05 was used to test the specific hypothesis for every indicator of mental ill-health. There was no significant correlation between violence experienced in the orphanage and PTSD symptoms (*r* = .23, *p* = .26). Additionally, no significant correlation between violence experienced in the orphanage and depressive symptoms (*r* = .16, *p* = .47) as well as between violence experienced in the orphanage and internalizing and externalizing problems (*r* = .28, *p* = .17) was found.

4.5 Discussion

Sub-Saharan Africa struggles with constantly rising numbers of orphans and vulnerable children (UNICEF, 2009). Up until today little has been known about their mental ill- health as consequences of their experiences. Therefore, we interviewed all children in an orphanage before and six months after the implementation of a new instructional system.

All in all, the findings are consistent with the expected relationship between experienced violence and mental ill-health of the children living in the orphanage (Study 1). The correlation with violence experienced in the orphanage is the strongest for all three indicators of mental ill-health at t1. Additionally, correlations with other forms of experienced violence are significant for PTSD symptoms as well as internalizing and externalizing problems at t1. Furthermore, a relationship between experienced violence and aggressive behavior in the children was observed at t2. After the implementation of the new instructional system and individual trauma therapy for all children suffering from PTSD (Study 2), the violence experienced in the orphanage declined, but the expected decline in mental ill-health was statistically significant only for PTSD. As expected, the relationship between violence experienced in the orphanage and mental ill-health could not be found at t2.

The relationship between experienced violence and mental ill-health is concordant with other research on the consequences of violent experiences (Copeland et al., 2007; Elbert et al., 2009). However, the findings suggest that the violence experienced in the orphanage plays an essential role in the ill-mental health of the children, even more important than the amount of violence experienced in the family of origin, before entering the orphanage, or in school and neighborhood. Therefore, it can be assumed that the parenting style of the caregivers plays a crucial role for the mental health and development of the children. The decline in PTSD severity and violence experienced in the orphanage after the implementation of the

new instructional system and the individual trauma treatment indicates a successful change in caregiving strategies. The influence of the new instructional system and the psychotherapeutic treatment of PTSD with KIDNET cannot be separately examined. However, the decline in violence and the non-existing correlation of experienced violence and PTSD severity at t2 argue for an influence not only of KIDNET, but also of the instructional system, as KIDNET has no influence on the use of violence by caregivers and not all children received KIDNET. A decline in depressive symptoms and internalizing and externalizing problems was expected, but not found. The mean severity of these symptoms was already rather low in the first assessment, which may have led to a floor effect. Moreover, the change in depressive symptoms may take more time under these conditions.
Caregiving strategies that avoid violent punishment, but provide possibilities for a secure bonding, can ameliorate the mental health of children who experienced violence in earlier settings (Wolff & Fesseha, 1998, 1999). The orphanage, as the current place of living, can provide a safe place to recover from the violence experienced in other settings. This view is supported by the decline of violent acts and improvement in mental health after implementing the new instructional system. Caregivers without specific pre-training in childcare and with little formal education could understand and apply positive parenting strategies and a zero-violence policy. Although the evidence for the detrimental effects of exposure to institutional care per se is overwhelming, the aspects of quality matter (St. Petersburg-USA Orphanage Research Team, 2008; Taneja et al., 2002; Wolff & Fesseha, 1998). Furthermore, the relation between experienced violence and aggression is important. However, the data give no information about causality. Even though the experienced violence declined in general, more aggressive children nevertheless reported more violence experienced in the orphanage. Aggressive behavior in children can lead to violent reactions of other children or caregivers, while experienced violence can correspondingly lead back to aggressive behavior. Similar findings were reported from other studies concerning organized and domestic violence (Connor et al., 2003; Elbert et al., 2006). Experienced violence and the related aggressive behavior might lead to a climate in the orphanage that upholds mental ill-health and violent behavior of caregivers. This endangers the development of strategies of self-regulation (Allen, 2011; van der Kolk & Fisler, 1994). The relationship between experienced violence and aggressive behavior supports the assumption that the violence experienced in the orphanage plays an important role for the mental health of the children.

Some methodological aspects limit the generalization of the findings. Due to the limited number of children, statistical analyses uncovering more complex interactions between multiple variables could not be computed. Information was only gathered from the children's perspective, which holds the risk of a social desirability effect. Although additional information

by teachers and caregivers was preferred, caregivers showed big difficulties to provide specific and detailed information about the children. Certainly, representativeness for other orphanages cannot be claimed. However, the consistency with findings from other countries concerning caregiving strategies lends some support to the idea that similar relationships would also be found in other settings. Moreover, important limitations stem from the absence of a control group. Other influences than the implemented intervention, including a change in the instructional system and treatment of PTSD, may have led to a decline in violence as well as to a decline in PTSD symptoms. Therefore, no conclusion about causality can be drawn from the data due to a variety of confounding variables. Likewise, a natural recovery process might be responsible for the decline in PTSD symptoms. However, this process would be fostered by nonviolent caregiving. Furthermore, the instruments used were not validated for a Tanzanian population, but they were implemented as structured interviews by clinicians with extensive experience in mental health research in low-income countries and have been successfully tested before in other Sub-Saharan African settings. The translators were extensively trained and the translation was discussed in detail. Nevertheless, cultural bias might have influenced the findings, as questions might not always reflect typical parts of the life of a Tanzanian child.

4.6 Conclusion

Results suggest that violence experienced in orphanages has a bigger impact on children's well-being than violence experienced earlier in the family of origin or when visiting school. These findings support the assumption that, although living in an orphanage increases the risk of mental ill-health in children, a good quality of caregiving can buffer negative effects. Moreover, the study demonstrated a relationship between exposure to violence and aggressive behavior in children, which again supports the assumption that violence experienced in the orphanage has a strong impact on children's development and well-being. The number of orphans and vulnerable children in Sub-Saharan Africa is still growing. If these children have no chance to grow up in good caregiving structures, they may grow into adults with problems of mental ill-health and aggressive behavior. Given the small amount of resources and the short time it took to implement change in this orphanage, this study emphasizes that orphanages in resource poor countries must be supported to implement a structured basic instructional plan, based on principals of primary care attachment, zero-violence and positive parenting.

4.7 Acknowledgements

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5 Growing up in armed groups: Trauma and aggression among child soldiers in DR Congo

5.1 Abstract

Background: Child soldiers are often both victims and perpetrators of horrendous acts of violence. Research with former child soldiers has consistently shown that exposure to violence is linked to trauma-related disorders and that living in a violent environment is correlated with enhanced levels of aggression.

Objective: To gain more insight into the experiences and the mental health status of former child soldiers, we conducted a survey with *N* = 200 former child soldiers and adult combatants in the DR Congo.

Methods: We conducted semi-structured interviews concerning military experiences, experienced and perpetrated violence, and mental health.

Results: Former child soldiers reported more experienced and perpetrated violence, a greater severity of trauma-related suffering, as well as higher appetitive aggression than adult ex-combatants. Appetitive aggression was related to more perpetrated violence, higher military ranks, voluntary recruitment and higher rates of reenlistments in former child soldiers.

Conclusions: Our results indicate that growing up in an armed group is related to higher levels of trauma-related disorders and aggressive behavior. This may explain the challenge of reintegrating former child soldiers. It is thus important to consider mental health problems, particularly trauma-related disorders and aggressive behavior, of former child soldiers for designing adequate reintegration programs.

Keywords: PTSD, child soldiers, aggression, violence, DRC

5.2 Background

The use of child soldiers is very common in current on-going conflicts worldwide (Elbert et al., 2006; Guy, 2009; Maedl et al., 2010; Shaw, 2000). Hereby, child soldiers are defined as individuals under the age of 18 associated with armed forces (Coalition to stop the use of child soldiers, 2008; UNICEF, 1997, 2007). They do not only take part in combat, but they also often work as carriers, guards, domestic servants or sex slaves (Coalition to stop the use of child soldiers, 2010; Schauer & Elbert, 2010; UNICEF, 2007). Child soldiers are known to be involved in conflicts in at least 86 countries and territories worldwide (Coalition to stop the use of child soldiers, 2008). In the eastern provinces of the Democratic Republic

of the Congo (DRC) recruitment of child soldiers is an entrenched feature of on-going armed conflict (Coalition to stop the use of child soldiers, 2008; Guy, 2009; United Nations, 2007). While local militia groups (e. g. Mai-Mai groups) and foreign armed groups (e.g. Forces démocratique pour la libération du Rwanda, FDLR) are known to recruit child soldiers, they are also present in the national army (Forces armées de la Republique démocratique du Congo, FARDC; Coalition to stop the use of child soldiers, 2008; Davis & Hayner, 2009). In 2007, an estimated 7,000 child soldiers still remained in armed groups and forces mostly in eastern Congo. Despite new laws prohibiting the recruitment of children (defined in the DRC as under 18 years of age) and banning child soldiering (Coalition to stop the use of child soldiers, 2008, 2010; Guy, 2009), child recruitment by Mai-Mai groups, FDLR and Congrès nationale du peuple (CNDP) continues to rise.

Armed groups in the DRC continue to forcefully abduct children (Coalition to stop the use of child soldiers, 2010; Romkema, 2007). In contrast, groups identifying themselves by their particular ethnic background recruit by emphasizing the need to defend their own people. Some minors join armed groups wishing to take revenge on the perceived enemy or hoping for a better life and more status (Coalition to stop the use of child soldiers, 2010).

As typical for ‘new wars’ (Elbert et al., 2006; Shaw, 2000), child soldiers in the conflict in the eastern DRC begin their military career from the bottom, whereas adult combatants and soldiers start with higher ranks depending on their educational background or age. Frequently, child soldiers have to execute the most dangerous and gruesome tasks in which they experience and perpetrate significant amounts of violence (Elbert et al., 2010; Pham et al., 2009). They suffer heavily from the consequences of being both victims and perpetrators in on-going conflicts (Betancourt et al., 2008; Derluyn et al., 2004; Schauer & Elbert, 2010; Stott, 2009). Exposure to severe and traumatic stress may lead to the development of post-traumatic stress disorder (PTSD). According to the “building block effect,” repeated exposure to different types of traumatic stressors cumulatively heightens the risk of developing trauma-related disorders like PTSD (Neuner, Schauer, Karunakara, et al., 2004; Schauer et al., 2003). Thus, child soldiers are highly vulnerable to developing psychological disorders. These psychological disorders have further effects on functionality, physical health, and mortality (Schauer & Elbert, 2010; Vinck et al., 2007).

Living in a violent environment can additionally result in more aggressive behavior, particularly in men and boys who have had combat experience (Betancourt et al., 2010; Catani et al., 2008; Maedl et al., 2010). Persons suffering from PSTD become aroused easily and may respond aggressively to a perceived threat (Elbert et al., 2006; Maedl et al., 2010). In addition to reactive aggression, armed groups instrumentally act aggressively to achieve external goals such as obtaining ammunition, food, money, recruiting new soldiers or upholding their reputation. Former child soldiers reported that their experience of war brought

about a gradual transformation in their perception of violence: At first it was frightening, but with repeated experience it became not only normal and acceptable, but even exciting and arousing (Elbert et al., 2010; Maclure & Denov, 2006). This appetitive form of aggression is conceptualized as perceiving aggressive behavior towards others as arousing and fascinating, even without gaining any immediate external benefit (Hecker et al., 2012). The phenomenon of 'appetitive aggression' has only recently begun to receive attention. Research with former child soldiers in northern Uganda has shown that living in a violent environment is correlated with appetitive aggression (Elbert et al., 2010). Other studies with different samples in Uganda (Weierstall, Schalinski, Crombach, Hecker, & Elbert, 2012) and the DRC (Hecker et al., 2012) showed that appetitive aggression is also linked to higher rates of perpetrated violence. A study with Rwandan prisoners (Weierstall, Schaal, Schalinski, Dusingizemungu, & Elbert, 2011) found a protective effect of appetitive aggression on PTSD symptoms. However, recent research showed that appetitive aggression protects against PTSD symptoms only if the level of traumatization does not exceed a certain threshold (Hecker, Hermenau, Maedl, Schauer, & Elbert, 2013; Weierstall, Bueno Castellanos, Neuner, & Elbert, 2013). Previously, the theory was further outlined that the inhibition of intra-species killing needs to be learned (Elbert et al., 2010). In a peaceful society, moral and social norms restrict extreme forms of violence. Life in an extremely violent environment, such as an armed group, can break down this socially learned inhibition (Engen, 2008). If the inhibition breaks down or is not learned, as is potentially the case for many young child soldiers, violence can be perceived appetitively. Furthermore, appetitive aggression has been shown to be positively related to holding higher military ranks in armed groups (Crombach, Weierstall, Hecker, Schalinski, & Elbert, 2013). However, research on the development of appetitive aggression is still lacking.

Besides a variety of challenges, for example, resource deficits in food, education, work and psychological support (Maedl et al., 2010; Mogapi, 2004; Stott, 2009), mental health problems (e.g. PTSD-symptoms) and a high tendency towards aggressive behavior - especially appetitively aggressive behavior – can pose a challenge to integration into communities (Betancourt et al., 2010; Elbert et al., 2010; Medeiros, 2007; Pham et al., 2009). Therefore, it is crucial to get more insight into the experiences and mental health problems of child soldiers in order to adjust reintegration programs to better meet the child soldiers' needs and help them to integrate into a peaceful, civil society.

In the present study, we aimed to examine the characteristics of former child soldiers in the DRC concerning their time and experiences in armed groups and the relation to their mental health status (i.e. PTSD symptom severity and appetitive aggression). Therefore, we compared them to former adult soldiers and combatants (below referred to as combatants) shortly after demobilization. Based on recent reports (Coalition to stop the use of child

soldiers, 2010; Elbert et al., 2010; Schauer & Elbert, 2010; United Nations, 2007), we made the following predictions: As a consequence of the exposure to extreme forms of violence, we predicted that 1) former child soldiers show a greater PTSD symptom severity than adult combatants. Furthermore, in comparison to adult combatants, we hypothesized that 2) former child soldiers would report having perpetrated more different types of violence and 3) show more appetitive aggression. To gain more knowledge about the characteristics of former child soldiers, we, additionally, examined the relationship of their mental health status to their experiences in armed groups.

5.3 Method

5.3.1 Sample

All interviews were conducted in Goma, DRC. Most interviews, 72% (n = 162), took place at a UN demobilization transit camp, 27% (*n* = 60) were conducted at a reintegration center for former child soldiers and former combatants and 1% (*n* = 2) at a military detention facility. All combatants who demobilize in the province of North Kivu, pass through the UN demobilization camp in Goma. All combatants who were registered in the demobilization camp during the time of our assessment participated in the study. The reintegration center for former child soldiers and combatants was led by a Congolese non-governmental, non-profit organization and offered vocational training in manual trades. All former child soldiers and combatants enrolled in the program took part in the interviews. Time since demobilization ranged from one day to seven years. The majority of the sample (78.5%) demobilized within the year prior to assessment.

Out of a full sample of 224 interviews, 11 could not be completed for logistical reasons. Additionally 13 participants without combat experience were excluded from further analysis. The remaining sample was completely male. A variety of armies and armed groups were represented, but, in most cases, the combatants belonged to the FARDC, CNDP, FDLR or to one of several Mai-Mai groups.

Out of the remaining *N* = 200 interviews, we identified all participants that joined the first armed group below the age of 18 years as former child soldiers. Thus, the group consisted of *n* = 126 with a mean age at recruitment of 13.20 years (*SD* = 3.07, range: birth - 17). The age at the time of assessment was 20.72 years (*SD* = 3.65, range: 15 - 32). The majority (79%, *n* = 99) was born in the DRC, and 21% were born in Rwanda (*n* = 27).

Participants that joined the first armed group with an age of at least 18 years were identified as adult ex-combatants. The group consisted of n = 74 ex-combatants, with a mean age at recruitment of 23.11 years (*SD* = 4.49, range: 18 - 37) and a mean age at the time of

assessment of 30.97 years (*SD* = 6.76, range: 19 – 50). The majority was born in the DRC (68%, *n* = 50), a minority was born in Rwanda (31%, *n* = 23) and one participant was born in Uganda.

5.3.2 Measures

All instruments were applied as a semi-structured interview and the same interview set was used in all interview settings. The clinical experience of the interviewers and the administration of the instruments in interview form allowed the interviewers to use the same questions for adults and minors.

Socio-demographic data and military experiences: The first part of the interview involved collecting information about the interviewee's age, place of birth, and level of education. Additionally, we asked about the time within armed groups, combat experience, the highest military rank, number of enlistments in the same or different armed groups, and the recruitment type. We defined enlistment as entry into an armed group. Many former combatants and child soldiers joined again an armed group in their past after a failed attempt to integrate into civil society. We assessed these failed attempts through reenlistment as we counted the number of enlistments to armed groups in their past. We assessed the recruitment type (voluntary vs. forcibly recruited) by counting the interviewee's subjective perception of his recruitment.

Violence types: To assess the number of life-time experienced violence types, a list of war- and nonwar-related potentially traumatic events was adapted to the circumstances of armed groups. The list included events from the checklist of traumatic events of the Posttraumatic Stress Diagnostic Scale (Foa, Cashman, Jaycox, & Perry, 1997) and was closely related to a checklist that previously demonstrated a high test-retest reliability ($r = 0.73$, $p < .001$), significant accordance with the CIDI Event List (Ertl et al., 2010) and a significant correlation with cortisol (Steudte et al., 2011) in a study with Ugandan child soldiers. The list consisted of 31 event types, e.g. domestic violence, assault by weapon, rape, accidents, and massacres. The number of times a specific event had been experienced was not assessed, as distorted memory in PTSD renders this measure unreliable (Elbert & Schauer, 2002; Kolassa & Elbert, 2007; McNally, 2006). For the analysis, we computed a score of experienced violence types (range 0 to 7), including e.g. being physically or sexually assaulted, as well as a score perpetrated violence types (range 0 to 9) including e.g. assaulting someone else physically or sexually. For this study, Cronbach's alpha was .74.

Mental health: Symptom severity of post-traumatic stress disorder was assessed with the help of the PTSD Symptom Scale-Interview (PSS-I; Foa, Riggs, Dancu, & Rothbaum, 1993). It consists of 17 items, whereas each item corresponds to one PTSD-symptom as specified

in DSM-IV with a range from not at all or only one time (0) to 5 times per week or more/ almost always (3) concerning the past four weeks. The PSS-I comes with reliable psychometric properties (Foa & Tolin, 2000) and was validated in the Great Lakes region by Ertl et al. (2010). The Cronbach's Alpha coefficient was .86 and the inter-rater reliability .93 for the PSS-I sum score (Foa et al., 1993; Foa & Tolin, 2000). This study used the PSS-I score, which ranges from 0 to 51. For this study, Cronbach's Alpha was .90.

Appetitive aggression was assessed with the 15-item Appetitive Aggression Scale (AAS; Weierstall & Elbert, 2011), which has been validated with over 1600 ex-combatants and child soldiers and proven its good psychometric properties in comparable samples (Weierstall et al., 2011, 2012). A question regarding the perception of violence or appetitive aggression was given to the interviewee in each item (e.g. *Is it exciting for you if you make an opponent really suffer?; Once fighting has started, do you get carried away by the violence?; When you fight, do you stop caring about whether you could be killed?*). The interviewee rated the level of agreement with the given question on a five-point Likert scale ranging from disagree (0) to agree (4). For the analyses, a sum score of all 15 items was computed, ranging from 0 to 60. For this study, Cronbach's Alpha was .89.

5.3.3 Procedure

All participants gave their informed consent verbally. In addition, the respective institutions gave their informed consent for underage participants, due to the fact that their caregivers were either dead or not available. The ethical review board of the University of Konstanz as well as the United Nations' mission in the DRC (MONUSCO) and authorities of the reintegration center approved the present study. Other parts and aspects of the data gathered during the extensive investigation are presented in other recent reports (Hecker et al., 2012; Hecker, Hermenau, Maedl, Schauer, et al., 2013; Hecker, Hermenau, Maedl, Hinkel, et al., 2013).

Four psychologists and a nurse, each having had extensive work experience in East Africa, conducted the interviews with the help of three interpreters. The interpreters were trained in the concepts of mental disorders and aggression before the assessment. All instruments were translated into Kiswahili, Kinyarwanda or Lingala, and the translation was intensely discussed to guarantee a precise interpretation. Two of the interviewers could speak the native languages fluently and continuously supervised and assured valid translation. The interviewers had standardized the form of assessment by practicing in joint interviews. Subsequently, one interviewer and one interpreter individually interviewed each participant in a calm and private setting. The interview took on average one and a half hour. All

participants received two U.S. dollars for participation. We assured mental hygiene of the interview team through daily intervision and supervision.

5.3.4 Analyses

For each set of variables, namely military experiences (type of recruitment, time with armed groups, military rank, number of enlistments in armed groups), mental health (PTSD, appetitive aggression), and reported violence (experienced and perpetrated violence), a MANOVA was conducted. Kurtosis was between K = -2.01 and K = 1.49 and skewness was between S = -0.68 and S = 1.42. Thus, no variable deviated from normal distribution. No univariate or multivariate outliers were detected. Box-M-Test for homogeneity of variance-covariance matrices produces $F(10, 110067) = 2.20$, $p = .015$ for military experience variables, $F(3, 807079) = 3.14$, $p = .024$ for reported violence variables, and $F(3, 807079) = 1.59$, $p = .190$ for mental health variables. As Box-M-Test is a very sensitive test, we adjusted the α-level to $\alpha = .01$. Consequently, variance-covariance matrices did not deviate significantly from homogeneity. Subsequently, we performed a Roy-Bargmann Stepdown Analysis on the dependent variables to investigate the contribution of each variable. To test the relations between mental health variables and experiences of former child soldiers, we used the Pearson coefficient of correlation. All analyses used a two-tailed $\alpha = .05$, unless otherwise specified. In cases of multiple testing we adjusted the alpha-level using a Bonferroni correction to avoid alpha-inflation. Our metric for a small effect size was $\eta^2 = .01$, for a medium effect, $\eta^2 = .06$; and for a large effect; $\eta^2 = .14$.

5.4 Results

5.4.1 Descriptive results

Almost all former child soldiers reported at least one experienced violence type (100%, n = 126) and at least one perpetrated violence type (99%, n = 125). Concerning posttraumatic stress symptoms, 14% (n = 17) reported no symptoms at all. In total, 29% (n = 37) of the former child soldiers fulfilled the DSM-IV criteria for a PTSD diagnosis. Only a minority of 2% (n = 2) reported no appetitive aggression at all. Almost all former adult combatants reported to have experienced at least one violence type (100%, n = 74) and to have perpetrated at least one violence type (97%, n = 72). Additionally, 27% (n = 20) reported no posttraumatic symptoms, and 7% (n = 5) reported no appetitive aggression. Of all adult ex-combatants, 16% (n = 12) fulfilled a PTSD diagnosis according to DSM-IV. Means and frequencies of both groups concerning their time in armed groups, experienced

and perpetrated violence types, as well as posttraumatic stress symptom severity and appetitive aggression are detailed in Table 5.1.

Table 5.1

Descriptive data concerning military experiences, mental health and violence in former child soldiers and adult combatants

	Child soldiers (*n* = 126)		Adult combatants (*n* = 74)	
	M or *n*	*SD* or %	*M* or *n*	*SD* or %
Recruitment type				
Voluntary	66	52	39	53
Forcibly	60	48	35	47
Time with armed groups (in weeks)	329	232	400	324
Military rank				
Holding a rank	43	34	45	61
Holding no rank	83	66	29	39
Number of enlistments in armed groups	1.50	0.70	1.60	0.89
AAS score	27.15	13.25	19.61	14.29
PSS-I score	11.55	9.33	7.64	7.65
Perpetrated violence types	5.38	1.81	4.22	1.84
Experienced violence types	4.60	0.92	3.76	1.19

Note. M = mean, SD = standard deviation

5.4.2 Military experiences

A MANOVA revealed that at least one of the military experience variables, including type of recruitment, time with armed groups, military rank, and number of enlistments in armed groups, differed between former child soldiers and former adult combatants ($F(4, 195) = 4.20$, $p = .003$, $\eta^2 = .08$). A Roy-Bargmann Stepdown Analysis was performed on an alpha-level of $\alpha = .017$ due to Bonferroni correction. The recruitment type (voluntary vs. forcibly; stepdown $F(1, 198) < 0.01$, $p = .965$, $\eta^2 < .01$) and the time with armed groups (stepdown $F(1,197) = 3.39$, $p = .067$, $\eta^2 = .02$) did not differ between former child soldiers and former adult combatants. With differences due to recruitment type and time with armed groups already entered, holding a military rank differed between former child soldiers and former adult combatants (stepdown $F(1, 196) = 13.00$, $p < .001$, $\eta^2 = .06$). As Table 5.1

shows, former adult combatants more often occupied military ranks than former child soldiers. The number of enlistments in armed groups did not differ significantly between former child soldiers and former combatants (stepdown $F(1, 195) = 0.27$, $p = .601$, $\eta^2 < .01$).

5.4.3 Violence

A MANOVA showed that at least one of the variables of reported violence types differed significantly between child soldiers and adult combatants ($F(2, 197) = 17.44$, $p < .001$, $\eta^2 = .15$). A Roy-Bargmann Stepdown Analysis was performed on an alpha-level of $\alpha = .025$ due to Bonferroni correction. The reported perpetrated violence types made a unique contribution of $\eta^2 = .09$ (stepdown $F(1, 198) = 18.89$, $p < .001$). The former child soldiers reported more perpetrated violence types than the former adult combatants (see Table 5.1). With differences due to the perpetrated violence types already entered, experienced violence types made a unique contribution of $\eta^2 = .07$ (stepdown $F(1, 197) = 14.68$, $p < .001$). In detail, the former child soldiers reported more experienced violence types than the former adult combatants (see Table 5.1).

5.4.4 Mental health: PTSD and appetitive aggression

A MANOVA revealed that at least one of the mental health variables, including PSS-I score and AAS score, differed between former child soldiers and former adult combatants ($F(2, 197) = 10.97$, $p < .001$, $\eta^2 = .10$). A Roy-Bargmann Stepdown Analysis was performed on an alpha-level of $\alpha = .025$ due to Bonferroni correction. Both variables differed significantly between the two groups. The contribution made by the PSS-I score was $\eta^2 = .05$ (stepdown $F(1, 198) = 9.33$, $p = .003$). Former child soldiers showed higher PSS-I scores than former adult combatants (see Table 5.1). With differences due to the PSS-I score already entered, the AAS score of appetitive aggression showed a unique contribution of $\eta^2 = .06$ (stepdown $F(1, 197) = 12.08$, $p = .001$). Former child soldiers reported higher appetitive aggression than former adult combatants (see Table 5.1).

Table 5.2

Inter-correlations of relevant variables in former child soldiers

	AAS	PSS-I	RT	TAG	MR	NE	PVT	EVT
AAS score	1							
PSS-I score	.03	1						
Recruitment type (RT)	.26*	-.11	1					
Time with armed groups (TAG)	.12	.10	.25*	1				
Military rank (MR)	.27*	-.02	.12	.12	1			
Number of enlistments (NE)	.27*	-.03	.14	.06	.37**	1		
Perpetrated violence types (PVT)	.46**	.14	.07	-.06	.20	.07	1	
Experienced violence types (EVT)	.10	.23*	-.11	-.14	.08	-.03	.35**	1

*Note. *p ≤ .01, **p ≤ .001*

To test the relationship between AAS and experiences in armed groups of former child soldiers an adjusted alpha-level of α = .010 due to Bonferroni correction was used. All correlations are displayed in Table 5.2. In former child soldiers, the AAS score correlated positively with holding a military rank, the number of enlistments in armed groups and voluntary recruitment. Furthermore, the AAS score correlated positively with perpetrated violence types in former child soldiers, but not with experienced violence types. In contrast, the PSS-I score correlated positively with experienced violence types, but not with perpetrated violence types (see Table 5.2). The PSS-I score did not correlate significantly with any of the military experience variables using again an adjusted alpha-level of α = .010 due to Bonferroni correction. Moreover, AAS and PSS-I score did not correlate significantly.

5.5 Discussion

Experiences of war and armed conflict can lead to severe mental suffering and illness in combatants, especially when the individual joined the armed group as a minor. Exposure to violence and perpetration of violent acts can lead to mental health problems like posttraumatic stress symptoms and aggressive behavior (Maclure & Denov, 2006; Schauer & Elbert, 2010).

According to our results, former child soldiers can be characterized as follows: While they resembled adult combatants concerning the recruitment type and time within armed groups, former child soldiers were less likely to hold military ranks than former adult combatants. Consistent with the literature (Schauer & Elbert, 2010), former child soldiers reported being both victims and perpetrators of violence. For example, they reported more experienced and perpetrated violence types than adult former combatants. Consequently, former child soldiers also showed higher PTSD symptom severity and higher appetitive aggression than former adult combatants. These findings are in accordance with other research reporting that especially child soldiers suffer from trauma-related disorders and aggressive behavior (Betancourt et al., 2010; Derluyn et al., 2004; Schauer & Elbert, 2010). Moreover, the results revealed that exposure to violence is linked to higher PTSD symptom severity in former child soldiers. Thus, our results confirmed the building block effect in child soldiers: Repeated exposure to different types of traumatic stressors cumulatively heightens the risk to develop PTSD symptoms (Neuner, Schauer, Karunakara, et al., 2004). In summary, the present study has shown that former child soldiers reported more adverse experiences during service and more mental health problems after demobilization than adult former combatants. We found no direct relationship between appetitive aggression and PTSD, which is in line with recent findings (Hecker, Hermenau, Maedl, Schauer, et al., 2013; Weierstall, Bueno

Castellanos, et al., 2013) showing that the protective effect of appetitive aggression wanes if the level of traumatization is high.

Additionally, we found a positive relationship between appetitive aggression and perpetrated violence types in former child soldiers. Furthermore, the positive correlation between appetitive aggression and military rank indicates that former child soldiers, who perceive perpetrating violence as fascinating and arousing, seem more likely to be promoted in the military hierarchy of an armed group. This finding is consistent with a study of former child soldiers in Uganda (Crombach et al., 2013). Concordantly, other studies reported a gradual transformation in the perception of the perpetration of violence in child soldiers, who were forced to perpetrate violence: At first it was frightening, however, with repeated experience it became not only normal and acceptable, but even exciting and arousing (Elbert et al., 2010; Maclure & Denov, 2006). Thus, living in an extremely violent environment such as in armed groups may reinforce the appetitive perception of aggression and violence in former child soldiers and in this way increase the perpetration of violence. Furthermore, appetitive aggression was positively related to voluntary recruitment in former child soldiers. Highly appetitively aggressive child soldiers tend to perceive their recruitment as voluntarily more often than low appetitively aggressive child soldiers. However, this study cannot determine whether child soldiers showed appetitive aggression already before their enlistment or whether they developed appetitive aggression during their time with an armed group. Therefore, longitudinal studies are highly important to understand the development of appetitive aggression in child soldiers and its causal relationship to perpetrated violence.

Although, we did not investigate reintegration in detail in this study, we can conclude from prior findings that suffering from PTSD and aggression can lead to discontinuation of reintegration programs and consequently heighten the risk of voluntary reenlistment in armed groups (Betancourt et al., 2008; Boyden, 2003; Mogapi, 2004; Stott, 2009). Similarly, we found that former child soldiers with higher appetitive aggression re-joined armed groups more often. Appetitive aggression therefore may interfere with the success of reintegration programs and heighten the risk of voluntary reenlistment in armed groups. Former child soldiers who behave aggressively are at high risk of failing in reintegration programs. As prospects in a conflict region like the eastern DRC are limited, they are more likely to go back to military life and armed conflict. As most participants in the present study very recently left the armed groups and were still in the process of integration, we only focused on one variable concerning reintegration and could not include typical integration variables like employment or socio-economic status. Future studies should investigate the possible challenges appetitive aggression poses to integration more closely. Moreover, future research should include further psychological reactions to traumatic stress like depression, anxiety and guilt and their impact on integration.

The present study demonstrates that former child soldiers are burdened in two ways: suffering from PTSD and displaying appetitively aggressive behavior. To address their needs and ease their suffering, we advocate adding a mental health component to reintegration programs for former child soldiers. If a young man is suffering from PTSD or displaying an enhanced readiness for aggression, his ability to profit from reintegration programs, such as vocational training in manual trades will be severely impaired (Betancourt et al., 2008; Boyden, 2003). However, mental suffering and aggression have not been in the focus of most reintegration programs so far (Maedl et al., 2010; Medeiros, 2007; Mogapi, 2004; Stott, 2009). It is imperative to redress these deficits by adding a psychological/psychotherapeutic intervention to the established economic and social reintegration programs (Betancourt et al., 2008; Hermenau, Hecker, Schaal, Maedl, & Elbert, 2013; Mogapi, 2004; Stott, 2009).

Some methodological aspects limit the generalization of these findings. The cross-sectional study design and the specific sample do not allow us to establish causality. While certainly representation of other settings cannot be claimed, the consistency with findings from other countries concerning child soldiers, mental suffering and appetitive aggression demonstrates that similar relationships would also be found in other settings. Although we interviewed all of the former child soldiers and adult combatants who were enrolled in the programs of the UN and the reintegration center during the assessment period, the sample might not be representative for child soldiers and adult combatants in the eastern DRC. In general, most studies include only former combatants and no active combatants. This may lead to an incomplete picture and selection bias. Even though we practiced in joint interviews to standardize the assessment, we cannot entirely rule out influences of interviewers. Moreover, differences in interview settings as well as the membership of different armed groups might have influenced the results. The on-going conflict in eastern DRC and the large and changing variety of armed groups in DRC made it practically impossible to control for the membership of armed groups. Furthermore, differences in current age might have influenced the results. Although the majority of our sample was adult at the time of assessment, some minors were included in the group of child soldiers. Unfortunately, we were not able to include a comparison group with the same age as the child soldiers. However, we think that the influences of current age, age at time of recruitment, the time with armed groups, and the time since leaving the armed group are very difficult to disentangle. As we focused on child soldiers and combatants who recently left the armed group and spent a comparable time with armed groups, we had to accept an age difference. All in all, the former child soldiers and combatants talked very openly about their experiences and mental health. However, a potential bias, such as social desirability, can never be ruled out for subjective reports.

5.6 Conclusion

The present study closely investigated the characteristics and experiences of former child soldiers in the ongoing conflict in the DRC. Former child soldiers suffered from being both perpetrators and victims of violent acts. Compared with a group of adult former combatants, former child soldiers presented a higher severity of trauma-related symptoms. They also reported perceiving perpetrating violence as more fascinating and arousing. Being more appetitively aggressive was related to higher positions in armed groups and more perpetrated violence types. Additionally, high appetitive aggression was linked to repeated reenlistment in armed groups. Thus, our findings indicate that growing up in an armed group is linked to higher levels of trauma-related disorders, aggressive behavior and failed reintegration. Consequently, particularly former child soldiers burdened with trauma-related illness and substantial appetitive aggression pose challenges for successful integration into civil society. It is thereby imperative to consider the mental health issues of former child soldiers when designing adequate reintegration programs. As the demobilization and reintegration of former child soldiers remains an important piece of the puzzle when solving on-going conflicts, it is crucial to specifically address mental suffering and enhanced aggressive behavior of former child soldiers to help them find closure with their past and start a new life in civil society.

5.7 Acknowledgements

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6 Addressing post-traumatic stress and aggression by means of narrative exposure – A randomized controlled trial with ex-combatants in the eastern DRC

6.1 Abstract

Former child soldiers and ex-combatants are at high risk of developing trauma-related disorders and appetitive aggression, which reduce successful integration into peaceful societies. In a randomized controlled clinical trial we offered Narrative Exposure Therapy for Forensic Offender Rehabilitation (FORNET) to 15 ex-combatants aiming to reduce traumatic stress and appetitive aggression compared to “treatment as usual”. Measures included the PTSD Symptom Scale-Interview and the Appetitive Aggression Scale assessed prior to treatment, 2 weeks and 6 months after the treatment. We also assessed closeness to combatants as an index of reintegration. The treatment group reported reduced PTSD symptoms and less contact with combatants. Appetitive aggression decreased substantially in both groups. The results indicate that it is feasible to add psychological treatment to facilitate the reintegration process.

Keywords: NET, PTSD, appetitive aggression, integration, ex-combatants, child soldiers, FORNET, DR Congo

6.2 Background

Experiences of war and armed conflict have a massive impact upon the mental health of humans (Betancourt et al., 2010; Guy, 2009; Hoge, 2011). Young men and boys who participate in combat, often suffer from being both victims and perpetrators in armed conflicts (Betancourt, Simmons, Borisova, & Brewer, 2008; Maclure & Denov, 2006; Medeiros, 2007; Schauer & Elbert, 2010). In the ongoing conflict in the eastern Democratic Republic of the Congo (DRC) between foreign armed groups, local militias and the Congolese governmental army particularly young men and boys are involved in frequent fighting (Guy, 2009). As a consequence of the extreme forms of violence that they experience, they are at high risk of suffering from trauma related disorders, for example posttraumatic stress disorder (PTSD; Annan, Brier, & Aryemo, 2009; Elbert et al., 2006; Ertl, Pfeiffer, Schauer, Elbert, & Neuner, 2011; Hill & Langholtz, 2003; Stott, 2009).

In addition to mental health problems, living in a violent environment can also result in higher rates of aggressive behavior (Betancourt et al., 2010; Schauer & Elbert, 2010), independent

of PTSD. Young men formerly associated with armed groups often report that they got used to perpetrating violence and even started to perceive violence as fascinating and appealing (Elbert et al., 2010; Maclure & Denov, 2006). Based on our research with former child soldiers in Uganda, we introduced the concept of appetitive aggression, defined as perceiving aggressive behavior towards others as positive and fascinating, without gaining any immediate external benefit (Elbert et al., 2010; Hecker et al., 2012). Studies with different samples in Uganda, Rwanda and the DRC showed that appetitive aggression can buffer the risk of developing PTSD under certain conditions and was related to higher rates of perpetrated violence (Hecker et al., 2012; Weierstall et al., 2011, 2012).

Child soldiers (defined as children associated with armed forces under the age of 18) in particular seem to be at risk of developing PTSD and appetitive aggression as a response to the violent environment (Guy, 2009; Hermenau, Hecker, Maedl, Schauer, & Elbert, 2013; Hill & Langholtz, 2003; Weierstall, Banholzer, Haer, & Elbert, 2013). Appetitive aggression can be seen as advantageous in a violent environment such as an armed group (Weierstall, Banholzer, et al., 2013) and was related to higher ranks in child soldiers (Crombach et al., 2013; Hermenau, Hecker, Maedl, et al., 2013). These changes in the behavior and mental state of the child soldiers caused by war experiences can pose a challenge to reintegration (Betancourt et al., 2010; Boyden, 2003; Medeiros, 2007).

Following disarmament and demobilization, integration of ex-combatants and child soldiers into civil society is implemented to stabilize countries after armed conflicts (Annan et al., 2009; Kingma, 1997; McMullin, 2004). Reintegration programs consist of different equally important components (Stott, 2009; Williamson, 2006). One component is formal education and vocational training (Betancourt et al., 2008). Having a perspective for the future is essential for the reintegration of ex-combatants and former child soldiers (Annan et al., 2009; Betancourt et al., 2008; Boyden, 2003; Stott, 2009). If former child soldiers and ex-combatants see no perspective for the future, many might consider voluntarily re-joining armed groups (Stott, 2009). The success of the education and training can be blocked by mental health problems and aggression (Annan et al., 2009). PTSD symptoms like concentration problems, flashbacks, sleeping problems and hyperarousal can lead to impaired functionality and a greater risk of dropping out of the program (Betancourt et al., 2008; Mogapi, 2004). Likewise, aggressive behavior that leads to interpersonal problems can cause discontinuation of reintegration programs (Boyden, 2003). If ex-combatants drop out of the reintegration programs they are at high risk for violent and delinquent behavior. This is also true for sexual violence. In the eastern DRC, rates of reported rape committed by civilians (including ex-combatants) increased, whereas rates of reported rape committed by armed groups remained stable (Bartels et al., 2011; Malemo et al., 2011). Bartels et al. (2011) concluded that one reason for the increase of civil rape is probably the failed

reintegration of ex-combatants. In a study with former Congolese child soldiers, we found that high appetitive aggression is related to repeated reenlistment in armed groups (Hermenau, Hecker, Maedl, et al., 2013). Participants reporting high appetitive aggression had a long history of failed reintegration. Consequently, reintegration programs need to address mental health and aggression so that ex-combatants can fully profit from integration efforts (Hill & Langholtz, 2003). Furthermore, they need to find closure with their past as well as change their self-image from “combatant” to “civilian” (Boyden, 2003; Williamson, 2006). Even though some reintegration programs include a counseling or psychosocial component, they are often not evaluated and adjusted to the individual combatant’s needs (Hoge, 2011; Maedl et al., 2010; Malan, 2000; Mogapi, 2004; Stott, 2009). Stott (2009) states that reintegration programs shifted their focus from individual psychological help to a community level, neglecting that social reintegration can only be successful if individual psychological suffering is addressed as well. A combination of the essential components of reintegration, like community approaches and economic support, with psychological support may be most effective in targeting successful reintegration (Betancourt et al., 2008; Mogapi, 2004; Stott, 2009).

Based on our working experience in Uganda, Rwanda and the DRC, we developed an intervention to bridge this gap in reintegration programs. It broadly follows the logic of the evidence-based trauma-focused Narrative Exposure Therapy (NET; Ertl et al., 2011; Hoge, 2011; Schauer et al., 2011). However, we adapted it to address both traumatic experience and perpetrated violence. As Medeiros (2007) stated, it is crucial to overcome the dichotomy of victim and perpetrator to address the complexity of the former combatants' feelings and experiences.

The Narrative Exposure Therapy for Forensic Offender Rehabilitation (FORNET) aims to reduce both PTSD symptoms and appetitive aggression by recalling the experiences through narrative exposure. It helps the former combatant to anchor not only fearful and traumatic experiences but also positive feelings that might have been linked to various forms aggressive behavior in the past. The role change from a combatant to a civilian is specifically addressed and reinforced. Additionally, visions for the future are developed in order to foster successful integration into society. We conducted a pilot study in the eastern DRC with former combatants and child soldiers participating in a reintegration program offering vocational training and education. We hypothesized that the treatment with FORNET would reduce both PTSD symptoms and the level of appetitive aggression and with it aggressive behavior six months post-treatment. Furthermore, we predicted that the FORNET would help the ex-combatants to find closure with their military past and to foster integration into civil society.

6.3 Method

6.3.1 Sample

All interviews and therapies were conducted in a reintegration center led by a Congolese non-governmental non-profit organization for war-affected youth in Goma, DRC. Only male former combatants and child soldiers were included in this study (from now on denoted as ex-combatants) who reported combat experience, thus the initial sample consisted of 58 participants. They were enrolled in a one-year vocational training in different manual trades to foster their reintegration process. Additionally, the reintegration center offered them support through social workers. At the start of the treatment these ex-combatants had already participated for eight months in the vocational training.

Participants were on average 19.00 years old (standard deviation *(SD)* = 2.02, range: 16 to 25) and reported on average 6.13 years of formal education (*SD* = 3.98, range: 0 to 14). They joined the first armed group with an age of 12.40 years (*SD* = 2.65, range: 5 to 18) and stayed on average 3.60 years with armed groups (*SD* = 3.98, range: less than 1 year to 10 years). They joined one to four (mean *(M)* = 1.83, *SD* = 0.87) armed groups belonging to a wide range of militia and self-defense groups including the FDLR (Forces démocratique pour la libération du Rwanda [Democratic forces for the liberation of Rwanda]), CNDP (Congrès nationale du peuple [National congress of the people]) and several local Mai-Mai militia groups.

6.3.2 Design and Procedure

Out of a sample of 58 participants at the baseline assessment, we included all 38 participants who were present at the time of the pretest at the reintegration center and matched them into 19 pairs of ex-combatants (see Figure 6.1). We then randomly assigned one member of each pair to the treatment group and the other one the control group. The series of random number was obtained via http://www.random.org. Matching criteria were symptoms of posttraumatic stress, assessed with the PTSD Symptom Scale-Interview, and appetitive aggression, assessed with the Appetitive Aggression Scale, at the baseline assessment (see Table 6.2). Thus, our treatment group and control group both contained not only extremely burdened ex-combatants, but the full spectrum of severity. We had four drop-outs in the treatment group: Two therapies could not be completed, one due to transferal into another program and one due to the participant's motivational reasons, one participant had to be excluded due to inconsistent answers and one participant could not be relocated for the follow-up assessment. For the analyses we also had to exclude the matched controls of the drop-outs. Thus, we included *n* = 15 matched pairs in the analyses (see Figure 6.1).

Participants were informed that their participation would be entirely voluntary and that no monetary compensation would be offered. All persons were willing to participate and provided their informed consent verbally. In addition, the head of the reintegration center gave his informed consent for underage participants, as their caregivers had either died or were not available. The Ethical Review Board of the University of Konstanz and the local authorities of the collaborating organization approved the present study.

The authors and two additional interviewers, who were all psychologists from the University of Konstanz and had extensive work experience in East Africa, conducted the interviews and implemented the intervention. Three highly experienced interpreters, who were trained in the concepts of mental disorders, aggression, and FORNET, translated from English to Kiswahili and Kinyarwanda. As these interpreters have served on several occasions investigating gender-based violence and trauma in the eastern DRC since 2009, a refresher training describing the specific aspects of the present study of two days proved sufficient. The translated instruments were already used in comparable studies (Hecker et al., 2012; Hecker, Hermenau, Maedl, Hinkel, et al., 2013). One of the authors speaks Kiswahili and thus could assure valid translation and supervise the work of the interpreters. With the help of an interpreter, each participant was interviewed individually in a calm, quiet setting. The pairing of interviewers and translators was continuously rotated. The interview took on average one hour.

First, we assessed PTSD and appetitive aggression at the baseline assessment (see Figure 6.1). Four months later, we conducted pre-treatment interviews with all participants. Subsequently, the treatment group received FORNET. The sessions were usually scheduled every other day, which led to a total duration of about two weeks for every FORNET. Participants in both groups (FORNET and control group) were re-interviewed one to two weeks after the last FORNET session and six months later (follow-up). At follow-up, all former combatants had completed their vocational training, which marked the end of the support of the reintegration center. They received a certificate and started to look for work, i.e. now their real reintegration challenge began. At the same time, the conflict in the Kivu region intensified once more, as a part of the Congolese military deserted and armed groups could again gain important territories. Most of the participants were still living in Goma, but some of them were situated in other areas in the Kivu provinces. With the help of the reintegration center, we were able to relocate 33 participants. Blind interviewers conducted a follow-up interview with each of them. After the interview each participant received 5 US $ as compensation and - if necessary - transportation fees.

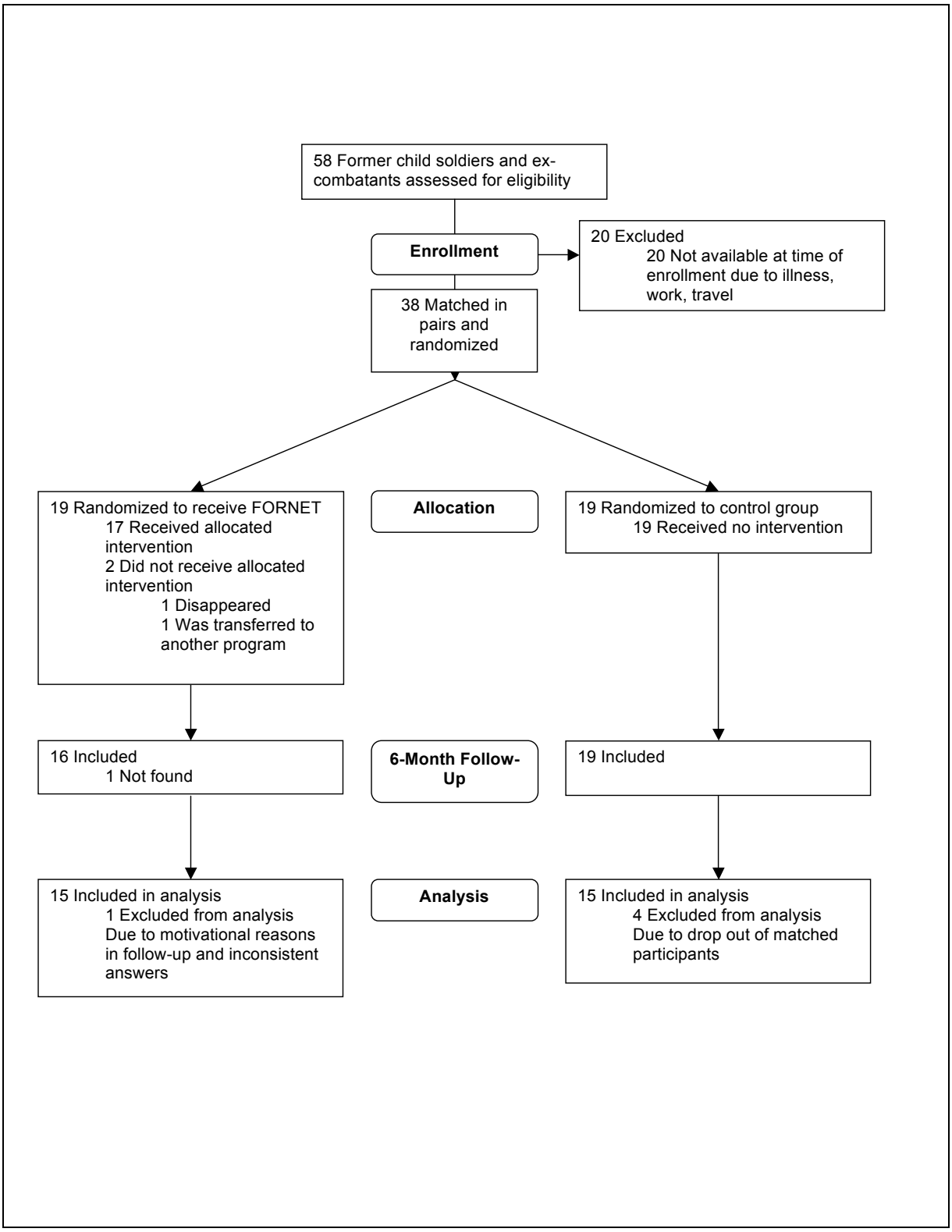

Figure 6.1: Flow of participants through the study.

6.3.3 Measures

To reduce potential cultural bias, all instruments were applied as interviews by clinical experts and the same interview-set was used at pre-, post-, and follow-up assessment, with minor changes to take the varying situational context of each assessment into account. In addition, a baseline assessment was conducted four months prior to the pre-test and treatment. At the baseline assessment only PTSD and appetitive aggression were assessed. The baseline data was used for the assignment to treatment and control group.

Socio-demographic data and information about the Disarmament, Demobilization, and Reintegration (DDR) process (only pre-assessment): The first part of the interview consisted of information about the age, place of birth, and level of education of the interviewee. Additionally, we asked about their experience of being in armed groups.

Mental health: Symptom severity of post-traumatic stress disorder was assessed using the PTSD Symptom Scale-Interview (PSS-I; Foa et al., 1993). It consists of 17 items, in which each item corresponds to one PTSD symptom as specified in DSM-IV. Each symptom is rated on a 4-point scale (0-3) in terms of the frequency of the symptom in the past four weeks. A PSS-I score (range 0-51) was computed by totaling the frequency scores for all symptoms. The PSS-I was validated in the African Great Lakes region by Ertl et al. (2010). The Cronbach's Alpha coefficient was $\alpha = .86$ and the inter-rater reliability .93 for the PSS-I sum score (Foa & Tolin, 2000). Cronbach's Alpha for this study ranged between $\alpha = .67$ and $\alpha = .91$.

Appetitive aggression: Appetitive aggression was assessed with the 15-item Appetitive Aggression Scale (AAS; Weierstall & Elbert, 2011), which has been validated with over 1600 ex-combatants and former child soldiers and proven its good psychometric properties in comparable samples of former child soldiers and combatants (Hecker et al., 2012; Weierstall et al., 2011, 2012). Each item consists of a question regarding the perception of violence or appetitive aggression (e.g. *Is it exciting for you if you make an opponent really suffer?; Once fighting has started, do you get carried away by the violence?*; *Is fighting the only thing you want to do in life?*). The interviewer rates the level of the interviewee's agreement on a five-point Likert scale. Cronbach's Alpha coefficient of the sum score was .85 (Weierstall & Elbert, 2011). For this study Cronbach's Alpha ranged between $\alpha = .76$ and $\alpha = .87$. For the analyses a sum score of all 15 items was computed, ranging from 0 to 60.

Integration: We asked 6 questions about current contact with combatants. This gave us a measure of the current closeness to military life, which conversely provided us with an index of level of integration into civil life. The questions included, for example contact with active combatants, to former commanders and to delinquent former combatants who are not successfully integrated into civil society (for details see Table 6.1). We computed a sum

score ranging from 0 to 6, in which a higher score stands for higher closeness to combatants and lower integration into civil life. For this study Cronbach's Alpha was α = .68 due to the heterogeneity of the questions.

At pre-assessment, we assessed the preparedness to re-join armed groups with the help of three questions. One question asked if the combatant would have a feeling of loosing something if they rejoin an armed group (reversed item). We also asked about the probability of joining an armed group again and specific plans to realize this. The total score ranged from 0 to 3, with a higher score representing a higher preparedness to re-join armed groups.

Table 6.1

Items to assess the current closeness to military life

Closeness to combatants
Have you spoken to or heard from your former unit during the last four weeks?
Have you spoken to or heard from any current combatants in the last four weeks?
Have you been offered a job as a soldier or combatant since you have left the last armed group or army?
Do you know how to contact your former commander?
Do you know any former comrades who have engaged in criminal activities in the last four weeks?
Do you know any former comrades who left the armed group, but are now combatants again?

6.3.4 Narrative Exposure Therapy for Forensic Offender Rehabilitation (FORNET)

The guidelines for FORNET have only been published in German (Elbert et al., 2012), which together with an unpublished extension, served as the guiding manual. For clarity, we detail it in the following section. Several studies have shown that NET can be effective within four to six sessions (Neuner, Schauer, Klaschik, et al., 2004; Neuner et al., 2008; Schaal et al., 2009). The effectiveness as a short-term intervention is essential for implementing NET or FORNET in unstable environments like a refugee camp or a region of on-going conflict like the eastern DRC. Correspondingly, the treatment in this study consisted of six sessions in total. Five of these were individual sessions and one was a group session. Each session lasted between one and two hours.

Individual sessions

In the first session after psychoeducation the client begins with the "lifeline" exercise. Following the logic of NET (Schauer et al., 2011) the ex-combatant lays out his path of life along a rope or string, which symbolizes the person's life up until now. He places flowers on the string for happy major events and good times in life and stones for fearful and traumatic events. In addition, we introduced sticks to symbolize active involvement in violent acts. In this way, combat, participation in a massacre, rape etc. were not colored by a priori moral judgment. Using the stick as a symbol also avoids imposing any particular emotional valence upon the violent acts. This is important, as these are frequently emotionally ambivalent situations. For the violent acts in particular, the therapist focuses on the first time they perpetrated violence (e.g. first killing, first rape, first experience of looting). Additionally, the therapist asks about violent acts involving strong emotions, which are therefore easily cued by reminders (e.g. fight in which he felt most powerful, fight in which he felt most fear, fight in which a close friend was injured or killed). The entry into and the exit out of an armed group both mark important moments in the life of the combatant. Thus, the entry and the exit of each armed group should be marked or at least mentioned during the lifeline exercise. The client is free to choose symbols and also to combine them. Hence, sticks can also be combined with stones or flowers to emphasize the complex emotions felt during the active involvement in violent acts.

The following four sessions are closely based on the approach of NET including the unconditional acceptance of every emotion. Both the recall of positive and of negative affective responses are encouraged even when the worst offenses are recalled. The therapist encourages the client to verbalize and relive all the feelings connected to perpetrated violent acts. It is essential that the therapist takes an accepting and supporting rather than judging position. The therapist also guides the client to contrast between NOW and THEN. Besides the feelings and cognitions of the past, the client's current view of the event, including his thoughts, feelings and bodily sensations, is taken into account.

The therapist supports the client in following his lifeline chronologically from his birth to the present time. As in NET, the therapist has an active role and helps the client to relive the emotions, cognitions, and bodily sensations experienced during his most traumatic events (stones) and while perpetrating violent acts (sticks). The memorized feelings (e.g., then I was shocked and afraid) are contrasted with the feelings that arise in the here and now, when the memories are recalled (e.g., when I think back, I get angry). In this way the therapist helps the client to anchor the cognitions and emotions that are recalled with the event in the past. Both, traumatic experiences and perpetrated violent acts become integrated into the memory. After the exposition of a violent act, an attribution of meaning from the client's

current point of view can be elaborated. Moral judgments, especially by the therapist, should be avoided.

During the sessions, the therapist focuses on the most traumatic events and specific perpetrated violent acts, which are connected to strong emotions and positive arousal (sensation of being powerful) or negative arousal (fear). The violent acts are commonly the first killing or attack of other humans, rape or looting. In consideration of the limited number of sessions it is essential to select, with the help of the lifeline exercise, the events that are most important to the client. A detailed description of the approach on different violent events can be found in Elbert et al. (2012). In the following we describe a typical example of dealing with the first killing/injury: While focusing on the first killing/injuring of another person by the client, the therapist should fully explore all emotions, both negative and positive, that were potentially linked to the first killing (primary emotions like disgust, fear, or joy and self-conscious emotions like guilt or pride), following the logic of NET. It is important to go through the first killing/injuring in great detail, to emphasize subsequent changes in the case of repeated violent acts. During the first killing/injuring, it often happens that the client becomes keenly aware of his/her own vulnerability. This cognition should be verbalized during therapy along with any sensations, including the description of the victim (*What did the victim look like? Did he scream? Did he bleed?*). Finally, the therapist and client focus on how the client overcame the inhibition threshold to kill/injure another person. The therapist concentrates on the cognitions (out-group, enemy) and emotions which made the client overcome this threshold (e.g., fear, anger, feelings of hatred or revenge). Subsequently, the client is encouraged to mention his current thoughts, feelings about of the event and the meaning for him and his/her life.

Furthermore, the last exit out of an armed group is discussed in detail. The therapist and the client collect reasons for leaving the armed group and focus on the negative experiences as a combatant.

During the last individual session, the autobiography finally reaches the present and the narration of the most emotionally arousing events in chronological order is thus completed. With the help of the therapist, it is now possible for the client to understand his development. This provides a strong basis for discussing future developments. At the end of the therapy, the therapist and the client also elaborate hopes and wishes for the future.

Group Session

A group session follows these five individual sessions. In the group session, the role change from combatant to civilian is addressed and reinforced. A group consisted of three to four clients and one or two therapists. The therapist structures and guides the discussion. He/she encourages the clients to hold and discuss different views and to be open to the experiences

of others. Furthermore, the therapist encourages them to take responsibility for their life and to develop aims, in order to foster successful reintegration into civil society.

At first, the clients review their own life as a combatant and discuss the positive and negative aspects of being a combatant. At this point, the old role of a combatant is discussed in a broader sense, as clients might not wish to disclose specific experiences addressed during the individual sessions. Subsequently, the therapist focuses on the role change from combatant to civilian and on the connected feelings and emotions of the clients (e.g. *How difficult was it to hand over your weapon? How did you feel when you actually did it – how do you feel about it right now?).* In the following part, the therapist directs the discussion to the current situation. The clients then have a discussion amongst themselves regarding positive aspects and difficulties in their current life as a civilian and collect advantages of being a civilian in comparison to being a soldier. The therapist encourages them to develop strategies together to overcome their difficulties. The group session ends with the future plans and wishes of each client and thoughts about the realization of these plans.

6.3.5 Data analysis

No variable deviated significantly from normal distribution and variance-covariance matrices showed homogeneity. Therefore, we used parametric analyses including t-tests, repeated-measures analysis of variance (ANOVA) and analysis of covariance (ANCOVA). Due to the directional hypotheses, analyses were computed one-tailed on an alpha-level of $\alpha = .05$. Concerning the effect size, $\eta^2 \geq .01$ indicates a small effect, $\eta^2 \geq .06$ a moderate effect, and $\eta^2 \geq .14$ a large effect. Cohen's d was considered small with $d \geq 0.2$, moderate with $d \geq 0.5$, and large with $d \geq 0.8$. All analyses were performed with version 20 of the SPSS software.

6.4 Results

Table 6.2 shows the symptom level of PTSD, levels of appetitive aggression, and closeness to combatants in the two groups for each of the baseline, pre-, post- and follow-up assessments as well as preparedness to re-join an armed group at pre-assessment.

6.4.1 Post-traumatic stress symptoms

We performed a repeated-measures ANOVA on the PSS-I scores of baseline, pre-, post- and follow-up assessment. Independent variable was treatment group vs. control group. The Mauchly-Test indicated a violation of sphericity, therefore we used the Greenhouse-Geisser correction. PSS-I score showed no statistically significant main effect over the four points of

assessment and no statistically significant main effect of the group variable was found. The PSS-I score varied between groups over the four points of assessment ($F(3,84) = 2.61$, $p = .036$) with a moderate effect of $\eta^2 = .09$. A t-test comparing pre- and follow-up PSS-I scores within each group revealed a tendency towards a difference between the pre- and follow-up score in the treatment group ($t(14) = 1.74$, $p = .052$), whereas the increase for the control group was not significant ($t(14) = -1.5$, $p = .078$, $d = .48$). Cohen's d indicated a moderate effect for the decrease in the treatment group with $d = 0.58$. The ANCOVA for between-groups effects revealed that both groups differ significantly in their follow-up PSS-I scores while controlling for pre-assessment scores ($F(1,27) = 4.70$, $p = .020$) with a large effect of $\eta^2 = .15$. As shown in Table 6.2, the treatment group reported less PTSD symptom severity than the control group at the follow-up assessment.

Table 6.2

Changes in PTSD symptom severity, levels of aggression, and closeness to combatants across the assessment points in the treatment and the control group

	Treatment group (*n* = 15)		**Control group (*n* = 15)**	
	M	*SD*	*M*	*SD*
PSS-I score baseline	10.20	5.92	10.47	7.42
PSS-I score pre	14.31	10.64	11.20	9.14
PSS-I score post	11.47	5.18	13.73	5.81
PSS-I score FU	8.93	7.61	16.53	12.46
AAS score baseline	32.20	12.77	32.73	13.93
AAS score pre	33.13	7.63	29.27	14.64
AAS score post	26.93	11.13	25.53	14.09
AAS score FU	11.93	8.62	10.93	9.67
Preparedness to re-join pre	0.60	1.06	0.87	1.13
Closeness to combatants pre	3.53	1.77	3.07	1.79
Closeness to combatants post	2.07	1.28	2.73	1.83
Closeness to combatants FU	2.13	1.89	2.80	1.82

Note. M = mean, SD = standard deviation

6.4.2 Level of appetitive aggression

We performed a repeated-measures ANOVA on the AAS scores of baseline, pre-, post- and follow-up assessment. Independent variable was treatment group vs. control group. We found a main effect of the AAS score over time with $F(3,84) = 36.89$ ($p < .001$, $\eta^2 = .57$). Both groups decrease in their AAS score over the four points of assessment (see Table 6.2). However, the groups did not differ significantly, nor did the AAS score significantly vary between groups over time ($F(3,84) = .33$, $p = .402$, $\eta^2 = .01$).

6.4.3 Closeness to combatants

To test the integration hypothesis, we conducted an ANCOVA on closeness to combatants scores of pre-, post- and follow-up assessment. The independent variable was treatment group vs. control group. Preparedness to voluntarily re-join armed groups was entered as a covariate, as preparedness has been found to be related to failed reintegration (Stott, 2009). Following Tabachnik and Fidell (2006), we included the covariate to adjust the mean of the dependent variable to simulate the case that all participants would have scored equally on the covariate. The closeness to combatants score showed a statistically significant main effect over the three points of assessment ($F(2,54) = 2.43$, $p = .049$, $\eta^2 = .08$). We found no statistically significant main effect of the group variable. The covariate interacted significantly with the closeness to combatants over time with $F(2,54) = 3.68$ ($p = .016$, $\eta^2 = .12$). The closeness to combatants score varied between groups over the three points of assessment with ($F(2,54) = 2.51$, $p = .046$) with a medium effect of $\eta^2 = .09$. A t-test comparing pre- and follow-up scores within each group revealed a significant difference between the pre- and follow-up assessment score in the treatment group ($t(14) = 2.12$, $p = .026$), whereas we found no difference in the control group ($t(14) = 0.64$, $p = .268$). Cohen's d indicated a moderate effect for the decrease in the treatment group with $d = 0.77$ and almost no effect in the control group ($d = .15$). An ANCOVA with the pre-assessment score and the preparedness to voluntarily re-join armed groups as covariates showed no significant difference between treatment and control group at the follow-up assessment ($F(1,26) = 2.15$, $p = .078$, $\eta^2 = .08$). Means are displayed in Table 6.2.

6.5 Discussion

Reintegration of young men formerly associated with armed groups can only be successful if the essential needs of the ex-combatants are considered (Mogapi, 2004; Stott, 2009). Psychological suffering has to be addressed in combination with other reintegration

components like community approaches and education to ensure successful reintegration (Betancourt et al., 2008; Stott, 2009). In the present study we implemented FORNET in a reintegration center to address symptoms of posttraumatic stress as well as appetitive aggression. This intervention was hypothesized to help the participants to be able to profit entirely from the reintegration program. We hypothesized that the treatment group would show lower PTSD symptoms and appetitive aggression, and would be better reintegrated than the control group six moths after the treatment.

The hypothesis that the FORNET would be superior to a control group in reducing the severity of PTSD symptoms at follow-up assessment was supported. The treatment group differed significantly from the control group over time. In contrast to the control group, the treatment group showed a decrease in PTSD symptoms. The moderate effect is not surprising, as we included all ex-combatants, i.e., also those with limited PTSD symptoms and only a few presented with a full PTSD diagnosis. This seems to be justified given that symptoms may increase with time and in fact, controls showed a tendency towards increased severity of PTSD symptoms, potentially promoted by the unstable situation in the eastern DRC with increasing tension. The former combatants were confronted with insecurity and combat situations, which may act as potential triggers of their traumatic experiences. Despite these adverse conditions, we still observed an improvement in the treatment group. While controlling for pre-assessment scores, the treatment group differed significantly from the control group at the follow-up assessment.

In general, the findings are consistent with other studies implementing NET (Ertl et al., 2011; Schauer et al., 2011) to reduce PTSD symptoms. Moreover, this pilot study shows that FORNET successfully reduces PTSD symptoms in former child soldiers and ex-combatants in a current conflict zone. Before the present study, child soldiers were treated only as victims. In contrast, we addressed the whole range of experiences of former child soldiers and ex-combatants accepting their past as having been both victims and perpetrators. Besides the work with traumatic experiences, we demonstrated that it is also feasible to therapeutically re-process with former combatants their experiences of perpetrating violence.

Our results do not support the hypothesis that FORNET is superior to the control group in reducing levels of appetitive aggression. Both groups decreased over time. This overall decrease may be due to the reintegration program in which the participants were enrolled. The reintegration center offered them not only vocational training and education, but also social support. During the reintegration program the participants learned how to act and interact in a civil context. This may have supported a role change from “combatant” to “civilian” (Boyden, 2003; Williamson, 2006) in the participants, which in turn produced a decrease of appetitive aggression. Therefore, it is possible that the reduction in aggression may mainly be a result of the comprehensive program of the reintegration center. Moreover,

the AAS may not be sensitive enough to measure the subtle and complex changes in the mind of ex-combatants. The questions of the AAS are strongly related to armed conflict and may not fit to the circumstances of civil life. This study cannot determine the influence of FORNET on appetitive aggression beyond the general decrease in reported appetitive aggression due to the reintegration program. Future research should investigate more closely the effect of FORNET not only on the subjective appetitive aggression but also on aggressive behavior in general by using self-report and reports by others as well as more objective measures, e.g. biological markers like the response or average levels of testosterone and cortisol. Furthermore, it would be helpful to include the participant's perspective on his perpetrated acts before and after the therapy to evaluate a possible change of perspective.

Concerning reintegration, we found that on average both groups reported to be less close to combatants over time. This might be due to the support through the reintegration program. All participants started to change their role from "combatant" to "civilian" (Boyden, 2003; Williamson, 2006). However, the treatment group differed from the control group. Within-group comparisons of pre- and follow-up scores revealed that participants treated with FORNET reported significantly less closeness to combatants with a moderate effect, whereas the control group showed no significant difference between pre- and follow-up scores. The treatment group reported less contact with active combatants as well as delinquent ex-combatants. Through FORNET they found closure with their military life and oriented more towards civil life. However, we did not find a significant difference between groups in the follow-up scores, while controlling for pre-assessment scores and the readiness to re-join armed groups. Other measures of reintegration were difficult to implement as the participants were at the end of the program just starting to look for work. Therefore, we could not use common markers like work, marriage or land ownership. Furthermore, the on-going conflict in the eastern DRC poses additional challenges to young men struggling to reintegrate. Infrastructure and economy barely exist. Many ex-combatants stayed in Goma instead of going back to their villages due to the danger of combat in the villages and the risk of being forcibly recruited again. However, other studies stated that PTSD symptoms and aggressive behavior hinder the success of vocational training (Annan et al., 2009; Betancourt et al., 2008; Boyden, 2003) and that the transition from "combatant" to "civilian" is essential for efficient reintegration (Williamson, 2006). Using FORNET in combination with vocational training and social support, we addressed both successfully. It was possible to bridge the gap of reintegration programs even under the circumstances of on-going conflict in the eastern DRC. This pilot study proved the feasibility of FORNET, found first evidence of a positive outcome, and highlighted the importance of addressing the whole range of experiences while treating former combatants. Further studies may

investigate if it would be beneficial to increase the number of group sessions as well as to include other treatment modules such as anger management in the group sessions.

Some methodological aspects limit the generalization of these findings. We included a small sample recruited from only one reintegration center in the pilot study; therefore, the sample might not be representative for ex-combatants in the eastern DRC. Furthermore, all reintegration centers have slightly different programs. Although we had comparatively little drop-out, it is still important to keep in mind that two participants were excluded in the beginning of the treatment phase and two more during follow-up assessment. Moreover, the on-going conflict in the eastern DRC may have influenced the ex-combatants in various ways. Even though, the majority of the participants stayed in Goma, some went back to their village and many still have relatives living in combat zones. The unstable situation may have influenced their mental health status in different ways. All in all, the former child soldiers and combatants talked very openly about their experiences and mental health. They appreciated the opportunity to share their own experiences. However, a potential bias, like social desirability, can never be entirely ruled out for subjective reports.

6.6 Conclusion

In the present pilot study we treated young men formerly associated with armed groups with FORNET to support them in their struggles for reintegration. By means of narrative exposure we were able to reduce posttraumatic stress and also closeness to combatants, relative to a matched control group. Ex-combatants treated with FORNET were more able to find closure with their past. Appetitive aggression decreased substantially in both groups. Despite the challenges in an on-going conflict zone, we showed that it is feasible to implement psychological treatment in a reintegration center focusing on the whole range of experiences, thus bridging the gap in reintegration programs. To achieve successful reintegration of ex-combatants it is desirable to combine economic and community-based approaches with psychological elements aiming to reduce traumatic stress and aggression in burdened ex-combatants.

6.7 Acknowledgements

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7 General discussion

The present thesis examined the consequences of different forms of violence on children's mental health in Sub-Saharan Africa as well as novel intervention approaches to improve children's mental health and protect children from further violence. In Sub-Saharan Africa corporal punishment is still a common practice in families and schools. Most studies worldwide investigating the consequences of corporal punishment find negative effects on mental health (Ani & Grantham-McGregor, 1998; Connor et al., 2004; Fantuzo & Mohr, 1999; Gershoff, 2002, 2010, 2013; Schilling et al., 2007; Straus & Kantor, 1994). Children from difficult family backgrounds are at even more of a risk to experience not only corporal punishment, but also severe forms of abuse and neglect. In order to protect them, they are often transferred to institutional care. However, studies have shown that institutional care also bears the risk of distant caregiving due to overburdened und untrained caregivers (Espié et al., 2011; Levin & Haines, 2007; Oliveira et al., 2012; St. Petersburg-USA Orphanage Research Team, 2008; Wolff & Fesseha, 1998, 1999). Thus, children in institutional care might be at a very high risk of developing more mental health problems, as experiences of violence in institutional care might add to the prior adverse experiences in the family of origin. Studies from other settings suggest that these children have a heightened risk of suffering from trauma spectrum disorders as well as internalizing and externalizing problems (Catani et al., 2008; Connor et al., 2003; Felitti et al., 1998).

If children grow up in a region of armed conflict and their parents suffer from violent experiences, it can lead to even higher rates of family violence (Catani et al., 2008; Rieder & Elbert, 2013; Saile et al., 2014). This situation may be further worsened by the children's own experiences of war and organized violence. This is particularly true for children who are recruited as child soldiers. These children both experience and perpetrate significant amounts of violence (Pham et al., 2009; Schauer & Elbert, 2010). They suffer heavily from the consequences of being both victim and perpetrator of violent acts, resulting in trauma spectrum disorders and aggressive behavior (Betancourt et al., 2008; Derluyn et al., 2004; Schauer & Elbert, 2010; Stott, 2009).

The present thesis examined the consequences of different forms of violence on the mental health of children in Tanzania and the DRC. In detail, the thesis focused mainly on the highly vulnerable groups of institutionalized children and former child soldiers. In Tanzania, family and institutional violence and their consequences on the children's mental health were in the center of the present thesis, while the research with former child soldiers in DRC focused on the consequences of organized and perpetrated violence. Following the results of the presented studies, interventions for both settings were developed, implemented, and tested.

Both interventions consisted of an individual component to reduce trauma related suffering and a component to reduce further exposure to violence. In the case of institutionalized children in Tanzania, the intervention included KIDNET and a training for caregivers. In the DRC, the intervention for former child soldiers included FORNET with individual and group sessions imbedded in a reintegration program offering vocational training and social support.

7.1 Discussion of the results

The following sections will discuss the results of the articles in this work, based on the hypotheses stated in section 1.4.

7.1.1 Consequences of family and institutional violence

The first hypothesis stated that experiences of violence in the family and in institutional care have a negative impact on the mental health of children in Tanzania. The results of the first article showed that corporal punishment is very common in primary school children in Tanzania. Nearly all children reported corporal punishment in their family and at school. More than half of the children even reported incidents of corporal punishment at home within the last year. Thus, corporal punishment is rather the norm than the exception in Tanzania. This result extended the findings of a national survey on a representative sample of Tanzanian adolescents (UNICEF, 2011) by demonstrating that corporal punishment is also experienced by young children and highlighting the endemic nature of corporal punishment in Tanzania. Moreover, the first article demonstrated that corporal punishment at home is linked to externalizing problems in children, namely aggression, hyperactivity and conduct problems. Similar relations between corporal punishment or family violence and externalizing problems have been reported in other settings (Ani & Grantham-McGregor, 1998; Connor et al., 2004; Fantuzo & Mohr, 1999; Schilling et al., 2007). The findings of the first article highlight the need to raise awareness for the adverse consequences of corporal punishment.

The second and the third article focus on children in institutional care, where corporal punishment is equally present. A great majority (89%) of children in the second study reported at least one violent experience in institutional care including not only corporal punishment but also other experiences of abuse and neglect. Thus, in countries with high rates of corporal punishment such as Tanzania, placement in institutional care does not represent definite protection from further violent experiences. Moreover, the violent experiences of children in institutional care were related to mental health problems, namely PTSD, depression, aggression, as well as internalizing and externalizing problems. Both studies found that violence in institutional care relates even more strongly to mental health

problems than to prior exposure to family violence. That is, early institutionalized children appear to be the most burdened, with both more violent experiences in institutional care as well as more mental health problems. These findings are in accord with research from other countries stating that early institutionalized children seem to be the most vulnerable (Johnson et al., 2006; Levin & Haines, 2007; McCall, 2013). Violent experiences in institutional care can add to the psychological burden of prior parental loss and possible adverse experiences in the family of origin. Combined with the lack of adequate caregiving in many African orphanages (Levin & Haines, 2007; Wolff & Fesseha, 1999), it puts children at very high risk of developing mental health problems. The findings of the first three articles show the detrimental consequences of exposure to violence on the children's mental health and highlight the importance of interventions aiming to address the children's mental health problems as well as the lack of adequate and nonviolent caregiving.

7.1.2 Evaluation of an intervention in institutional care

In the second part of the third article we implemented and tested an intervention aiming to improve individual mental health as well as to reduce the exposure to violence in institutional care in Tanzania. In this two-component approach children with PTSD received KIDNET and caregivers were trained in nonviolent caregiving strategies. Results six months after the implementation were promising, as posttraumatic stress symptoms and violent incidents experienced in the institution declined. However, there was no significant reduction for other mental health problems. Narrative Exposure Therapy is designed to reduce traumatic stress, thus, it is not surprising that only posttraumatic stress symptoms declined. But as other mental health problems like depressive symptoms can occur comorbid to PTSD, lower posttraumatic stress can be accompanied by a decline in depressive symptoms. However, it may also be possible that a decline in depressive symptoms would take more time. Nevertheless, the results of the three articles showed that children may suffer from a broad spectrum of mental health problems as a consequence of experienced violence. Hence, in future interventions the individual psychological support should not exclusively target PTSD, but also other internalizing and externalizing psychological disorders, such as conduct disorder or depression.

To reduce future exposure to violence, corporal punishment and other forms of violence were prohibited. To provide the caregivers with alternative discipline strategies, training sessions on child development and parenting skills were arranged. Results six months after the training showed that violence in the institution reduced significantly. Thus, the intervention was successful in reducing further exposure to violence in institutional care. The findings are in line with other studies showing that it is possible to improve the caregiving quality in

institutional care (Levin & Haines, 2007; McCall, 2013; Muhamedrahimov et al., 2004; St. Petersburg-USA Orphanage Research Team, 2008; Taneja et al., 2002; Wolff & Fesseha, 1999). However, the recently developed intervention is the first intervention to address corporal punishment and other forms violence in institutional care. In summary, we found initial promising evidence for feasibility and effectiveness of this two-component intervention approach in institutional care in Sub-Saharan Africa. We successfully improved the children's mental health and reduced exposure to further violence in a resource-poor setting.

7.1.3 Consequences of organized violence

The present thesis hypothesized that organized violence in ongoing conflicts impairs the mental health of children within armed forces. The fourth article compared mental health status and experiences of violence of former child soldiers with adult combatants in the eastern DRC. In line with the hypothesis, former child soldiers reported both more experienced and perpetrated violence than adult combatants. At the same time, they showed higher rates of posttraumatic stress symptoms and appetitive aggression. The results are in accordance with the literature stating that child soldiers are victims and perpetrators of massive forms of violence (Pham et al., 2009; Schauer & Elbert, 2010) and simultaneously suffer especially from trauma-related disorders and aggression (Betancourt et al., 2010; Derluyn et al., 2004; Schauer & Elbert, 2010). Child soldiers in other studies reported that perpetrating violent acts was frightening at first, however, with repeated exposure it became not only normal and acceptable, but even exciting and arousing (Elbert et al., 2010; Maclure & Denov, 2006). Thus, living in an extremely violent environment such as in armed groups may reinforce the appetitive perception of aggression and violence in former child soldiers and in this way increase the perpetration of violence. Concordantly, high rates of appetitive aggression in former child soldiers were linked to more perpetrated violence, higher military ranks, voluntary recruitment and higher rates of reenlistments. In line with the literature (Crombach et al., 2013; Hecker, Hermenau, Maedl, Hinkel, et al., 2013), appetitive aggression was associated with success in the military system as well as nonviolent recruitment. Moreover, former child soldiers reporting high appetitive aggression had a long history of failed reintegration. Prior studies concordantly stated that suffering from PTSD and aggression can lead to discontinuation of reintegration programs and consequently heighten the risk of voluntary reenlistment in armed groups (Betancourt et al., 2008; Boyden, 2003; Mogapi, 2004; Stott, 2009). In summary, the results of the fourth article showed that former child soldiers were highly burdened by the experiences of violence and that the high rates of traumatic stress and aggression present a risk to successful integration. Unfortunately, most integration programs include very little specific and evidence-based individual psychological

support (Hoge, 2011; Maedl et al., 2010; Stott, 2009). In order to prevent former child soldiers from failing reintegration and rejoining armed conflict, we need to adjust reintegration programs to their needs and address the lack of psychological support.

7.1.4 Evaluation of an intervention in an reintegration setting

In order to fill this gap in reintegration programs, FORNET was developed to address individual psychological suffering, namely traumatic stress and aggression, and to support former child soldiers to find closure with their military past.

To test the fourth hypothesis of the present thesis, FORNET was implemented in the reintegration process for former child soldiers in the eastern DRC in order to improve their mental health and to support their integration into civil society, and thus prevent them from taking up arms again. A combination of the essential components of integration, such as community approaches and economic support, with psychological support might be most effective in engendering successful reintegration (Betancourt et al., 2008; Mogapi, 2004; Stott, 2009). Therefore, we implemented FORNET in a center for reintegration offering vocational training in manual trades and support from social workers.

Results revealed that six months after treatment traumatic stress symptoms decreased substantially in the intervention group compared to the control group. Before this study, child soldiers were treated only as victims. In contrast, we addressed the whole range of experiences of former child soldiers overcoming the dichotomy of victim and perpetrator. Besides the work with traumatic experiences, we demonstrated that it is also feasible to therapeutically reprocess experiences of perpetrating violence with former child soldiers.

Aggression, however, decreased in both groups. This overall decrease might be due to the reintegration program in which the former child soldiers were enrolled. The reintegration program aimed to prepare them for life in a civil society. This might have supported a role change from combatant to civilian (Boyden, 2003; Williamson, 2006), which in turn produced a decrease in appetitive aggression.

In addition to the individual sessions, FORNET included one group session addressing the role change from combatant to civilian. Finding closure with the military past was expected to support the reintegration process. We found that both groups reported being less close to not successfully integrated combatants over time. As with the previous results, this might be a result of the support through the reintegration program. However, the treatment group showed a significantly stronger decline in their closeness to combatants. Thus, FORNET supported the former child soldiers to find closure with their military past. This thesis proved the feasibility and found initial evidence that FORNET is successful in addressing mental

health problems of former child soldiers as well as reducing the risk of further exposure to violence by supporting the reintegration process.

7.2 Implications for the future

7.2.1 Future research

The present thesis provides further evidence that experiences of family and organized violence have detrimental consequences for the mental health of the affected children. While many studies from other settings deal with family violence and its consequences for children, further research in Sub-Saharan settings is needed. Although corporal punishment has more recently become a focus of research, we are still lacking knowledge on the epidemiology of emotional abuse and neglect in Sub-Saharan Africa and its consequences for children's mental health and development.

Additionally, until now violence in institutional care was a neglected topic. Many studies concentrated on the lack of caregiving quality (Levin & Haines, 2007; McCall, 2013; Muhamedrahimov et al., 2004; St. Petersburg-USA Orphanage Research Team, 2008; Taneja et al., 2002; Wolff & Fesseha, 1999), but studies dealing with violence in institutional care are rare. Future studies need to investigate the epidemiology of violence in institutional care, but should also take physical and emotional neglect into account. In western settings, placement in institutional care is often seen as a protection from further maltreatment. However, our findings showed that this is not true for countries like Tanzania where corporal punishment is very common. Further research on institutional care worldwide should be more sensitive to violence in this context in order to reveal if it is only relevant in Sub-Saharan Africa or was just overseen in other regions.

Concerning former child soldiers, the present thesis concentrated on organized and perpetrated violence. However, other studies suggest that these children might also experience high rates of family violence (Catani et al., 2008; Saile et al., 2014). Thus, future studies need to investigate family violence in the eastern DRC more closely. Furthermore, we need age comparable groups of child soldiers and youth without military history in order to distinguish between different forms of war experiences.

In both settings we found evidence for the effectiveness of the recently developed interventions. However, further research needs to evaluate both approaches more closely.

The intervention targeting institutional care needs to be tested in a randomized control group design to establish causal conclusions regarding its effectiveness. Furthermore, both components need to be tested individually to disentangle their effects on children and

caregivers. The results of the present thesis showed that violence in family and institutional care did not only lead to PTSD, but also to a variety of internalizing and externalizing problems that equally affected the children. Consequently, the individual component needs to be extended to address also other mental health problems besides PTSD. Until now little is known about the needs and skills of caregivers in institutional care in Sub-Saharan Africa. Further studies need characterize this group more precisely in order to improve training approaches to better meet the participants' needs. Finally, to be able to generalize the outcome of the intervention in institutional care in Sub-Saharan Africa, the intervention needs to be tested in different institutions and countries.

The implementation of FORNET proved to be successful when embedded within a reintegration program in the eastern DRC. Other researchers have stated that reintegration is most likely to be successful when it comprises a combination of essential components of reintegration, such as community approaches, economic support, and psychological support (Betancourt et al., 2008; Mogapi, 2004; Stott, 2009). As reintegration programs differ strongly, further studies are necessary to distinguish the components of the reintegration program that interacted successfully with FORNET. The impact of FORNET on the success of reintegration needs to be tested long-term and include common markers of successful integration like work, marriage, or land ownership. Besides the interaction with the reintegration program, FORNET included an individual and a group component. The effects of these components cannot be disentangled in the present thesis and require further research. Moreover, we included a wide range of symptom severity of traumatic stress and aggression. Further studies should test different inclusion criteria, for example only high symptom severity or full diagnosis of PTSD. Finally, the generalization of the findings is restricted. Studies including different reintegration programs and countries are necessary in order to generalize the findings.

7.2.2 Clinical implications

The present thesis showed alarmingly high rates of family and institutional violence in Tanzania. The repeatedly demonstrated relationship between such violence and mental health problems in children is alarming. Results from a survey of UNICEF (2010) showing that six of the 10 countries with the highest rates of corporal punishment are in Sub-Saharan Africa, suggest similar results for other countries in Sub-Saharan Africa. Consequently, societies are confronted with a substantial number of children suffering from the consequences of violent experiences. Thus, our findings emphasize the need to inform parents, teachers and governmental organizations, especially in low-income countries, about the adverse consequences of using corporal punishment in families and schools.

In institutional care, where violence compounds with distant caregiving, possible prior violent experiences in the family of origin, and parental loss, the consequences for the affected children might be even more severe. Due to the rising numbers of OVC, institutional care will continue to be part of the support system (McCall, 2013; Wolff & Fesseha, 1998). Therefore, it is highly important to improve the quality of institutional care and to reduce exposure to violence for already affected children. Thus, we advocate for implementing culturally appropriate prevention programs that effectively replace violent discipline strategies with nonviolent caregiving skills. Moreover, countries like Tanzania need guidelines to ensure a minimum of quality in institutional childcare.

In regions of armed conflict, family violence appears to exist and to be connected to war experiences of the caregivers (Catani et al., 2008; Rieder & Elbert, 2013; Saile et al., 2014). Moreover, children recruited as soldiers endure and perpetrate immense amounts of violence while suffering severely from these experiences. Regions of armed conflict are unlikely to stabilize if the young generations are severely suffering from psychological distress and failed integration. Thus, it is highly important to overcome the dichotomy of "victim" and "perpetrator" and address individual suffering in its complexity (Medeiros, 2007; Stott, 2009).

In both settings, we found that individual psychological support is necessary to improve the mental health of children affected by violent experiences. Aid organizations who work with children affected by violent experiences often concentrate on community and economic support (Skovdal et al., 2011; Stott, 2009; Wolff & Fesseha, 1998). While this support is demonstrably important, it cannot bridge the gap of individual psychological support to address the psychological consequences of violent experiences specifically. The present thesis highlighted the great variety of resulting mental health problems. Thus, the individual psychological support should be oriented toward the specific needs of the child. As not all children who experienced violence show high rates of psychological suffering, this component will be most successful if it is offered specifically to the severely affected children.

Additionally, this thesis showed that it is advisable to combine individual psychological support with an improvement of the abusive setting. If the exposure to violence continues, every improvement of the children's mental health will be diminished by new experiences of violence. In institutional care, a warm and responsive caregiving style is not possible when violence is perpetrated at the same time. Correspondingly, reintegration programs can offer psychological, social, and economic support, but if they fail to support a role change from a military mindset to a mindset of a civilian, chances are high that the former child soldiers will return to armed conflict and to be exposed to violence again.

In summary, the present thesis showed the need for and the feasibility of psychological interventions for children in violent settings in Sub-Saharan Africa. Organizations working in

these contexts need to shift from focusing mainly on community approaches to a combined approach including psychological and preventive components.

7.3 Overall conclusion

In order to thrive, children need a secure place to grow up. However, violent experiences can interfere with the development and mental health of children. In Sub-Saharan Africa, where corporal punishment is still common and lawful, children are often exposed to violence in families and institutional care. The present thesis showed that the rates of family violence and violence in institutional care are alarming. Placement in institutional care cannot be seen as protection from violence in this context. Results revealed that experiences of violence were related to traumatic stress as well as internalizing and externalizing mental problems in affected children. Combined with the possibility of adverse experiences in the family of origin, children in institutional care appear to be highly burdened.

In regions of armed conflict, experiences of organized violence add to the adverse experiences of family violence. If children are recruited as child soldiers, they experience and perpetrate massive forms of violence. The present thesis showed that child soldiers did not only experience and perpetrate more violence than adult combatants, but they also presented higher rates of traumatic stress and aggression. Moreover, the violent experiences and the affected mental health of child soldiers pose serious challenges to integration into civil society.

In the present thesis, two interventions were developed in order to improve the children's mental health and to reduce further exposure to violence. The first intervention aimed to improve the situation of institutionalized children. Individual traumatic stress was addressed with KIDNET, while a caregiver training was implemented in order to improve the caregiving quality and reduce further violence. The second intervention targeted former child soldiers participating in a reintegration program. Individual traumatic stress and violent acts committed previously were addressed with FORNET. The group session included in FORNET addressed the role change from "combatant" to "civilian" in a group setting with the aim of supporting reintegration and protecting the former child soldiers from returning to armed conflict. Both interventions proved to be feasible and the present thesis showed first evidence of their effectiveness. Thus, the interventions successfully improved the children's mental health and reduced further exposure to violent experiences in resource-poor settings.

All in all, the present thesis confirmed that exposure to violence in childhood has a negative impact on the mental health of affected children and thus impairs their healthy development. However, intervention approaches focusing on both individual psychological support and prevention of further exposure to violence promise to support affected children in overcoming

their psychological suffering and give them the chance to grow up healthy in a secure and supportive environment.

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