

# Trauma in Sub-Saharan Africa: Review of Cost, Estimation Methods, and Interventions

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**ABSTRACT:** *Trauma is a widely acknowledged problem facing individuals and communities in developing countries. In sub-Saharan Africa—a region that is home to some of the world’s worst human rights violations, ethnic and civil conflicts, disease epidemics, and conditions of poverty—trauma is an all-too-common experience in citizens’ daily lives. In order to address these conditions effectively, the impact of trauma must be understood. The authors reviewed recent literature on the cost and consequences of psychological trauma in sub-Saharan Africa to provide a substantive perspective on how trauma affects individuals, communities, and organizations and to inform the effort to determine a method for measuring the impact of trauma in sub-Saharan Africa and the efficacy of trauma interventions in the region. Several recommendations are offered to help broaden and deepen the current approaches to conceptualizing trauma, evaluating its cost, and intervening on behalf of those impacted by trauma in sub-Saharan Africa.*

**Key words:** *Trauma; sub-Saharan Africa; cost; intervention*

## TRAUMA IN SUB-SAHARAN AFRICA: REVIEW OF COSTS, ESTIMATION METHODS, AND INTERVENTIONS

The European colonization of the African continent, which began in the last half of the nineteenth-century, had devastating repercussions. In a scramble for African resources, European powers vied over land and imposed arbitrary boundaries that divided ethnic groups and clans, naming members of the same tribe as residents of different nations (Heath, 2010; Lawson & McCormic, 2006; Oliver & Fage, 1988). In addition to forcibly imposing colonial states, European powers maintained control by exploiting linguistic, ethnic, and cultural differences to create unstable political and economic environments for native people (Lawson & McCormic, 2006; Oliver & Fage, 1988). The volatile context created by colonial rule resulted in continuing instability for the individuals, communities, and systems that comprise sub-Saharan Africa today (Turner, Duignan, & Gann, 1971). The effort to determine the human and economic cost of trauma in sub-Saharan Africa is complicated by the continuing legacy of this colonization. Lack of infrastructure, tribal conflict, disease, and general lack of economic progress not only form the stage for trauma, but also exacerbate its consequences.

### Poverty

Poverty in sub-Saharan Africa includes economic, social, political, and cultural facets. The World Bank (2012) defines poverty as living under the international poverty line of \$1.25 per day. Sub-Saharan Africa has the highest percentage of people living in poverty, as much as 47.5 percent of the region’s population in 2008 (World Bank, 2012). The first of the United Nations’ (UN) Millennium Development Goals is to halve the proportion of people living in poverty worldwide by 2015 because combating poverty is essential for the overall growth and development of nations (United Nations Summit, 2010). Chronic poverty, as defined by the Chronic Poverty

Research Center, refers to those who benefit least from economic growth and development (Grant, Hulme, Moore et al., 2005). These individuals and their children will comprise the majority of the 800 million people who are projected to still be in poverty by 2015, suggesting that those who are in poverty will remain in poverty (Grant et al., 2005). Sub-Saharan Africa not only has the highest percentage of people living under the poverty line, but it is also home to approximately 25% of the world’s “chronically poor,” or those who will never, or very rarely, be found above the international poverty line (Grant et al., 2005). Those in the lowest socioeconomic classes are the most vulnerable when exposed to trauma due to limited or no access to health care, impoverished nutrition, little or no education, and limited job opportunities (Onyut et al., 2009).

### War and Conflict

In addition to widespread, chronic poverty, sub-Saharan Africa has also been the site of extensive armed conflict in the past few decades. Some argue that conflict in the region has been “the single most important determinant of poverty and human misery in sub-Saharan Africa” (Luckham, Ahmed, Muggah et al., 2001, p. 1). Armed conflict is not an isolated occurrence; it has impacted over half of the countries on the continent of Africa in the past two decades alone (Luckham et al., 2001). Civil wars have become one of the most common forms of conflict in the region (Justino, 2012). Due to the damage inflicted on infrastructure, social institutions, industrial production, local communities, and social networks, civil war has been named one of the main causes of persistent poverty in this region (Justino, 2012). In addition to immediate damage, the residual impact of these conflicts can last years and spread across social groups. People are often displaced and forced to leave their homes, which interferes with social support networks that are important for coping. Those who remain in their communities are not necessarily in a better position than those who flee. Distrust between neighbors creates conditions of fear that further disrupt communities (Justino, 2012). Thus, the impact of war and conflict can be felt across societies and contributes to ongoing conditions of hardship that contribute to ongoing poverty and trauma.

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## Disease

High rates of disease, including HIV/AIDS, cholera, tuberculosis, and malaria, are widespread in sub-Saharan Africa and play a distinct role in the types of trauma suffered by citizens of this region (World Health Organization, 2006). When addressing trauma, it is necessary to account for the impact of disease, since disease shapes the experience of trauma in relation to both personal and public health. Lando, Williams, Sturgis, and Williams (2006) found that chronic diseases significantly impact mental health. For example, caregivers who attend to the needs of loved ones affected by disease have been found to experience negative psychological consequences. Overall, the trauma of disease has been found to increase chronic stress, which in turn affects physical health, creating a cyclical downward spiral (Schaefer et al., 2007). Worsened physical health is associated with less access to health care, increased depression, and greater insecurity (Vinck & Pham, 2010). Additionally, a trend of the “double health burden” is rising within sub-Saharan Africa, in which high rates of infectious disease are compounded by increasing rates of chronic disease (diabetes, cancer, etc.) (World Health Organization, 2006). Overall, the potential for trauma related to incidence levels and effects of disease persist in sub-Saharan Africa, and many millions of individuals are impacted by these factors.

## Gender-Based Violence

Gender-based violence in sub-Saharan Africa encompasses many types of abusive experiences, including domestic violence, sexual exploitation, genital mutilation, and rape or sexual assault. The victims of such abuses are usually young women and adolescents, though the traumatic effects of gender-based violence are immense for families and communities as well (Wood & Jewkes, 1997).

Domestic violence against women is widespread across many sub-Saharan African countries (Kimuna & Djamba, 2008). Though gender-based violence disproportionately affects women and girls, little attention has been given to sexual violence against men and boys. Limited data suggests that sexual violence against men and boys may often take the form of sexual torture, including castration, rather than forced sexual encounters (Human Security Report, 2012). Despite the overshadowing impact of conflict-related sexual violence, the majority of gender-based violence in conflict areas occurs in the context of intimate relationships (Human Security Report, 2012).

## PURPOSE

In this review of the literature we investigate the cost and consequences of trauma in sub-Saharan Africa, as well as interventions. We begin by describing the psychosocial and physical health outcomes of trauma, followed by the impact on services, infrastructure, and productivity. We then examine current attempts to estimate the economic and financial cost analyses of trauma. Finally, we focus on interventions to address these areas in order that we may provide a substantive perspective on how trauma affects individuals, communities, and organizations. The purpose of this review is to bring greater attention to the nuances of trauma in sub-Saharan Africa and to inform future efforts to measure and combat trauma in this region.

## METHOD

We reviewed empirical, peer-reviewed studies reflecting the current state of knowledge concerning the cost and treatment of trauma in sub-Saharan Africa published between 2000-2012. This includes aspects of the sociopolitical and cultural context of trauma, metrics and methods for measuring impact, types of indicators and their uses, and intervention outcome literature. Since PsycINFO, EconLit, and MedLine most fully encompass the topic of economic

and psychosocial costs associated with trauma, the searches were limited to these three databases. Examples of keywords searched included, but were not limited to, posttraumatic stress disorder, war, genocide, violence, trauma, disaster, armed conflict, cost, and intimate partner violence. Articles that were not empirical or not adequately address trauma and its impacts on the population, healthcare providers, resources, or human or economic costs were excluded.

## COST OF TRAUMA

Psychosocial outcomes and physical health outcomes comprise the majority of the research on the cost of trauma in sub-Saharan Africa. The impact of trauma is primarily measured according to the incidence and prevalence of particular mental and physical health problems among certain populations. Each study is context-specific, such as focusing on post-genocide Rwanda or civil war-torn Liberia. While the outcomes should not be generalized to all sub-Saharan African contexts, the similar findings across contexts illustrate the pervasiveness of these problems in the region.

## Psychosocial Outcomes

The most common measurements of psychological distress in the aftermath or the midst of trauma are posttraumatic stress symptoms and posttraumatic stress disorder (PTSD). Commonly reported posttraumatic stress symptoms include difficulty concentrating, irritability and outbursts of anger, intrusive thoughts, nightmares, and hypervigilance (Liebling & Kiziri-Mayengo, 2002). Studies reviewed show prevalence rates of PTSD ranging from 24.8% of the adult population surveyed to 74% (Pham, Weinstein, & Longman, 2004; Vinck et al., 2007). Perhaps most notably, the actual and assumed number of participants who met criterion A of the DSM-IV PTSD classification, exposure to a traumatic event, was at or near 100% across studies. This suggests that entire communities are at risk of posttraumatic stress symptoms and PTSD.

Two studies focused particularly on the experiences of women and girls in attempts to fill a gap in the literature regarding the suffering of traumatized women in contexts of war (Amone-P'Olak, 2005; Igreja et al., 2006). The participants were Mozambican women living in a former war-zone in the center of Mozambique and formerly abducted adolescent girls receiving treatment at a trauma center in northern Uganda. All of the women and girls had experienced traumatic circumstances, such as being in the midst of combat, lacking food/water, lacking shelter, and being close to death. Ninety-three percent of the Mozambican women reported a particularly distressing, specific form of forced labor called *gandira*, which usually included captivity and rape, in addition to carrying food, weapons, and other goods to remote locations. A salient, ongoing psychological consequence of the trauma was possession by “war spirits” that were said to prevent the women from returning to their normal lives. About one-third of the women reported this type of possession, and 88% of that subset met criteria for PTSD. This manifestation of symptoms reflects a unique cultural response to trauma.

Exposure to sexual violence correlated with higher levels of PTSD among both men and women in a study examining gender and combatant status among Liberians (Johnson et al., 2008). Among all adults surveyed, 44% met symptom criteria for PTSD. One-third of those surveyed were former combatants, and one-third of those were female. While rates of exposure to sexual violence were higher among former combatants, specifically female former combatants, male former combatants were exposed to sexual violence as well. The prevalence of PTSD was higher among both male and female former combatants who experienced sexual violence than those who did not. Soldiers and rebels were reported to be the perpetrators of sexual violence experienced by both women and men who had been involved in combat.

Vinck et al. (2007) focused on northern Uganda and provided a perspective on patterns of exposure to traumatic events. Participants were divided into four groups, and comparisons were made among each group's level of exposure to violence and rate of PTSD. Group 1 reported low exposure to war-related violence; Group 2 reported witnessing violence but did not personally suffer threat of death or physical injury; Group 3 reported suffering threat of death or physical injury; and Group 4 reported being abducted. As would be expected, traumatic exposure increased across groups, ranging from less than 1 traumatic event for Group 1 to almost 7 traumatic events for Group 4. Despite their comparatively low levels of exposure, respondents in Group 1 still had a PTSD rate of 47%. This rate nearly doubled for Groups 3 and 4, in which respondents were more than 6 times as likely to have PTSD symptoms. Similar studies in Rwanda and South Africa examined cumulative traumatic exposure as well as demographic characteristics and proximity to conflict as predictors of PTSD symptoms (Pham et al., 2004; Williams et al., 2007). Women were more likely to have PTSD symptoms, as were individuals who were residing in Rwanda at the time of the genocide. In South Africa, individuals with the highest number of cumulative traumatic events were at significantly greater risk of distress. A study examining exposure to traumatic events for aid workers and missionaries found a similar pattern of exposure and posttraumatic stress (Schaefer et al., 2007).

In addition to providing information about demographics and patterns of exposure, studies in Rwanda and Uganda attempted to connect exposure to trauma with attitudes toward community rebuilding, specifically justice, reconciliation, and peace-building (Bayer, Klasen, & Adam, 2007; Pham et al., 2004; Vinck et al., 2007). Across contexts, those with PTSD symptoms were less likely to have faith in others, including local and national judicial proceedings, were more likely to view violence as a viable means to achieve peace, and were generally less open to reconciliation. Conceptions of peace varied depending on exposure and proximity to violence, as well as level of education and ethnicity. This applied focus provides useful correlations that may help other researchers and community-based workers make projections about attitudes of individuals and communities toward reconciliation and may help tailor interventions accordingly.

PTSD was not the only indicator of poor psychosocial outcomes in traumatized settings. Depression, poor social functioning, and anxiety have also been examined (Johnson et al., 2008; Roberts, Damundu, Lomoro et al., 2009; Roberts, Ocala, Browne et al., 2008; Vinck et al., 2007; Vinck & Pham, 2010). Prevalence rates for depression and Major Depressive Disorder (MDD) range from 40% in Liberia to 55.3% in the Central African Republic (CAR). While these prevalence rates do not parallel the variance found in PTSD, they suggest that depression is a consistent psychosocial outcome. Greater exposure to traumatic events, specifically gender-based violence, increases rates of depression, and this may be attributed to stigma (Betancourt, Agnew-Blais, Gilman, et al., 2010; Gelaye, Arnold, Williams, et al., 2009). Rates of suicidal ideation and unsuccessful suicide attempts also have been found to increase among those who have experienced domestic violence, and specifically sexual violence (Devries et al., 2011; Esere, Idowu, & Omotosho, 2009). One study examined perceptions of mental health outcomes using local terms for common symptoms and found a "depression-like" illness, suggesting both the universality of certain symptoms as well as the need for contextual investigation of mental health problems (Bolton, 2001; Vinson & Chang, 2012). Anxiety in the form of panic attacks and panic disorder were found among Rwandan widows who survived the 1994 genocide (Hagengimana et al., 2003). In addition to exposure to traumatic events, other stressful life events (i.e., living in refugee camps) were found to be associated

with depression, anxiety, and posttraumatic stress (Fox & Tang, 2000; Hadley et al., 2008).

All the studies discussed so far have focused on the psychosocial outcomes of adults who have been exposed to trauma. The literature concerning children is scarcer, presumably because of the methodological challenges of working with that population. However, there are some significant findings to be highlighted from the existing literature. Similar to the adult population, it can be assumed that virtually all children living in or near contexts of trauma are significantly at risk of experiencing posttraumatic stress symptoms and PTSD (Magwaza, Killian, Petersen, & Pillay, 1993; Neugebauer et al., 2009). One study in the Darfur region of southern Sudan found that 75% of the children interviewed met PTSD criteria (Morgos, Worden, & Gupta, 2007). Young lives that are characterized by experiences of death, disease, violence, and poverty are bound to exhibit heightened levels of emotional distress.

Akello, Reis, and Richters (2010) found that despite high levels of exposure to trauma, children in northern Uganda did not readily express their distress verbally. From a developmental perspective, it is reasonable that children lack the cognitive ability to translate their emotions into words. This limited developmental capacity may account for the finding by Morgos et al. (2007) that while 75% of children met symptom criteria for PTSD, only 20% endorsed grief symptoms. However, it should be noted that children's distress does not go unexpressed entirely. Akello and colleagues (2010) found that children appear to primarily express their emotional suffering through somatic complaints, which frequently lead to pharmacological and medical interventions for emotional and psychological problems. Another study asked children to draw pictures of things they had experienced in their lives. Children able to share their trauma experience through the drawings were less likely to suffer from PTSD (Magwaza et al., 1993).

Werner (2012) conducted a literature review exploring the effects of war on children across the globe. Children at the greatest risk of developing posttraumatic stress symptoms include child soldiers or children who were raped, similar to the victims of sexual violence per Johnson et al. (2008), and children who had been forcibly displaced. In addition, vicarious trauma is a significant risk for children and adolescents. A study in the Democratic Republic of Congo found that 92% of the children interviewed knew a young person who had been forcefully recruited by rebel forces, and the children endorsed an accompanying feeling of inferiority to those children (Masinda & Muhesi, 2004).

A study by Seedat et al. (2004) compared rates of trauma exposure and posttraumatic stress symptoms among male and female adolescents in Kenya and South Africa. Findings showed a similar rate of exposure to severe trauma, more than 80% in both contexts, but the South African youth reported significantly higher levels of PTSD and posttraumatic stress symptoms. No significant gender differences were found. Long-term physical health consequences have been identified for children exposed to war trauma; however more longitudinal research is needed to identify the long-term psychosocial outcomes. One potential area of further exploration is neurocognitive functioning, where impairment as a result of PTSD has been found (Schoeman, Carey, & Seedat, 2009). In addition, the role of perceived social support warrants additional exploration, as one study suggested that it moderated the impact of traumatic exposure and posttraumatic stress on AIDS-orphaned children in South Africa (Cluver, Fincham, Dylan et al., 2009).

## Physical Health Outcomes

Though not the primary focus of this review, physical health

outcomes are relevant to the degree that they influence or are influenced by psychosocial outcomes. Studies have shown several indicators of poor physical health in communities affected by war, including reduced stature and increased mortality, specifically mortality of children under 5, and lifelong disabilities and associated pain (Akresh, Bhalotra, Leone et al., 2011; Akresh, Lucchetti, & Thirumurthy, 2012; Baez, 2011; Denov, 2010; Simon, 2001; Vinck et al., 2010).

One study particularly examined the physical health impact of hosting refugees, a common occurrence across sub-Saharan Africa (Baez, 2011). Hosting refugees brought an increase in infectious diseases, which are potentially fatal, especially for children. Rape as a weapon of war has been shown to increase incidence of HIV among victims, which in turn increases depressive symptoms and leads to gynecological complaints, such as chronic lower abdominal pain and abnormal bleeding (Cohen et al., 2009; Kinyanda et al., 2010; Murray et al., 2006). Formerly abducted girls reported sexually related concerns, including abdominal pains and a variety of sexually transmitted diseases (Amone-P'Olak, 2005). Other commonly reported physical symptoms included headaches, ulcers, and hernias, as well as increased heart rate 7-9 months after experiencing trauma (Liebling & Kiziri-Mayengo, 2002; Obilom & Thacher, 2008).

### Services/Infrastructure/Productivity Outcomes

The impact of trauma on communities is examined in the literature in terms of vulnerability, human productivity, community cohesion, and community rebuilding. Vulnerability to trauma is influenced by a myriad of factors, including psychological, social, and economic. A common assumption from an economic perspective is that civil unrest, which contributes to trauma in communities, is rooted in the greed of individuals. One study explored the determinants and consequences of civil strife and found that civil strife increases as education levels and access to infrastructure decrease (Deininger, 2003). Therefore, strengthening a society's access to "assets" may decrease its vulnerability to civil strife and consequently its vulnerability to trauma.

The World Health Organization conducted World Mental Health surveys in 24 countries to examine the impact of commonly occurring mental and physical disorders on society (Alonso et al., 2011). The disorders were predetermined and reflected the highest-prevalence disorders worldwide. PTSD had the third largest impact on productivity, with individuals reporting an average of 15.2 days in which they could not carry out their usual activities due to illness. Major depression was the most commonly reported mental health problem, affecting between 4.9 and 6.2 percent of those surveyed and resulting in 34.4 "days out of role". The data specific to lower income countries, which would have included the majority of countries in sub-Saharan Africa, are even more severe. The prevalence rate for depression was 4.9%, but the average number of "days out of role" was 35.8. Prevalence for PTSD is even lower, at 0.7%, but the average number of days lost was 44.9. Clearly, impact should be examined in terms of depth as well as breadth.

Other studies used the unfortunate but naturally occurring laboratory of northern Uganda to examine the impact of trauma in terms of community cohesion through the reintegration of perpetrators of violence into their communities (Annan, Blattman, Mazurana et al., 2011; Blattman & Annan, 2010). Contrary to what may be a logical assumption, studies suggest that perpetrators of violence gain acceptance into their communities that is similar to the acceptance of non-combatant peers. However, these studies focus on males; females are believed to experience more difficulty reintegrating, particularly those who were sexually assaulted (Annan et al., 2011). Also contrary to popular assumption, women and girls

do indeed become combatants, and evidence suggests that overall social acceptance is high for women as well as men. However, despite these exceptions, research also suggests difficulty reintegrating due to various forms of stigma attached to former combatants (Akello, Richters, & Reis, 2006; Denov, 2010).

Another study focused on reintegration in Uganda found that former child soldiers often report battling with *cen*, which are the avenging spirits of the people killed by the child soldier (Akello et al., 2006). Communities sometimes ask questions of former child soldiers seeking reintegration to ascertain the degree to which they are troubled by *cen*. The cultural assumption is that if a person has made every effort to alleviate *cen* but has been unable to do so, then the person is truly guilty for their actions. However, the common symptoms of *cen* mirror common symptoms of depression and anxiety, including difficulty sleeping, threatening and disturbing images, and feelings of guilt, fear, or sadness. Reintegration into a community may help alleviate some common symptoms through the presence of social support and a sense of purpose and belonging. Whether a former combatant is reintegrated or remains ostracized from the community, culturally manifested psychological distress must be understood and addressed to promote healing and health for them.

Community rebuilding constitutes more than the reintegration of communities; the very people and structures that constitute a society must be reconstructed. Though reintegration is possible, the ongoing impact of conflict creates long-term effects. Ghobarah, Huth, and Russett (2004) found increased incidence of infectious diseases and other ailments such as cancer, with women and children being disproportionately affected. Rates of death and disability climb as a result of these complications, and communities are forced to respond to the ongoing disruptions that threaten their efforts to rebuild.

In Uganda and Sudan, the economic cost of civil war led to redistribution of resources toward military spending and away from essential services, such as healthcare (Dodge, 1990). The pervasiveness of poor psychosocial and physical health outcomes in conflict-ridden communities has been illustrated, and therefore the importance of essential services cannot be underestimated. The difficulty of providing such services is further exacerbated by the relocation of healthcare providers away from areas of conflict. Some flee for their own safety, while others leave because they are unable to provide services due to insufficient infrastructure and resources. Once again, communities face concomitant complications of trauma that must be overcome. However, despite the challenge of allocating resources, there is evidence that training and employing community workers to address mental health needs in rural areas with limited access to hospitals and other infrastructure can promote mental health and manage psychological problems (Byaruhanga, Cantor-Graae, Maling, & Kabakyenga, 2008).

### Financial Cost Analyses/Economic Outcomes

The prevalence of negative psychosocial and physical health outcomes necessitates an outpouring of both human and capital resources in response. Need for these resources have been calculated according to the associated costs, such as scaling up essential mental healthcare services (Chisholm, Lund, & Saxena, 2007; Lund, Boyce, Flisher et al., 2009). The Chisholm et al. (2007) study used national epidemiological survey data to estimate prevalence rates of select ICD-10 mental disorders in 12 low- and middle-income countries. Needs assessments revealed how much scaling up would be required to address the prevalence of the disorders, and the US dollar amount was computed. The results indicated that, while new resource allocation is essential, the total amounts are not large, particularly when compared to the funding requirements of other major global

disease contributors. This suggests a potentially high return on investment through scaling up mental healthcare resources; however the scope of psychosocial outcomes included was very limited and did not include the disorders identified previously as being the most destructive for communities that have experienced trauma (e.g. PTSD).

The Lund et al. (2009) study specifically focused on estimating service needs for a population of 100,000 people in South Africa, according to number of daily patient visits, number of hospital beds required for acute and medium to long-term care, and number of staff needed. This study also excluded PTSD, so the results are likely underestimated. Additionally, the study attempted to measure service requirements for the current level of need. Due to ongoing conflict throughout sub-Saharan Africa, and the frequency of displacement and refugee movement among countries, the established levels may not be accurate. Nonetheless, the model for calculating service needs may be useful in other contexts where such assessment would assist in service provision.

Another South African study reviewed inpatient mental healthcare services at a particular hospital and found that the hospital was significantly understaffed and also underfunded (van Rensburg & Jassat, 2011). The majority of patients receiving care were seeking treatment for schizophrenia, substance-related disorders, and bipolar mood disorder, and the study did not specifically examine trauma in any form.

Finally, a study by Bishai et al. (2010) estimated the financial cost and loss of life resulting from female genital mutilation and resulting obstetric complications among 15-year-old girls who lived to the age of 45 in six countries. The level of risk of obstetric complications was based on a former study. Findings suggest that, based on a population of 2.8 million 15-year-old girls across the six countries, the anticipated loss of life is 130,000 years, or approximately half a month from each girl's life. The financial cost of obstetric complications in these countries was estimated at \$3.7 million purchasing power parity dollars (Bishai et al., 2010). The cost of investing in FGM prevention is projected to offset the cost of caring for obstetric complications. In the next section we will review the literature on efforts to address these outcomes, focusing on psychosocial interventions.

## ADDRESSING THE COST OF TRAUMA

Studies that address the cost of trauma in sub-Saharan Africa take multiple forms in the literature. Some studies evaluate the effectiveness of new and established interventions in the sub-Saharan African context; others do not address interventions directly but rather include general recommendations for improving the lives of individuals impacted by trauma. Both are included, with an emphasis on reviewing psychological and religious intervention outcomes.

### Psychosocial Interventions

Several interventions have been directed at reducing posttraumatic stress symptoms and PTSD with favorable outcomes. Neuner et al.'s (2008) study on Rwandan and Somali refugees in Uganda found that both narrative exposure therapy and trauma counseling interventions significantly decreased the likelihood of meeting PTSD criteria when compared to the control group. Similarly, a rumination-focused cognitive and behavioral intervention with adolescent genocide survivors in Rwanda found lower levels of PTSD symptoms following treatment and at follow-up (Sezibera, Van Broeck, & Philippot, 2009).

In Mozambique, Igreja, Kleijn, Schreuder, Van Dijk, & Verschuur (2004) conducted an intervention study of the efficacy of the testimony method of psychotherapy to relieve posttraumatic stress symptoms. The testimony method is a relatively simple intervention in which

the survivor of trauma tells his or her story of traumatic events and is helped by the interviewer to write a narrative account. This process is believed to help the survivor develop a coherent account of the trauma, which enables the survivor to function. The purpose of this study was two-fold: to evaluate the efficacy of this method to reduce posttraumatic stress symptoms and to determine the viability of this method in a poor, rural, war-stricken African context. Participants randomly assigned to the intervention group did not demonstrate a significant difference in posttraumatic stress symptoms from those in the control group, though both groups demonstrated significant decreases in symptoms. Explanations for this are only conjecture, and further exploration is needed. Although the intervention results were not robust, the intervention was demonstrated to be feasible. If anything is to be learned from this study with regard to reducing posttraumatic stress symptoms, it is perhaps that time begins to heal psychological wounds inflicted by trauma.

Exposure-based therapies are commonly used to address anxiety disorders and trauma. The Rewind Technique is an intervention in which the participant recalls the trauma as two movies. In the first movie, the participant is a detached observer of the trauma; in the second movie, the participant is an active participant who sees and feels the content of the first movie as it is rewound, but the rewinding happens too quickly for the participant to re-experience its intensity. The process starts and ends in the safe space before the trauma occurred. Utuza, Joseph, and Muss (2012) used this intervention in a group setting with Rwandan genocide survivors. The simplicity of the technique, combined with the decreased potential for re-traumatization through telling one's story and the capacity to reach many people with a single, one-time intervention, makes it appealing for contexts in which mental healthcare is scarce. Results from the Impact of Events Scale (IES) demonstrate significantly decreased symptom levels following the Rewind Technique at a two-week follow-up. This suggests the Rewind Technique may be a viable intervention in traumatized sub-Saharan African contexts.

Two studies investigated the effectiveness of Thought Field Therapy (TFT) in reducing PTSD symptoms (Connolly & Sakai, 2011; Sakai, Connolly, & Oas, 2010). The participants were adult and adolescent survivors of the 1994 genocide in Rwanda. TFT is a brief treatment that focuses on a specific traumatic event and uses self-tapping of select acupuncture points. The treatment is initially taught by the therapist and can then be enacted by the participant in the context of treatment or on his or her own. Trauma symptoms significantly decreased for both samples, and gains were maintained at follow-up one year later for adolescents and two years later for adults. Among the adolescent group, several offered unsolicited reports of self-treatment using TFT at the time of the follow-up. One possible limitation of these studies is their reliance on self-report measures of PTSD symptoms.

In addition to exposure-based therapies, psychoeducation has been shown to have a normalizing effect, which reduces PTSD symptoms. Yeomans, Forman, Herbert and Yuen (2010) examined the effects of PTSD psychoeducation by comparing the efficacy of an intervention delivered with and without PTSD psychoeducation to a sample in Burundi. Compared to the control group, both intervention groups demonstrated decreased posttraumatic stress symptoms; however, the group that did not receive PTSD psychoeducation saw greater decreases. Yeomans proposes that this effect may be due to 1) the exacerbation of symptoms based on new, trauma-focused information, or 2) the effect of additional content used in the non-psychoeducation group to make up the time difference of the psychoeducation group. Further research is needed to examine the effect of psychoeducation.

Community-based education has been shown to be effective in promoting behavior change regarding female genital mutilation/cutting (FGM/C) in Senegal (Diop & Askew, 2009). The intervention

was developed locally in Senegal and involved dissemination of information about FGM/C within the intervention villages, with no intervention occurring in the comparison villages. Effectiveness was measured by pre- and post-test responses concerning knowledge and attitudes toward FGM/C, as well as through reported decreases in FGM/C activity among young girls in the intervention villages. Similar decreases were not reported among young girls in the comparison villages. Another study that specifically examining issues affecting women measured the effectiveness of two interventions, one providing counseling and one that offered support groups and skills training (Lekskes, van Hooren, & de Beus, 2007). Compared to the control group, both interventions were helpful in decreasing PTSD scores, though counseling had a more significant effect.

Adapting interventions for cross-cultural contexts is important for providing the most relevant and sensitive care possible. One of the elements of sub-Saharan African culture that stands out as a potential avenue for adaptation is the use of rituals. Harris (2007) moved beyond adapting traditional Western therapy to conceptualizing creative therapeutic processes that combine the essence of Western trauma treatment with the rituals of the culture of Sierra Leone. The capacity of dance/movement therapy to promote emotional expression through the body resonates with the culture of Sierra Leone, in which unity of mind and body is strong. This therapy, combined with the disruption of traditional rituals due to ongoing, pervasive war, created an opportunity to conduct creative therapy with boys who were former combatants. An attendance rate of 90% suggests a commitment to the process that likely facilitated progress. Gradual reduction in symptoms of aggression, depression, and anxiety suggests that each session contributed in a cumulative way to the improved psychosocial outcomes overall.

The impact of trauma is measured in both the presence of symptoms and the absence of appropriate daily functioning. Therefore, it is appropriate for interventions to move beyond the reduction of symptoms toward improved functioning. Stepakoff et al. (2006) implemented a program for Liberian and Sierra Leonean refugees that primarily consisted of relational, supportive, group counseling. The counseling process followed 3-stages of recovery, from safety to mourning to reconnection. Follow-up assessments demonstrated improved daily functioning and social support in addition to trauma symptom reduction. Social support was likely enhanced by the departure from a traditional, Western group therapy expectation that precludes contact between members outside of therapy. Participants were encouraged to interact with one another outside of the group. Promoting positive self-talk as a technique presumably contributed to the enhanced capacity for daily functioning.

In Uganda, the EMPOWER program is a culturally sensitive intervention based in the cognitive-behavioral tradition that seeks to help war-affected individuals deal with and move on from traumatic experiences (Sonderegger, Rombouts, Ocen et al., 2011). A pilot evaluation of this program found that it was successful in decreasing depression and anxiety symptoms and in promoting prosocial behaviors when compared to the control group. The primary assessment instrument, the Acholi Psychosocial Assessment Instrument (APAI), was selected for its broad scope of functioning, rather than focusing narrowly on PTSD. It was developed in consultation with community members in the region of Uganda that shares its name.

Despite the preceding affirmative results, not all interventions produce favorable outcomes. Akello, Richters, and Reis (2006) investigate why reintegration processes in northern Uganda have failed by examining the perspectives of three different groups on the process: a Christian non-governmental organization called World Vision, formerly abducted child soldiers, and the communities where the children attempt to reintegrate. World Vision's perspective on reintegration is rooted in Christian values of repentance,

forgiveness, and the belief that formerly abducted children were taken advantage of in their vulnerability and are innocent of their crimes. Interventions are based in traditional Western conceptions of one-on-one psychotherapy and group psychotherapy, with the ultimate goal of talking about one's experiences. The communities where children attempt to reintegrate have a different perspective. Formerly abducted children are not viewed as innocent of their crimes, and thus they face harassment, verbal abuse, and stigma based on the community's previous experience with other formerly abducted children, specifically those who rejoined the rebel forces. Formerly abducted children describe a perspective that combines the perspectives of the NGO and the community. They are aware of the negative attitudes toward them and do not endorse that they are innocent. The previous discussion of *cen*, which are the avenging spirits of people killed by the child soldier, emerges in the myriad of symptoms endorsed by the children. The presence of *cen* increases the hostility with which communities regard former child soldiers.

The inconsistencies in these three perspectives illuminate the challenge of reintegration. Akello et al. (2006) recommends considering the desires of formerly abducted children with regard to reintegration. Children may diverge from the NGO model in any number of places, including whether they desire to reintegrate at all. In addition, the problem of *cen* must be addressed in light of the cultural and religious context in which it takes place. To restate a foundational concern, culturally manifested psychological distress must be understood for any intervention with formerly abducted children, whether or not they desire to reintegrate.

Narrative Exposure Therapy (NET) has been shown to be effective for adults, so Onyut and colleagues (2004) designed and evaluated a child-friendly version. Symptom reduction was evident following treatment and at the nine-month follow-up assessment. However, the pilot study involved only six children, requiring further validation. Ertl, Pfeiffer, Schauer, Elbert, & Neuner (2011) used NET with formerly abducted children in northern Uganda suffering from PTSD and assessed its effectiveness compared to an academic catch-up plan with supportive elements and a wait list control group. Therapy was carried out by trained lay therapists without mental health or medical backgrounds and took place over the course of 8 sessions. As hypothesized, NET produced the most significant improvement in PTSD symptoms one year following treatment, as measured by the Clinician-Administered PTSD Scale.

Wessells and Monteiro (2006) focused on Angola, where decades of war have wreaked havoc on the local people. One ongoing challenge of rebuilding in a context of violence is offering young people alternatives to violence, including prosocial behaviors. Wessells evaluated a community-based program intervention that focused on skill building, peer support, and education about nonviolence among young people. Favorable outcomes included increased awareness of the needs of young people (including increased awareness for adults), decreased levels of conflict among young people, and increased perceptions and actualizations of young people contributing to the community. Developing a joint focus on young people and post-conflict rebuilding contributed to positive community-wide changes, such as disrupting the cycle of violence. This is especially important because many young people fought in Angola's war and were otherwise victims of the structural violence that pervaded the country.

In addition to therapeutic interventions, attention to the activities of mundane life is warranted. Social relationships are deeply woven into the fabric of life for many communities in sub-Saharan Africa, and the case for social support as a protective factor against posttraumatic stress is strong. Cluver, Fincham, & Seedat (2009) examined social support specifically in children orphaned by AIDS in South Africa and found that participants with high levels of perceived social support had significantly lower levels of PTSD

symptoms than those with low levels of perceived social support. This was found across levels of trauma exposure. Uguak (2010) promotes the use of mundane childhood activities in a therapeutic way. Such activities may include, dance, drawings, and play with the objective of meeting psychosocial needs.

## DISCUSSION

Overall, researchers have documented a wide range of atrocities and high rates trauma in sub-Saharan Africa. One of the overarching findings from this review is that trauma in sub-Saharan Africa appears complexly intertwined with a wide-range of contextual factors. Based on this review, we draw several conclusions about the state of research in this field. Further, we outline a series of next steps in hopes of helping inform future efforts to understand and address trauma in sub-Saharan Africa.

### Methodological Issues

Greater attention needs to be given to methodological design issues. Askew (2005) emphasizes the importance of quasi-experimental design and appropriate sample sizes to draw valid conclusions about the effectiveness of interventions. Bolton (2001) highlights the need for and the feasibility of validating instruments prior to using them in a particular context through the collection of supporting evidence from the specific context. Further, there is a need for greater standardized, culturally appropriate metrics that assess for culture- and context-specific expressions of trauma. A standardized metric to assess for the specific impacts of trauma will also help inform culturally and contextually appropriate interventions. It is important to note that many of the measures used among the treatment studies reviewed utilized PTSD measures normed on Western populations. Greater efforts are needed to validate the efficacy of PTSD measures in sub-Saharan Africa. More detailed validity and reliability reports are also needed in future research, as current reports among treatment-focused studies were spotty at best. Assessment tools for community-wide trauma are also needed, rather than relying solely on those oriented toward PTSD and other individual, pathological responses to trauma. Interventions should also address community-wide needs and promote healing for an entire community, rather than just select members. Generating these types of assessments and interventions would necessarily involve the development of culturally and communally informed constructs of trauma, rather than relying on the imposition of Western definitions and conceptualizations.

### Estimation Methods

Only a handful of empirical articles have attempted to quantify the economic cost of trauma in sub-Saharan Africa. More research is needed in this area to help guide future efforts. Specific foci may include estimating the cost of trauma to assist with: maximizing resources, assisting with fundraising efforts, enhancing fiscal accountability of service delivery, and improving sustainability and scale-ability of services. Alternative models for quantifying and estimating the myriad costs of trauma are also needed in sub-Saharan Africa. Building on the current available research, future studies ought to expand quantitative models that will incorporate a wider range of contextual factors. Researchers should also consider the interaction of domains of trauma, rather than attempting to only measure or address the cost of trauma on a domain-specific basis. For example, Alonso (2011) looked at how many work days an individual misses due to psychological or physical illness, but how does this interact with a lack of infrastructure, living in chronic poverty, or the absence of social support? Efforts should be made to understand the interaction between domains of trauma to inform development and implementation of interventions, as interactions may contribute to increased costs that may otherwise go

unobserved. Similarly, researchers should look beyond the current literature to identify novel measurement models from other fields of study (e.g., healthcare) for quantifying the cost of trauma, such as rating, categorical, or ranking systems (e.g., report card systems). Conversely, researchers are encouraged to move beyond measuring the ex post facto cost of trauma to consider related factors like preventive costs, such as the estimated cost benefit of resilience.

### Contextualization

Greater effort is also needed to more effectively develop contextual and community-based interventions. Attempts to validate psychological constructs and interventions in cultures other than the one in which they were developed should adopt an anthropological bent, in which observed behaviors and practices are integrated into the intervention. This is exhibited by the dance/movement therapy used in Sierra Leone (Harris, 2007). Amone-P'Olak (2005) found support programs, such as training in entrepreneurial skills and teaching coping skills to formerly abducted girls in northern Uganda, to be effective approaches to help buffer against trauma. Exploring community differences and community perspectives and practices that contribute to positive outcome trajectories following trauma is essential to help strengthen sub-Saharan Africa from within. This may also assist with breaking down the victim/helper mentality with which many well-meaning professionals and organizations approach interventions. Further, there appears to be a general lack of trauma outcome research. More attention should therefore be given not just to developing culturally appropriate interventions, but also to developing evidence-based practices. By taking into account cultural, community, and evidence-based factors, addressing the cost of trauma through interventions will become a much more robust endeavor.

## CONCLUSION

Despite being widely acknowledged and researched, trauma in sub-Saharan Africa remains a complex problem affecting individuals and communities in complicated ways. Effectively addressing trauma in this context requires combining an anthropologist's observational abilities with a scientist's methodological integrity, infused with a counselor's compassion for suffering. This multi-faceted perspective helps to broaden and deepen the current approaches to conceptualizing trauma, evaluating its cost, and intervening on behalf of those impacted by trauma. Rather than being overwhelmed by the task that lies ahead, we assert that the greatest resources for addressing trauma in sub-Saharan Africa are the people and communities therein. Merging the best of Western psychological theory and practice with the best of sub-Saharan African indigenous knowledge and experience will yield more effective approaches to understanding and addressing the cost of trauma.

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