More than the loss of a parent: potentially traumatic events among orphaned and abandoned children

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Abstract

This study examines rates of potentially traumatic events and associated anxiety and emotional/behavioral difficulties among 1,258 orphaned and abandoned children in 5 low and middle-income countries. The study quantifies the types of events the children experienced and demonstrates that anxiety and emotional/behavioral difficulties increase with additional event exposure. As policies for orphaned and abandoned children are being implemented, this study helps policy makers and providers recognize that: (a) children and caregivers are willing to report experiences of potentially traumatic events; (b) those who report such events are at higher risk for experiencing additional events; (c) resulting symptomatology indicates a need for appropriate mental health services; and (d) male children are as vulnerable as females, indicating an equal need for protection.

Local, national, and international organizations are struggling to meet the needs of the more than 143 million children worldwide who experienced the death of a parent and the millions more who have been abandoned by both parents (UNICEF, UNAIDS, & USAID, 2004). In Sub-Saharan Africa alone, it is estimated that 47.5 million children were orphaned in 2007 (UNICEF, 2009); the number is even larger in South and Southeastern Asia (UNICEF, 2010). The well-being of orphaned and abandoned children and their later ability to become productive community members is important to the future stability and well-being of those nations most affected by the new epidemic of orphaned and abandoned children (Senate and

House of Representatives of the United States 109th Congress, 2005). In addition to the availability of basic necessities such as food, water, and shelter, the well-being of these children depends on their physical and emotional safety (General Assembly of the United Nations, 1989; UNICEF and UNAIDS, 2004). Creating comprehensive policies and programs that ensure their safety requires an understanding of the extent and nature of potentially traumatic experiences and their sequelae so that effective and targeted protection policies and treatment services can be put in place if needed.

Recent studies of orphaned and abandoned children in low and middle-income countries recognize the potential trauma of losing one or both parents (Cluver, Fincham, & Seedat, 2009;Cluver & Gardner, 2006; Cluver, Gardner, & Operario, 2007). These studies demonstrate the potential for these children to be exposed to additional potentially traumatic events and hypothesize that when children are orphaned they are at higher risk for experiencing such events due to lack of adequate adult protection (Ahmad et al., 2005). However, studies do not quantify the types of events that orphaned and abandoned children are exposed to, or whether they are associated with increased emotional and behavioral difficulties that may make it difficult to succeed in school and acquire life skills for adulthood. Childhood exposure to potentially traumatic events has been demonstrated in numerous studies to be associated with anxiety, depression, and antisocial behavior patterns that last into adulthood (Koenig, Doll, O'Leary, & Pequegnat, 2004; Matshalaga & Powell, 2002) and can lead to high-risk behaviors, increased risk of contracting sexually transmitted diseases such as HIV/AIDS, and reduced health promotion activities (Whetten, Reif, Whetten, & Murphy-McMillan, 2008). Exposure to such events in childhood has also been linked to distrust of governments and systems of care later in life (Whetten et al., 2006).

This manuscript expands the understanding of the physical safety and emotional well-being of orphaned and abandoned children in five low and middle-income countries by examining rates of potentially traumatic events, the nature of these events, and rates of anxiety and emotional difficulties among the children who experienced them. Differences by sex and orphan status are examined and comparisons are made with a small sample of children living with both parents, drawn from the same geographical areas. Increased knowledge of potentially traumatic events and the associated emotional difficulties provides valuable information to policy makers, funders, and practitioners that can assist in the creation of safe living environments where the needs of traumatized children can be addressed. The study uses data from the Positive Outcomes for Orphans research study which assesses the well-being of children who were orphaned or abandoned in six diverse sites in five low and middle-income countries (Whetten et al., 2009).

Method

Participants

The Positive Outcomes for Orphans sampling strategy and characteristics of participating caregivers and children have been reported elsewhere (The Positive Outcomes for Orphans Research Team, 2010; Whetten, et al., 2009); we describe here the elements of the sampling approach most relevant to this analysis. Six sites from five low and middle-income countries (Cambodia, Ethiopia, India, Kenya, Tanzania) were selected for their cultural, historical, ethnic, religious, political, and geographic diversity: Battambang District, Cambodia; Addis Ababa, Ethiopia; Hyderabad, India; Nagaland, India; Bungoma District, Kenya; and Kilimanjaro Region, Tanzania.

The Positive Outcomes for Orphans study employed a two-stage random sampling survey methodology to identify a sample of 1,480 orphaned and abandoned children, ages 6-12 at baseline, who were living in family dwellings. In each study area, the sampling strategy

involved the selection of 50 sampling areas ("clusters") and five children per cluster. Geographic or administrative boundaries were used to define sampling areas. Orphaned and abandoned children were defined as children who had at least one parent who had died or children who had been abandoned by both parents. In each cluster up to five eligible children were selected, either randomly from available lists, or through a house-to-house census conducted until five households with age-eligible children were identified. In households with multiple age-eligible children, the child whose first name started with the earliest letter in the alphabet was selected. Although the Positive Outcomes for Orphans study also enrolled a sample of children residing in institutional care settings, those children are not included in analyses for this manuscript, which focuses on community exposure to potentially traumatic events. Enrollment and baseline data collection were conducted over a 6 to 8 month period at each site between May 2006 and February 2008.

In addition to orphaned and abandoned children, 301 children who were not orphaned or abandoned at baseline were enrolled into the study to provide a qualitative reference group. In each cluster, one household without orphaned and abandoned children was randomly selected from the five respective nearest such households, and one child, ages 6-12, and his/her primary caregiver, were enrolled.

Procedures

Children and their self-identified primary caregivers were contacted twice-annually for up to 3 years. Annual assessments included children's exposure to potentially traumatic events, symptoms of anxiety and emotional and behavioral difficulties, and households' socio-economic characteristics. Caregiver proxy and child self-reports from the 24 and 36-month follow-up assessments of 1,258 orphaned and abandoned children and 272 non-orphaned or abandoned children were the principal source of information for this manuscript. Data from prior assessments, including baseline and intermediate follow-up assessments were supplemented to compensate for missing data on time-invariant characteristics of children or caregivers and to assess biases due to selective loss to follow-up. The measures described below have been used in numerous countries and are applicable across cultures. Measures were field tested through focus groups and pilot interviews to ensure that concepts were understood similarly across sites. Assessment tools were translated and back-translated, and field tested by trained local interviewers fluent in both the local language and English.

Measures

The Life Events Checklist was created by the National Center for Posttraumatic Stress Disorder (PTSD) to facilitate the diagnosis of PTSD (Gray, Litz, Hsu, & Lombardo, 2004). The list of experienced or witnessed events includes those that have been found to be predictive of the diagnoses of PTSD, anxiety and depression and is one of the most frequently used instruments by researchers to assess potentially traumatic event exposure *across countries and cultures* (Elhai, Gray, Kashdan, & Franklin, 2005). The Life Events Checklist asks about events such as being in a natural disaster, seeing someone hurt or killed, being raped or beaten, or being forced to leave home. For each event, caregivers and children ages 11 and older were asked if the child had ever witnessed or experienced the event, and if yes, if the event had occurred more than once. At follow-up, an additional question asked whether the event(s) happened more than one year ago, within the past year, or both. When both caregiver proxy reports and child self-reports were available they were combined; i.e., a child was counted as having experienced an event if either the caregiver or the child reported the event. "Hearing about a family member who died" was not included in analyses because nearly all children had heard of a family member who had died; "had a brother or sister die" was excluded because it could not be ascertained whether the event was witnessed by the child. The 19 remaining events were grouped into six conceptually

related categories: witnessing family death; physical or sexual abuse; witnessing family violence; being forced to leave home; war, riots or killings; and disasters or accidents (see Table 1). Similar groupings have been used in other studies of potentially traumatic events in childhood and adulthood (Mugavero et al., 2006). Parental death and abandonment were added as separate event categories; study inclusion criteria thus implied that all orphaned and abandoned children in this study had experienced at least one potentially traumatic event. Although one event may be associated with multiple event categories (e.g., witnessing a parent die from illness, or being forced to leave home due to war or conflict would be included in two categories), it is not possible to establish from the data how many events were included in multiple categories.

The Post-Traumatic Stress Disorder Checklist – Specific (PCL-S) was used to measure anxiety (Weathers, Litz, Herman, Huska, & Keane, 1991). The psychometric properties of the PCL-S have been tested and reported elsewhere along with studies confirming its validity in various population groups (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers, Litz, Herman, Huska, & Keane, 1993). Although the PCL-S can be used for a dichotomous classification of individuals likely to meet diagnostic criteria for PTSD (Weathers, et al., 1993), in these analyses the PCL-S was used as a continuous measure of anxiety symptomatology and not to diagnose PTSD. The PCL-S was only administered to orphaned and abandoned children; the term "anxiety" is used when reporting on the PCL-S scale.

The Strengths and Difficulties Questionnaire is a brief behavioral screening tool applicable to children 3-16 years old, used to assess behavioral and emotional difficulties and pro-social behavior (Goodman, 1997). The Strengths and Difficulties Questionnaire has five subscales: Emotional Symptoms, Conduct Problems, Hyperactivity/Inattention; Peer Relationship Problems, and Pro-Social Behavior. Each subscale has five items; items are scored from 0-2. The 4 difficulties subscales were summed to form a Total Difficulties score. The Strengths and Difficulties Questionnaire was chosen for its brevity, its psychometric properties, and its frequent use in other international studies (Goodman, 2001; Youthinmind, 2009).

Household characteristics were assessed using the World Bank's Child Needs Assessment Toolkit (World Bank, 2008), administered to all participating caregivers at baseline; selected elements were also asked at annual follow-up assessments. An asset checklist, several elements of which were used by DHS in the construction of wealth indices (Rutstein & Johnson, 2004), was administered to all caregivers. Elements of the asset checklist and Child Needs Assessment Toolkit that were comparable to items used in the construction of DHS wealth indices were used to construct a comparable wealth index for each participating household (The Positive Outcomes for Orphans Research Team, 2010).

Analyses

Bivariable logistic regression models assessed the association between lifetime potentially traumatic event reports at baseline and reports of incident events during the last year of follow-up. Linear regression models with PCL-S scores, Strengths and Difficulties Questionnaire subscales, and the Total Difficulties score as dependent variables were used to estimate the associations of potentially traumatic events with child well-being. Outcomes models controlled for children's age, sex, orphaning or abandonment status, site fixed effects, and reports of potentially traumatic events. Each of the six event categories (Table 1) was scored as 1 if an event was reported and zero if no event was reported. Principal components analysis was used to reduce the correlated event categories, with correlations up to $\rho = .59$ for physical/sexual abuse and family violence, into two orthogonal factors which were used as covariates. Physical and sexual abuse and family violence loaded on the first

factor; war, riots, and killings, being forced to leave home, witnessing family death, and to a lesser extent disasters and accidents loaded primarily on the second factor. Parameter estimates from outcomes regressions were combined with component loadings for each event category to derive the individual and joint associations of each potentially traumatic event category with each outcome. Separate regression models were estimated for the PCL-S anxiety measure; the Strengths and Difficulties Questionnaire Total Difficulties score, and each subscale.

All models accounted for clustering by site. Weights were constructed to adjust for differences in the number of children and their age and sex distributions across sites. In sensitivity analyses we evaluated whether the relationships between potentially traumatic events and mental health symptomatology differed by children's age, sex, orphan status (loss of one or both parents or abandonment), relationship to the primary caregiver (biological parent or others), household socioeconomic status, or site.

Threats to Validity

Several preliminary analyses were used to evaluate and control for threats to the validity of our results. Logistic regression models were used to evaluate whether children who were lost to follow-up (222 orphaned or abandoned children) differed with respect to baseline rates of potentially traumatic event exposure or outcomes. In the aggregate, these children were 8 months older, had higher symptoms of anxiety and emotional difficulties, and were more likely to have been abandoned, but were no more likely than other study children to have experienced other potentially traumatic events (not shown).

Logistic regression models were also used to evaluate concerns that repeated assessments of sensitive topics may have affected lifetime potentially traumatic event reports at follow-up. In 36 individual regression models (one model for each site and event category), we compared age-adjusted rates for lifetime potentially traumatic event exposure between the baseline and last available follow-up assessments. In Kenya, significant increases in age-adjusted event reports were observed in all categories except disasters and accidents. These increases were arguably the result of election-related violence in January of 2008. In addition, higher rates of physical or sexual abuse were reported in Cambodia, and higher rates of family death and being forced to leave home in Tanzania. No differences in age-adjusted event reports were observed in the remaining 24 models. Due to the specific nature of the events in Kenya, all models were re-estimated in sensitivity analyses with Kenya data excluded.

Results

The average age of the sample at the 36 month follow-up assessment was 11.5 years ($SD = 1.85$); 53% were male (Table 2). One-third had experienced the death of a mother, and 75% the death of a father, with an average of 7 years since the death of a parent. Sixty-three percent of children lived with a biological parent, 21% with grandparents, 13% with aunts and uncles. Nearly 3% lived in child-headed households (not shown). The average age of the primary caregivers was 42.5 years (SD = 13.4). One-third of the sample was living in rural areas.

Table 3 describes rates of reported potentially traumatic events, including the percentages of children reported to have ever experienced the event; experienced the event more than one time; and experienced the event in the 12 months prior to the interview. Rates of lifetime exposure to each event category are presented by sex and orphan status, and for the sample of children living with both parents.

Nearly all children experienced at least one additional potentially traumatic event beyond the death of a parent or abandonment (98%), with more than half experiencing 4 or more events (55%). The non-orphan sample experienced fewer event categories than the sample of orphaned and abandoned children, yet 87% reported at least one event; 13% experienced 4 or more types of events. Death of a family member (79%), physical and/or sexual abuse (70%), and witnessing family violence (50%) were the most commonly reported events. One third of children reported a potentially traumatic event during the past year. Sex was not predictive of abuse. Abandoned children were most likely to experience physical and/or sexual abuse (84%), followed by double orphans (79%). Double orphans were most likely to have witnessed family violence (59%) and to have had to leave home (42%). War, riots or killings were experienced by one-quarter of the sample.

There was little difference in rates of potentially traumatic events, rates of repeated exposure, or the number of event categories by sex. There was a significant difference in the mean number of reported event categories between children cared for by a biological parent (3.47) versus other children (3.81; p < 0.001, not shown).

Experiencing a past event predicts experiencing such an event in the future (Table 4). For example, reporting having experienced physical or sexual abuse at the baseline assessment strongly predicted reporting such an event during the year preceding the follow-up assessment. The relationship was statistically significant for three of the five potentially traumatic event categories evaluated.

Jointly controlling for all event categories in multivariable regression models, four event categories were independently associated with higher levels of anxiety and emotional difficulties, three with total difficulties, and two with conduct problems (p-values < 0.05; Table 5). For example, if a child had experienced war, riots or killings, this was associated with increased anxiety (p < 0. 01); if they were also forced to leave home this was independently associated with increased anxiety symptomatology (p < 0.001). Emotional problems were predicted by witnessed death (p < 0.05), war, riots or killings (p < 0.01), being forced to leave home (p < 0.001), and disasters or accidents (p < 0.001). The effects on peer relationship problems and hyperactivity were not statistically significant.

Nearly all children experienced at least one potentially traumatic event in addition to the death of a parent or abandonment. Additional event categories were associated with higher PCL-S scores and greater difficulties scores (nonparametric trend tests; both p < 0.001). Figure 1 suggests that the relationship between potentially traumatic events and PCL-S scores, but not between events and difficulties scores, may differ between orphaned and abandoned children, with additional events associated with the greatest increases in anxiety among double and single orphans.

Sensitivity Analysis

Rates of reported lifetime exposure and incidence of potentially traumatic events differed significantly across sites for all event categories and for the total number of categories reported (p < 0.0001). Sensitivity analyses suggest significant differences in the strength of the association between potentially traumatic events and mental health symptomatology across study sites, by age, and whether the caregiver is the biological parent (less symptomatology), but not by sex, household wealth, or whether the child was a single or double orphan (not shown). Site-specific analyses indicated positive associations between the number of event categories and adverse outcomes in four of the six study sites; associations between event categories and symptomatology were strongest in the African sites and weakest in India (not shown).

Discussion

Past studies have documented that orphans are exposed to stressors that include caring for a dying parent, relocation from home and school, separation from siblings, child labor to provide extra income, unstable living conditions, and abuse in living situation without the protection of a biological parent (Foster, Makufa, Drew, Mashumba, & Kambeu, 1997; Ntozi, Lubaale, & Nakanaabi, 1997). Studies examining the mental health symptomatology of orphaned and non-orphaned children found that orphans were more likely to experience internalizing disorders such as anxiety, a sense of failure, and suicidal thoughts (Cluver, et al., 2007; Cluver & Orkin, 2009). Relatively few studies on the lives and wellbeing of orphaned and abandoned children living in South and Southeast Asia have been conducted, yet this is region is home to the largest number of such children.

This is the first study to examine rates of potentially traumatic events longitudinally in a large randomly selected group of orphaned and abandoned children in multiple less wealthy nations. It is also the first to examine the relationships between past and future events among orphaned and abandoned children; between additional potentially traumatic events and emotional outcomes; and whether the latter is influenced by orphan status or abandonment. This study provides further evidence that potentially traumatic experiences of orphaned and abandoned children in low and middle-income countries extend beyond abandonment or parental death, and it begins to describe such events. The study demonstrates that double and single orphans and abandoned children are all at risk for additional potentially traumatic events and that the specific events for which they are at highest risk may differ. The study suggests that even though abandoned children and children living with both parents may experience similar rates of potentially traumatic events, being a single or double orphan results in greater negative psychological impacts of additional events.

This study indicates that caregivers and children are willing to discuss their experiences of potentially traumatic events in interviews with trained interviewers; and by following children longitudinally, the study documents that children who experienced potentially traumatic events in the past are likely to re-experience such events in the future. This suggests that further events could be averted with targeted protective interventions and mental health care for children reported to have experienced such events in the past. Importantly, male children appear as vulnerable to potentially traumatic events as female children. Currently many policies target vulnerable female children specifically; our analyses indicate that protection policies for both sexes are equally necessary.

A possible limitation of this study is reporting bias. Event reporting biases are likely in the direction of underreporting, which could bias the estimated effects of additional potentially traumatic events on anxiety and behavioral and emotional difficulties. Other limitations of this study include the lack of data on the total number of events within categories, on when the child experienced the events, the perpetrators of events, and on the sequencing of events, including which events occurred pre- or post-orphaning and the causal nature of traumas and symptomatology. However, this study indicates that children who experienced potentially traumatic events are more likely to experience mental health symptomatology, and symptomatology increases with additional events. Recognizing the possible contribution of potentially traumatic events to emotional difficulties can aid in the development of interventions to mediate their effects, thereby allowing children a greater chance of success in education, work, relationships, and healthy adulthood.

Many orphaned and abandoned children live in poor communities and households where adults spend long hours working away from the home, where rates of violence may be high, and where perpetrators of potentially traumatic events may be family members. Protection

of children under such conditions can be difficult for families; protection policies and services may need to target entire communities in such cases. The study finding that 87% of children living with both parents experienced at least one potentially traumatic event, and 72% experienced two or more events, indicates that communities caring for orphaned and abandoned children may be areas of high risk for such events for all children who live there. Early and community-wide interventions could potentially provide protective systems and coping skills. Such programs could help build resilience and reduce the number of potentially traumatic events to which children are exposed. Researchers are beginning to identify interventions that can be adapted to less wealthy nation settings to ameliorate the mental health symptomatology resulting from potentially traumatic events (Lin, Sandler, Ayers, Wolchik, & Luecken, 2004; Verdeli et al., 2003).

In summary, this study indicates that orphaned and abandoned children are at high risk for experiencing further potentially traumatic events and that those who experienced different categories of events are at high risk for repeated exposure. Double orphans are considered the most vulnerable children (Huang and Panza, 2009) and appear in this study to be most negatively affected by repeated exposure to potentially traumatic events. However, this study also indicates that single and abandoned children, both male and female, are each at high risk for further potentially traumatic events and associated difficulties, demonstrating the need for similar protection and care, and appropriate psychological services. Site variation indicates that protective and care services should be tailored to sites' specific needs, and may need to be based on recent political events such as wars or riots, or cultural differences such as views of family violence.

Acknowledgments

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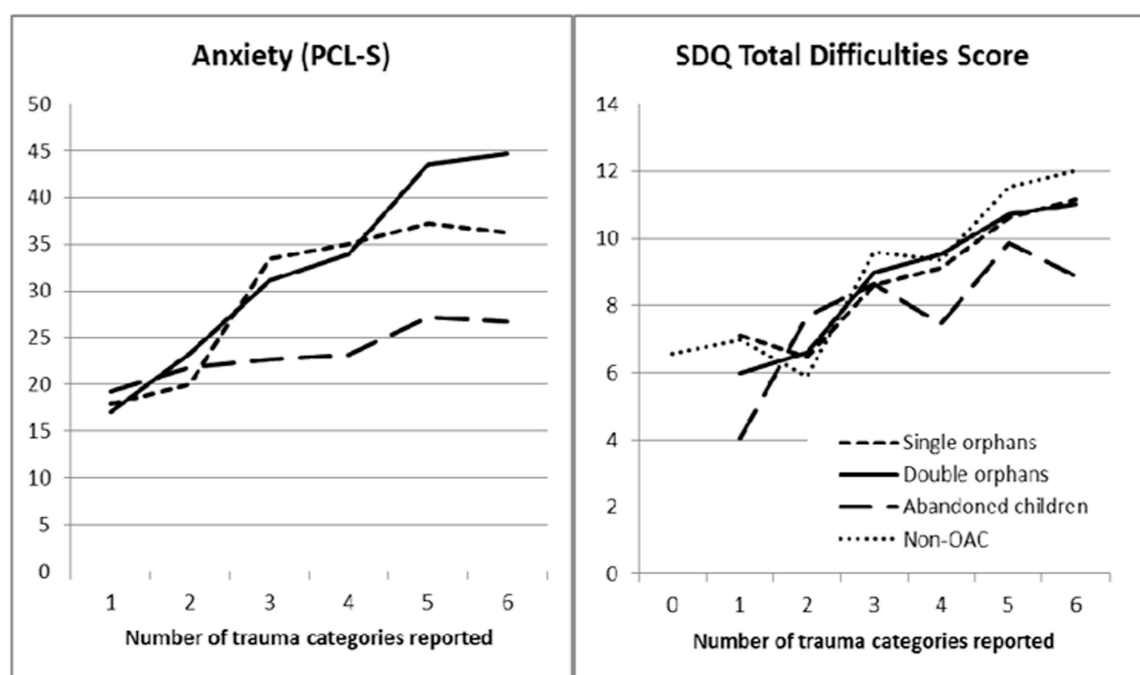
Figure 1.
Association of potentially traumatic events with anxiety and emotional difficulties. OAC = Orphaned and Abandonded Children; PCL-S = Posttraumatic Stress Disorder Checklist-Specific; SDQ = Strengths and Difficulties Questionnaire. PCL-S was not used with the non-OAC group.

Table 1

Frequency of Exposure to Potentially Traumatic Events

Potentially traumatic events	Percent reporting						Category
	Caregiver		Child		Either		
	n	%	n	%	n	%	
Maternal death	433	34.4	-	-	-	-	Parental death
Paternal death	939	74.6	-	-	-	-	
Abandonment by both parents	104	8.3	-	-	-	-	Abandonment
Seeing a family member die a violent death or seriously injured	330	27.1	161	15.8	378	30.5	Witnessed family death
Seeing a family member die from illness	841	68.8	627	61.0	1062	85.6	
Being hit, kicked, or beaten at home	723	59.1	438	42.7	868	70.0	Physical or sexual abuse
Being hit, kicked, or beaten by other children	544	44.8	330	32.3	702	56.7	
Having someone touch private sexual parts when child did not want them to	22	1.8	28	2.7	48	3.9	
Being raped or sexually molested	7	0.6	5	0.5	11	0.9	
Seeing a family member hit, kicked, or beaten	469	38.5	305	29.8	631	51.0	Family violence
Seeing a family member shot at or killed	30	2.4	40	3.9	59	4.8	
Seeing a family member raped or sexually molested	16	1.3	11	1.1	24	1.9	
Being forced to move or run from home due to a war, conflict, fighting, riots, etc.	21	1.7	22	2.1	40	3.2	Forced to leave home
Being forced to leave home because there was no adult at home to stay with	245	19.9	147	14.3	280	22.6	
Being in a place where war, riot, or conflict was going on	261	21.3	194	18.9	312	25.2	War, riots or killings
Seeing someone hurt or killed during a war, conflict, fighting or riots	129	10.5	113	11.0	190	15.3	
Seeing someone in child's town shot at or killed	43	3.5	55	5.4	79	6.4	
Being in a big earthquake that damaged the building the child was in	13	1.1	1	0.1	14	1.1	Disaster or accidents
Being in another disaster, such as a fire, storm, flood, hurricane, tsunami etc.	78	6.3	49	4.8	113	9.1	
Being in a bad accident, like a car accident	106	8.6	63	6.1	146	11.8	

Note. Based on 1,230 caregiver reports and 1,029 child self-reports. Maternal death, paternal death and abandonment identified by caregiver reports.

Table 2

Characteristics of Orphaned And Abandoned Children Ages 9-15 And Their Primary Caregivers

	n	Percent Unweighted	Percent Weighted [a]
Male	665	52.9%	50.0%
Single orphans	936	74.4%	74.0%
Double orphans	218	17.3%	16.9%
Abandoned children	104	8.3%	9.1%
Mother died	433	34.4%	33.5%
Father died	939	74.6%	74.3%
Living with biological mother	663	52.7%	53.7%
Living with biological father	115	9.2%	8.9%
Fair or poor caregiver health	365	29.2%	29.2%
Rural	395	33.1%	31.9%

Note. N = 1,258.

[a]Weighted to ensure equal representative of all ages, both genders and all six study sites.

Table 3

Rates Of Reported Potentially Traumatic Events Among Children Ages 9-15 (%)

| | All children | | | Sex | | Loss status | | | |
	Ever	>1 time	Past year	Female	Male	One parent	Both parents	Abandoned	Non-OAC
Number of children	1,258	1,258	1,258	593	665	936	218	104	272
Parental death	91	17	-	92	90	100	100	-	
Abandonment	9	-	-	8	10	-	-	100	
Witnessed family death	79	42	11	80	78	80	91	48	36***
Physical or sexual abuse	70	64	19	66	74	66	79	84**	74
Family violence	50	38	6	49	51	48	59	53**	53
Forced to leave home	22	7	1	23	21	18	42	9***	11***
War, riots or killings	25	18	10	24	25	26	20	18	22
Disaster or accidents	17	6	1	15	19	16	21	15	16
Number of event categories									
None	-		67	--	-	-	-	-	13***
1	2	2	22	2	2	2	1	5	15
2	21	18	9	22	20	23	12	24	38
3	22	22	1	22	22	23	15	32	21
4 or more	55	55	1	53	56	52	73	39	13

Note. OAC = orphaned and abandoned children. Event reports among orphaned and abandoned children. Event reports among orphaned and abandoned children are weighted to ensure equal representative of all ages, both genders and all six study sites. Significance refers to comparisons of event rates by loss category and among orphaned and abandoned children vs. the comparison group. Inclusion criteria implied that all children other than non-OAC had experienced orphaning or abandonment by both parents

*
p < .05,

**
p < .01,

***
p <.001

Table 4

Baseline Reports of Potentially Traumatic Events as Predictors Of Potentially Traumatic Event Reports at Follow-Up

Report of lifetime exposure at baseline	Reports of past-year exposure at follow-up									
	Physical or sexual abuse		Family violence		Forced to leave home		War, riots or killings		Witnessed family death	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Physical or sexual abuse	3.76	[1.16, 12.23]	3.36	[0.43, 26.01]	1.20	[0.36, 4.04]	0.20	[0.06, 0.67]	0.51	[0.16, 1.64]
Family violence	1.83	[0.62, 5.42]	2.91	[0.73, 11.61]	0.51	[0.08, 3.44]	0.11	[0.03, 0.39]	0.37	[0.09, 1.45]
Forced to leave home	0.82	[0.24, 2.81]	1.23	[0.53, 2.87]	4.93	[1.39, 17.55]	2.00	[0.92, 4.34]	1.39	[0.87, 2.23]
War, riots or killings	1.51	[0.65, 3.47]	2.35	[0.66, 8.38]	7.01	[1.56, 31.38]	3.84	[1.66, 8.89]	2.59	[1.53, 4.41]
Witnessed family death	0.93	[0.55, 1.59]	0.43	[0.19, 0.98]	1.19	[0.28, 5.19]	0.45	[0.22, 0.95]	1.17	[0.53, 2.60]

Note. N = 1,258. *OR* = odds ratio; CI = confidence interval.

Odds ratios and 95% confidence intervals from bivariate logistic regression models controlling only for prior event report(s).

Table 5

Effects of Traumatic Events on Anxiety and Emotional and Conduct Difficulties

Trauma Category	Anxiety (PCL-S)		Total difficulties		Conduct problems	
	β	SE	β	SE	β	SE
Witnessed family death	0.36 *	0.15	0.12	0.06	0.03	0.02
Physical / sexual abuse	0.20	0.21	0.04	0.09	0.02	0.03
Family violence	0.24	0.20	0.06	0.09	0.02	0.03
Forced to leave home	0.59 ***	0.17	0.18 **	0.07	0.05 *	0.02
War, riots or killings	0.63 **	0.20	0.20 *	0.09	0.06	0.03
Disaster or accidents	0.45 ***	0.13	0.14 *	0.05	0.04 *	0.02
Mean (SD)	32.27	14.81	8.87	5.03	1.57	1.56

Trauma Category	Hyperactivity		Emotional difficulties		Peer relations	
	b	SE	b	SE	b	SE
Witnessed family death	0.00	0.02	0.06 *	0.03	0.02	0.02
Physical / sexual abuse	0.00	0.03	0.04	0.04	-0.02	0.03
Family violence	0.00	0.03	0.04	0.04	-0.02	0.03
Forced to leave home	0.01	0.03	0.10 ***	0.03	0.02	0.02
War, riots or killings	0.01	0.03	0.11 **	0.04	0.03	0.03
Disaster or accidents	0.01	0.02	0.08 ***	0.02	0.01	0.02
Mean (SD)	2.82	1.92	2.85	2.20	1.63	1.56

Note. PCL-S = Post-Traumatic Stress Disorder Checklist – Specific; OAC = Orphaned and Abandonded Children. Estimates from multivariable linear regression analyses controlling for age, gender, OAC status, and site fixed effects

*
p < .05,

**
p < .01,

***
p < .001