



Published in final edited form as:

Child Youth Serv Rev. 2014 August 1; 43: 131–137. doi:10.1016/j.chilyouth.2014.05.011.

The Effects of Parental Loss on the Psychosocial Wellbeing of AIDS-Orphaned Children Living in AIDS-Impacted Communities: Does Gender Matter?

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1. Introduction

Communities in sub-Saharan Africa continue to bear the biggest share of the global HIV/AIDS burden compared to the rest of the world. In 2012, an estimated 23.5 million people – approximately 71% of all people living with HIV/AIDS worldwide – reside in sub-Saharan Africa (UNAIDS, 2013). Although the increase in the access and use of antiretroviral treatment (ART) has reduced the number of people dying from HIV/AIDS related illnesses in sub-Saharan Africa –from 1.8 million in 2005 to 1.2 in 2012 (UNAIDS, 2013), the number of children orphaned as a result of HIV/AIDS (defined as those who have lost one or both parents due to HIV/AIDS) remain high because of the high numbers of people living with the disease –many of whom still have no access to quality treatment. Indeed, global statistics indicate that sub-Saharan Africa is home to 90% of all children orphaned as a result of HIV/AIDS (UNAIDS, 2010). The majority of these orphaned children are between the ages of 10 and 15. One of the sub-Saharan African countries hardest hit by the HIV/AIDS pandemic, Uganda, is estimated to have over 2.7 million orphaned children, with 1.2 million of them directly resulting from HIV/AIDS (UAIS, 2012; UNICEF, 2013).

2. The impact of parental loss on children

Losing a parent or both is a double tragedy to children. Not only do they have to deal with the experience of loss and grief associated with parental loss, but also the additional

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Human Participant Protection

The study was approved by Columbia University Institutional Review Board and Uganda National Council for Science and Technology. The study protocol is registered in the Clinicaltrials.gov database (ID # NCT01447615).

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stressors that arise after the death of parents. Unlike children orphaned due to other causes, AIDS orphans begin to suffer psychologically and emotionally long before the death of their parents. For example, the prolonged AIDS related illnesses usually lead to the reversal of parent-child roles, with the child assuming the role of a caretaker in the household (Stein, 2003). After parental loss, children may experience stigma, changes in living situations and a lack of support, which continues to complicate their grieving process (Bray, 2003; Cluver & Gardner, 2006; Foster, Makufa, Drew, Mashumba & Kambeu, 1997). Moreover, many are ostracized. As a result, orphanhood is likely to have profound effects on child development and later outcomes including physical, social, economic (McLoyd, 1998; Ssewamala & Ismayilova, 2008; Ssewamala, Han & Neilands, 2009) and mental health functioning (Atwine, Cantor –Graae, & Bajunirwe, 2005; Field, Diego, & Sanders, 2001; Klein, Dougherty, & Olino, 2005; Reinherz, Giaconia, Carmola-Huff, Wassweman, & Silverman, 1999; Ssewamala et al., 2009).

Several studies have examined the impact of orphanhood on the mental health and psychological wellbeing of children. Findings indicate that compared to children orphaned due to other causes, children orphaned as a result of HIV/AIDS are more likely to experience anxiety (Atwine, et al., 2005; Pelton & Forehand, 2005), depression, sadness, hopelessness and loneliness (Bhargava, 2005; Ssengendo & Nambi, 1997), posttraumatic stress and suicidal feelings (Cluver, Gardener & Operario, 2007). Studies also indicate that AIDS-orphaned children suffer from peer problems (Makame, Ani & McGregor, 2002), conduct problems (Atwine et al., 2005) and higher levels of internalizing problems and delinquency (Cluver, Gardener & Operario, 2007).

Although the majority of AIDS-orphaned children in sub-Saharan Africa are no strangers to poverty, HIV/AIDS usually worsens the problem (Case, Paxson, & Ableidinger, 2004; Duncan & Brooks-Gunn, 1997; Ssewamala & Ismayilova, 2008). Household wealth diminishes due to increased medical care and other related expenses yet the capacity to generate income reduces significantly (Bechu, 1998; Subbarao & Coury, 2004). These circumstances negatively impact children's access to basic needs including food, shelter, health, education and schooling needs (Foster & Williamson, 2000; Steinberg, Johnson, Schierhout, & Ndegwa, 2002). Unfortunately, the extended family system that hitherto provided care and support to AIDS-orphaned children is so overwhelmed by the high numbers of orphans that many are unwilling to take in more orphans (Foster, 2000; Ssewamala & Ismayilova, 2009; Ntozi & Nakayiwa, 1999; Madhavan, 2004; Karimli, Ssewamala & Ismayilova, 2012; Lund & Agyey-Mensah, 2008). As a consequence, child-headed households are increasing and more children are dropping out of school to work. Others end up on the streets where they engage in illegal activities including selling drugs and prostitution (Lindblade, Odhiambo, Rosen & DeCock, 2003; Salaam, 2004).

Although the psychological impact of orphanhood on children has received considerable attention in research, very few empirical studies have examined gender differences among children orphaned by HIV/AIDS. Yet, gender perspectives could provide important information needed to facilitate meaningful and equitable service delivery for orphaned children. Although all orphaned children experience multiple and multidimensional disadvantages and stressors, given the sub-Saharan culture and traditions which prefer boys

to girls (Ssewamala, Ismayilova, McKay, Sperber, Bannon, & Alicea, 2010), orphaned girls are particularly considered to be at a disadvantage, in regards to social isolation, early sexual activity including early marriages (Bruce, 2007) and are more likely to be taken out of school to perform care giving roles than boys (Booyesen & Arntz, 2002; Ssewamala, et al., 2010; Steinberg et al., 2002).

In addition, few studies exist that incorporate the gender question into mental health and psychological outcomes of orphaned children (Cluver & Gardner, 2007; Lata & Verma, 2013). Moreover, even for the few studies that exist, very few, among them, use measures developed and tested in sub-Saharan Africa. As Cluver & Gardner (2007) rightly observe, the use of standardized scales tested and validated on populations in developed countries is problematic. There is need to apply scales that have been tested and validated on sub-Saharan African populations within sub-Saharan Africa.

Against this backdrop, this study uses measures tested in sub-Saharan Africa (see Ssewamala, et. al, 2010; Ssewamala, et. al, 2009; Ssewamala & Ismayilova, 2009) to address the gender question in regards to the psychosocial wellbeing of orphaned children – by examining the effects of parental loss on boys and girls. Specifically, the study addresses the following research questions: 1) What effects does parental loss has on the psychosocial wellbeing of AIDS-orphaned children? 2) Does parental loss affect boys and girls differently? The two questions are important for community practice and programming, especially when working in communities dominated with children orphaned as a result of HIV/AIDS.

3. Methodology

Data and Sample

This study uses baseline data from a National Institute of Child Health and Human Development (NICHD) study, called Bridges to the Future study (2011–2016), implemented in Uganda. Bridges to the Future includes a total of 1410-orphaned children (n=625 boys, and n=785 girls), with an average age of 12.7 (range 10–16). The overall aim of the study is to evaluate the long-term impacts of a family based economic strengthening intervention that used children savings accounts aimed at promoting health outcomes and life options for AIDS-orphaned children. Participants were eligible to participate in the study if: 1) they had lost one or both parents to HIV/AIDS, 2) enrolled in grades 5 and 6, in a government-aided primary school. Participants were recruited through the school system from 48 rural primary schools, in 4 political districts of Rakai, Masaka, Lwengo and Kalungu in South Western Uganda—a region heavily affected by HIV/AIDS. The study received Institutional Review Board approval from Columbia University, and the Uganda National Council of Science and Technology (UNCST). Data were collected using surveys administered by trained Ugandan interviewers. Each interviewer had to undergo good clinical practice training and had to obtain the Collaborative Institutional Training Initiative (CITI) Certificate before interacting with the children.

Measures

Effects of parental loss—Measures for the effects of parental loss were first tested as open-ended questions in previous studies (see Ssewamala, et al., 2010; Ssewamala, et. al, 2009; Ssewamala & Ismayilova, 2009). Children’s responses were coded and later used in this study as the outcomes variables. Specifically, study participants were asked to answer questions regarding life changes after the loss of their parent(s). The questions included: 1) What has changed in your daily life (circumstances) since your father died? 2) What has changed in your daily life (circumstances) since your mother died? Responses for both questions included changes in education, basic needs and family responsibilities (*e.g. school attendance has declined, grades have worsened, have to take care of small children, have to take care of a parent, etc*).

To measure the effects of parental loss on children’s feelings, participants were asked the following questions: 1) How has the loss of your father affected the way you feel about life? 2) How has the loss of your mother affected the way you feel about life? Responses for both questions included both positive and negative feelings (*e.g. happy and contented, determined to do well, worried, angry, scared, etc*). All responses were coded as 1 for a “yes” response and 0 for a “no” response to a reported change.

Demographics—Socio-demographic characteristics of participants such as gender, age groups (below 13 years and 13 years and above), double orphanhood (whether a child lost both parents), and household composition (number of people living in the household and number of children in the household) were included. Gender was used as the major independent variable in the regression analyses.

Analysis plan

First, one-way frequencies were conducted on all variables to generate percentages of participants, for the total sample and gender groups (boys and girls). Measures of central tendency and variability (means and standard deviations) were generated for continuous variables such as age and household composition. Second, bivariate analyses such as cross tabulations and independent sample t tests were conducted to examine the differences between girls and boys among participants who reported a father not living and among those who reported a mother not living. Finally, binary logistic regressions to examine: 1) the relationship between gender and the reported changes in the children’s lives; and 2) the relationship between gender and the effects of parental loss on children’s feelings were conducted, controlling for age, orphanhood status and household composition. Statistical analyses were conducted using SPSS 19.

4. Results

Socio-demographic characteristics of the sample

Table 1 presents the socio-demographic characteristics of the sample. The average age of participants was 12.7. The majority of the participants (55.8%) were 13 years and older. Boys were more likely to be older (mean age 13) than girls (mean age 12) ($t=8.72, p<.001$). Fifty-six percent (56%) of the sample were girls. The majority of the participants

(57.5%) were paternal orphans (had lost a father). Girls were more likely to be paternal orphans than boys ($\chi^2 = 8.76$, $p < .01$). The average household size was 6.4, with 3.2 children living in the household. Approximately 37% of the participants reported their grandparents as their primary caregivers, and more girls (32.4%) than boys (29.8%) reported their biological mother as their primary caregiver.

Changes in the child's life after parental loss

Following the death of a father, more than half (53.8%) of all participants reported worsening school grades. However, although both boys and girls reported a decline in school attendance, female participants were more likely to report starting school later than their male counterparts ($t = 2.26$, $p < .05$). In regards to household responsibilities, although both boys and girls reported having to do more household chores, orphaned girls were more likely to report taking care of small children ($t = 2.59$, $p < .01$), and a surviving parent ($t = 2.14$, $p < .05$) than their orphaned male counterparts. Moreover, although the majority of the participants reported a decline in basic needs such as food, clothing and money as a family or individually, girls seem to have been more affected than boys. Specifically, following the death of a father, girls were more likely to report a decline in food and money than boys ($t = 2.44$, $p > .01$). Similarly, slightly over 52% of all participants reported worsening school grades following the death of a mother. Although we do not observe statistically significant gender differences, boys (55.7%) were more likely to report worsening school grades than their female (49.2%) counterparts. These differences are consistent with those observed after the death of a father. On the other hand, girls (49.8%) were more likely to report starting school later than boys (38.7%). We observe statistically significant differences between the 2 groups ($t = 2.77$, $p < .01$). In regards to changes in household responsibilities, following the death of a mother, more girls than boys reported having to do more chores, taking care of smaller children and taking care of the surviving parent. Girls were significantly more likely to take care of a surviving parent than boys ($t = 2.14$, $p < .05$). Further, the majority of the participants reported a decline in basic needs as a family (67.6%) and individually (73.8%) after losing a mother. However, no significant gender differences were observed between the 2 groups. Gender differences were more visible among children who lost a father than those who lost a mother.

Effects of parental loss on the child's feelings

Following the death a father, the majority of participants reported feelings of sorrow, isolation and loneliness, being worried, angry and scared. Girls were, however, more likely to report being scared than boys ($t = 2.33$, $p < .05$). On the other hand, boys were more likely to report determination to do well (76.5%) compared to girls (70.5%). The reported differences were statistically significant ($t = -2.35$, $p < .01$).

Similar to reported changes observed after losing a father, the majority of the participants reported negative feelings following the death of a mother. Specifically, girls (73.8%) were more likely to report being scared than boys (63.8%). These observed differences were statistically significant ($t = 2.65$, $p < .01$). In regards to positive feelings, participants reported feelings of comfort and relief, and determination to do well. Slightly more boys (78.4%) than girls (76.1%) reported determination to do well, although more girls (72.1%) reported

being comforted and relieved than boys (67.7%). Moreover, boys were significantly more likely to report being happy and contented ($t=-2.09$, $p<.05$) following the death of a mother.

As indicated above in the bivariate analysis, the loss of a parent, be it a father or a mother, has significant impacts on the psychosocial wellbeing of children, including a sense of being scared, additional household responsibilities, and a decline in basic needs. In the following analysis we conduct logistic regression controlling for several observable socio-demographic characteristics of the affected children and their families to ascertain the effects of parental loss on the children's psychosocial wellbeing within gender. The results are presented in tables 4 and 5 below.

Regression on changes in the child's life and feelings after losing a father—As indicated in Table 4 above, following the loss of a father, gender is significantly associated with the likelihood of an orphaned child starting school late. Specifically, the odds of starting school late among girls were 1.47 times higher than boys (OR=1.47, 95% CI=1.1–1.8, $p<.01$). In other words, girls who lost a father were 1.47 times more likely to start school late than boys. Another reported gender difference was in household responsibilities. Girls were more likely than boys to take care of a surviving parent. Specifically, the odds of having to take care of a surviving parent were 1.3 times higher for girls than boys (OR=1.3, 95% CI, 1.0–1.7, $p<.05$). In addition, girls were 1.38 times more likely to take on the responsibility of care for their young siblings than boys (OR=1.38, 95% CI=1.1–1.8, $p<.01$). Further, we locate a significant relationship between gender and having less food and money. Specifically, girls were 1.4 times more likely to report having less food and money as a family (OR=1.4, 95% CI=1.1–1.9, $p<.01$) than boys.

In addition, following the loss of a father, the odds of an orphaned girl reporting being scared were 1.4 times higher than those of an orphaned boy (OR=1.3, 95% CI=1.0–1.8, $p<.05$). Girls were also .75 times less likely to report determination to do well than boys (OR=.75, 95% CI=.57–.99, $p<.05$). Significant results were also observed among participants' age groups, double orphans and household composition.

Regression on the changes in the child's life and feelings after losing a mother—As indicated in Table 5, following the loss of a mother, gender was associated with the odds of starting school late and taking care of a surviving parent. Specifically, the odds of starting school late were 1.69 times higher for girls than for boys (OR=1.69, 95% CI=1.2 – 2.4, $p<.01$). In addition, girls were 1.48 times more likely to take care of a surviving parent than boys (OR=1.48, 95% CI=1.1–2.2, $p<.01$). Moreover, girls were .62 times less likely than boys to report feeling happy (OR=.62, 95% CI=.38–1.0, $p<.05$). In addition, girls were 1.7 times more likely to report being scared than boys (OR=1.7, 95% CI=1.2–2.5, $p<.01$). Significant results were also observed among participants' age.

5. Discussion

Study findings support the argument that in communities heavily affected by HIV/AIDS, losing a parent is a source of psychosocial distress and negative changes in the lives of

children. Specifically, AIDS-orphaned children report a decline in schooling, worsening school grades, a decline in basic needs and an increase in household responsibilities. In addition, children report feelings of sadness, being angry, isolated and worried after the death of their parent(s). These findings are consistent with earlier studies that examined the impact of parental loss on children (Bechu, 1998; Gilborn Gilborn, Nyonyintono, Kabumbuli, Jagwe-Wadda, 2001; Makame, et al, 2002; Ssengendo & Nambi, 1997).

On the other hand, study participants also reported positive feelings such as determination to do well, as well as feelings of happiness following parental loss. There are two possible explanations for this finding; 1) the death of a parent may come as a relief to the child, putting an end to the prolonged HIV related illnesses and the caregiving roles, and 2) positive effects may be due to the moves from poor to economically better off households where children are motivated to perform well to prove their worth to the new families and to win their support (Ssengendo & Nambi, 1997). These feelings were more prevalent among male participants than females.

In addition, findings from the logistic regression models suggest that parental loss affects boys and girls differently. Specifically, following the loss of a parent, girls are more likely to take on additional household responsibilities, such as taking care of a surviving parent and young children. These responsibilities may negatively impact children's schooling as well as their psychological wellbeing. Indeed girls in our study were more likely to start school late and report feelings of being scared compared to boys. Boys on the other hand were more likely to report feelings of happiness and determination to perform well following parental loss. This may be attributed to the way boys are traditionally socialized and trained to take care of the household, especially in the absence of their fathers – hence the reports of happiness and determination to do well in their new roles.

Further, gender differences were observed more following the loss of a father than a mother. Specifically, girls were more likely to report starting school late, taking care of a surviving parent, taking care of young children and having less food and money as a family following the death of a father, compared to starting school late and taking care of a surviving parent following the loss of a mother. One possible explanation for this finding is that, fathers are usually the breadwinners in the household and their death is felt more deeply compared to mothers (Gillespie & Kadiyala, 2005; Lindblade et al, 2003). Alternatively, following the death of a mother, close relatives tend to step in to take care of the children, and fathers tend to remarry, which may help reduce the impact of maternal loss on children.

Therefore, given that children are becoming caregivers at a young age, there is need to provide additional psychosocial support to enable them to carry out their caregiving roles without adverse impact on their own wellbeing. Peer mentoring programs that connect orphaned and vulnerable children to individuals who can help support and encourage them, connect them to peer support groups, recreational activities, as well as counseling are necessary. Special attention should be paid to the girl-orphaned child, since girls are more likely to take on the caregiving roles compared to boys.

Limitations

The study has four major limitations. First, in the analysis, we were unable to separate the effects of parental loss on orphanhood type (i.e. maternal, paternal and double orphans) given the way the questions were asked. The loss of each parent was assessed separately. Second, the psychosocial changes and experiences were self-reported by children. In such instances, the reports provided by participants may be subject to social desirability bias. However, we do not think social desirability was an issue given that the participants had no incentive to inflate or downplay the experiences in their reports. Third, we report results from AIDS-orphaned children, we do not know whether the results would be different for non-orphans. We are, however, comforted by the fact that other studies that have compared orphans to non-orphans have reported that orphaned children are more likely to report worse outcomes (Atwine et al, 2005; Cluver & Gardner, 2006). Finally, findings are limited to orphaned children who attend school in rural communities. Reports from children who are out of school or those in urban settings may be different.

Implications

Most community-level programs in sub-Saharan Africa that support AIDS-orphaned children tend to address the socioeconomic impact of orphanhood –by providing food aid, clothing and school tuition for children, ignoring the psychosocial needs. Our findings suggest that parental loss may have adverse effects on children, which may in turn affect their psychosocial, mental health functioning and educational outcomes. Community programs and policies should consider incorporating components that address the psychosocial needs of orphaned children in their support efforts –especially given that psychosocial wellbeing is a major determinant of positive outcomes for both children and support programs. These components should not only focus on children identified as clinically significant (such as those with severe psychological and mental health problems) but all orphaned children. The Bridges to the Future study is one of the programs that combine both economic empowerment and peer mentorship components to address the psychosocial needs of orphaned children. We look forward to analyzing and reporting post intervention initiation findings from this study.

Further, our findings suggest that parental loss affect both girls and boys differently. These are significant findings that add on to the limited existing literature on the impact of parental loss on gender. Moreover, given that children are likely to take on adult responsibilities early on, further research is needed to understand the impact of such responsibilities on orphaned children. Finally, the study utilized measures previously tested on populations in sub-Saharan. This approach captures important details that may be left out if standardized measures used in western countries are used. Therefore, measures tested in sub-Saharan African communities can augment standardized scales from the western world in assessing the psychosocial wellbeing of orphaned children.

Conclusion

Study findings suggest that in communities affected by HIV/AIDS, parental loss has significant negative effects including socioeconomic and psychological distress on children. Therefore, additional efforts are needed to ensure that the psychosocial needs of orphaned children are met over and above the socioeconomic support they currently receive from their families and communities.

Acknowledgments

Financial support for the Bridges to the Future study was provided by the National Institute of Child Health and Human Development (R01 HD070727-01). The content of this paper is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Child Health and Human Development or the National Institutes of Health. We are grateful to the staff and the volunteer team at the International Center for Child Health and Asset Development in Uganda for monitoring the study implementation process. Our special thanks go to all the children and their caregiving families who agreed to participate in the study. The authors declare that they have no conflict of interest.

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Research Highlights

- We examine gender and the effects of parental loss on orphaned children.
- Parental loss is a source of psychosocial distress and negative changes.
- Girls suffer more negative effects compared to boys.
- Gender differences are more prevalent following the loss of a father than a mother.

Table 1

Socio-demographic characteristics of the study sample (N=1410)

Variable	Total Sample %	Boys (n=625) %	Girls (n=785) %	t-test or χ^2
Age (Mean, SD)	12.7(1.26)	13.0(1.27)	12.43(1.19)	8.72***
Below 13 yrs	44.2	32.8	53.2	
13yrs and older	55.8	67.2	46.8	
Gender		44.3	55.7	
Orphanhood Status				8.76**
Paternal Orphan	57.5	53.9	60.4	
Maternal Orphan	21.4	21.6	21.3	
Double Orphan	21.2	24.5	18.3	
Family Composition				
Number of people in the household (Mean, SD)	6.35(2.79)	6.36(2.83)	6.35(2.76)	.026
Number of children in the household (Mean, SD)	3.18(2.20)	3.13(2.29)	3.23(2.13)	-.837
Caregiver Type				8.58*
Biological mother	31.2	29.8	32.4	
Biological father	7.9	10.2	6.1	
Grand parents	36.6	36.6	36.6	
Other relatives (<i>aunt, uncle, Siblings, in-laws</i>)	24.3	23.4	25	

* p<.05;

** p<.01;

*** p<.001

Table 2

Descriptive and bivariate analysis: Reported changes in the child's life after parental loss

Changes in the child's life	After losing a father				After losing a mother				t- test
	Total sample (%)	Among boys (%)	Among girls (%)	t-test	Total sample (%)	Among boys (%)	Among girls (%)	t- test	
Decline in school attendance	34.4	35.6	33.5	-.746	28.1	30.1	26.2	-1.02	
Grades have worsened	53.8	54.6	52.7	.618	52.3	55.7	49.2	-1.53	
Started school late	44.8	40.9	47.8	2.26*	44.4	38.7	49.8	2.77**	
Do more chores	42.1	42.9	41.2	.569	43.1	41.5	44.5	.774	
Take care of smaller children	35.1	30.9	38.4	2.59***	36.7	33.0	40.2	1.84	
Take care of a parent	45.4	41.8	48.3	2.14*	46.0	41.5	50.2	2.14*	
Less food/money as a family	75.5	72.0	78.4	2.44***	67.6	64.5	70.4	1.58	
Less food/clothes as an individual	76.9	76.7	77.1	.078	73.8	70.9	76.4	1.57	
No shelter	6.6	7.8	5.7	-1.39	4.1	5.0	3.3	.982	

* p<.05;

** p<.01;

*** p<.001

Table 3

Descriptive and bivariate analysis: Effects of parental loss on the child's feelings

Effects on child's feelings	After losing a father				After losing a mother				t-test
	Total sample (%)	Among boys (%)	Among girls (%)	t-test	Total sample (%)	Among boys (%)	Among girls (%)	t-test	
Sad and sorrowful	86.3	86.6	86.0	-435	82.5	82.3	82.7	236	
Worried	77.6	75.5	79.3	1.39	77.9	74.8	80.7	1.79	
Angry	64.8	65.0	64.7	-197	65.5	67.4	63.8	-85	
Scared	71.8	68.1	74.8	2.33*	69.0	63.8	73.8	2.65**	
Isolated and alone	81.9	82.3	81.6	-416	80.6	77.7	83.4	1.83	
Happy and contented	11.3	13.0	9.9	-1.56	13.9	17.0	11.0	-2.09*	
Determined to do well	73.2	76.5	70.5	-2.35**	77.2	78.4	76.1	-58	
Comforted and relieved	71.4	69.8	72.6	.961	70.0	67.7	72.1	-1.21	

* p<.05;

** p<.01;

*** p<.001

Table 4
 Logistic Regression Results: Effects of losing a father on the child's life and feelings: OR (95% CI)

Variable	Reported changes in the child's life			Effects on the child's feelings		
	Model 1: Started school late	Model 2: Take care of a parent	Model 3: Take care of small children	Model 4: Less food and money	Model 5: Feeling scared	Model 6: Determined to
Constant	.571**	.959	.260***	2.65***	2.94***	3.16***
Gender (boys)	1.47(1.1, 1.8)**	1.33(1.0, 1.7)*	1.38(1.1, 1.8)**	1.42(1.1, 1.9)**	1.33(1.0, 1.8)*	.747(.57, .99)*
Age groups (below 13yrs)	1.63(1.3, 2.1)***	1.15(.90, 1.5)	1.16(.89, 1.5)	1.22(.92, 1.6)	1.06(.81, 1.4)	.963(.73, 1.3)
Double orphan	1.15(.87, 1.5)	.932(.71, 1.2)	.79(.59, 1.1)	.868(.63, 1.2)	.684(.51, 1.92)**	1.40(1.0, 1.9)*
No. of people in the HH	.958(.88, 1.0)	.934(.86, 1.0)	.99(.91, 1.1)	.896(.82, .99)*	.922(.84, 1.0)	1.05(.95, 1.2)
No. of children in the HH	1.03(.92, 1.2)	1.02(.91, 1.1)	1.17(1.0, 1.3)**	1.2(1.1, 1.4)**	1.09(.97, 1.2)	.904(.79, 1.0)
χ^2 (df)	22.4(5)***	12.5(5)*	40.0(5)***	18.0(5)**	16.2(5)**	13.5(5)*

* p<.05;
 ** p<.01;
 *** p<.001

Table 5
 Logistic Regression Results: Effects of losing a mother on the child’s life and feelings: OR (95% CI)

Variable	Reported changes in the child’s life			Effects on the child’s feelings		
	Model 7: Started school late	Model 8: Take care of a parent	Model 9: Feeling happy	Model 10: Feeling scared		
Constant	.545*	.947	.159***	1.52		
Gender (boys)	1.69(1.2, 2.4)**	1.48(1.1, 2.2)**	.616(.38, .1.0)*	1.71(1.2, 2.5)**		
Age (below 13yrs)	1.39(.99, 1.9)	1.35(.95, 1.9)	.999(.61, 1.6)	1.49(1.0, 2.2)*		
Double orphan	.917(.66, 1.3)	.738(.53, 1.0)	1.35(.84, 2.2)	.737(.51, 1.1)		
No. of adults in the HH	.931(.83, 1.0)	.933(.83, 1.0)	1.03(.88, 1.2)	1.02(.91, 1.2)		
No. of children in the HH	1.14(.98, 1.3)	1.03(.89, 1.2)	.973(.80, 1.2)	.961(.83, 1.1)		
$\chi^2 (df)$	14.9(5)**	14.2(5)**	6.10(5)	14.5(5)**		

* p<.05;

** p<.01;

*** p<.001