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The relationship between parental presence and child sexual violence: Evidence from thirteen countries in sub-Saharan Africa

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Abstract

There are compelling reasons to believe that orphans – many millions due to the AIDS epidemic – are more likely to be sexually victimized during childhood. Few studies have empirically investigated sexual violence disparities, and those that do suffer from methodological limitations and limited geographic scope. We used nationally-representative data on female adolescents (15-17 years) from 13 countries in sub-Saharan Africa. We built multilevel logistic models to test for an association between the dependent variables (orphanhood and parental absence) and sexual violence, both within countries and pooled across all countries. Approximately 10% of adolescent girls reported past experiences of sexual violence; a third of those victimized were 14 years or younger at the time of their first forced encounter. Paternal orphaning (OR 1.36, $p = .01$), double orphaning (OR 1.47, $p = .05$), and paternal absence (OR 1.28; $p = .05$) were significantly associated with experiencing sexual violence in pooled analyses. Fewer findings reached significance within individual countries. Our findings suggest that the lack of a father in the home (due to death or absence) places girls at heightened risk for childhood sexual abuse; further research identifying pathways of vulnerability and resilience specific to this population is needed. Our findings also indicate that abuse often starts at an early age; thus promising programs should be adapted for younger age groups and rigorously tested.

Keywords

orphans; sub-Saharan Africa; child sexual abuse; HIV/AIDS; adolescents

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Introduction

As of 2012, there were approximately 56 million children who had been orphaned in sub-Saharan Africa, 13.4 million due to HIV/AIDS (UNICEF, 2013). The illness and/or loss of a parent is a traumatic experience, with economic, social, and psychological consequences that reverberate over the life course (Heymann, Sherr, & Kidman, 2012). As orphans reach adolescence, there is mounting concern that this cumulative disadvantage may manifest in heightened levels of sexual victimization.

Adolescents in sub-Saharan Africa are highly vulnerable to adverse sexual health outcomes (Reza et al., 2009; UNICEF, U.S. Centers for Disease Control and Prevention, & Muhimbili University of Health and Allied Sciences, 2011). Studies in Malawi, Swaziland and Tanzania indicate that one third will experience sexual violence before their 18th birthday (Ministry of Gender Children Disability and Social Welfare of the Republic of Malawi, United Nations Children's Fund, The Center for Social Research at the University of Malawi, & Centers for Disease Control and Prevention, 2014; Pereda, Guilera, Forns, & Gómez-Benito, 2009; UNICEF Swaziland and CDC, 2007; UNICEF Tanzania, CDC, & Muhimbili University of Health and Allied Sciences, 2011). Moreover, a recent review of the evidence suggests that rates of childhood sexual violence are generally higher in sub-Saharan Africa than in many other parts of the world (UNICEF, 2014). Importantly, there are compelling reasons to believe that orphans may be even more vulnerable with respect to these outcomes: the loss of a parent exacerbates established risk factors (e.g., school dropout) for sexual violence while creating additional risk factors (e.g., lack of parental supervision). For example, identified risk factors for sexual violence – including social isolation, residential instability, being out of school, poverty, and food insecurity (Breiding, Mercy, Gulaid, Reza, & Hleta-Nkambule, 2013; Breiding et al., 2011; Bruce & Hallman, 2008; Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002) – are all more prevalent among orphans (Ainsworth & Filmer, 2002; Bechu, 1996; Bicego, Rutstein, & Johnson, 2003; Case & Ardington, 2006; Case, Paxson, & Ableidinger, 2004; Deininger, Garcia, & Subbarao, 2003; Evans & Miguel, 2005; Ford & Hosegood, 2005; Jaramillo & Tietjen, 2001; Loewenson & Whiteside, 2001; Miller, Gruskin, Subramanian, & Heymann, 2007; Miller, Gruskin, Subramanian, Rajaraman, & Heymann, 2006; Monasch & Boerma, 2004; Palamuleni, Kambewa, & Kadzandira, 2003; Ssewamala & Curley, 2006; Ueyama, 2006). Sexual abuse frequently occurs in the home (Reza et al., 2009). Consistent with this, the physical absence of a biological parent and the presence of a stepfather have also been linked to sexual victimization (Madu, 2003). Finally, orphans may not have an adult in their lives to whom they feel comfortable disclosing abuse, and thus may be at risk for re-victimization.

Reports of sexual abuse among orphans abound in qualitative research (Cluver & Gardner, 2007; Foster, Makufa, Drew, Mashumba, & Kambeu, 1997; Lindsey, Hirschfeld, Tlou, & Ncube, 2003; Morantz et al., 2013; Oleke, Blystad, Moland, Rekdal, & Heggenhougen, 2006). However, few studies have empirically investigated sexual violence disparities, and those that do suffer from methodological limitations. As a result, there is a lack of consistency in these findings. A recently published review found eight studies (from Zimbabwe, South Africa and Uganda) that measured sexual abuse among orphans and non-

orphans (Nichols et al., 2014). Only one study reported that orphans were more likely to be sexually abused (Nyamukapa et al., 2008). Only two of the eight studies reported that orphans were more likely to have experienced forced sexual debut (Pascoe et al., 2010; Thurman, Brown, Richter, Maharaj, & Magnani, 2006). When studies were pooled in a meta-analysis, the authors concluded that orphanhood was not a significant risk factor for sexual violence. However, the authors noted that both because their findings contradict qualitative findings and “because of inconsistent quality of data and reporting, these findings should be interpreted with caution” (p. 304, Nichols et al., 2014). This leaves the relationship between orphanhood and sexual violence equivocal. Moreover, the meta-analysis did not disaggregate by type of orphan, despite findings from past studies demonstrating differential impacts of maternal and paternal orphaning on reproductive outcomes (Beegle & Krutikova, 2007; Gregson et al., 2005; Palermo & Peterman, 2009). Similarly, many non-orphaned children live apart from their parents, but none of the above studies accounted for parental absence.

Child sexual violence has serious physical, psychological, and reproductive consequences that may persist through adulthood (Johnson, 2004). More definitive evidence is urgently needed to guide our response. The proposed study will be the first to estimate orphan disparities in sexual violence using nationally-representative data from across sub-Saharan Africa. We hypothesized that adolescents who were orphaned or whose parents were absent would be more vulnerable to sexual violence.

Methods

Data and sample

Data were drawn from 15 Demographic and Health Surveys and two AIDS Impact Surveys (AIS), representing 13 countries (countries are listed in Table 1). These surveys were implemented by host countries, with funding from USAID and technical assistance from ICF International (Corsi, Neuman, Finlay, & Subramanian, 2012). While standardized surveys were provided, countries were free to tailor module implementation to their individual needs. The surveys were cross-sectional and nationally-representative. Households were selected through stratified, two-stage sampling. Face-to-face interviews were conducted with individual residents. Surveys were selected for inclusion if they represented a sub-Saharan African country; were conducted in 2005 or later; and were publically available at the time of analyses. Included surveys also had to contain parental survival data (this information was generally provided on children through age 17 years) and information on sexual violence for adolescents. If a country had multiple surveys meeting these criteria, all survey rounds were included. We analyzed information on female adolescents aged 15-17 years old, the only age group with both parental survival and sexual violence data.

Primary measures

Sexual violence—Countries typically collected data on the experiences and consequences of sexual violence in two ways: 1) an optional domestic violence module administered to one randomly selected woman per household or 2) through a set of questions administered

to all women in the core questionnaire. The domestic violence module was based on valid and reliable measures of sexual violence (Hindin, Kishor, & Ansara, 2008), including a modified version of the conflict tactics scale (Kishor, 2005; Straus, 1979; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). Countries either elected to ask separately about experiences of forced sex and of forced sexual acts, or to combine these items in their questioning.

When the core questionnaire was used to assess sexual violence, the following were typically included:

- “At any time in your life, as a child or as an adult, has anyone ever forced you in any way to have sexual intercourse or perform any other sexual acts?”
- “In the last 12 months has anyone forced you to have sexual intercourse against your will?”
- “The first time you had sexual intercourse, did you want to have sex or you were forced against your will?”

Once again, there was flexibility in how these questions were asked. In some countries, separate questions were created for ever partnered and never partnered women. In such cases, partnered women are asked two sets of questions: those that pertain to violence at the hands of their current/most recent partner, and those that pertain to violence perpetrated by someone other than the current/most recent partner. In other countries (e.g., Zambia 2007), there is only one set of questions about lifetime sexual violence.

There was also variability in the wording and inclusion of individual sexual violence questions by survey. For instance, six surveys did not ask about first sex. Two surveys asked only about first sex and past year experiences, thus leaving a gap for capturing lifetime experiences. Thus for primary analyses, data were summarized in a single measure of lifetime sexual violence experience by any perpetrator, across available indicators. We also examined forced sexual debut as a separate indicator, but do not present results as they did not differ substantially from those of the lifetime measure. Finally, we use additional information to better describe their experiences, including the age at first sexual victimization and type of perpetrator at first sexual victimization. We note that these last questions were only asked of women who reported sexual victimization. Adolescents who reported intimate partner sexual violence but who answered no to the broader question of sexual victimization were not included (n=77). We recoded these latter cases to reflect that their partner was the perpetrator at first sexual victimization.

Orphanhood—The UN and other key stakeholder define orphans as children aged 0-17 years who have lost one or both parents (UNICEF, 2006; UNICEF, Bernard van Leer Foundation, CARE, & et al., 2004). The household head provided information on parental survival for all children under the age of 18 years. All respondents were classified by whether their mother (maternal orphan), father (paternal orphan), or both parents (double orphan) had died, as past research suggests that adverse outcomes may be dependent on the type of orphanhood (e.g., Nyirenda, McGrath, & Newell, 2010).

Parental absence—The household head also reported the residential information on parents. For each parent who was living, household heads were asked whether that parent resided in the household. Mothers and fathers who were alive but living outside the child's household were coded as absent.

Covariates—We controlled for potential confounders of the relationship between orphanhood and sexual violence, including age (continuous in years), education (classified as none, some or completed primary, or completed secondary), marital status (dichotomized into currently married or co-habiting versus all other), area of residence (rural or urban), and wealth quintile (based on the DHS-provided wealth index calculated using assets and dwelling characteristics (Rutstein & Johnson, 2004)).

Analyses

Descriptive data is presented using the provided sample weights (calculated for the domestic violence sample in DHS surveys and for the women's sample in AIS surveys). For each country-year separately (17 total datasets), sexual violence was regressed on orphanhood using multilevel logistic modeling (three levels were included: strata (a combination of region and rural/urban area), communities (primary sampling units), and individuals). Models tested for an association between the primary dependent variables (orphanhood and parental absence) and sexual violence. All models incorporated the above sociodemographic factors expected to confound the relationship.

Within-country estimates were imprecise given the small sample size when restricted to female adolescents aged 15-17. Thus, we also pooled data across all 17 surveys, adding a fourth level to the model (survey, representing a combination of country and year). This final model is specified as:

$$\ln \left(\frac{1 - \pi_{ijkl}}{\pi_{ijkl}} \right) = Y_{ikc} = \beta_0 + \beta_1 X_{ijkl} + \beta_2 O_{ijkl} + \beta_3 P_{ijkl} + \mu_{jkl} + \mu_{kl} + \mu_{0l} + \varepsilon_{ikl}$$

where Y is the outcome of interest which varies between individuals (i), communities (j), strata (k), and survey (l); X is a set of confounders; O is a categorical variable indicating type of orphanhood; P is a categorical variable indicating type of parental absence; μ is the random intercept and is the individual level residual. No weights are used in the regression analyses in accordance with DHS guidelines (Rutstein & Rojas, 2006).

Results

Sample description

Table 1 presents the characteristics of the sample by country. Orphanhood was highly prevalent in this sample, with the loss of a father more common than the loss of a mother in 10 of the 13 countries. Orphanhood ranged widely by country (from 15% – 44%), with high rates observed among countries with the largest HIV/AIDS epidemics (e.g., Zimbabwe) or recent conflict (e.g., Rwanda).

Approximately 10% (unweighted) of adolescent girls aged 15-17 years reported experiencing sexual violence at some point in their lives. Weighted lifetime prevalence of sexual victimization ranged from a high of 18% in Cameroon to a low of 6% in Nigeria. However, we caution that some of this variation reflects differences in the questions that were asked in the respective countries (e.g., Nigeria did not ask about the circumstances of their first sexual experience). Respondents were also asked about the circumstances of their first sexual victimization. Approximately a third of those victimized were 14 years or younger at the time of their first forced encounter, with the mean age ranging from 12.6 (Gabon) to just over 15 (Zimbabwe 2005). The perpetrator at the time of first victimization was most commonly a partner (boyfriend or husband; 45% unweighted), followed by a religious leader (14%), in-law (12%), other relative (9%), or friend/acquaintance (8%); rarely was abuse perpetrated by a stranger (2%).

The association between orphanhood and sexual violence

Table 3 presents the fully-adjusted models regressing parental status on sexual violence; results are presented both by individual survey and with data pooled across all 17 surveys. The loss of a mother was not statistically associated with sexual violence in any individual country nor in the pooled analyses (OR 0.97). The loss of a father was associated with elevated risk in several individual countries as well as in the pooled analyses (OR 1.36, $p = .01$). The loss of both parents likewise emerged as a significant risk factor for having experienced any sexual violence (OR 1.47, $p = .05$ in the pooled analyses). With regard to maternal absence, there were conflicting findings across countries (e.g., Tanzania showed a significant negative association whereas Uganda (2011 AIS) demonstrated a positive association) and hence there was no net association across all 17 surveys. Paternal absence, on the other hand, was significantly associated with greater sexual violence overall (OR 1.28; $p = .05$).

Discussion

Main findings

This study adds to the existing evidence in several ways. First, few peer-reviewed studies have estimated sexual violence prevalence among adolescents in lower and middle-income countries. Using nationally representative data from thirteen countries in sub-Saharan Africa, we estimate that approximately one in ten female adolescents aged 15-17 have experienced at least one form of sexual violence.

Second, the existing evidence was equivocal on whether orphanhood was a risk factor for sexual violence among this age group. Our 13-country study highlights the significant risk that accompanies paternal absence, either because the father is deceased or because he does not live in the child's home. Specifically, we report a statistically significant likelihood of sexual violence for paternal orphans (OR 1.36) and double orphans (OR 1.47). This is largely consistent with a prior meta-analysis which found that the likelihood of sexual abuse among orphans compared to non-orphaned peers was elevated but not statistically significant (Nichols et al., 2014). The fact that relationships between orphanhood and sexual

violence reach significance in the current study may reflect its larger sample size, disaggregation by orphan type, and greater geographic diversity.

Third, we find risk attaches to paternal absence but not to maternal absence in sub-Saharan Africa. While the prevalence of orphanhood has been widely publicized, particularly in reference to the impact of the HIV/AIDS epidemic, there has been far less emphasis placed on parental absence. Critically, parental absence may be far more common than orphanhood (Gaydos, 2015). Over time, households dissolve, parents divorce, and many adolescents migrate to new households due to marriage, work or schooling (Hosegood, Benzler, & Solarsh, 2005). This has implications for the transition to adulthood. Behaviors and events that occur in this key window may have long-term impacts on individuals' future trajectories. In our study, a substantial number of adolescents had living parents who did not reside in the same household: 14-48% had absent mothers and 21-52% had absent fathers. These figures are consistent with past research on parental co-residence in sub-Saharan Africa (Beegle, Filmer, Stokes, & Tiererova, 2010; Ford & Hosegood, 2005). Drawing attention to this substantial population is all the more critical given that our findings suggest that it is the presence of a father in the home – not just his survival status – that is protective against sexual violence.

The next step is to further understand the pathways through which paternal absence places girls at heightened risk in an effort to better inform policy and programming. We find that paternal, but not maternal, orphanhood and absence is associated with elevated risk of sexual violence. This suggests that economic-related risk factors associated with losing a father (e.g., food insecurity, poverty, and being out of school) may play a larger role in sexual violence risk than do risk factors more generally associated with the loss of a mother (support, monitoring, etc). While our analyses do control for household-level wealth, this measure captures assets that may precede a father's death rather than current income, and thus may not reflect economic security with enough precision. Income poverty, shocks, and vulnerability are increasingly being addressed by national governments in the SSA region through social protection strategies to help poor and vulnerable households. Some of these are specifically targeted to households with OVC, including Kenya's Orphans and Vulnerable Children Cash Transfer Programme (CT-OVC) and Botswana's Programme for Orphans and Vulnerable Children, an in-kind program. There is a growing evidence base that cash transfers can reduce sexual risk taking among adolescents (Baird, Chirwa, McIntosh, & Özler, 2010; Handa, Halpern, Pettifor, & Thirumurthy, 2014; Pettifor, MacPhail, Nguyen, & Rosenberg, 2012; Rosenberg, Pettifor, Thirumurthy, Halpern, & Handa, 2014). To date, we know of no published studies that have examined their impact on sexual violence among this population specifically,¹ however the evidence on intimate partner violence among older cohorts generally suggests a protective effect against intimate partner violence (not strictly defined as sexual IPV) (Angelucci, 2008; Hidrobo & Fernald, 2013; Hidrobo, Peterman, & Heise, 2013).

¹Studies currently underway are examining the impacts of government-run unconditional cash transfer programs on sexual violence (defined as first forced sex or lifetime forced intercourse) experienced by youth and adolescents in Malawi, Zimbabwe, and Zambia (<http://www.cpc.unc.edu/projects/transfer/countries>).

In addition to the economic insecurity pathway, many other alternatives exist and warrant investigation: girls who lack a father's presence may exhibit greater dependence on other male relatives (leaving them more vulnerable to abuse) or may seek out unhealthy partnerships with older men. Given that almost half of the girls in this study reported that their first violent experience was at the hands of a boyfriend or husband, particular attention should be given to how and with whom they form early partnerships. Specifically, efforts to address sexual violence should target adolescents to break the cycle of violence as victims or perpetrators (Lundgren & Amin, 2015).

Limitations and strengths

There are limitations inherent in using the DHS: these are cross-sectional surveys that do not allow for temporal ordering of the events, and it is possible that sexual victimization occurred prior to orphaning. Further, DHS do not collect the timing of parental death, which may modify the impact of this experience on adverse outcomes. Neither do DHS collect parental survival above age 17 years which prematurely truncates the sample. Our measure of parental absences is similarly limited in that it captures only current circumstances, which may not reflect the timing of sexual victimization. However, we find it highly unlikely that reverse causation (i.e., victimization leading to parental absence) explains the observed relationship.

Importantly, there are aspects of our methodology that may lead to underestimates of sexual violence. First, our measure of sexual violence does not include all forms of sexual exploitation, such as transactional sex. The questions asked by individual DHS surveys also differed, and thus our sexual violence measure likewise differed slightly by survey (often not including forced sexual initiation). Moreover, while the DHS domestic violence modules were conducted only when privacy could be assured, the prevalence estimates of sexual violence may still be low due to under-reporting (Ellsberg, Heise, Peña, Agurto, & Winkvist, 2001). Thus, it is important to examine how our estimates compare to others. For example, a meta-analysis of child sexual abuse reported a prevalence of 20% among females in Africa (Stoltenborgh, van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011). In the more recent Violence against Children Survey series, sexual violence before 18 was reported by 20% of girls from Malawi and approximately a third of girls from Kenya, Swaziland, Tanzania and Zimbabwe (Ministry of Gender Children Disability and Social Welfare of the Republic of Malawi et al., 2014; Reza et al., 2009; UNICEF, U.S. Centers for Disease Control and Prevention, & Kenya National Bureau of Statistics, 2012; UNICEF Tanzania et al., 2011; Zimbabwe National Statistics Agency (ZIMSTAT), 2012), with repeated exposure in over 40% of these cases (Reza et al., 2009). A combination of definitional differences, age and location of the study cohort, and interview circumstances likely account for the range in estimates between studies (Ellsberg et al., 2001). Our prevalence estimates are likely among the lowest because our sample was 15-17 years old; the above estimates are from young women who have already reached age 18. Importantly, this is unlikely to bias estimates of orphanhood disparities.

Pooling data across 13 countries may also mask important heterogeneity in the relationship between parental status and sexual violence. In most cases, country-level estimates of

associations have low precision due to small individual sample sizes and are non-significant. However, there are suggestions of heterogeneity between countries. If the heterogeneity is real (worthy of testing with larger samples), than it may be a product of cultural influences (e.g., the extent of gender inequality (Madu & Peltzer, 2001)), political protections for women, social structure (e.g., greater urbanization and migration (Stoltenborgh et al., 2011)), or differential fosterage patterns. These and other hypotheses are worthy of further research, as this line of inquiry may best be able to highlight malleable practices or beliefs.

The use of DHS data from multiple countries in sub-Saharan Africa also confers important advantages. First, we were able to generate nationally representative estimates of childhood sexual violence among adolescents, albeit with the above caveats. Second, it allowed us to better examine the relationship between orphanhood and sexual violence. Previous studies suffered from small sample sizes, employed heterogeneous definitions, and were limited in geographic range. By pooling DHS surveys, our study ensures there is adequate sample size to detect significant results, that the data are nationally representative, and that they generalize to a much broader geographic range. Thus, our results provide strong initial guidance for programmers trying to allocate scarce resources between competing needs.

Implications for practice and research

This study confirms the high prevalence of sexual violence among children and adolescents found in other studies from this region, and highlights the increased vulnerability of children who do not reside with their fathers. We know sexual violence is a risk factor for HIV infection (e.g., Jewkes et al., 2006; Jewkes, Dunkle, Nduna, & Shai, 2010). A recent study covering ten countries in sub-Saharan Africa found that sexual violence in a woman's first union was associated with increased risk of HIV (Durevall & Lindskog, 2015). In an earlier study, Lalor estimated that 1-2% of girls in southern Africa would experience penetrative sex by an HIV-positive perpetrator before their 18th birthday (Lalor, 2004). Thus in countries that are still in the grips of large-scale HIV/AIDS epidemics, our findings carry even greater weight. They point to a high risk group in need of immediate intervention, and may partially explain why orphans are more likely to be HIV-positive (Operario, Underhill, Chuong, & Cluver, 2011). Key stakeholders, such as PEPFAR, are urging programs serving orphaned and vulnerable children to facilitate better access to sexual violence prevention initiatives in their communities, and to respond appropriately to cases of sexual violence reported by their beneficiaries (US President's Emergency Plan for AIDS Relief, 2012). Our findings lend greater urgency to this collaborative approach.

Further, studies from around the world indicate that victimization and perpetration of various forms of gender-based violence begin early (Jewkes, Fulu, Roselli, & Garcia-Moreno, 2013; Peterman, Bleck, & Palermo, in press). This held true in our study: a third of those victimized were 14 years or younger at the time of their first forced encounter. These findings underscore the need for early intervention, and recent calls have reiterated this point (Decker, Miller, Illangasekare, & Silverman, 2013). However, there is a lack of evidence on what works to prevent gender-based violence in low and middle income countries (Heise, 2011). A 2009 systematic review found 74 articles on sexual abuse prevention; all but one came from a high income country (Mikton & Butchart, 2009). A 2015 review highlighted an

emerging literature in low and middle income countries, though still noted that the most promising interventions have yet to be rigorously tested in these contexts (Lundgren & Amin, 2015). There are some recent exceptions. For example, one study in Kenya found that a school-based program to empower girls was successful at reducing sexual assaults (Sarnquist et al., 2014). The same initiative offered boys a complementary program; participants demonstrated more positive attitudes towards women and were better able to intervene when witnessing violence (Keller et al., 2015). More research is critically needed in this area to understand what interventions can reduce child sexual abuse in sub-Saharan Africa, and how they can be adapted to address the unique vulnerabilities of paternally orphaned children. This will require further qualitative inquiry to identify specific pathways of vulnerability for this population, followed by rigorous empirical evaluation of potential solutions.

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Table 1

Parental status among adolescent girls aged 15–17 years by survey, weighted

Country (year)	n	Both Parents Alive and in Household (%)			Orphanhood			Parental Absence	
		Maternal Orphan (%)	Paternal Orphan (%)	Double Orphan (%)	Mother Living but Absent (%)	Father Living but Absent (%)			
Cameroon (2011)	525	17.3	12.5	2.2	36.0	43.0			
Cote d'Ivoire (2005)	629	3.7	12.0	5.7	45.6	46.0			
Gabon (2012)	531	30.4	8.0	4.2	36.7	45.5			
Ghana (2008)	205	31.5	9.6	2.3	34.4	51.7			
Liberia (2007)	365	31.2	7.2	3.1	47.7	48.1			
Malawi (2010)	662	34.7	15.2	5.4	37.5	41.0			
Mozambique (2011)	687	30.9	13.7	6.0	39.4	45.0			
Nigeria (2008)	2077	37.8	9.5	1.9	42.7	44.1			
Rwanda (2005)	456	37.8	25.8	9.5	13.5	21.4			
Rwanda (2010)	513	37.5	2.2	6.5	18.6	28.1			
Tanzania (2010)	703	41.2	11.9	4.1	31.5	34.6			
Uganda (2006)	203	34.0	18.0	5.7	35.8	37.6			
Uganda (2011 DHS)	188	40.9	13.3	6.9	32.6	32.1			
Uganda (2011 AIS)	306	35.9	15.8	5.9	33.0	36.6			
Zambia (2007)	503	37.1	15.1	8.0	30.4	33.6			
Zimbabwe (2005–6)	656	27.9	18.6	11.3	33.5	37.1			
Zimbabwe (2010–11)	612	25.5	18.5	14.2	35.5	37.2			

Table 2
Sexual violence experience among adolescent girls aged 15–17 years by survey, weighted

Country (year)	Overall (%)	Both Parents Alive and in Household (%)		Orphanhood			Parental Absence	
		Maternal Orphan (%)	Paternal Orphan (%)	Double Orphan (%)	Mother Living but Absent (%)	Father Living but Absent (%)		
Cameroon (2011)	17.7	11.1	23.8	10.2	19.9	18.1		
Cote d'Ivoire (2005)	8.6	9.1	14.5	3.7	9.7	13.3		
Gabon (2012)	13.7	27.0	8.3	2.8	19.0	13.4		
Ghana (2008)	12.9	6.1	54.1	0	13.5	8.2		
Liberia (2007)	11.4	35.8	3.1	7.6	11.3	13.0		
Malawi (2010)	13.1	23.4	7.2	20.7	14.9	16.1		
Mozambique (2011)	8.0	18.2	16.7	4.1	9.1	10.0		
Nigeria (2008)	6.2	5.8	9.9	18.9	6.9	5.9		
Rwanda (2005)	6.5	2.1	4.9	8.2	17.2	11.8		
Rwanda (2010)	10.7	8.0	13.0	11.0	12.7	14.6		
Tanzania (2010)	11.4	7.3	6.1	15.0	15.0	18.9		
Uganda (2006)	16.5	0	27.1	10.5	24.1	23.3		
Uganda (2011 DHS)	15.6	0	14.5	25.9	8.6	9.9		
Uganda (2011 AIS)	8.9	11.9	6.0	11.3	14.7	12.9		
Zambia (2007)	14.1	4.8	10.1	10.6	16.4	17.2		
Zimbabwe (2005–6)	12.6	11.7	13.2	11.1	15.2	14.1		
Zimbabwe (2010–11)	13.4	30.7	18.4	14.9	19.8	17.6		

* among those who report experiencing any sexual violence only;

† survey does not include the lifetime sexual abuse question;

‡ survey does not include the forced sexual debut question; survey does not include additional intimate partner violence questions

Adjusted association between parental status and sexual violence among adolescent girls aged 15–17 years by survey

Country (year)	n	Maternal Orphan OR (95% CI)	Paternal Orphan OR (95% CI)	Double Orphan OR (95% CI)	Maternal Absence OR (95% CI)	Paternal Absence OR (95% CI)
Cameroon (2011)	498	0.66 (0.22 – 1.93)	0.90 (0.43 – 1.87)	0.43 (0.08 – 2.27)	1.04 (0.57 – 1.92)	0.55 ⁺ (0.28 – 1.05)
Cote d'Ivoire (2005)	458	0.28 (0.02 – 3.16)	6.08 ** (1.72 – 21.46)	11.75 * (1.48 – 93.34)	0.42 ⁺ (0.154 – 1.13)	4.11 ** (1.42 – 11.90)
Gabon (2012)	499	1.77 (0.57 – 5.48)	1.01 (0.35 – 2.85)	1.49 (0.27 – 8.20)	1.79 ⁺ (0.96 – 3.32)	1.11 (0.56 – 2.13)
Ghana (2008)	203	0.97 (0.10 – 9.65)	4.72 * (1.29 – 17.29)	–	0.86 (0.29 – 2.53)	0.99 (0.30 – 3.32)
Liberia (2007)	348	1.19 (0.11 – 12.65)	0.42 (0.04 – 4.09)	1.31 (0.12 – 14.21)	0.83 (0.31 – 2.21)	1.24 (0.47 – 3.27)
Malawi (2010)	636	2.62 (0.78 – 8.84)	0.74 (0.29 – 1.88)	2.78 ⁺ (0.97 – 7.99)	1.68 (0.76 – 3.69)	0.92 (0.40 – 2.11)
Mozambique (2011)	683	2.60 ⁺ (0.89 – 7.65)	3.69 * (1.32 – 10.35)	1.13 (0.21 – 6.07)	1.33 (0.59 – 2.97)	2.03 (0.79 – 5.21)
Nigeria (2008)	2082	1.22 (0.45 – 3.33)	1.54 (0.81 – 2.94)	2.52 (0.78 – 8.20)	1.01 (0.58 – 1.74)	1.02 (0.57 – 1.81)
Rwanda (2005)	1494	–	2.10 (0.82 – 5.39)	2.21 (0.68 – 7.20)	1.61 (0.62 – 4.23)	2.10 (0.72 – 6.16)
Rwanda (2010)	501	0.80 (0.22 – 2.90)	2.12 ⁺ (0.88 – 5.06)	1.80 (0.54 – 5.99)	0.57 (0.23 – 1.39)	2.65* (1.05 – 6.70)
Tanzania (2010)	685	0.60 (0.15 – 2.47)	1.52 (0.59 – 3.93)	0.97 (0.20 – 4.70)	0.41 * (0.17 – 0.97)	1.97 ⁺ (0.91 – 4.24)
Uganda (2006)	196	–	25.08 ** (2.37 – 266.00)	5.61 (0.28 – 111.33)	0.85 (0.27 – 2.70)	25.87 ** (2.47 – 271.03)
Uganda (2011 DHS)	172	–	–	1.19 (0.07 – 19.30)	1.19 (0.27 – 5.23)	1.10 (0.23 – 5.20)
Uganda (2011 AIS)	305	1.47 (0.15 – 14.58)	0.49 (0.13 – 1.82)	2.53 (0.44 – 14.71)	4.25 ** (1.61 – 11.21)	0.94 (0.35 – 2.47)
Zambia (2007)	486	0.33 (0.07 – 1.56)	0.86 (0.36 – 2.08)	0.92 (0.31 – 2.76)	1.32 (0.64 – 2.71)	1.31 (0.62 – 2.76)
Zimbabwe (2005–6)	619	0.99 (0.30 – 3.27)	0.90 (0.35 – 2.32)	1.00 (0.36 – 2.79)	0.96 (0.42 – 2.19)	1.25 (0.5 – 2.96)
Zimbabwe (2010–11)	599	0.98 (0.28 – 3.48)	2.37 (0.85 – 6.64)	2.70* (1.00 – 7.26)	0.78 (0.35 – 1.77)	2.01 (0.73 – 5.54)
Pooled	10464	0.97 (0.70 – 1.35)	1.36 ** (1.08 – 1.70)	1.47 * (1.08 – 1.99)	1.06 (0.88 – 1.28)	1.28 * (1.05 – 1.56)

p < 0.001,**
p < 0.01,*
p < 0.05,+
p < 0.10;

– indicates that there were too few cases to create an estimate; adjusted ORs control for age, educational achievement, marital status, household wealth quintile, and rural residence (not shown).