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Orphanhood and Completion of Compulsory School Education Among Young People in South Africa: Findings From a National Representative Survey

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We examined the association of orphanhood and completion of compulsory school education among young people in South Africa. In South Africa, school attendance is compulsory through grade 9, which should be completed before age 16. However, family and social factors such as orphanhood and poverty can hinder educational attainment. Participants were 10,452 16–24-year-olds who completed a South African national representative household survey. Overall, 23% had not completed compulsory school levels. In univariate analyses, school completion was lower among those who had experienced orphanhood during school-age years, males, and those who reported household poverty. In multivariate analyses controlling for household poverty, females who had experienced maternal or paternal orphanhood were less likely to have completed school; orphanhood was not independently associated with males' school completion. Findings highlight the need for evidence-informed policies to address the education and social welfare needs of orphans and vulnerable youth, particularly females, in South Africa.

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INTRODUCTION

South Africa has experienced a dramatic growth in the prevalence of orphanhood due in large part to AIDS-related deaths in the adult population (Commission on HIV/AIDS and Governance in Africa, 2005; Monasch & Boerma, 2004; UNAIDS, UNICEF, & USAID, 2004; UNICEF, 2006). Orphanhood has been defined as experience of parental death among children below the age of 18 (UNAIDS, UNICEF, & USAID, 2004). By the end of 2003, 13% of children in South Africa ages 17 years or younger were estimated to have experienced the death of a parent, of which 48% had lost their parents to AIDS. Reports from international development and humanitarian aid agencies have described immediate and long-term consequences of orphanhood in Southern Africa (UNICEF, 2006; World Bank, 2002). Consequences at the individual and family levels include loss of family income, poorer health, and emotional difficulties among affected children, disruption of family networks, and unexpected childcare responsibilities for extended family and elderly caregivers. Long-term population and state-level consequences can include reduced economic and development capacity, as well as extensive burdens on social care and public health systems (Bicego, Rutstein, & Johnson, 2003).

Educational status is an important individual-level indicator of a young person's well-being and future life opportunities, and at the population level, educational attainment among young people can predict growth potential and economic viability of the state. Data from several countries throughout sub-Saharan Africa, including South Africa, have indicated that orphans experience lower school attendance than nonorphans (Bhargava, 2005; Bicego et al., 2003; Case & Ardington, 2006; Nyamukapa, Foster, & Gregson, 2003). Some researchers have posited that the association between experience of parental death and educational outcomes is explained by poverty due to loss of adult income and increased medical costs (Lloyd & Blanc, 1996). The association between adults' AIDS illnesses and increased household poverty is well documented (Piot, Bartos, Ghys, Walker, & Schwartlander, 2001). In countries such as South Africa, where school fees, uniforms, and school equipment are often compulsory, poverty and economic shocks have been shown to lead to children's removal from school in order to reduce costs or to provide household income through child labor (Bell, Devarajan, & Gersbach, 2006; Edmonds, 2006). However, socioeconomic factors alone might not explain educational outcomes among children who have experienced parental death. A study of predictors of school enrollment in 10 sub-Saharan African countries found that orphan status predicted lower enrollment independent of household poverty (Case, Paxson, & Ableidinger, 2005).

Do orphans' educational outcomes differ depending on whether they experience a mother's versus father's death? Longitudinal evidence from a study that followed a large sample of children in KwaZulu-Natal, South Africa found that a mother's death directly impacted the child's educational outcomes, whereas a father's death did not (Case & Ardington, 2006). Children who had experienced their mother's death following entrance into the study were significantly less likely to be enrolled in school and had less money spent on their education at follow-up compared with children whose mothers remained alive. Although children who had experienced their father's death were subsequently more likely to experience increased poverty compared with children whose fathers remained alive, father's death did not independently explain reduced school enrollment.

Do female orphans differ from males in educational outcomes following parental death? The evidence on this appears mixed. Reports by international agencies have cautioned that females are particularly vulnerable to adverse outcomes associated with orphanhood (Commission on HIV/AIDS and Governance in Africa, 2005; UNICEF, 2006). However, in the study of orphans in KwaZulu-Natal there was no indication that boys and girls who experienced parental death differed in rates of school enrollment (Case & Ardington, 2006).

In this study, we present data on educational outcomes associated with experience of parental death in a population-based survey of young people sampled from the nine provinces in South Africa. According to the South African Schools Act, passed by the parliament in 1996, school attendance is compulsory through grade 9, or for children between ages 7 and 15, whichever comes first. Compulsory education, therefore, is equivalent to 7 years of primary education followed by 2 years of secondary education, and should ideally be completed before children reach age 16. This study uses data from the National Survey of HIV and Sexual Behavior among Young South Africans (Pettifor et al., 2005), which is the largest known nationally representative household survey of HIV risk and sexual behavior conducted among South African young people between the ages of 15 and 24. The specific aims of this paper are to examine whether experience of parental death during school-age years (i.e., age 15 or younger) is associated with completion of compulsory school education, whether this association is independent of socioeconomic conditions, and whether this association differs between males and females. Analyses are restricted to respondents ages 16 or older. By focusing on rates of school completion among young people during their post compulsory school-age years, rather than rates of school enrollment among children who should be currently enrolled (e.g., Case & Ardington, 2006), this paper can

provide a perspective on potential vulnerabilities associated with orphanhood during the formative period of school-age years that might extend into early adulthood. This is the first-known study to examine these issues with a representative national sample of South African young people.

METHOD

Sampling and Participants

The survey was conducted between March and August 2003, using a stratified, systematic national sampling of households across South Africa's nine provinces. The South African 2001 census served as the basis for the sampling frame. Census enumeration areas served as the primary sampling units, and a segment of each enumeration area was randomly selected with all households within each segment enumerated and visited. One eligible youth, 15–24 years old, per household was invited to participate in a face-to-face structured survey; analyses reported here excluded 15-year-olds. The survey's original goal was to examine HIV prevalence and sexual health among young South Africans (Pettifor et al., 2005). In addition to asking about sexual behaviors and risk for sexually transmitted infections, the survey included measures of family composition, household poverty, and educational outcomes. All participants provided informed consent before the survey and, for participants younger than 18, consent from an adult was obtained. Interviewers were matched according to participants' gender, race, and language. Surveys were translated and back-translated from English into eight South African languages (Sotho, Zulu, Tswana, Xhosa, Pedi, Venda, Tsonga, Afrikaans). All study procedures were approved by the Committee for the Protection of Human Subjects, University of the Witwatersrand, South Africa.

Measures

Completion of compulsory education was a dichotomous variable reflecting whether participants had or had not completed the ninth-grade level of school. *Mother died before child reached age 16* and *father died before child reached age 16* were dichotomous-coded variables reflecting whether participants reported their mother or father had died during school-age years, i.e., when participants were at age 15 or younger. Cause of parental death was not assessed. *Sociodemographic variables* included participants' current age, race, geographic province, and several proxy measures for household socioeconomic status including whether they lived in rural versus urban

neighborhoods, whether they lived in formal versus informal settlements, whether they had an adult caregiver at home, whether they had electricity at home, and the type of building material used to make their home. Direct questions about socioeconomic status, such as household or personal income or possessions, were not asked.

Statistical Analysis

Weighted analyses took into consideration the sampling probabilities and distribution of the sample. We examined the proportion of the sample that had not completed compulsory education (ninth grade) by age, gender, sociodemographic characteristics, and experience of mother's of father's death. Chi-square tests and univariate logistic regressions were used to examine descriptive trends among these variables. Multivariate logistic regression analyses, controlling for sociodemographic characteristics, were used to assess whether experience of either a mother's or father's death were each independently associated with not completing compulsory education; females and males were analyzed separately because of robust gender differences. All analyses were conducted in STATA 8.0 (College Station, TX, USA) using *svy* methods, which adjusted for sample strata, primary sampling units, and population weights.

RESULTS

In total, 10,452 participants ages 16–24 were interviewed. The sociodemographic profile of the sample was similar to the national profile from the 2001 South African census. Slightly over half (52.2%) of the sample was female, and the majority (82.7%) were Black African, living in either rural informal (38.9%) or urban formal (48.3%) areas across the nine provinces. Overall, 14.4% had experienced the death of a father before they had reached the age of 16, and 4.4% had experienced the death of a mother before the age of 16.

Sociodemographic Characteristics and Compulsory Education

Nearly one-quarter (23.3%) of 16–24-year-olds had not completed compulsory education (Table 1). Males were significantly less likely than females to have completed compulsory education (for males, 72.5%; for females, 80.1%). Participants who had experienced the death of either a mother or a father before they had reached the age of 16 were significantly

TABLE 1
Associations Between Completion of Ninth Grade, Gender, Experience of Parental Death, and Sociodemographic Characteristics

	Completed Ninth Grade Education				
	Yes		*No*		
	Weighted %	*95% CI*	*Weighted %*	*95% CI*	*p*
Overall	76.7	75.3–78.1	23.3	23.2–24.7	
Gender					<.001
Female	80.1	79.3–82.0	19.5	18.1–21.0	
Male	72.5	70.7–74.3	27.5	25.7–29.3	
Mother died before child reached age 16					<.005
Yes	71.3	67.3–75.3	28.7	24.7–33.0	
No	76.9	75.5–78.3	23.1	21.7–24.5	
Father died before child reached age 16					<.001
Yes	71.6	69.0–74.1	28.4	25.9–31.0	
No	77.5	76.1–78.9	22.5	21.1–23.9	
Race					<.001
Black	74.5	73.0–76.1	25.5	24.0–27.0	
Colored	81.3	77.4–84.8	18.7	15.3–22.6	
White	98.5	96.8–99.3	1.5	.7–3.2	
Indian	96.8	93.2–98.6	3.2	1.4–6.8	
Province					<.001
Eastern Cape	67.5	62.8–71.8	32.5	28.2–37.2	
Free State	75.4	70.5–79.6	24.6	20.4–29.5	
Gauteng	87.5	84.7–89.8	12.5	10.2–15.3	
KwaZulu-Natal	76.3	72.4–79.7	23.8	20.3–27.6	
Limpopo	73.3	69.5–76.7	26.8	23.3–30.6	
Mpumalanga	75.9	71.5–79.9	24.1	20.1–28.5	
North West	75.8	70.2–80.6	24.2	19.4–29.8	
Northern Cape	74.6	65.8–81.7	25.5	18.3–34.2	
Western Cape	85.4	81.8–88.4	14.6	11.6–18.2	
Geographic area type					<.001
Rural formal	43.1	36.6–49.7	56.9	50.3–63.4	
Rural informal	71.1	69.1–73.1	28.9	26.9–30.9	
Urban formal	86.4	85.0–87.7	13.6	12.3–15.0	
Urban informal	74.8	69.7–79.2	25.2	20.8–30.3	
Main materials used for walls of home dwelling					<.001
Traditional materials (mud brick, dugga, etc.)	58.7	55.2–62.0	41.3	38.0–44.8	

Continued

TABLE 1 (*Continued*)

	Completed Ninth Grade Education				
	Yes		*No*		
	Weighted %	*95% CI*	*Weighted %*	*95% CI*	*p*
Temporary shack (plastic, cardboard, plywood, etc.)	74.9	70.4–78.9	25.1	21.1–30.0	
Permanent shack (corrogated iron, mixed brick, etc.)	71.0	67.4–74.3	29.0	25.7–32.6	
Permanent house (brick, block)	81.2	79.7–82.5	18.9	17.5–20.3	
House has electricity					<.001
Yes	80.4	79.0–81.7	19.6	18.3–21.0	
No	61.3	58.0–64.4	38.7	35.6–42.0	
Has a parent/caregiver living with him/her					<.001
Yes	78.0	76.6–79.3	22.0	20.8–23.4	
No	67.0	62.4–71.2	33.0	28.8–37.6	

Note. Weighted percentages and confidence intervals reflect row percentages. Significance values are associated with χ^2 tests of association.

CI, confidence interval.

less likely to have completed compulsory education (respectively, 71.3% and 71.6%) compared with those who had not experienced the death of either mother of father by age 16 (respectively, 76.9% and 77.5%). Completion of compulsory education was associated with sociodemographic factors indicative of poverty, including race, province, geographic area type, materials used for walls of home dwelling, and electricity at home (Table 1).

Age and Compulsory Education

Table 2 shows the proportion of participants, by age and experience of parental death, who had not completed compulsory education. Overall, 39.1% of 16-year-old participants had not completed compulsory education; this proportion was 22.1% among 24-year-olds. Bivariate logistic regressions were used to examine linear trends between age and school completion. Between the ages of 16 and 24, school completion levels significantly improved among participants who had not experienced their mother's or father's death (for mother's death, OR = 1.16, 95% CI, 1.13–1.96; for father's death, OR = 1.16, 95% CI 1.13–1.92), and among

TABLE 2
Weighted Proportion of 16–24-Year-Old South Africans Who had Not Completed Ninth Grade, By Age and Experience of Mother's or Father's Death

	Completed Ninth-Grade Education							
	Mother Alive When Child Reached Age 16		*Mother Died Before Child Reached Age 16*		*Father Alive When Child Reached Age 16*		*Father Died Before Child Reached Age 16*	
Age	*Weighted %*	*95% CI*	*Weighted %*	*95% CI*	*Weighted %*	*95% CI*	*Weighted %*	*95% CI*
16	39.0	36.4–41.7	41.1	30.9–52.8	38.8	36.1–41.5	41.2	35.1–47.6
17	29.7	27.0–32.6	23.5	15.3–34.5	28.4	25.6–31.4	35.4	29.4–42.0
18	22.0	19.6–24.5	26.2	18.1–36.3	20.6	18.2–23.2	32.1	26.3–38.5
19	19.6	17.3–22.1	26.6	17.6–38.0	19.1	16.7–21.7	25.0	19.1–32.0
20	18.6	16.2–21.2	16.4	9.0–27.3	17.9	15.5–20.6	22.5	16.8–29.5
21	16.6	14.4–19.1	22.6	12.1–38.2	16.0	13.7–18.7	20.7	15.6–26.9
22	14.6	12.1–17.4	41.7	27.6–57.3	14.4	11.9–17.3	22.1	16.1–29.4
23	17.1	14.5–20.0	32.3	18.5–49.9	17.5	14.8–20.5	18.2	12.3–26.1
24	21.6	18.2–25.5	33.3	17.5–54.1	21.1	17.4–25.3	28.2	19.9–38.3
Overall	23.1	21.7–24.5	28.7	24.7–33.1	22.5	21.1–23.9	28.4	25.9–31.0

CI, confidence interval.

participants who had experienced their father's death during school-age years (OR = 1.14, 95% CI, 1.09–1.20). School completion levels did not significantly improve between ages 16 and 24 among participants who had experienced their mother's death during school-age years (OR = 1.01, 95% CI, .93–1.10).

Associations Between Gender, Experience of Mother or Father Death, and Compulsory Education

Multivariate logistic regression was used to examine, separately for females and males, associations between experience of a mother's or father's death before age 16 and having not completed compulsory education, controlling for sociodemographic co-factors (Table 3). For females, mother's death before age 16 (OR = 1.42, 95% CI 1.03–1.97) and father's death before age 16 (OR = 1.34, 95% CI 1.11–1.61) were both independently associated with having not completed compulsory education in the adjusted models. For males, experience of father's death before age

TABLE 3
Associations Between Parental Death During School-Age Years (Before Age 16) and Not Completing Ninth Grade Among South African 16–24 Year Olds: Females and Males

	Completed Ninth-Grade Education			
	Female		*Male*	
	Unadjusted OR, 95% CI	*Adjusted[a] OR, 95% CI*	*Unadjusted OR, 95% CI*	*Adjusted[a] OR, 95% CI*
Mother died before child reached age 16	1.52 (1.15–2.01)	1.42 (1.03–1.97)	1.13 (0.84–1.52)	0.92 (0.67–1.27)
Father died before child reached age 16	1.52 (1.28–1.80)	1.34 (1.11–1.61)	1.23 (1.04–1.46)	1.10 (0.92–1.32)

Note. [a]Each model controlled for participant's age, province, race, geographic area type, dwelling type, household electricity, caregiver status, and death of other parent before child reached age 16.
OR, odds ratio; CI, confidence interval.

16 was associated with having not completed compulsory education in the unadjusted model (OR = 1.23, 95% CI 1.04–1.46), but the association was nonsignificant when adjusting for socioeconomic indicators; experience of mother's death before age 16 was not associated with completion of compulsory education among males.

DISCUSSION

Much has been written about the potential vulnerabilities associated with orphanhood in sub-Saharan Africa, but relatively few population-level studies have documented specific vulnerabilities. This study contributes to a further understanding of the potential consequences of orphanhood on children, particularly in South Africa, which has been devastated by the AIDS epidemic. Findings here indicated that educational vulnerabilities associated with the experience of parental death during childhood, as described by Case et al. (2005), may continue into late adolescence and young adulthood, evidenced here by reduced likelihood of compulsory school completion among post-school-age females who experienced the death of either their mother or father. For males, likelihood of school completion was not independently associated with the either parent's death when sociodemographic indicators were considered.

Hypothesized explanatory mechanisms that link orphanhood and educational shortfalls have been offered elsewhere (Case & Ardington,

2006). According to the ''psychological difficulties hypothesis,'' experience of parental death can be a traumatic event leading to emotional difficulties or excessive worries among children that prevent them from focusing on school. This hypothesis has received empirical support from a case–control study of orphans and nonorphans in South Africa (Cluver & Gardner, 2006). According to the ''early adult responsibility hypothesis,'' associations between orphanhood and poor educational outcomes might be attributed to the need for orphaned children to assume adult roles such as caregiving for younger children or another ill family member, domestic labor, and work outside of the home. The ''closeness to caregiver hypothesis,'' which has received empirical support (Case et al., 2005), explains that educational outcomes among orphans might vary as a function of the relationship between the child and caregiver, such that weaker family bonds (e.g., between an orphan and a distant cousin acting as caregiver) result in poorer investment in the orphaned child's education. Finally, the ''illness hypothesis,'' suggests that orphaned children might perform worse in school because they might be ill themselves, perhaps due to HIV-related illness. Because of the cross-sectional design of the study and limitations of the measures, it is impossible to identify which of these explanations account for the lower rates of school completion among females in South Africa who experienced parental death during childhood.

The nonsignificant associations between parental death and school completion among males are additionally difficult to interpret. Overall, males were significantly less likely to complete school compared with females. Indeed, school completion rates among males at age 24 were comparable with those for 16-year-old females. It is possible that the contribution of parental death might be minimal relative to the other factors that predispose South African males to educational shortfalls. Additional research is warranted to examine this issue.

In addition to the cross-sectional design of this study, which limits insight into explanatory mechanisms and temporal order of events, there are other limitations of this study to note. First, because of demographic transitions in South Africa that have disrupted the nature of family units, some participants might not have been able to distinguish biological parents from other adult caregivers such as grandparents, who may be described or viewed as ''parents.'' Second, attributions of parental death to AIDS or other causes cannot be made because cause of death is not known; societal stigma and secrecy regarding HIV/AIDS impeded direct questions on cause of parental death. Third, using a national household sampling strategy, while a major strength of this study, might have underestimated risk associated with parental death because data were not collected from young people who lived in prisons, hospitals, children's

homes, street settings, or other venues not classified as a household. Educational shortfalls might be even more severe for children who live on the streets or in children's homes due to parental bereavement. Fourth, measurement of socioeconomic status relied on indirect indicators, which challenged our statistical capability of completely controlling for the effects of poverty on education. Fifth, the definition of compulsory education—i.e., completion of ninth grade by age 16—might have been overly strict by not taking account of whether participants were currently enrolled in school. However, the operational definition used here, based on the South African Schools Act, offers a stringent examination of the national educational policy goal.

In what ways are these findings relevant for informing policy for the care of orphans and vulnerable children in South Africa? We have observed that the likelihood of completing compulsory education among young people in South Africa is associated with multiple indicators of poverty and disadvantage, including race, gender, geographic location, and home characteristics. Over and above the contribution of these latter socioeconomic indicators, experience of orphanhood during school-age years is associated with a reduced likelihood that females will complete compulsory education. Females' school completion was undermined by both mother's and father's death. Further research is necessary to determine causal mechanisms for this association, which can inform the development of interventions to improve school completion. For example, interventions that aim to alleviate negative psychosocial and economic consequences of orphanhood may also have the potential to raise educational outcomes.

Findings from this paper indicate generalized educational shortfalls in the population. A large proportion of 16-year-old South Africans have not completed compulsory school education in the expected time period; this overall proportion reduced to 22% among young people at age 24, suggesting that many participants completed compulsory education in their later teenage years or early 20s. The lag in school completion may be due to a number of factors that can delay academic progress. However, cross-sectional findings reported here suggested that maternal orphans are less likely to ''catch-up'' on school completion by the time they are young adults. The specific social, family, psychological, and economic consequences of maternal death that contribute to poor educational outcomes need to be explored further. These findings are particularly interesting in the light of prior research indicating that poor educational achievement is a risk factor for HIV infection in a range of African countries (De Walque, Nakiyingi-Miiro, Busingye, & Whitworth, 2005; Gavin et al., 2006; Michelo, Sandoy, & Fylkesnes, 2006).

In summary, findings from this national representative sample of young people in South Africa provide evidence for females' educational vulnerabilities associated with death of a parent during childhood or early adolescence. The South African government has recognized the necessity to support the education of orphans and vulnerable children. Proposed policies of ''no fee'' schools in the poorest population quintiles are particularly encouraging. This national survey provides additional support to initiatives calling to ensure school access for orphaned children. Further research into the social and behavioral mechanisms and conditions that improve or threaten orphans' educational and other life opportunities are needed in order to design intervention and policy programs that meet their specific needs and vulnerabilities.

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