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Marriage and childbirth as factors in dropping out from school: An analysis of DHS data from sub-Saharan Africa

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Leaving school prematurely is often claimed to be among the most negative consequences of early marriage and pregnancy for girls in less developed countries. However, an analysis of the relative frequency with which these events actually occur or are named as reasons for leaving school reveals that, at least in the case of francophone Africa, they explain no more than 20 per cent of dropouts. To the extent that demographic events trump school or family factors as determinants of school-leaving, our data indicate that it is union formation—defined by the DHS as first marriage or cohabitation—rather than childbirth that is more likely to have this effect. ‘Schoolgirl pregnancy’ typically accounts for only between 5 and 10 per cent of girls’ departures from school. Furthermore, the risks of leaving school because of pregnancy or marriage have declined over time with the decline in rates of early marriage and childbearing.

Keywords: school exit; dropout; schoolgirl pregnancy; early marriage; early childbearing; sub-Saharan Africa

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Demographers have devoted considerable effort in recent years to exploring the association between schooling and fertility in less developed countries (Bledsoe et al. 1999). Education clearly plays a role in the timing of reproductive events; the effect of educational attainment in raising age at marriage and childbearing, and the positive association between current school enrolment and delayed sexual initiation, have been documented with Demographic and Health Survey data (NRC/IOM 2005). With the rapid expansion of girls’ schooling in sub-Saharan Africa, the decline in age at puberty, and the greater likelihood of attending school after puberty, the increased exposure of schoolgirls to the risk of leaving school because of pregnancy or early marriage is a growing cause of concern. This concern is magnified by evidence of rising opportunity costs to leaving school prematurely given increased rates of return to secondary and post-secondary education (NRC/IOM 2005).

Among policymakers and the media, marriage and pregnancy are frequently mentioned as reasons for premature school-leaving in the region. Anyone who has lived or travelled in Africa and read the

local papers is familiar with the attention given to ‘schoolgirl pregnancy’—a term that draws attention to the risks schoolgirls face when they stay in school beyond the age of sexual maturity. In most African countries, girls whose pregnancies are detected are required to leave school, at least temporarily. While in some countries rules have been liberalized to provide for the possibility of re-entry, the fraction of new mothers returning to school tends to be low. Thus, a high cost is associated with becoming pregnant during the school years. A pregnant schoolgirl typically must make one of two choices: either discontinue her education and go ahead with the pregnancy, or undergo an abortion that is usually illegal, and therefore potentially unsafe, in order to remain in school. Boys who get girls pregnant do not face these same risks and choices.

Child marriage—marriage before 18—is also receiving increasing international attention as an issue both for reproductive health and human rights. Chief among the arguments made for its elimination is its negative effect on educational attainment. Yet such claims are not empirically grounded. Countries with very early ages at marriage tend to be the same

countries in which average educational attainment remains well below levels likely to conflict with early marriage customs. Hence, in most countries where early marriage is prevalent there is typically a gap of several years between the age students leave school and the age at which they marry. Cross-sectional data on school-leaving and marriage by single year of age suggest on average roughly a 3- to 5-year gap between the time 50 per cent of young women have left school and 50 per cent of them have married (NRC/IOM 2005). However, in sub-Saharan Africa, where it is not uncommon for children to begin school late and still be attending primary school in their late teens (Mensch and Lloyd 1998; Hewett and Lloyd 2005), and where girls have experienced recent and dramatic increases in educational participation and attainment, the question of the relationship between early marriage and schooling has acquired more relevance.

Claims about the importance of pregnancy as a cause of dropping out from school assume that, were it not for this event, young women would continue in school. Claims that early marriage compromises school attendance make similar assumptions. The problem with assumptions about this link between schooling and early marriage or early childbearing or both is that they overlook the possibility that teenage marriage or childbearing or both are endogenous to school completion (Geronimus and Korenman 1992; Grogger and Bronars 1993; Ribar 1994, 1999; Klepinger et al. 1995; Jones et al. 1999; Lloyd and Mensch 1999; Mensch et al. 2001; Dahl 2005).

The same social and economic circumstances that predispose young women to engage in unprotected premarital sex (and subsequently proceed with a pregnancy rather than abort it) and that predispose their families to marry them off at a young age are, in all likelihood, critical factors in early school-leaving. In short, premature school-leaving among girls may be due less to early marriage or pregnancy than to other factors such as poverty, the perceived value of education, distance to school, the safety or quality of the school, or school performance.

This paper has three sections. In the first, we review the limited empirical research on reproductive behaviour and premature school-leaving. In the second, we provide descriptive data from the Demographic and Health Surveys (DHS) on school attendance and school-leaving in 20 sub-Saharan African countries. In the third, we present multiple-decrement life tables of school-leaving as a means of exploring the relative importance of different causes of premature departure from school in the five

francophone countries where data are available on age at school-leaving. In particular, we compare reasons given for leaving school with actual demographic events in order to determine what fraction of school departures among adolescents before the completion of secondary school can legitimately be associated with either early marriage or schoolgirl pregnancy. We also explore recent trends in age-specific risks of leaving school as a result of marriage or childbearing or both.

Review of literature

A small empirical literature exists on schoolgirl pregnancy, but to our knowledge there is no equivalent literature on the relationship between early marriage and leaving school. This is perhaps because marriages tend to occur after girls leave school, whereas pregnancies, which ultimately lead to school-leaving, occur while girls are still enrolled. Ironically, however, the term 'schoolgirl pregnancy' is really a misnomer since data on schoolgirl pregnancy rarely include information on pregnancies that end in abortion but only information on those that result in childbirth. As with marriage, these births tend to occur after leaving school rather than while girls are still attending school. In the discussion below, we review the literature on schoolgirl pregnancy as well as other literature relevant to the questions we plan to address.

Several events need to occur before a girl is in a position to report that pregnancy was the cause of leaving school. First, she must have unprotected or inadequately protected sex while attending school. Second, her pregnancy must be detected while she is still enrolled. Third, she must decide to take the pregnancy to term, thus forgoing the possibility of having an abortion and continuing in school.

Comparative analysis of DHS data shows that, in a majority of sub-Saharan African countries, the proportion of adolescent girls aged 15–17 who are sexually experienced is much lower among currently enrolled students than among those who never went to school or are no longer in school (Lloyd 2006). Furthermore, adolescent girls who are currently enrolled are much more likely than non-enrolled girls to use contraception if they are sexually active. Findings from a study in Kenya, which links household data on adolescents with data on the characteristics of the schools they attended, show that the school environment may be a critical factor affecting the likelihood that a schoolgirl will engage in sex. Mensch et al. (2001) found that girls who attended

schools where more girls felt they received equal treatment with boys were less likely to have engaged in sex than those who attended schools where fewer girls reported equal treatment. The study suggests that the school environment may be an important factor affecting the likelihood that a girl will be at risk of pregnancy.

It is also possible that the school environment may contribute to a girl's decision to proceed with a pregnancy once detected, but this question has been impossible to address empirically because of the incompleteness of data on pregnancy. In nationally representative household-based surveys, such as the DHS, many pregnancies that occur among schoolgirls probably go unreported, even when great care is taken to collect data on all pregnancies and not just on live births. The limited data we have on abortion, however, appear to support the view that, among pregnancies that occur during the adolescent years, those that involve schoolgirls are more likely to be terminated than those that involve adolescents who are no longer in school because pregnancies among schoolgirls are less likely to be wanted.

In in-depth surveys with a focus on abortion, including hospital and clinic-based studies of women who have experienced complications from induced abortion, young women often state their desire to remain at school as a major reason for the abortion (Bankole et al. 1998). In five subnational surveys conducted in Benin, Kenya, Nigeria, and Zambia, data were collected on the main reason given for abortion. In four of the surveys (the exception was for the one in Benin) between 30 and 55 per cent of women reported that 'having a child will disrupt education or job' as the primary reason. (Note, however, that these five studies are not based on representative samples. Two were based on small sub-samples of women—one of nurses in Kisii, Kenya; the other of 300 Ekiti Yoruba women in Nigeria—and three were hospital/clinic-based studies.) Because, to the best of our knowledge, the majority of women obtaining abortions in Africa are young and unmarried (Bankole et al. 1998), such reasons are more likely to be cited by African women than by women in other regions.

Recent studies from Cameroon provide further support for the finding that abortions among young people are more likely among those who become pregnant while still enrolled in school than among those who have never attended school or have left. In a small but representative survey of 384 young people aged 20–29 living in Yaoundé, Calvès (2002) found that being at school increased the odds sevenfold that a pregnancy would result in abortion,

after controlling for other factors. This finding is in a country where abortion is illegal but nonetheless widely practised. In Calvès' sample, 20 per cent of young women reported having had an abortion. In a small survey of 184 Beti women of reproductive age who had completed 1 year of Catholic secondary school, Johnson-Hanks (2002) found that almost 70 per cent of reported abortions had occurred among women who were enrolled in school at the time of pregnancy.

Two studies have investigated the degree to which pregnancy-related school departure is a major source of differences by sex in educational attainment. (Given that the option of reporting pregnancy as a reason for leaving school is restricted to girls, the effect of pregnancy-related school departure on girls' educational attainment should be identical to its effect on sex differences in educational attainment.) The goal was to determine whether policies designed to reduce unintended teenage childbearing among girls enrolled in school could provide an effective approach to achieving equity between the sexes in school participation. This research, based on the experiences of women who have ever attended school, relied on self-reports on the reasons for leaving school. In the first study, Eloundou-Enyegue (2004) drew on his own rich data from Cameroon with retrospective schooling and pregnancy histories and concluded that pregnancies among girls attending secondary school make a significant contribution to the sex gap in educational attainment at that level. In the second study, based on a comparative analysis of DHS surveys with data on reasons for leaving school, Eloundou-Enyegue and Stokes (2004) concluded that the relationship between schoolgirl pregnancy and the sex gap in educational attainment, which varies widely across these countries, depends on overall levels of schooling and fertility among adolescents.

These studies suffer from several shortcomings. First, the DHS analysis combined data on women of all ages, whether they attended school 30 years ago or more recently, despite the fact that schools, social norms, and behaviours are likely to have changed over time in ways that would complicate the interpretation of observed statistical associations. Second, the event of pregnancy was assumed to be exogenous, an implausible assumption for reasons discussed above. Pregnancy could be an *ex post* justification for leaving school rather than a cause. Third, while the first study was able to draw on a rich data-set with retrospective information on all respondents, the second drew on country-specific data on age/grade progression rates published by the

World Bank (citation not provided by the authors). They had to derive schooling life tables from cross-sectional data on school participation by age, using assumptions about girls' ages at each grade in countries in which late entry and grade repetition are common, with patterns varying widely from country to country. These limitations raise questions about the authors' conclusions and suggest the need for a more in-depth exploration of the association between reproductive events such as marriage or childbearing or both and changing patterns of school-leaving.

More recently, Grant and Hallman (2006) have examined previous school performance as a factor in pregnancy-related school-leaving in South Africa, using data from an adolescent survey conducted in 2001 in KwaZulu-Natal that collected detailed retrospective data on schooling, pregnancy, and births. This study is the first we are aware of that not only used event history data, permitting precise sequencing of events, but also explored in a multivariate framework some of the underlying causal factors affecting the likelihood of leaving school, of pregnancy while enrolled, and of leaving school for those who became pregnant while still enrolled. South Africa is unusual in the subcontinent in having a very high rate of premarital adolescent childbearing, combined with very liberal school policies, allowing pregnant girls and young mothers to stay enrolled in school, as well as providing child support grants for single mothers. The authors found that poorer school progress and performance as measured by temporary school withdrawal and grade repetition were positively and significantly associated both with the likelihood of getting pregnant while still enrolled and with the likelihood of leaving school if pregnant.

Marriage and childbirth as factors in school-leaving

As noted above, our empirical analysis is based on DHS data. We focus primarily on five francophone countries—Burkina Faso, Cameroon, Côte d'Ivoire, Guinea, and Togo—where data were gathered from all women of reproductive age on their age at leaving school and the main reason for leaving school for those no longer attending. Neither of these two pieces of information is part of the standard DHS questionnaire. To situate the experience of these five countries within the wider context of African experience, we begin by comparing it with that of an additional 15 sub-Saharan African

countries where women of reproductive age who were no longer attending school gave reasons for leaving school, although not the age at leaving. Women of reproductive age were asked the principal reason for leaving school in all DHS surveys conducted in the late 1990s. (This question was dropped from subsequent DHS surveys.) Possible reasons included marriage and pregnancy along with such others as school fees, exam failure, lack of interest, and family needs. While a question of this kind is likely to identify the precipitating factor, responses are unlikely to identify the only factor. For example, poor grades or lack of parental support could lead to discouragement and then to pregnancy and then to dropout. The pregnancy could be the precipitating cause but not the underlying cause.

Although marriage was defined as either formal marriage or cohabitation in the marriage section of the DHS questionnaire, marriage was not defined in the earlier section of the questionnaire where women were asked about schooling and reasons for dropout. How women may perceive the role of marriage in school dropout may vary across and within countries, especially since marriage in Africa is more a process than a well-defined event that can be precisely timed (van de Walle and Meekers 1994).

Demographic and educational context

Table 1 provides descriptive data for the 20 countries on various educational and reproductive outcomes among young women aged 20–24, including the percentage of those leaving school who reported pregnancy or marriage as the main reason for leaving. As a check on the quality of data on the main reason for leaving school, we examined whether women reporting marriage or pregnancy had actually been married or given birth by the time of the survey. With the exception of a handful of cases, this proved to be the case. We chose the age group 20–24 because in most countries young women are either no longer enrolled or have completed secondary school by age 20. The 20 countries are ranked from lowest to highest according to the percentage who have ever attended school (column 3). Almost the full range of potential levels of school attendance are represented among these countries, from Burkina Faso with 18 per cent who ever attended to Zimbabwe and South Africa with 97 and 98 per cent. Obviously, the fewer adolescents who have ever attended school, the more selective of the overall population of adolescents will be those in

a position to report on the main reason for school departure.

Column 4 provides data on the percentage who have left school among those who ever attended. In 14 of the 20 countries, over 80 per cent of young women aged 20–24 who ever attended had left school early. In the remaining six countries, young women living in South Africa and Nigeria stand out as having a relatively low prevalence of school-leaving—37 and 48 per cent. In South Africa, 35 per cent of young women remain enrolled at these ages (NRC/IOM 2005). The other women unaccounted for in South Africa can be presumed to have successfully completed secondary school, given the country's nearly universal rate of school enrolment. In Nigeria, high rates of current enrolment among young women aged 20–24 (19 per cent) as well as relatively high rates of secondary school completion among the 68 per cent who had ever attended school account for the relatively low prevalence of school-leaving. Cameroon and Comoros are the only other countries in this group where more than 10 per cent of women aged 20–24 are still in school (NRC/IOM 2005).

Of young women who left before completing secondary school, the fraction who reported pregnancy as the main reason ranges from 1 per cent in Niger to 31 per cent in South Africa (column 5). In 15 of the 20 countries, rates are 10 per cent or lower; in 9 countries rates are 5 per cent or lower. The proportion of those who report marriage as the main reason ranges from 2 per cent in Benin, Côte d'Ivoire, and Togo, to between 26 and 28 per cent in Chad, Mozambique, and Nigeria (column 6). In twelve countries, rates are 10 per cent or lower; in seven countries, they are 5 per cent or lower. In most cases, the countries in which women report high rates of school-leaving for marriage are different from those in which they report high rates of school-leaving for pregnancy. The countries are roughly evenly divided between those citing marriage and those citing pregnancy as the reason for leaving school reported relatively more frequently.

Next, we categorize countries by low, medium, and high levels of school attendance and prevalence of marriage before age 18 (Table 2) and according to levels of school attendance and prevalence of childbearing before age 18 (Table 3). We note that the

Table 1 Indicators (percentages) of educational and reproductive outcomes among women aged 20–24 in 20 sub-Saharan African countries

Country	Survey year	Ever attended	Left school before completion of secondary school, among those who ever attended	Of those who left school before completion, main reason reported as	
				Pregnancy	Marriage
Burkina Faso	1998–99	18	79	6	3
Niger	1998	22	87	1	5
Mali	1995–96	23	85	3	13
Guinea	1999	24	70	5	11
Chad	1996–97	29	86	5	28
Benin	1996	34	90	2	2
Côte d'Ivoire	1998–99	53	82	4	2
Central Afr. Rep.	1994–95	58	88	15	5
Togo	1998	61	85	9	2
Comoros	1996	64	66	2	16
Mozambique	1997	65	95	10	26
Nigeria	1999	68	48	8	27
Uganda	1995	78	90	8	6
Cameroon	1998	79	83	12	7
Madagascar	1997	82	94	2	10
Tanzania	1996	83	95	4	16
Zambia	1996–97	89	94	17	5
Kenya	1998	96	69	13	11
Zimbabwe	1994	97	94	7	7
South Africa	1998	98	37	31	9

Note: Countries are ranked from lowest to highest according to percentage who ever attended school.

Source: DHS data.

five countries featured in our subsequent, more detailed analysis—Burkina Faso, Guinea, Côte d'Ivoire, Cameroon, and Togo—reflect the full range of current experience with respect both to educational participation and to levels of early marriage and childbearing. These countries are italicized in Tables 2 and 3.

In Table 2, we indicate in parentheses the percentage who gave marriage as the major reason for leaving school. Regardless of the levels of school attendance or early marriage, we find countries in each cell of the table where no more than 6–7 per cent of those who left school reported marriage as the main reason. Not surprisingly the highest values reported among the 20 African countries, including Chad with 28 per cent, Mozambique with 26 per cent, and Nigeria with 27 per cent, are for countries where rates of early marriage are in the middle or high category. In Table 3, we find countries in each cell where 10 per cent or less of young women reported pregnancy as a major reason for leaving school, even in contexts where enrolment rates and early childbearing rates are moderate to high. Nonetheless, the highest rates occur among the countries that have achieved the highest levels of enrolment.

There are many reasons why countries with similar rates of school participation, early marriage, and early childbearing might have very different proportions of school-leaving attributed to marriage or pregnancy. Among them are different policies on schoolgirl pregnancy, with some countries requiring expulsion, some requiring temporary withdrawal,

and some allowing girls to continue in school while they are pregnant, as well as differences in the level of enforcement. A few countries, such as Mozambique, Togo, and Mali, have very strict policies requiring expulsion; Mali does not allow re-entry after childbirth (NRC/IOM 2005). At the other extreme is Burkina Faso, where girls who are pregnant are allowed to stay in school throughout their pregnancy and continue immediately after delivery. Most other countries have policies that fall somewhere between these extremes.

Multiple-decrement life tables of school-leaving

From the five DHS surveys where retrospective data on the age of leaving school have been collected as part of the questionnaire for women of reproductive age, we are able to construct life tables of school-leaving from age 12 until age 20 for those still attending school at age 12. Women who were no longer attending school were asked to report on the age at which they left school. For this analysis, we define premature school-leaving as any departure from school that occurred before the completion of secondary school. In some of these countries, because withdrawal and re-entry are not uncommon and classes have been suspended in some cases for a whole year (*années blanches*) owing to political or economic difficulties, the dating of school-leaving may not always be straightforward and some school departures that appear terminal may in fact be temporary.

Table 2 Percentage of women aged 20–24 who gave marriage as the main reason for leaving school prematurely, among those who had left school, by school attendance and marriage by age 18 in 20 sub-Saharan countries

		Per cent marrying by age 18		
		Low <30	Medium 30–50	High >50
Per cent ever attended 20–24	Low <40		Benin (2%)	<i>Burkina Faso</i> (3%) Niger (5%) Mali (13%) <i>Guinea</i> (11%) Chad (28%)
	Medium 40–70		<i>Côte d'Ivoire</i> (2%) <i>Togo</i> (2%) Comoros (16%) Nigeria (27%)	C.A.R. (5%) Mozambique (26%)
	High >70	Kenya (11%) South Africa (9%) Zimbabwe (7%)	<i>Cameroon</i> (7%) Madagascar (10%) Tanzania (16%) Zambia (5%)	Uganda (6%)

Note: The five countries featured in our detailed analysis are italicized.

Source: Table 1 and NRC/IOM 2005.

Table 3 Percentage of women aged 20–24 who gave pregnancy as the main reason for leaving school prematurely, among those who had left school, by school attendance and birth by age 18 in 20 sub-Saharan countries

		Per cent marrying by age 18		
		Low <25	Medium 25–40	High >40
Per cent ever attended 20–24	Low <40	Benin (2%)	<i>Burkina Faso</i> (6%)	Niger (1%) Mali (3%) <i>Guinea</i> (5%) Chad (5%)
	Medium 40–70	<i>Togo</i> (9%) Comoros (2%)	<i>Côte d'Ivoire</i> (4%) C.A.R. (15%) Nigeria (8%)	Mozambique (10%)
	High >70	Kenya (13%) South Africa (31%) Zimbabwe (7%)	<i>Cameroon</i> (12%) Madagascar (2%) Tanzania (4%) Zambia (17%)	Uganda (8%)

Note: The five countries featured in our detailed analysis are italicized.

Source: Table 1 and NRC/IOM 2005.

Because of the rapid rise in adolescent girls' school attendance in all five countries (NRC/IOM 2005), we construct separate multiple-decrement life tables for two cohorts of women, those aged 15–24 and those aged 35–44, which enable us to explore trends over a 20-year period. For each age from 12 to 19, we calculate the overall risk of leaving school, using childbirth and marriage as the two identified decrements.

We chose age 12 as the starting point because this tends to be the earliest age for the onset of puberty among girls and thus the age at which those still in school are first at risk of pregnancy. The selectivity of the subgroup of women still attending school at age 12 varies widely across these countries because of differences in school attendance rates, although it has lessened over time with rising enrolment. Table 4 presents data on the percentages in school at age 12 for both age cohorts in the five countries.

Table 4 Percentage of women aged 15–24 and 35–44 who were attending school at age 12 in five sub-Saharan countries

	15–24 year olds	35–44 year olds
Burkina Faso	18.0	5.9
Cameroon	77.3	56.7
Côte d'Ivoire	41.9	29.0
Guinea	23.4	10.8
Togo	60.6	n/a

n/a=not available.

Source: DHS data.

Alternative approaches to the measurement of cause-specific school-leaving

We compare three alternative estimates of the risk of school-leaving as a result of marriage or childbirth. The first estimate is based on the reported principal reason for leaving school, regardless of whether marriage or a first birth actually took place at the same age at which the student left school. The second estimate is based on the ages reported retrospectively for school-leaving, marriage, and childbirth; women who reported that school-leaving occurred at the same age as or 1 year before or after giving birth or getting married are deemed to have left school either to give birth or to marry. We attribute the departure in each case to whichever of these two demographic events was reported to have occurred first. Note that although the timing of first marriage (defined by the DHS as age at first cohabitation with a partner or spouse) and first birth is reported in calendar months and years, the timing of school-leaving is reported as a particular year of age. Also, even though marriage may have preceded childbirth and therefore may have been the proximate cause of school-leaving, the marriage could have been precipitated by a pregnancy. We know, however, that in these five countries no more than 20 per cent of first births took place within 7 months of marriage (NRC/IOM 2005); thus the overwhelming majority were reported to have been conceived within marriage. This second estimate, which allows generous leeway for the sequence of events in recognition of the lack of precision in the reported timing of school-leaving, yields a substantially higher probability than the

first. (In the most extreme cases, this estimate allows a maximum of 2 years' difference between the timing of school-leaving and a demographic event.) This higher estimate is partially explained by the fact that women who reported a first marriage or a first birth or both during the same year that they reported leaving school sometimes provided reasons for leaving other than marriage or pregnancy.

The third estimate categorizes a woman's reason for leaving school as childbirth or marriage if she fulfils the criteria applicable to either of the first two estimates. We see the third estimate as a maximum estimate and the first estimate as a minimum estimate of the number of women whose departure from school could plausibly be linked to either childbirth or marriage. Our goal is to create upper and lower bounds for the degree to which leaving school can legitimately be attributed to marriage or childbirth.

Table 5 contrasts the results for the three alternative estimates of the cumulative probability of school-leaving by age 20 for each cause, separately and combined, and for both age groups. All women who reported marriage or pregnancy as the main reason for leaving school had in fact been married or had a first birth by the time of the survey. If we compare columns 1 and 2, however, we see that many young women who left school around the time of their first marriage or first child did not provide this as the main reason for leaving school. With the exception of Togo in the case of childbirth, the estimates in column 2 always exceed the estimates in column 1. Because the estimates in column 2 allow for a very generous definition of the cumulative risk of school-leaving as a result of either of these demographic events, we might expect very little difference between columns 2 and 3. We might even reasonably assume that column 1 is a subset of column 2. When we combine the two approaches, however, the estimates of school departures attributable to childbirth rise still further, indicating that some women who stated that they left school because of pregnancy or marriage reported marriage or childbirth more than 1 year later or earlier than the age at which they left school. This raises questions about both the validity of reported reasons for leaving school and the accuracy of reporting on the timing of either of these events. The estimates in column 3 include all women who either had reported experiencing childbirth or marriage within 1 year (on either side of leaving school) or who said that such an event was the major reason for leaving school. We interpret estimate 3 as the *upper* boundary even though the generous allowance built into it might suggest an *overestimate*. We

deliberately err on the conservative side; it is impossible to know where the truth lies.

Figure 1 depicts results for women aged 15–24 and contrasts estimates 1 and 3 for each cause for all five countries within the context of the overall risks of school-leaving. The solid line indicates the overall cumulative risk of premature school-leaving at each age. The gap between that line and the lines for marriage and childbirth indicates the cumulative risk of school-leaving for other reasons. These other reasons included family responsibilities, financial constraints ('could not pay' or 'needing to earn money'), exam failure, school completion, and dislike of school along with other less frequently mentioned reasons. In most countries, the most common reasons reported were inability to pay and failure to pass. Note that no more than 75 per cent of women aged 15–24 had left school by age 20 in any country, and no more than 50 per cent had done so in Guinea among those who were attending school at age 12.

If we rely on reported reasons for school departure (estimate 1), we find very low cumulative risks of school-leaving attributed to either pregnancy or marriage in all countries, suggesting that young women themselves were very unlikely to give marriage or pregnancy as the principal reason for leaving school. The cumulative risk of leaving school for the reported reason of pregnancy ranges from 3 per cent in Burkina Faso to 10 per cent in Cameroon by age 19, and the cumulative risk of leaving school for the reported reason of marriage ranges from 1 per cent in Togo and Côte d'Ivoire to 7 per cent in Guinea. Using the most inclusive estimate (number 3), which combines reasons given for leaving school with reported events, the cumulative risk of premature school-leaving associated with childbirth ranges from 5 per cent in Burkina Faso to 17 per cent in Cameroon, and the cumulative risk associated with marriage ranges from 12 per cent in Togo to 22 per cent in Cameroon. According to this maximum estimate of the percentage of premature school departures attributable to demographic events, marriage was more likely to be associated with school-leaving than childbirth, whereas the opposite is true if we rely on reported reasons alone. This is largely because in West and Middle Africa, 82 per cent of all births among young women are reported to occur after the date of marriage (NRC/IOM 2005). Thus the more inclusive estimate demonstrates clearly that early marriage is a greater deterrent to school progress than schoolgirl pregnancy in this region of Africa.

Figure 2 shows trends over 20 years in the cumulative risk of premature school-leaving from ages 12 to

Table 5 Cumulative probability of leaving school prematurely by age 20 as a result of childbirth and marriage, according to three alternative estimates of school-leaving by cause, five sub-Saharan countries

	Age 15–24			Age 35–44		
	Estimate 1	Estimate 2	Estimate 3	Estimate 1	Estimate 2	Estimate 3
Childbirth						
Burkina Faso	2.6	3.4	5.0	2.2	7.3	9.5
Cameroon	10.2	12.6	17.3	11.0	12.8	18.9
Côte d'Ivoire	3.1	8.4	9.1	16.9	20.9	27.3
Guinea	4.4	5.1	7.3	6.2	9.0	13.0
Togo	6.7	5.4	9.5	n/a	n/a	n/a
Marriage						
Burkina Faso	2.5	14.4	15.1	4.3	20.9	23.7
Cameroon	4.6	20.8	22.2	11.6	26.7	30.6
Côte d'Ivoire	1.2	12.0	12.6	2.7	20.5	22.0
Guinea	6.6	10.7	13.3	21.3	22.4	32.1
Togo	1.1	12.0	12.1	n/a	n/a	n/a
Childbirth or marriage						
Burkina Faso	5.1	17.8	20.1	6.5	28.2	33.2
Cameroon	14.8	33.4	39.5	22.6	39.5	49.5
Côte d'Ivoire	4.3	20.4	21.7	19.6	41.4	49.3
Guinea	11.0	15.8	20.6	27.5	31.4	45.1
Togo	7.8	17.4	21.6	n/a	n/a	n/a

Note: Estimate 1—reported reason for leaving school—pregnancy or marriage.

Estimate 2—childbirth or marriage occurring at same age as, or age ± 1 year before or after leaving school.

Estimate 3—women who fit criteria for either or both estimates 1 and 2.

n/a = not available.

Source: DHS data.

19 by comparing the cumulative risks for those aged 15–24 to the cumulative risks experienced by those aged 35–44 during this same phase of the life cycle; these calculations are based on reports of the age of school-leaving for four of the five countries. (The Togo DHS did not ask the age of school-leaving for those older than age 24 and is excluded.) In all four countries, the overall risk of school-leaving was greater at each age during the late teens for the older age cohort than for the younger cohort. This pattern is what we would expect given reduced rates of early marriage and childbearing among young cohorts (NRC/IOM 2005).

The figure also shows trends in the risk of school-leaving attributable to either marriage or childbirth, using estimate 3, which is the most inclusive definition. The data indicate that school-leaving attributable to these events occurs less often now than in the past, not just in absolute but in relative terms (except in the case of Cameroon where the declines in premature school-leaving attributable to marriage and childbearing have been roughly proportional to the overall declines in premature leaving). The relative and absolute declines have been greatest in Côte d'Ivoire and Guinea. These declines are probably due to a reduction in the prevalence of

adolescent marriage and childbirth over the past 20 years (NRC/IOM 2005). While we might have expected a rise in premature leaving as a result of schoolgirl pregnancy relative to the past, given the increase in premarital sex among youth (Mensch et al. 2006), the fact that this did not occur, or did not occur sufficiently to swamp the effects of a decline in early marriage on school-leaving, might be explained in two ways. Either these trends in premarital sex are less common among students or students are more able to control their fertility than in the past through contraception and abortion, thus leading to a reduction in schoolgirl pregnancy among them. Note also that in all four countries, the decline in early marriage rates is greater than the increase in the occurrence of premarital sex such that the percentage of young people initiating sex before age 18 has declined—in two of the four countries, Burkina Faso and Cameroon, significantly so (Mensch et al. 2006).

Conclusions and implications

Among young women from francophone Africa still enrolled in school at age 12, the risks of leaving

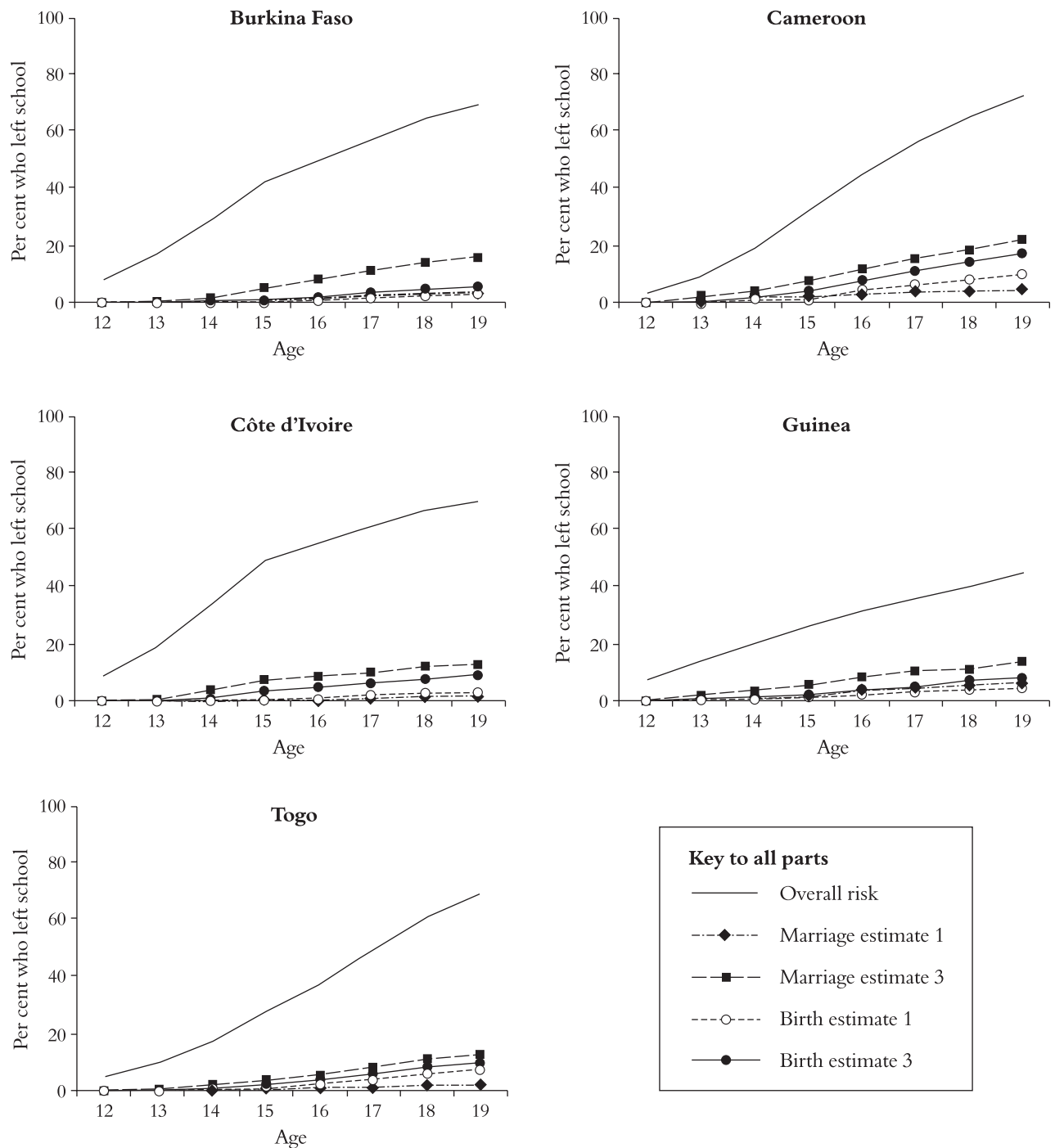


Figure 1 Cumulative risk of school-leaving attributable to childbirth or marriage among 15–24 year olds attending school at age 12, five sub-Saharan countries

Source: Tabulations from DHS surveys

school during adolescence for reasons other than childbirth or marriage far exceed the risks associated with these demographic events. With the exception of Cameroon, where our ‘maximum estimate’ suggests that approximately half of the cumulative risk of premature school-leaving is associated with childbirth or marriage, this finding is true whether we rely on the reasons respondents give or on self-reports of these events. Moreover, it remains true even when

we attribute departure from school to childbirth or marriage in all cases where there is any evidence that childbirth or marriage might be the cause.

Consistent with declines in early marriage and childbearing, the risks of school-leaving during adolescence for reasons of childbirth or marriage have lessened over time. Combining the two risks, the reduction over 20 years in the risk attributable to childbirth or marriage of leaving school by age

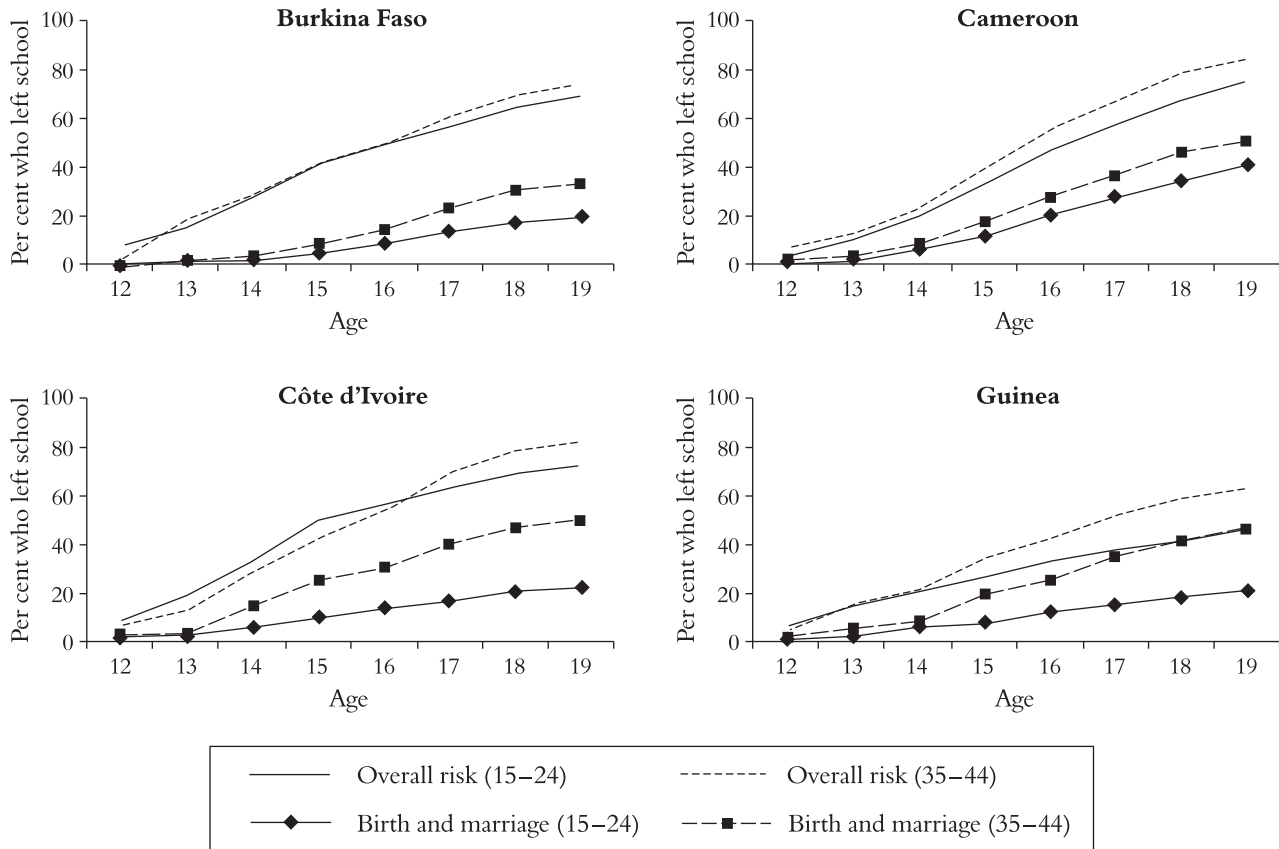


Figure 2 Cumulative risk of premature school-leaving attributable to childbirth and marriage, by age group, highest estimate

Source: Tabulations from DHS surveys, four sub-Saharan countries

20 ranges from 21 per cent in Cameroon to 39 per cent in Burkina Faso and 56–58 per cent in Côte d'Ivoire and Guinea. Looking at childbirth separately, the decrease in the risk of leaving school ranges from 9 per cent in Cameroon to 47–50 per cent in Burkina Faso and Guinea and 66 per cent in Côte d'Ivoire. Not only are the risks of school-leaving attributable to childbirth greatest in Cameroon, but the decline in the risk has been relatively small compared to the trend in neighbouring countries. In most cases, despite an increase in the percentage of adolescents still attending school after the age of puberty and a lengthening exposure to the risks of pregnancy with later ages of school-leaving, the risks of leaving school owing to childbirth have nonetheless diminished, suggesting the possibility that schooling itself provides young people with a protective environment or the knowledge and skills to prevent pregnancy, or both.

These findings have several policy implications. First, to the extent that demographic events such as early marriage and childbearing trump the school environment as a determinant of school-leaving during adolescence, our data indicate that

early marriage is more likely to limit girls' educational horizons than is early childbirth, at least in the case of francophone Africa. This result suggests that the reproductive-health community should view early marriage as a central area of concern for adolescent reproductive health. Second, our results suggest that 'schoolgirl pregnancy' rarely accounts for more than a relatively small percentage of girls who leave school. Even in countries such as Cameroon, where this topic has received considerable attention, the maximum estimate is that school-leaving associated with childbirth affects less than one-fifth of girls by age 20 who were still enrolled in school at age 12. These findings also have implications for future research. More complete retrospective data would be required for a fuller understanding of the factors that enable girls to stay in secondary school, delay sexual initiation, pregnancy, marriage and childbirth, and practise safe sex. Such data would permit an exploration of the conditions that contribute simultaneously to greater schooling success and better reproductive health in adolescence.

Notes

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References

- Bankole, Akinrinola, Susheela Singh, and Taylor Haas. 1998. Reasons why women have induced abortions: evidence from 27 countries, *International Family Planning Perspectives* 24(3): 117–127, 152.
- Bledsoe, Caroline, John B. Casterline, Jennifer A. Johnson-Kuhn, and John G. Haaga (eds.). 1999. *Critical Perspectives on Schooling and Fertility in the Developing World*. Washington, DC: National Academy Press.
- Calvès, Anne-Emmanuèle. 2002. Abortion risk and decision-making among young people in urban Cameroon, *Studies in Family Planning* 33(3): 249–260.
- Dahl, Gordon B. 2005. *Myopic Matrimony and Dropout Decisions: Evidence Using State Laws for Marriage, Schooling and Work*, National Bureau of Economic Research Working Paper No. 11328. Cambridge, MA: NBER.
- Eloundou-Enyegue, Parfait M. 2004. Pregnancy-related dropouts and gender inequality in education: a life-table approach and application to Cameroon, *Demography* 41(3): 509–528.
- Eloundou-Enyegue, Parfait M. and C. Shannon Stokes. 2004. Teen fertility and gender inequality in education: a contextual hypothesis, *Demographic Research* 11(11): 305–334.
- Geronimus, Arline T. and Sanders Korenman. 1992. The socioeconomic consequences of teen childbearing reconsidered, *Quarterly Journal of Economics* 107(4): 1187–1214.
- Grant, Monica and Kelly Hallman. 2006. *Pregnancy-Related School Dropout and Prior School Performance in South Africa*, Policy Research Division Working Paper No. 212. New York: Population Council.
- Grogger, Jeff and Stephen Bronars. 1993. The socioeconomic consequences of teen childbearing: findings from a natural experiment reconsidered, *Family Planning Perspectives* 25(4): 156–161, 174.
- Hewett, Paul C. and Cynthia B. Lloyd. 2005. Progress towards 'Education for All': trends and current challenges for sub-Saharan Africa, in C. B. Lloyd, J. R. Behrman, N. P. Stromquist, and B. Cohen (eds.), *The Changing Transitions to Adulthood in Developing Countries: Selected Studies*. Washington, DC: National Academies Press, pp. 84–117.
- Johnson-Hanks, Jennifer. 2002. The lesser shame: abortion among educated women in southern Cameroon, *Social Science & Medicine* 55(8): 1337–1349.
- Jones, Alison Snow, Nan M. Astone, Penelope M. Keyl, Young J. Kim, and Cheryl Alexander. 1999. Teen childbearing and educational attainment: a comparison of methods, *Journal of Family and Economic Issues* 20(4): 387–417.
- Klepinger, Daniel H., Shelley Lundberg, and Robert D. Plotnick. 1995. Adolescent fertility and the educational attainment of young women, *Studies in Family Planning* 27(1): 23–28.
- Lloyd, Cynthia B. and Barbara S. Mensch. 1999. Implications of formal schooling for girls' transitions to adulthood in developing countries, in C. H. Bledsoe, J. B. Casterline, J. A. Johnson-Kuhn, and J. G. Haaga (eds.), *Critical Perspectives on Schooling and Fertility in the Developing World*. Washington, DC: National Academy Press, pp. 80–104.
- Lloyd, Cynthia B. 2006. Schooling and adolescent reproductive behavior in developing countries. Background paper to the report *Public Choices, Private Decisions: Sexual and Reproductive Health and the Millennium Development Goals*. UN Millennium Project. Available: <http://www.unmillenniumproject.org/documents/CBLloyd-final.pdf>
- Mensch, Barbara S. and Cynthia B. Lloyd. 1998. Gender differences in the schooling experiences of adolescents in low-income countries: the case of Kenya, *Studies in Family Planning* 29(2): 167–184.
- Mensch, Barbara S., Wesley H. Clark, Cynthia B. Lloyd, and Annabel S. Erulkar. 2001. Premarital sex, school-girl pregnancy, and school quality in rural Kenya, *Studies in Family Planning* 32(4): 285–301.
- Mensch, Barbara S., Monica J. Grant, and Ann K. Blanc. 2006. The changing context of sexual initiation in Africa, *Population and Development Review* 32(4): 699–727.
- NRC/IOM (National Research Council and Institute of Medicine). 2005. *Growing Up Global: The Changing Transitions to Adulthood in Developing Countries*. Panel on Transitions to Adulthood in Developing Countries, Cynthia B. Lloyd (ed.). Washington, DC: National Academies Press.

- Ribar, David C. 1994. Teenage fertility and high school completion, *The Review of Economics and Statistics* 76(3): 413–424.
- Ribar, David C. 1999. The socioeconomic consequences of young women's childbearing: reconciling disparate evidence, *Journal of Population Economics* 12(4): 547–565.

- Van de Walle, Etienne and Dominique Meekers. 1994. Marriage drinks and kola nuts, in C. Bledsoe and G. Pison (eds.), *Nuptiality in Sub-Saharan Africa: Contemporary Anthropological and Demographic Perspectives*. Oxford: Clarendon Press, pp. 57–73.