Adolescent pregnancy and education trajectories in Malawi

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Short abstract

Childbearing among adolescent girls in sub-Saharan Africa remains high, while access to and use of contraception is low. This paper uses longitudinal data from five rounds of the Malawi Schooling and Adolescent Survey to investigate how a young woman's education trajectory might be different if she could avoid pregnancy while in school. Employing multiple strategies to overcome potential endogeneity between pregnancy and education, we estimate the effect of pregnancy on enrollment, grade attainment, literacy, and numeracy. Preliminary results show that pregnancy is commonly cited as a reason for not attending school, and that girls who miss one or more school terms due to pregnancy are less likely to return than their counterparts who drop out for other reasons. However, girls who left school due to pregnancy do not appear to be a selective group of sexually active girls with respect either to ability and aspirations or to background characteristics.

Extended abstract

Introduction

Childbearing among adolescent girls in sub-Saharan Africa remains high – the adolescent fertility rate is 108 births per 1000 girls aged 15-19 in the region, compared to 73 in South Asia, and 72 in Latin America and the Caribbean (World Bank, 2010). Correspondingly, contraceptive use among 15-19 year old girls is low – only 21% of married girls who want to avoid pregnancy, and just 41% of unmarried sexually active girls who want to avoid pregnancy are using a modern contraceptive method (Guttmacher Institute and IPPF, 2010).

In theory, contraceptive services can reduce fertility among this age group, decrease maternal mortality, improve maternal and child health, and have economic benefits at the individual, family, and community levels. However, while family planning programs have been touted as a critical component of development policy (Bongaarts, 1994), measurement of the potential benefits—particularly the economic benefits—of contraceptive services for women's lives is not straightforward (Miller, 2005). It is well known that utilization of family planning in developing countries is correlated with socioeconomic status. Those who have access to and use contraception are generally better educated and more affluent, undermining the ability to identify an independent effect of family planning on women and their families (Khan et al, 2007). Furthermore, some economists argue that what matters for fertility decline and other outcomes is not the supply of services, but reduced demand for children, a consequence of increased schooling and other features of economic development (Pritchett, 1994; Lam, 2011)

To assess the economic effects of family planning on sexually active adolescent girls in Africa—a segment of the reproductive-age population for whom access to services is limited, particularly for the unmarried (Biddlecom et al 2007)—it is useful to address the counterfactual: How might a young woman's life be different if she used contraception? More specifically, how might a young woman's education trajectory be different if she avoided pregnancy while in school? Theoretically, adolescent girls who remain in school should attain higher levels of education than their school-going counterparts who become pregnant and are forced to leave school. Yet, had those girls who left school not become pregnant, they still might have withdrawn from school early, married, and become pregnant. In short, the same underlying individual and familial factors that influence young adult reproductive behavior may affect educational attainment. Prescribed gender roles and the absence of employment opportunities for young women may lead to poor academic performance as well as a preference for early motherhood and frequent childbearing.

Taking advantage of a longitudinal survey conducted among adolescents in Malawi, the goal of this paper is to explore how early pregnancy affects the education trajectories of young women. Because fertility decisions and contraceptive use are widely thought to be endogenous to decisions about education and labor force participation, few studies have adequate data to assess whether family planning has contributed to human capital formation. The question we will address is whether the availability of family planning services could potentially influence women's educational attainment. Employing (i) empirical strategies designed to address unobserved heterogeneity, and (ii) a range of outcomes typically not available in survey data, the

proposed analysis will contribute to the debate on the impact of family planning on young women's lives in one of the poorest countries in sub-Saharan Africa.

Context

Schooling in Malawi

Education is a vital component of the preparation for adulthood, and is known to interact with and affect each aspect of this transition. Schooling levels are linked not only to subsequent earnings but also to nonmarket outcomes such as fertility, child health, and marriage, particularly for females (NRC and IOM, 2005). Since the elimination of all primary school fees in 1994, Malawi has achieved nearly universal access to primary school. Although policies and interventions to encourage girls' school enrollment have contributed to near gender parity in primary school entry (Anzar et al, 2004; Chimombo et al 2000), girls are still more likely to leave school than are boys, and do so at a younger age (Baird et al, 2012). In 2010, 51 percent of young men but only 38 percent of young women aged 20–24 completed primary school, suggesting substantial attrition particularly among girls. The median years of school completed for those aged 20–24 was 5.7 years among young women and 7.2 years among young men, which represents a near doubling in less than two decades for females (2.9 years in 1992), and a substantial increase for males (from 5.1 years) (NSO and ISF Macro, 2011). Although the absence of school fees has been effective in increasing access, it is thought to have had little positive impact on other critical schooling outcomes, namely retention, grade repetition, attainment, and skill acquisition.[1]

Sexual activity, contraceptive use and pregnancy in Malawi

According to the most recent Malawi Demographic and Health Survey, 60% of females aged 20-24 had sex by the age of 18, and 15% of females 15-19 had had sex in the past year. Of currently sexually active unmarried 15-19 year old girls, only half had ever used a modern method of contraception, and about a third were currently using a modern method, almost exclusively the male condom. At 26%, current modern contraceptive use was also low among married girls aged 15-19, but prevalence of hormonal methods—most notably injectables—was considerably higher than among sexually active unmarried females. Not surprisingly, given the level of sexual activity and the absence of contraceptive use, more than a quarter of girls aged 15-19 had started childbearing (NSO and ICF Macro, 2011).

Two frequently proffered reasons for early school discontinuation among girls are pregnancy and marriage. Although there is evidence to suggest that early marriage and pregnancy are often consequences rather than causes of early school leaving, at least a portion of the risk of school leaving is undoubtedly attributable to these factors.[2] While having a child poses numerous

[1] For a discussion of the effect of free primary education on school quality and community-state relations, see Kendall, N. 2007. "Education for all meets political democratization: Free primary education and the neoliberalization of the Malawian school and state." *Comparative Education Review* 51(3):281-305.

[2] For an excellent summary of this literature, see Chapter 2 of Lloyd, 2009. "New Lessons: The Power of Educating Adolescent Girls.

challenges to school continuation, in Malawi these are exacerbated by policies enacted in 1993 by the Ministry of Education, Science and Technology. Girls who become pregnant and boys who are found to impregnate a girl are required to withdraw from school. They are allowed to seek re-admission six months after the birth of the child, and re-enroll one year after the birth. However, this involves a cumbersome process of sending requests to the Ministry as well as the school that they want to attend. A second pregnancy results in permanent expulsion. This policy is more strictly enforced among females than males, thereby disproportionately affecting girls (Yates, 2008; Mayzel et al, 2009).

Data

The analysis will draw on five rounds of data from the Malawi Schooling and Adolescent Survey (MSAS), a longitudinal study of 2650 adolescents, aged 14–16 in January 2007. The original sample consisted of 1764 students (875 girls and 889 boys) randomly selected from the rosters at 59 randomly selected primary schools in Machinga and Balaka districts. These districts were chosen because they are located in the Southern region, the area of the country with the highest prevalence of HIV, where 17% of women of reproductive age are infected compared with 8% in the Northern and 9% in the Central regions (NSO and ICF Macro, 2011). An additional sample of 886 out-of-school adolescents (463 girls and 423 boys) was drawn from communities surrounding the selected primary schools. The study re-interviewed between 88 and 91% of the original sample in four subsequent waves.

The adolescent instrument includes an extensive set of questions on household structure and characteristics, household assets, ethnicity, religion, educational attainment and aspirations, schooling history and experiences, employment, migration, health, marriage, sexual behavior, pregnancy and birth history, contraceptive use, gender role attitudes, agency and self efficacy. The MSAS also includes numeracy and literacy assessments in all rounds as well as testing for HIV and HSV-2 in waves 4 and 5. In all survey rounds non-sensitive data were collected via conventional face-to-face interview, while sensitive topics, including questions related sexual behavior, pregnancies and contraceptive use, were asked using audio computer-assisted self-interview (ACASI). For the purposes of this analysis, which examines educational trajectories of young women in Malawi, we restrict the sample to the 875 females who were attending school in Round 1.

Research questions

In this paper, we examine the medium-term educational outcomes of girls who are in school at baseline. We investigate the extent to which pregnancy is the "cause" of non-attendance[3] by estimating the risk of not attending attributable to pregnancy versus other factors—e.g., domestic responsibilities, work, finances, marriage, health, school performance, lack of interest, etc.—based on self-reported reasons for non-attendance. Note that we did not ask explicitly about reason(s) for leaving school, but rather, for participants who had missed one or more school

[3] Attendance in this context refers not to daily attendance but to enrollment. The survey question, however, was phrased in terms of attending school in a given term.

terms between surveys, we asked them to specify the reason(s) for not attending each term. In this analysis, we approximate the reason for school leaving by identifying the reason given for not attending school during the term immediately following an attended term. For participants who left school during a round in which they were not interviewed, reasons for non-attendance are coded as missing.

A second, more direct measure to identify the timing of pregnancy relative to school leaving is based on the participant's birth history, from which we can assess whether she was pregnant during the term in which she did not attend school. Using this measure, we can identify participants who became pregnant while in school, particularly those for whom self-reported reasons for school leaving are missing and those who reported other reasons, such as marriage, for non-attendance.

In examining medium-term educational trajectories, we focus specifically on four outcomes measured in the Round 5 survey: school enrollment, grade attainment, literacy, and numeracy. School enrollment indicates whether a respondent attended the third and final term of the 2011 school year. Grade attainment indicates the highest standard (primary 1-8) or form (secondary 1-4) attended by participants at the time of the Round 5 interview, regardless of their current enrollment status. We consider a participant to be literate if she can read two complete sentences in English, taken from the 2004 Malawi DHS. We generate a numeracy score from responses to a 12-question exercise involving ordering numbers, addition, subtraction, multiplication, division, and simple word problems, drawn from the Malawi Institute of Education achievement tests for standard 3.[4]

Finally, since temporary withdrawals from school are not uncommon—in the MSAS sample, 16% of girls who did not attend at least one term at any point between waves 1 and 5 eventually re-enrolled—we also conduct a set of analyses to investigate whether girls who became pregnant while in school had a lower likelihood of ultimately returning than girls who left school for other reasons.

Preliminary findings

A key problem in estimating the causal impact of pregnancies on schooling outcomes is the effect of unobserved characteristics such as ability, motivation, and interest that potentially affect both the likelihood of becoming pregnant as well as the outcomes of interest. The rich dataset employed in this study—containing measures such as literacy and numeracy scores, and educational aspirations—allows us to directly control for characteristics which are typically unmeasured. We start by describing the prevalence of sexual activity, contraceptive use, pregnancy, and school dropout among our sample, and comparing the characteristics of those girls who report leaving school due to pregnancy with those of their sexually active peers. We then present an analytical strategy which takes advantage of our longitudinal data to more rigorously examine potential endogeneity biasing estimates of the effect of pregnancy on education outcomes.

[4] The Malawi Institute of Education is a para-statal organization that is charged by the Ministry of Education with curriculum development, assessment and teacher training programs.

Sexual activity and contraceptive use

Nearly one-third (32.8%) of MSAS participants who were in school at baseline reported sexual initiation in the Round 1 interview. A similar percentage (35.5%) of females who were still in school in Round 3 reported sexual activity. Contraceptive use among schoolgirls, however, is uniformly low: of the 160 female students who in Round 3 reported ever having had sex, only 3.8% reported ever using the pill or injectable, and 44.0% reported ever using a condom.

Pregnancy and school leaving

School dropout is a common phenomenon for female members of our student sample. Of the 875 girls who were attending school at baseline in 2007, only one-quarter were still in school four years later (Figure 1), and nearly two-thirds had a child in that time (Figure 2). Childbearing happens early, as evidenced by Figure 3: by age 18, more than a third of those 875 girls had a child, and by age 19 nearly half had given birth.

Table 1 aggregates the reasons reported for missing one or more terms in each school year since 2007, and indicates that pregnancy ranks highly among reasons for non-attendance. Indeed, 17.0% of school-leavers[5] reported pregnancy as one of the reasons for missing at least one term of school. (For females indicating multiple reasons for non-attendance, pregnancy was typically reported in combination with marriage.) Marriage was the most common reason cited for not attending a term, followed by economic reasons such as the inability to afford school fees or need to work or earn money. Domestic responsibilities, family illness/death, and problems at school were less often cited as reasons for missing a term.

In contrast to their peers who left school for other reasons, girls who dropped out due to pregnancy were also much less likely to return to school. Of the 133 females who cited pregnancy/childbearing as a reason for not attending school, only 11 (8.3%) subsequently re-enrolled. Just 2.8% of the 253 girls who ever reported not attending school due to marriage later returned. In contrast, 23.5% of those who reported missing a term as a result of economic constraints subsequently returned to school, as did 26.6% of those who did not attend for other reasons.

Our data therefore show that a non-trivial proportion of school leaving in rural Malawi stems from pregnancy and childbearing and that, in an environment where school attendance can be sporadic, dropout for these girls is more likely to be permanent than for girls who leave school for other reasons. Tables 2a-c suggest, moreover, that girls who report not attending school due to pregnancy are not a selective group of sexually active schoolgirls. From round to round, comparisons of sexually active girls who remained in school with girls who reported pregnancy as a reason for not attending school reveals that the latter group (i) were performing equally as well as, if not better than the former; (ii) had similar marital and educational aspirations; (iii) were equally likely to be using contraception, and (iv) had similar background characteristics.

[5] 74 girls who left and returned to school repeatedly are counted multiple times in our measure of "school leavers". The 786 school leavers featured in Table 1 represent 703 girls.

With respect to aptitude and aspirations, those who became pregnant and dropped out of school also compare favorably to girls who left school for other reasons.

Analytical strategy

Building on the bivariate analysis presented in Tables 2a-c, we test for potential selectivity among girls who became pregnant while in school in a multivariable framework. We examine the association of literacy, numeracy, and aspirations, and other individual and household characteristics (such as household economic status, household composition, ethnicity and/or religion, area of residence) in one survey round with the following outcomes in the next round (for Rounds 2 through 5):

(i) Whether girls in school are sexually active or not
(ii) Whether sexually active girls remain in school (base category), whether they do not attend due to pregnancy, or whether they do not attend due to other reasons

If the multivariable results parallel the bivariate findings, we can establish that schoolgirl pregnancies are not attributable to differences in observable characteristics, such as socioeconomic status, nor to other less-often measured qualities, including ability and aspirations.

To rule out the possibility that female students who become pregnant differ from their sexually active peers along some unobservable set of traits, we will compare results from simple multivariable regression models which inherently treat pregnancy as an exogenous event with individual fixed effects regression models which account for the possibility that pregnancy may be endogenous correlated with unobserved traits. The latter approach capitalizes on the longitudinal nature of MSAS data and eliminates the influence of all time-invariant characteristics associated with the adolescent that may be correlated with pregnancy as well as educational attainment. Including the sociodemographic and aspirations variables presented in Tables 2a-c as covariates, we will examine the following outcomes measured in Round 5 (2011):

(i) Enrollment in school
(ii) Grade attainment
(iii) Literacy
(iv) Numeracy

The key explanatory variable will be whether a girl became pregnant while in school between Rounds 1 and 5, determined firstly by self-reports of school leaving attributable to pregnancy, and secondly by in-school pregnancies identified using participants' birth histories. Given that pregnancy was cited as the third most common reason for leaving school, and that girls who reported missing a term for pregnancy were less likely to return to school than those who reported not attending for other reasons, we anticipate that girls who became pregnant while in school will have less favorable educational trajectories than their sexually active peers who avoided pregnancy. Moreover, if the direction and magnitude of coefficients are broadly similar between the simple regression model and the fixed-effects model, this provides support for

treating pregnancy among students as an exogenous event which provision of contraception could help to avert.[6]

Finally, using multivariable regression analysis, we will examine the likelihood of re-enrollment in school among those who missed one or more terms, according to the reason(s) reported for non-attendance. If, as the simple proportions indicate, re-enrollment after not attending school due to pregnancy is less likely than re-enrollment after not attending school for other reasons, this provides further evidence that early pregnancy can permanently derail an adolescent's educational trajectory.

Policy implications

Our preliminary results, which capitalize on a particularly rich dataset, suggest that pregnancy accounts for a non-trivial proportion of school leaving in rural Malawi and that girls who leave school due to pregnancy do not appear to be a selective group. These findings may have important policy implications for sexual and reproductive health service delivery in Malawi. Most notably, providing girls the means to postpone pregnancy at least until after the completion of schooling could potentially significantly improve the economic trajectories of girls who would have otherwise had to abandon their education. Increasing access to family planning among young, sexually active, unmarried women—a traditionally underserved demographic—could serve to reduce unintended pregnancies and in turn reduce premature school leaving, as could promoting a method mix that includes more female-controlled and long-term contraceptives in a group currently relying almost exclusively on male condoms. Reducing the administrative burden on young mothers aspiring to return to school, and easing other social and economic barriers preventing re-enrollment after childbearing, could also improve medium- and long-term outcomes such as literacy, numeracy, and labor force participation.

[6] Since individual fixed effects models reduce the sample to those adolescents who have variation in an outcome over time, we will run the simple regressions on the fixed effects sample to ensure that fixed effects results are not being driven purely by sample selectivity.

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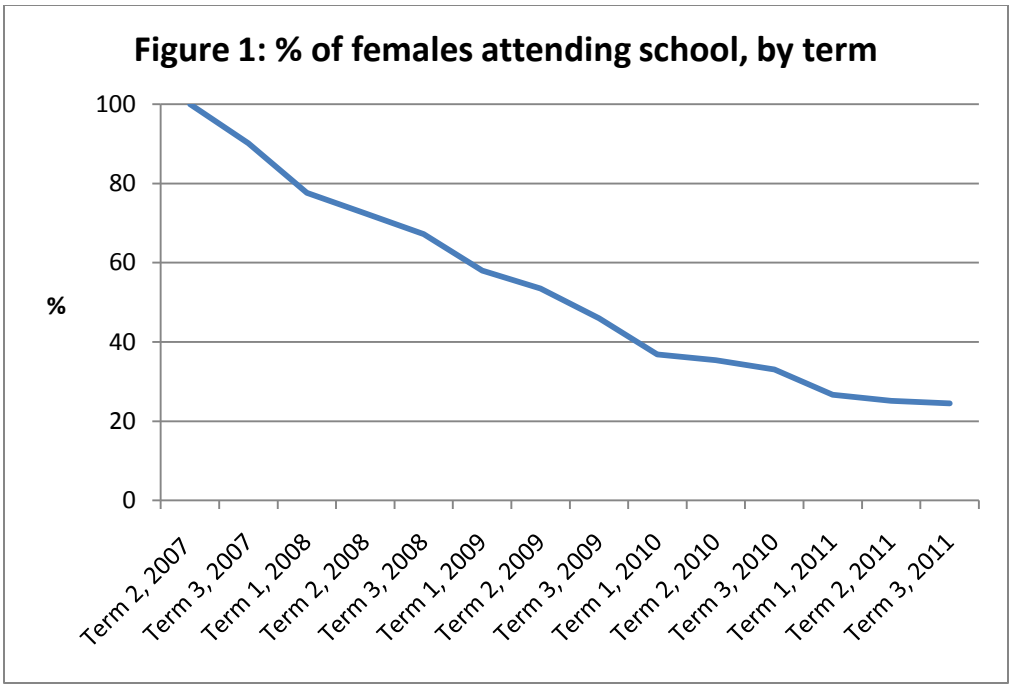
Figure 1: % of females attending school, by term
100
80
60
40
20
0
%
Term 2, 2007
Term 3, 2007
Term 1, 2008
Term 2, 2008
Term 3, 2008
Term 1, 2009
Term 2, 2009
Term 3, 2009
Term 1, 2010
Term 2, 2010
Term 3, 2010
Term 1, 2011
Term 2, 2011
Term 3, 2011

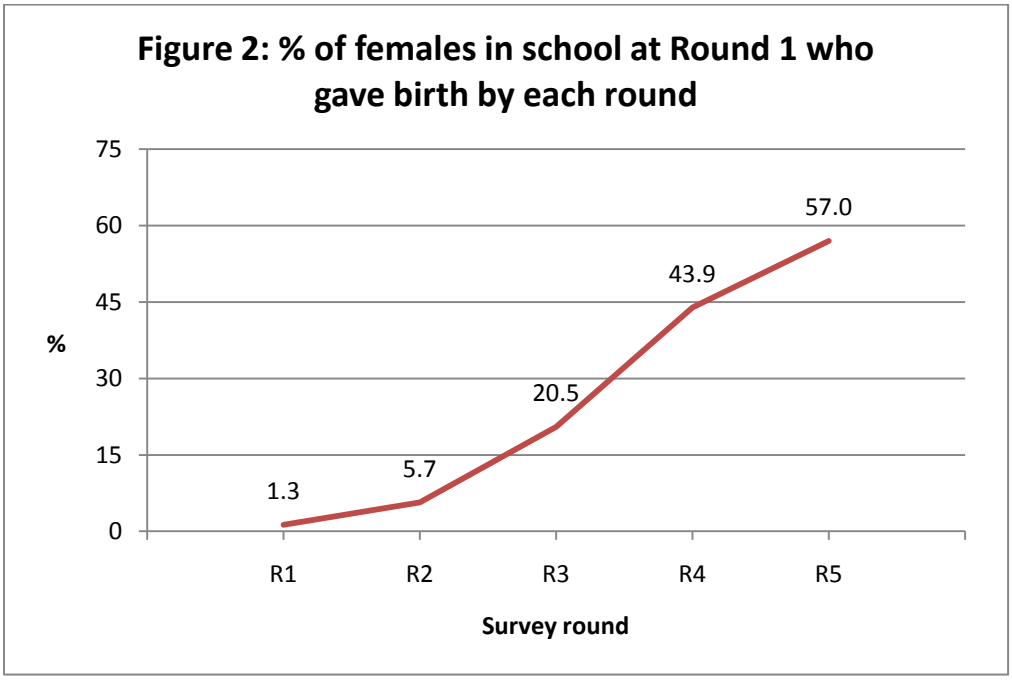
Figure 2: % of females in school at Round 1 who gave birth by each round
75
60
45
30
15
0
%
1.3
5.7
20.5
43.9
57.0
R1
R2
R3
R4
R5
Survey round

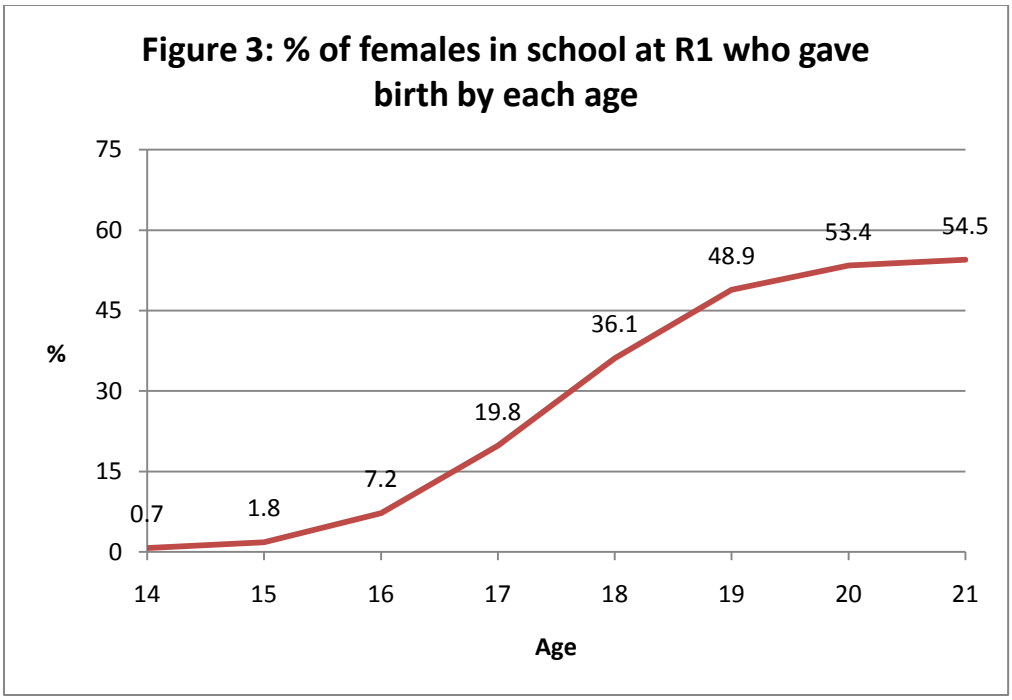
Figure 3: % of females in school at R1 who gave birth by each age
75
60
45
30
15
0
%
0.7
1.8
7.2
19.8
36.1
48.9
53.4
54.5
14
15
16
17
18
19
20
21
Age

Table 1: Percentage of female school leavers not attending one or more terms for each of the following reasons, by school year[a]

School year	Pregnancy/ childbearing	Marriage	Economic constraints	Other[b]	Reason missing[c]	Total school leavers (N)[d]
2007[d]	10.5	26.7	9.3	22.1	34.9	86
2008	10.5	26.9	17.2	13.9	34.5	238
2009	18.9	37.3	30.7	12.3	13.6	228
2010	17.0	34.1	37.8	18.5	2.2	135
2011	34.3	38.4	26.3	11.1	14.1	99
Total[e]	17.0	32.6	24.9	14.8	20.4	786

NOTES:

[a] Respondents were entitled to report more than one reason for non-attendance so row totals may sum to >100%.

[b] Conflates problems with/at school, domestic responsibilities, family illness/death, and other reasons.

[c] For participants who left school during survey rounds in which they were not interviewed, the reason for non-attendance is missing. Additionally, reasons for not attending Term 2 of the 2008 school year were not solicited so these are recorded as missing.

[d] Because it was possible for participants to leave and return to school repeatedly, participants may be counted multiple times in the "total school leavers" column. The 786 school leavers featured here represent 703 participants.

[e] Due to the timing of the baseline interview, 2007 includes only non-attendance in Term 3 of the school year.

[f] In a few cases individuals who left and returned to school multiple times reported the same reason for non-attendance on each occasion and therefore may be represented more than once in column totals.

Table 2a: Selected baseline characteristics of females who in Round 2 were 1) in school and sexually active, 2) not attending school due to pregnancy, or 3) not attending school for another reason

	Round 2 status							
	In school		Out of school					
	Ever had sex		Reason not attending school					
	Yes		Pregnancy/baby		Other[a]		Difference	
Round 1 indicators	N	Mean	N	Mean	N	Mean	1 vs. 2[b]	2 vs. 3[c]
Age baseline	214	15.1	24	15.5	216	15.2	***	*
Schooling								
Read Chichewa	210	91.9	24	100.0	213	89.2	*	**
Read English	212	75.9	24	75.0	212	68.9		
Math correct	213	9.2	24	10.5	215	8.8	***	***
Grade	214	6.6	24	7.0	217	6.4	**	**
Aspirations								
Get married (if never been married)	213	82.2	22	77.3	213	80.3		
Marriage older age 20 (if wants to marry)	168	78.0	17	88.2	163	77.9		
Completed secondary or more (if wants to marry)	171	88.9	17	76.5	168	85.7	*	
Contraceptive use								
Ever used pill or injectables	199	5.5	24	4.2	205	6.3		
Currently using pill or injectables	199	2.0	24	4.2	205	2.4		
Ever used a condom	196	16.3	24	25.0	205	18.5		
Co-residence with parents								
Mother co-resident	214	70.6	24	79.2	217	73.7		
Father co-resident	214	45.3	24	41.7	217	52.6		
Parental education								
Mother completed primary+	199	18.6	22	9.0	206	16.5		
Father completed primary+	181	44.8	20	45.0	188	38.8		
Household assets	213	5.5	24	6.0	217	5.5		
Tribe								
Yao	214	31.3	24	54.2	217	40.1	**	
Chewa	214	22.4	24	16.7	217	19.8		
Lomwe	214	25.7	24	16.7	217	22.1		
Other	214	20.6	24	12.5	217	18.0		

*** p<0.01; ** p<0.05; * p<0.1

NOTES:

[a] The "other" category includes participants for whom the reason for not attending school is missing.

[b] One-sided p values from tests of differences in means/proportions comparing in-school girls who had ever had sex with girls who reported leaving school due to pregnancy

[c] One-sided p values from tests of differences in means/proportions comparing girls who reported leaving school due to pregnancy with girls who did not attend for other reasons

Table 2b: Selected Round 2 characteristics of females who in Round 3 were 1) in school and sexually active, 2) not attending school due to pregnancy, or 3) not attending school for another reason

	Round 3 status							
	In school		Out of school					
	Ever had sex		Reason not attending school					
	Yes		Pregnancy/baby		Other[a]		Difference	
Round 2 indicators	N	Mean	N	Mean	N	Mean	1 vs.2[b]	2 vs. 3[c]
Age baseline	152	15.1	40	15.1	141	15.1		
Schooling								
Read Chichewa	148	99.3	40	95.0	134	91.8	**	
Read English	147	90.5	40	90.0	135	76.3		**
Math correct	149	9.6	40	9.8	137	9.2		*
Grade	152	7.6	40	7.5	141	7.3		
Aspirations								
Get married (if never been married)	146	82.2	40	95.0	131	88.6	**	
Marriage older age 20 (if wants to marry)	118	78.8	37	86.5	110	74.6		*
Completed secondary or more (if wants to marry)	116	95.7	38	94.7	113	92.0		
Contraceptive use								
Ever used pill or injectables	146	4.8	40	5.0	137	0.7		**
Currently using pill or injectables	146	0.7	40	2.5	137	0.0		**
Ever used a condom	146	25.3	40	27.5	137	11.0		***
Co-residence with parents								
Mother co-resident	151	74.8	40	77.5	138	73.2		
Father co-resident	148	48.0	40	47.5	136	50.0		
Parental education[d]								
Mother completed primary+	139	19.4	39	15.4	132	9.6		
Father completed primary+	128	44.5	39	29.4	132	34.7		
Household assets	149	6.0	40	5.4	137	5.3		
Tribe[d]								
Yao	149	34.2	40	40.0	137	36.5		
Chewa	149	23.5	40	15.0	137	21.2		
Lomwe	149	27.5	40	20.0	137	27.0		
Other	149	14.8	40	25.0	137	15.3		

*** p<0.01; ** p<0.05; * p<0.1

NOTES:

[a] The "other" category includes participants for whom the reason for not attending school is missing.

[b] One-sided p values from tests of differences in means/proportions comparing in-school girls who had ever had sex with girls who reported leaving school due to pregnancy

[c] One-sided p values from tests of differences in means/proportions comparing girls who reported leaving school due to pregnancy with girls who did not attend for other reasons

[d] Non-time varying indicators (parental education and tribe) were measured in Round 1.

Table 2c: Selected Round 3 characteristics of females who in Round 4 were 1) in school and sexually active, 2) not attending school due to pregnancy, or 3) not attending school for another reason

	Round 4 status							
	In school		Out of school					
	Ever had sex		Reason not attending school					
	Yes		Pregnancy/baby		Other[a]		Difference	
Round 3 indicators	N	Mean	N	Mean	N	Mean	1 vs. 2[b]	2 vs.3[c]
Age baseline	71	15.1	43	15.1	145	15.1		
Schooling								
Read Chichewa	70	98.6	42	92.9	143	95.8	*	
Read English	70	85.7	42	83.3	143	76.2		
Math correct	70	9.7	42	10.1	143	8.8		***
Grade	70	8.4	42	8.5	145	8.2		*
Aspirations								
Get married (if never been married)	70	92.9	40	95.0	139	89.9		
Marriage older age 20 (if wants to marry)	65	89.2	37	89.2	121	92.6		
Completed secondary or more (if wants to marry)	65	95.4	38	100.0	125	96.0	*	
Contraceptive use								
Ever used pill or injectables	70	1.4	42	2.4	141	2.8		
Currently using pill or injectables	70	1.4	42	0.0	141	0.7		
Ever used a condom	70	24.3	42	31.0	141	23.4		
Co-residence with parents								
Mother co-resident	70	62.9	42	57.1	144	68.8		
Father co-resident	70	42.9	42	31.0	144	46.5		*
Parental education[d]								
Mother completed primary+	67	20.9	40	20.0	136	16.9		
Father completed primary+	61	37.7	37	37.8	130	37.7		
Household assets	70	6.6	42	5.3	144	6.1	**	
Tribe[d]								
Yao	70	37.1	42	40.5	144	37.5		
Chewa	70	22.9	42	21.4	144	20.1		
Lomwe	70	27.1	42	21.4	144	20.1		
Other	70	12.9	42	16.7	144	22.2		

*** p<0.01; ** p<0.05; * p<0.1

NOTES:

[a] The "other" category includes participants for whom the reason for not attending school is missing.

[b] One-sided p values from tests of differences in means/proportions comparing in-school girls who had ever had sex with girls who reported leaving school due to pregnancy

[c] One-sided p values from tests of differences in means/proportions comparing girls who reported leaving school due to pregnancy with girls who did not attend for other reasons

[d] Non-time varying indicators (parental education and tribe) were measured in Round 1.