Evaluation

Malawi Secondary Education Expansion for Development (SEED) Impact Evaluation

Baseline Report

October 2022

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Evaluation

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Abstract

The Malawi Secondary Education Expansion for Development (SEED) activity is a $90,000,000 commitment from USAID and PEPFAR for urban expansion and rural construction of Community Day Secondary Schools (CDSSs). Data for Impact (D4I) is conducting an evaluation of the SEED activity to understand whether there is an impact on communities where SEED is conducting expansion and construction of CDSSs.

This mixed methods impact evaluation covers a broad range of development outcomes, including the impact of SEED for children enrolled in Standard 7 in primary schools at baseline in rural SEED CDSS catchment areas on educational outcomes; sexual behaviors; water, sanitation, and hygiene behaviors; and child safety and violence.

We recruited Standard 7 students (n=761) from 32 rural primary treatment schools that will feed into new rural CDSSs, as well as from 32 rural comparison primary schools outside the catchment area of new CDSSs. To measure the pre-intervention primary to secondary school transition rate, we surveyed a retrospective cohort of students (n=599) enrolled in Standard 8.

In rural and urban areas, focus group discussions (FGDs) were held with students and caregivers and key informant interviews (KIIs) with community leaders. We also conducted in depth interviews with students and KIIs with teachers in urban areas.

We found acceptable balance in 94.9 percent of assessed quantitative variables. Rural qualitative findings mirrored those from the quantitative survey. Urban findings showed perceived positive outcomes resulting from SEED urban, including a conducive learning environment, and reduced absenteeism among girls. Some unintended outcomes were noted by urban respondents, such as expanded enrollment and increased teacher workloads.

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Cover

Construction of rural SEED community day secondary school (CDSS). Photo credit: Matt Harder, Tetra Tech.

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Abbreviations

AGYW	adolescent girls and young women
CDC	Centers of Disease Control
CDSS	Community Day Secondary School
CEFM	Child, early, and forced marriage
CPYDS	Chinese Positive Youth Development Scale
CSR	Centre for Social Research
DID	difference-in-differences
D4I	Data for Impact
EMIS	Education Management Information System
EQ	Evaluation question
FGD	focus group discussion
GBV	gender-based violence
ICC	intra-class correlation coefficient
IDI	in-depth interview
IE	impact evaluation
KII	key informant interview
MHM	menstrual hygiene management
MoE	Ministry of Education
PEPFAR	President's Emergency Plan for AIDS Relief
PSLCE	Primary School Leaving Certificate of Education
PSU	primary sampling unit
PTA	Parent and Teachers Association
SEED	Secondary Education Expansion for Development
SMC	School Management Committee
SR-GBV	school-related gender-based violence
SRH	sexual and reproductive health
UNC	University of North Carolina
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VACS	Violence Against Children Survey
WASH	water, sanitation, and hygiene
WHO	World Health Organization

Executive Summary

The Malawi Secondary Education Expansion for Development (SEED) activity is a $90,000,000 commitment from USAID and PEPFAR for urban expansion and rural construction of Community Day Secondary Schools (CDSSs). Data for Impact (D4I) is conducting an impact evaluation of the SEED activity to help understand whether there is a change or impact on communities where SEED is carrying out expansion and construction of CDSSs.

This report shares a summary of results from rural baseline data collection and urban retrospective initial end-line data collection. The Executive Summary provides topline findings in relationship to the evaluation questions. A more detailed summary of baseline findings organized by development hypotheses and the SEED theory of change is presented in the Malawi SEED Baseline Summary Report.[1]

SEED Activity

In urban areas, SEED constructed prefabricated classroom blocks, new boy and girl latrine blocks, and sanitary changing rooms for girls in 30 existing CDSSs in the cities of Blantyre, Lilongwe, Mzuzu, and Zomba. These blocks aim to reduce overcrowding, provide new seats in existing CDSSs, and improve sanitation and hygiene, eliminating absenteeism due to the lack of a clean latrine. SEED urban sites were handed over to the Ministry of Education (MoE) between December 2020 and February 2021.

In rural areas, SEED is constructing new "greenfield" CDSS facilities in areas where secondary school access has historically been limited. SEED is a $90 million investment in new secondary schools (complete with boys' and girls' latrine blocks and sanitary changing rooms for girls).

SEED's main development hypothesis is that by providing increased access to secondary schools, young Malawians will attend school rather than move into the "out-of-school" population that impedes the country's future development. Through the proper design of classroom learning spaces and school facility infrastructure that decrease distance to schools, and increased access to secondary education, young Malawians will be provided the opportunity to learn, which improves economic growth and personal attainment. Furthermore, by providing a proper learning environment (sanitary conditions, decongested classrooms, and closer access to schools), young girls will remain in school longer, reducing the risk of early pregnancy, early marriage, and HIV exposure.

Figure E1 illustrates the activity's theory of change (with a focus on SEED Rural) and provides a visual representation of hypothesized causal linkages within the SEED project.

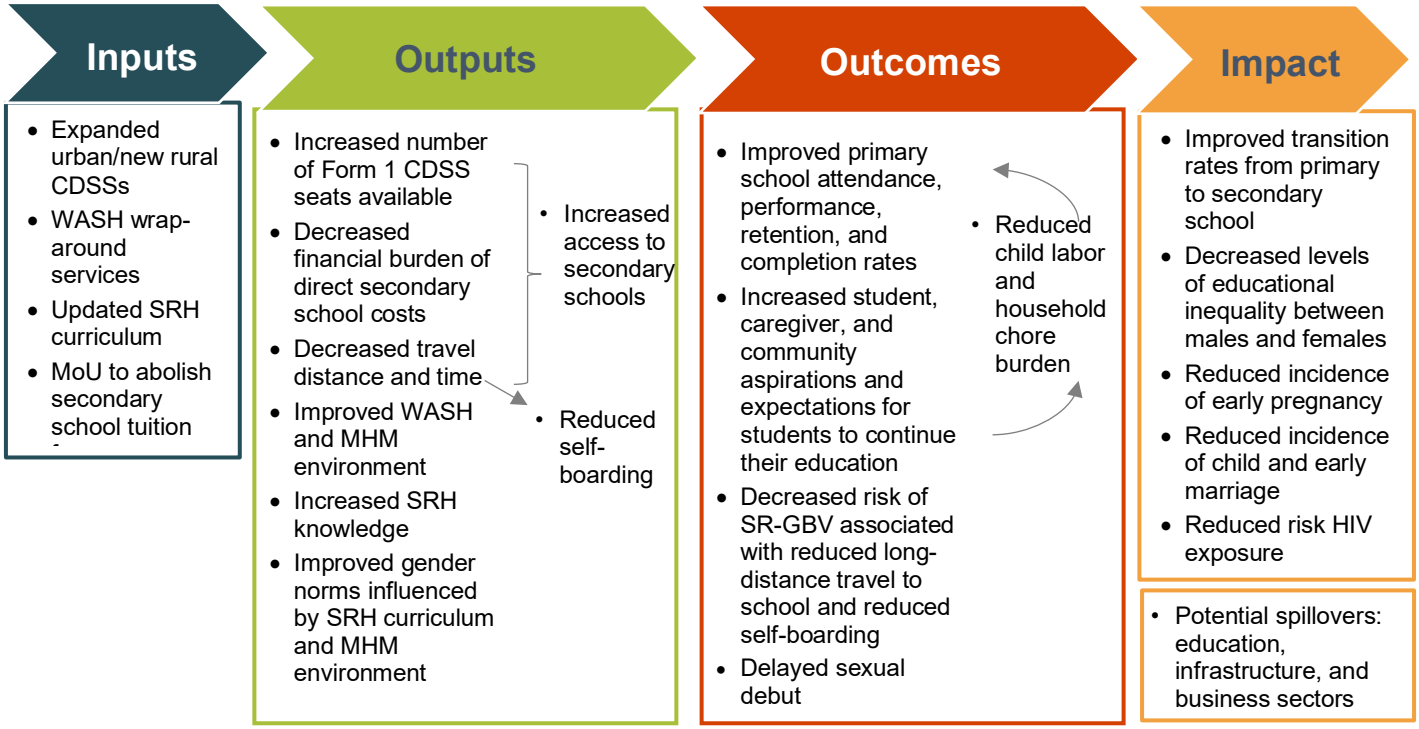
1 https://www.data4impactproject.org/publications/malawi-secondary-education-expansion-for-development-seed-impact-evaluation-baseline-report-summary/

Evaluation Questions

The impact evaluation will answer the following evaluation questions:

1. **Key outcome impacts:** What is the impact of SEED Rural on children enrolled in Standard 7 at baseline in the SEED CDSS catchment areas? Key outcomes of interest include transition rates from primary to secondary school; attendance and dropout from late primary and early secondary school; primary school completion rates; student performance (Primary School Leaving Certificate of Education [PSLCE] examination) and selection for secondary school; school-related gender-based violence (SR-GBV), including on the way to school and within self-boarding settings; and child, early, and forced marriage (CEFM).
2. **General attitudinal/behavioral impacts:** To what extent does construction of new SEED CDSSs in rural Malawi change the perceptions, attitudes, aspirations, or behaviors related to education and future outlooks among children enrolled in Standard 7 at baseline, their parents/caregivers, local leaders, and educators? To what extent does the expansion of urban SEED CDSSs in Malawi change the perceptions, attitudes, aspirations, roles, or behaviors related to education and future outlooks among children enrolled in Form 1 at baseline, their parents/caregivers, local leaders, and educators?
3. **Healthy behavioral impacts:** To what extent does the construction of a new or expanded SEED CDSS positively or negatively affect sexual behaviors, WASH behaviors, and child safety?
4. **Schooling and business environment spillovers:** To what extent have there been changes in the education environment (e.g., teachers leaving primary school to teach in new SEED CDSSs) and the business environment (e.g., infrastructure development, business booms) because of new rural SEED CDSS construction or urban SEED CDSS expansion? (Note that in rural areas we will measure education environment changes through qualitative and quantitative measures; business environment spillover in rural areas will be measured through qualitative only. In urban areas, both topic areas will be addressed solely through qualitative methods)

Figure ES1. Malawi SEED theory of change



Source: Adapted from Statement of Work: Socio-Economic Impact Evaluation of the SEED CDSS Construction in Malawi Activity.

Methods

The evaluation is a mixed methods impact evaluation that will synthesize both quantitative and qualitative data to address the evaluation questions. The quantitative component will focus on rural communities, while the qualitative component will cover both urban and rural areas. The evaluation includes three rounds of data collection: a baseline survey October–November 2021 (completed), a midline survey May–June 2023 (estimated, based on anticipated handover of new rural CDSSs to MoE), and an endline survey in mid-2024.

Quantitative

The rural quantitative evaluation component is based on a prospective, quasi-experimental research design using a difference-in-differences approach to evaluate the quantitative impact of SEED interventions in rural areas on outcomes of interest.

Baseline data were collected from a panel of students selected in 32 treatment and 32 comparison schools. We also collected students' household information and community-level data. School-level aggregate data from a panel of primary and secondary schools was collected to understand potential schooling spillover effects. In addition, we surveyed the head teacher (or a designee) at the 64 public primary schools the students were selected from, and at 58 public secondary schools that were the main CDSS to which the primary schools fed.

This report presents baseline indicator values for treatment and comparison groups separately, and for each indicator we present the p-value of a statistical test for the difference of the

treatment and comparison values. Indicator values were calculated using sampling weights and the statistical tests of differences used the relevant sampling design features (stratification, clustering, and sampling weights).

Prospective Cohort

The population of focus for the rural quantitative component included public school male and female students enrolled in Standard 7 during the 2021 academic year (January 4, 2021–November 19, 2021) in treatment and comparison areas. These students were surveyed as a prospective cohort at baseline because they will benefit from the new secondary schools to be built by SEED. We also surveyed students' households and main caregivers. These students are expected to be revisited at midline during the 2022–2023 academic year after the new schools become operational. There were 761 students in this group.

Retrospective Cohort

To measure the pre-intervention primary to secondary school transition rate, we also surveyed a retrospective cohort of public school students (n=599) enrolled in Standard 8 during the 2019–2020 academic year (September 16, 2019–December 18, 2020). We also surveyed students' households and primary caregivers.

Rural Qualitative

The purpose of the qualitative component was to contextualize the rural quantitative findings and provide insight into the perceived impact of the SEED's expansion of urban CDSSs. The rural qualitative component was implemented at two primary schools that will feed into new CDSSs in each of three regions—North, Central, and South. Rural data collection consisted of 12 focus group discussion (FGDs) with Standard 7 youth and 12 FGDs with their caregivers, and six key informant interviews (KIIs) with community leaders; these were conducted prior to CDSS completion.

Urban Qualitative

The urban qualitative component was implemented at two newly expanded CDSSs in each of three urban areas—Mzuzu, Blantyre, and Lilongwe—and consisted of 12 FGDs with Form 1 youth and 12 FGDS with caregivers, 12 individual in-depth interviews (IDIs) with Form 1 youth and six KIIs with Form 1 teachers and six with community leaders; these were carried out approximately 13 months after CDSS expansion. The team audio recorded data collection and transcribed the data in English. It then coded the transcripts using pre-determined codes based on the evaluation questions and key outcomes. Results were summarized by topic area and rural findings were integrated with quantitative results; urban qualitative findings are presented separately, as there was no quantitative urban data collection and the urban results are a retrospective initial end line, in contrast to the rural results.

Key Findings: SEED Rural

Sample Characteristics

Approximately half of the students in both the prospective and retrospective cohorts were female with average ages of 15 (prospective cohort) and 17 (retrospective cohort) years. The rural qualitative sample consisted of 46 Standard 7 girls, 46 Standard 7 boys, 45 female caregivers of Standard 7 youth, 47 male caregivers of Standard 7 youth, and 6 community leaders. The average age of students was 14.

About 50 percent of households across cohorts were below the national poverty line and a high percentage of households (over 70%) were experiencing food insecurity. Less than six percent were receiving cash transfers from the government.

Primary schools reported that approximately half of Standard 8 students were female, and secondary schools reported the same about Form 1 students. Over a third (35.6%) of comparison primary schools, and a quarter (26.1%) of treatment primary schools, were over capacity for Standard 8, and just a under one-quarter (24%) of secondary schools were over capacity for Form 1.

Program Exposure

Awareness of new secondary school construction was measured among students, caregivers, and school respondents at baseline to check for the presence of potential anticipation effects in treatment areas, control for baseline levels of general secondary school expansion in estimates of program impacts, and to understand whether awareness differed among students, caregivers, and teachers. Approximately 11 percent of students and 10 percent of caregivers across cohorts and intervention groups were aware a new secondary school was being built nearby, compared to nearly 60 percent of head teachers from treatment group primary schools.

Evaluation Question 1. Baseline Levels of Key Impact Outcomes

Table E1 presents baseline levels of key indicators related to education, SR-GBV, and CEFM by the reference population which will be used to estimate midline and endline program impacts (priority reference population).

Education

The average PSLCE pass rate ranged from 75.1 percent to 83.6 percent based on retrospective cohort student self-reported data and ranged from 77.3 to 81.0 percent based on primary school-reported data. These findings align with the national PSLCE pass rate for 2019/2020 of 81.4 percent (GoM NSO, 2021). Transition rates calculated from primary school-reported data indicate that 27.1 percent of retrospective cohort students in both study groups who sat for the PSLCE were selected to a public secondary school.

Pre-intervention secondary school transition rates, Standard 8 repetition rates, and school dropout rates differed significantly overall ($p=0.034$) in the retrospective cohort. Based on household-reported data:

- 23.2 percent of the comparison group and 37.5 percent of the treatment group transitioned to a public secondary school
- 35.6 percent of the comparison group and 26.6 percent of the treatment group repeated Standard 8
- 30.7 percent of the comparison group and 22.0 percent of the treatment group dropped out of school

SR-GBV

In the retrospective cohort, 66.1 percent (comparison) and 81.2 percent (treatment) of female students reported experiencing one or more of 21 sexual violence acts at least once. The most frequently reported types of sexual violence included making upsetting love proposals, sexual comments, and sexual gestures. Retrospective cohort girls were significantly more likely to have been absent from school during the academic year due to SR-GBV safety concerns at or travelling to/from school in treatment areas (10.0%) compared to comparison areas (1.8%).

CEFM

Ten percent of retrospective cohort students had ever been married or in a union. No students reported being married or in a union before age 15. Approximately 10 percent of out-of-school youth in the retrospective cohort reported being married/in union before age 18, compared to less than four percent of all retrospective cohort students. Eight retrospective cohort female students reported they were forced into marriage.

Table ES1. Key education, SR-GBV, and CEFM outcomes by priority reference population, Evaluation Question 1

Indicator	Study sample	Comparison (%)	Treatment (%)	Statistical significance
Education				
PSLCE pass rate (student self-report)	Retrospective	75.1	83.6	
PSLCE pass rate (primary school report)	Primary schools	81.0	77.3	
Percent of students selected to public secondary school among those who sat for PSLCE	Primary schools	24.3	29.8	
School progression	Retrospective			*
Transition to public Form 1		23.2	37.5	
Transition to other Form 1		10.5	13.9	
Dropped out of school		30.7	22.0	
Repeated Standard 8		35.6	26.6	
SR-GBV				
Girls ever absent from school during academic year due to SR-GBV safety concerns at or traveling to/from school	Retrospective	1.8	10.0	*
Girls reported experiencing one or more of 21 sexual violence acts at least once	Retrospective	66.1	81.2	
CEFM				
Forced into marriage	Retrospective	2.2	0.8	
First married/in union before age 15	Retrospective	0.0	0.0	
First married/in union before age 18	Retrospective	3.9	3.8	
Ever married or in union	Retrospective	11.5	9.3	

* Notes: Significance levels indicated as * p<0.05, ** p<0.01, and *** p<0.001.

Evaluation Question 2. Education-Related Attitudinal and Behavioral Baseline Levels

Nearly all prospective cohort students reported secondary or higher as their ideal and expected actual level of education. Over 70 percent of prospective cohort students perceived a high chance of finishing secondary school. Over 80 percent of prospective cohort students felt their life would be better in five years.

Prospective cohort students described issues they perceived as barriers to reaching their own educational goals:

- Despite the elimination of primary and secondary school tuition and select fees, costs persist as a predominant barrier to schooling. Over 60 percent of prospective cohort students felt direct school costs or exam fees and related costs were a barrier to reaching their own educational goals.
- Twenty-two percent of comparison group and 30.2 percent of treatment group prospective cohort students reported a lack of Form 1 secondary admissions spaces as a barrier to achieving their own educational goals.
- Nearly 40 percent reported distance to school and over 22 percent reported safety concerns traveling to/from school as barriers.
- Approximately 50 percent of students reported getting married and getting pregnant/fathering a child as a barrier.

> *"Secondary schools are very far and we cannot manage to commute there every day. On the days that we do go, we find that our friends have already started learning by the time we get there. This is a big a challenge that will make it impossible for us to complete our secondary school education."*
>
> —Standard 7 female student

Table ES2. Key attitudinal and behavioral outcomes by priority reference population, Evaluation Question 2

Indicator	Study sample	Comparison (%)	Treatment (%)	Statistical significance
Student's ideal level of education is secondary or higher	Prospective	99.7	98.5	
Student's expected actual level of education is secondary or higher	Prospective	99.1	97.0	
Student perceives their chances of finishing secondary school to be high	Prospective	72.0	71.0	
Student expects their life will be better five years from now	Prospective	88.1	84.8	
Student-perceived barriers to reaching own educational goals				
Direct school costs	Prospective	62.4	64.3	
Exam fees and related costs	Prospective	60.3	60.7	
Not enough Form 1 secondary admissions spaces	Prospective	21.9	30.2	
Distance to school	Prospective	39.5	39.7	
Not safe traveling to/from school	Prospective	22.7	25.8	
Getting married	Prospective	37.4	40.6	
Getting pregnant/fathering a child	Prospective	35.7	40.4	

* Notes: Significance levels indicated as * p<0.05, ** p<0.01, and *** p<0.001.

Evaluation Question 3. Baseline Levels of Healthy Behavioral Outcomes

Sexual Behavior

Over eleven percent of prospective cohort students had ever had sex at evaluation baseline; 4.1 percent of prospective cohort students sexually debuted before age 15 years. Nearly 70 percent of sexually active prospective cohort students used a modern family planning method during the past 12 months and nearly 70 percent used a condom at last sex. Over 10 percent of sexually active students had concurrent sexual partnerships in the past 12 months, and over 10 percent reported ever having transactional sex with their current/most recent partner in the past 12 months.

"[Getting pregnant] affected her education [in] that she dropped out of school since the other children would tease her about the pregnancy every time she goes to school."

—Standard 7 female student

"In this community, most of the people fail to go further with their studies due to lack of money to pay for school fees and they end up getting married earlier."

—Standard 7 male student

WASH and MHM Environment

Based on definitions from the Joint Monitoring Programme's 2018 indicators for monitoring WASH and MHM in schools, 93.2 percent of secondary schools had a basic drinking water service, 55.9 percent had basic sanitation services, and 86.2 percent had basic hygiene services.

Only 27.1 percent of secondary schools had both water and soap available in a private space for girls to manage menstrual hygiene and 44.1 percent had at least one girls-only change room in use. Twenty-one percent of comparison group and 27 percent of treatment group retrospective cohort menstruating girls currently in school worried they would not be able to change their menstrual materials when needed during their last menstrual period when at school.

Safety

Sixty-three percent of retrospective cohort students who had transitioned to Form 1 in a public secondary school felt safe traveling to/from school, compared to over 70 percent of all retrospective cohort students. Less than 15 percent of retrospective cohort students reported feeling unsafe or threatened in their neighborhood, on the way to school, or in school.

Table ES3. Sexual behavior, WASH and MHM, and safety outcomes by priority reference population, Evaluation Question 3

Indicator	Study sample	Comparison (%)	Treatment (%)	Statistical significance
Sexual behavior				
Ever had sex	Prospective	11.8	11.2	
Sexually active student used modern family planning method past 12 months	Prospective	71.7	66.1	
Sexually active student had concurrent sexual partnerships past 12 months	Prospective	10.9	13.2	
Sexually active student used condom at last sex past 12 months	Prospective	71.9	64.5	
Sexually active student ever had transactional sex with current/most recent partner past 12 months	Prospective	14.0	9.1	
WASH and MHM environment				
School has basic drinking water service	Secondary schools		93.2	
School has basic sanitation service	Secondary schools		55.9	
School has basic hygiene service	Secondary schools		86.2	
School has water and soap available in a private space for girls to manage menstrual hygiene	Secondary schools		27.1	
School has one or more girls-only change rooms in use at the school	Secondary schools		44.1	
Menstruating girl currently in school worried would not be able to change menstrual materials when needed during last menstrual period when at school	Retrospective	20.5	27.0	
Safety				
Student agrees/strongly agrees with statement on student safety				
I feel safe traveling to/from school	Retrospective	71.4	72.2	
Felt unsafe or threatened in neighborhood, on the way to school, or in school	Retrospective	13.6	15.3	

* Notes: Significance levels indicated as * p<0.05, ** p<0.01, and *** p<0.001.

Evaluation Question 4. Schooling Spillovers

Potential schooling environment spillovers of the rural SEED intervention could include teachers leaving primary schools to teach in the new SEED CDSSs. Without job-upgrading or professional development opportunities, this could result in secondary school staff with only primary professional qualifications. At baseline, 7.1 percent of comparison primary schools and 9.9 percent of treatment primary schools reported that at least one teacher from the school transferred to a secondary school during the 2020 academic year. Eighty-eight percent of secondary schools reported that teachers at the school have only primary teaching professional qualification levels.

Table ES4. Schooling environment indicators by priority reference population, Evaluation Question 4

Indicator	Study sample	Comparison (%)	Treatment (%)	Statistical significance
Primary school had any teacher leave during the 2020 academic year because they transferred to a secondary school	Primary schools	7.1	9.9	
Any teacher at the school has only a primary teaching professional qualification level	Secondary schools	87.9		

* Notes: Significance levels indicated as * p<0.05, ** p<0.01, and *** p<0.001.

Baseline Balance Between Intervention Groups: Prospective Cohort

As the Malawi SEED impact evaluation uses a non-experimental study design, it is important to statistically assess the similarity between the treatment and matched comparison groups at baseline to determine whether the matching process resulted in a balanced sample. We examined baseline balance for key education outcomes, intermediate outcomes and mediating variables, and potential control variables for the sampled and matched primary schools, as well as among students, caregivers, and households in the retrospective and prospective cohorts. We defined statistical significance as a p-value lower than 0.05, which indicates that baseline values differ significantly between treatment and comparison groups. Ninety-five percent of tested indicators were balanced.

Key Findings: SEED Urban

SEED Urban qualitative results are reported here separately from SEED rural quantitative and qualitative results. Due to the different timelines of SEED urban versus rural, the urban data collection took place after SEED urban completion. These findings, therefore, do not comprise a "baseline," but rather a retrospective end line for SEED urban.

SEED Urban involved the design-build construction of prefabricated classroom blocks, new boy and girl latrine blocks, and sanitary changing rooms for girls in 30 existing CDSSs in Malawi's urban districts of Blantyre, Zomba, Lilongwe, and Mzuzu. SEED Urban sites were handed over to the MOE December 2020–February 2021.

A total of 166 FGD respondents participated in the urban qualitative component, with an average FGD size of eight students and six caregivers. An additional 24 individuals participated in in-depth interviews (IDIs) and KIIs for a total of 190 respondents. The average age of students was approximately 15.

Students, caregivers, teachers, and community leaders reported many positive outcomes resulting from the SEED urban school expansion. These included an increased sense of school pride, a conducive learning environment, increased student motivation to do well in school, increased motivation for parents to send their children to school, higher enrollment and attendance rates, and reduced absenteeism among girls due to the presence of changing rooms for MHM. At the same time, some unintended outcomes were noted by respondents, such as expanded enrollment, increased teacher workloads and exacerbation of existing book shortages.

> *"The new infrastructures have created a credible environment for learning and teaching at our school. As a result of these new infrastructures, we are assured of walking in the corridors of various universities in the near future."*
>
> —Form 1 female student (FGD)

> *"During the time the school was being expanded, we took [it] upon ourselves as a motivation to work hard in Standard 8 so we could be selected to this CDSS and occupy these prestigious classrooms."*
>
> —Form 1 male student (FGD)

> *"The change rooms which are menstrual hygiene-friendly have contributed enormously to the menstrual hygiene of girls which enables them to have dignified lives and not miss classes."*
>
> —Form 1 female student (FGD)

Respondents reported that the expanded classroom space and smaller class size (despite expanded enrollment) because of SEED enabled students to better social distance to mitigate the spread of COVID-19.

Students reported that they were not sexually active because they feared getting pregnant or making someone pregnant, which would affect their ability to continue their schooling. Nearly all students that were interviewed reported they did not want to marry early as they viewed early marriage as a hindrance to their education and future aspirations.

Some students experienced physical violence at the hands of fellow students. Reports of psychological violence within the school environment were common and involved verbal abuse or harassment. While no students self-reported sexual assault, several female students recounted stories about friends who had been assaulted unrelated to their schooling.

Respondents reported that the school expansion had a positive effect on the local economy. Short-term effects included piece work at construction sites and an increased demand for goods such as food due to the presence of construction workers. Long-term benefits such as improvement in roads and increased business for local merchants due to increased student enrollment were also reported.

Preliminary Programmatic Implications

The following preliminary programmatic implications are based on baseline evaluation findings. They were discussed and refined with stakeholders during results validation events.

Based on Rural Findings

- **Hold community awareness events once the opening date for the new local CDSS is announced.** We did not detect high levels of planned CDSS construction awareness among students or caregivers at baseline. It will be important to ensure that caregivers and students in Standards 6, 7, and 8, as well as community and primary school leaders, are aware that Form 1 admissions spaces have increased in their community for the SEED rural CDSS construction program to influence education and related behavior change.
- **Monitor whether abolishment of secondary school tuition is being implemented**. While 97 percent of secondary schools reported bursaries, subsidies, scholarships, and/or school fee waiver programs were available to students, direct school costs were a frequently cited barrier to secondary school attendance.
- **Consider cost reduction or elimination for PSLCE and secondary school exam fees**. Although roughly 20 percent of primary and secondary schools reported examination fee waivers or vouchers were available to students, caregivers, primary school main respondents, and secondary school main respondents cited exam fees and related costs as serious problems for students' motivation and ability to complete primary school, join secondary school, and complete secondary school.
- **Monitor availability of WASH spaces supportive of MHM and availability of MHM commodities at secondary schools**. Less than 30 percent of secondary schools surveyed at baseline had both water and soap available in a private space for girls to manage menstrual hygiene, over half did not have any girls-only change rooms available, and only a quarter had MHM materials available at the school.

Based on Urban Findings

- Create clear school guidance that students should be allowed to use new toilet and changing facilities. At several urban sites, students reported restricted access.
- Address community expectations around job creation in ongoing and future construction efforts. Some urban qualitative respondents wished for more opportunities to benefit from the construction as only a few people were able to obtain piecework and builders were brought from elsewhere. While the rural construction may have different approaches to site job creation, it will be important from the beginning to be clear with the community what that approach is.
- Monitor teacher workloads for urban sites. Teachers at these sites often noted increased workloads since additional students were enrolled after the expansion. This may not be sustainable and could lead to teacher burnout.

1. Evaluation Purpose and Questions

The Malawi Secondary Education Expansion for Development (SEED) activity is a $90,000,000 commitment from USAID and PEPFAR for urban expansion and rural construction of Community Day Secondary Schools (CDSSs). D4I is conducting an impact evaluation of SEED activity to help understand whether there is a change or impact on communities where SEED is carrying out expansion and construction CDSSs. The Malawi SEED impact evaluation is a high-profile evaluation of a historic USAID undertaking in school construction in Malawi, and the findings of the evaluation expect to receive wide readership. The main audiences for this evaluation comprise USAID Operating Units (notably USAID/Malawi and the Africa Bureau), the Bureau for Economic Growth, Education, and Environment (E3)/Education Office, the President's Emergency Plan for AIDS Relief (PEPFAR), and the U.S. Congress. Other important audiences are the Government of Malawi, primarily MoE, and other development partners committed to building and or supporting schools such as UNICEF, the Japan International Cooperation Agency, the Department for International Development, the World Bank, and the European Union.

The evaluation covers a broad range of development outcomes, including the impact of SEED for children enrolled in Standard 7 at baseline in rural SEED CDSS catchment areas on educational outcomes, SR-GBV, CEFM, sexual behaviors WASH behaviors, and child safety. The impact evaluation will answer the following evaluation questions:

1. **Key outcome impacts:** What is the impact of SEED Rural on children enrolled in Standard 7 at baseline in the SEED CDSS catchment areas? Key outcomes of interest include:
    - Transition rates from primary to secondary school
    - Attendance and dropout from late primary and early secondary school
    - Primary school completion rates
    - Student performance (Primary School Leaving Certificate of Education [PSLCE] examination) and selection for secondary school
    - SR-GBV, including on the way to school and within self-boarding settings
    - Child, early, and forced marriage (CEFM)
2. **General attitudinal/behavioral impacts:** To what extent does construction of new SEED CDSSs in rural Malawi change the perceptions, attitudes, aspirations, or behaviors related to education and future outlooks among children enrolled in Standard 7 at baseline, their parents/caregivers, local leaders, and educators? To what extent does expansion of urban SEED CDSSs in Malawi change the perceptions, attitudes, aspirations, roles, or behaviors related to education and future outlooks among children enrolled in Form 1 at baseline, their parents/caregivers, local leaders, and educators (this urban question will be addressed solely through qualitative methods)?

3. **Healthy behavioral impacts:** To what extent does the construction of a new or expanded SEED CDSS positively or negatively affect sexual behaviors, WASH behaviors, and child safety?
4. **Schooling and business environment spillovers:** To what extent have there been changes in the education environment (e.g., teachers leaving primary school to teach in new SEED CDSSs) and the business environment (e.g., infrastructure development, business booms) because of new rural SEED CDSS construction or urban SEED CDSS expansion? (Note that in rural areas, we will measure education environment changes through qualitative and quantitative measures; business environment spillover in rural areas will be measured through qualitative only. In urban areas, both topic areas will be addressed solely through qualitative methods).

A better understanding of these impacts will help USAID and its multiple partners understand how integrated outcomes can result from secondary school construction in Malawi, fine tune current investments, and prioritize future investments. The information generated through this impact evaluation will also contribute towards building the growing body of evidence on the socio-economic and learning impacts (both intended and unintended) of the SEED Activity in Malawi.

2. Background

2.1 Country Context

Every year, the lack of available secondary school admission space in Malawi means that over 20,000 adolescent girls, and a similar number of boys, graduating from primary schools are denied access to continuing their secondary school education. According to 2019 education statistics, only 82,072 out of 282,428 students (29%) transitioned into public secondary schools from primary schools. With the limited space in public secondary schools, a total of 136,684 qualifying students were not selected to continue their public secondary education in 2019.

Most of the girls and boys that get admitted into secondary schools travel long distance to the nearest secondary school, particularly in rural areas. Such long distances to secondary school prevent/discourage both boys and girls from attending secondary schools. However, this issue affects girls disproportionately as the farther a girl must travel, the greater the concern for her safety. Parents may also be reluctant to allow their daughters to travel long distances, or the girl herself might think school is not worth the additional risk. Traveling long distances to secondary schools exposes girls to gender-based violence (GBV) and increases their risk of HIV infection and early pregnancy, and some eventually drop out of school and end up in early marriages.

Limited secondary school spaces also discourage primary school boys and girls because they sense their chances of transitioning to secondary school are limited, often resulting in declining academic performance during upper primary. It is also possible that primary school completion rates are negatively affected since some primary school students end up dropping out of school given the negative factors mentioned above. In addition, some boys and girls that do not drop out of primary school must repeat their final year of primary school to improve their grades to boost their chances of being selected for secondary school.

Secondary school fees present a financial challenge for many families, especially in rural areas. In September 2019, the government of Malawi announced a plan to remove secondary school tuition, textbook, and general-purpose fees for secondary schools with a goal of improving transition, retention, and pass rates. The plan for abolition of secondary school fees was announced in tandem with plans to "massively increase the number of secondary schools in the country" to ensure enough spaces "to allow every child that passes standard eight to transit to secondary school." The government noted that although the aforementioned fees were abolished, that school administration, Parent and Teachers Associations (PTAs), and school committees may collect money from students to support small scale projects at individual schools (Minister of Education, 2019).

Addressing all the barriers and challenges that exist to secondary education will be crucial for Malawi to improve educational attainment for its youth. SEED is designed to address the lack of space and proximity in secondary schools in partnership with the Government of Malawi.

2.2 Activity Description

SEED is co-funded by USAID and PEPFAR ($90,000,000 ceiling) and implemented by USAID and the MoE. Led by implementing partner Tetra Tech (Task Order 72061219F00002), SEED is being carried out in two phases—expansion of urban CDSSs (Phase I) and construction of new rural CDSSs (Phase II). Construction work is being undertaken by various contractors with architectural and engineering oversight services provided by Tetra Tech.

SEED worked to provide increased urban public CDSS access through the expansion of existing CDSSs in the cities of Blantyre, Zomba, Lilongwe, and Mzuzu during Phase I. SEED Urban (February 7, 2019–September 30, 2020) involved the design-build construction of prefabricated classroom blocks, new boy and girl latrine blocks, and sanitary changing rooms for girls in 30 existing CDSSs. These blocks aim to reduce overcrowding and provide new seats in existing CDSSs and improve sanitation and hygiene, eliminating absenteeism due to the lack of a clean latrine. SEED Urban sites were handed over to the MoE between December 2020 and February 2021.

SEED is also working to provide increased public CDSS access through the construction of new CDSSs in targeted rural areas of the country (Phase II). SEED Rural (April 15, 2019–September 30, 2022) involves the construction of new "greenfield" CDSS facilities in rural areas where secondary school access has historically been limited. It is anticipated that up to 200 new secondary schools will be constructed (complete with boys and girls latrine blocks and sanitary changing rooms for girls), with at least one school envisioned to be constructed per Malawian education district. SEED Rural will be implemented in four construction groups. Construction for the 38 total Group 1 schools began in mid-2021 with staggered handover to the MoE as construction is completed with final handover planned for late 2022/early 2023.

Additional components of SEED rural and urban interventions include WASH wrap-around services and memorandums of understanding signed among the MoE, USAID, UNICEF, and UNESCO to provide school furniture and update the national SRH curriculum.

2.3 Theory of Change

SEED's main development hypothesis is that by providing increased access to secondary schools, young Malawians will attend secondary school rather than move into the "out-of-school" population that impedes the country's future development. According to the USAID Country Development Cooperation Strategy for 2013–2019, only 50 percent of students complete primary school and of those, only 68 percent pass primary school. With a lack of quality primary education and lack of secondary school opportunities, there is a growing population of youth that is uneducated. Furthermore, young girls who do not have access to education and secondary school often end up getting married and engage in early sexual activities, increasing risk of HIV infection. Through the proper design of classroom learning spaces and school facility infrastructure and increased access to secondary education, young Malawians will be provided the opportunity to learn, which improves economic growth and personal attainment. By providing a proper learning environment (sanitary conditions,

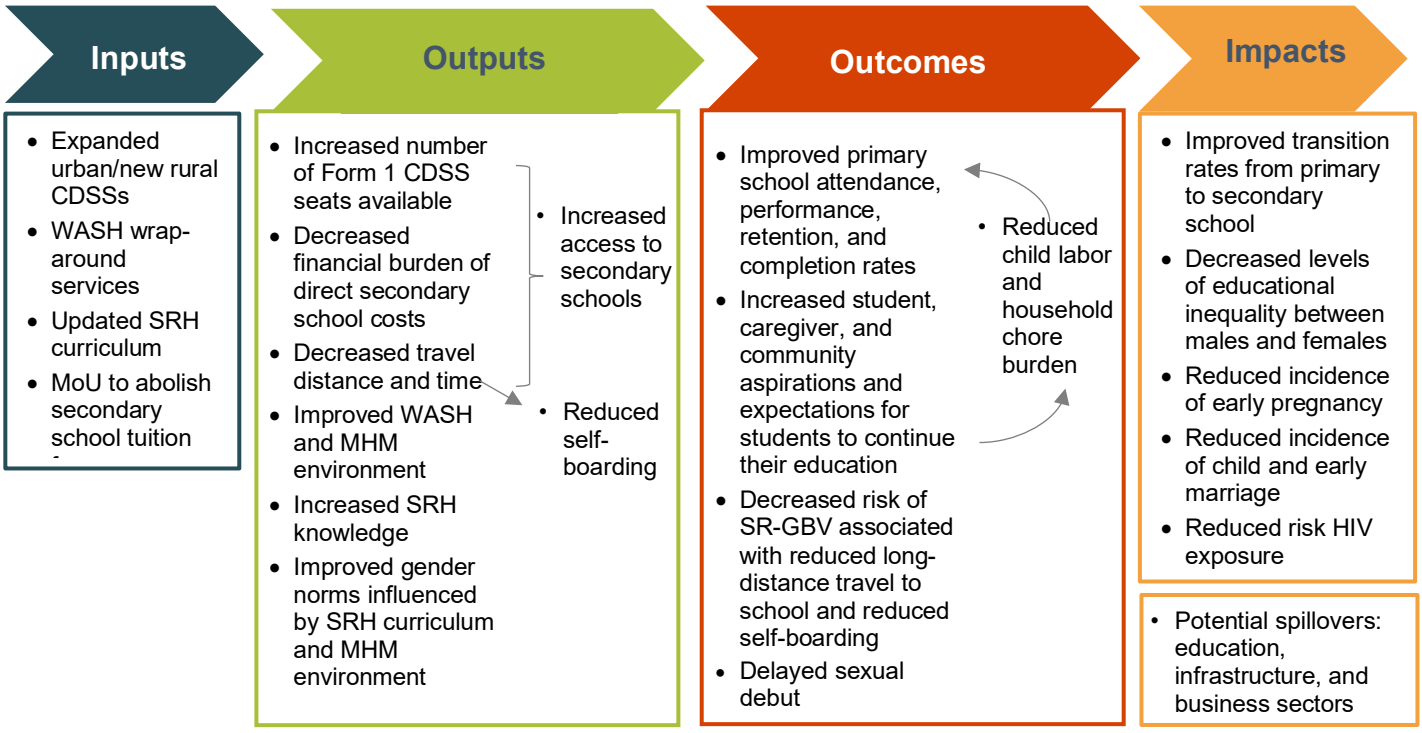
decongested classrooms, and closer access to schools), young girls will remain in school longer, reducing the risk of early pregnancy, early marriage, and HIV exposure.

SEED is unique in that its focus is on providing engineered design of schools appropriate to the local context, ensuring quality assurance of the school construction, and preparing a school community management committee to maintain and operate the new schools. The new schools are proposed in communities across Malawi to provide opportunities in underserved areas and improve the life of Malawians. The integration of appropriate school design, quality construction, and community engagement will result in greater sustainability of the new schools.

Figure E1 illustrates the activity's theory of change (with a focus on SEED Rural) and provides a visual representation of causal linkages within the SEED project. Outputs in the theory of change represent barriers youth face in accessing secondary education. Examples of important program impact pathways that may be examined as part of the Malawi SEED impact evaluation include:

- Embedding newly constructed CDSSs in underserved rural communities will increase the number of Form 1 seats available and decrease travel distance to secondary schools, thereby increasing access to secondary school.
- Reduced distance to secondary school will lead to a reduction in SR-GBV risk associated with travel to/from school and self-boarding.
- Increased access to secondary schools will result in reduction of HIV risk, early pregnancy, and early marriage.
- Abolishment of secondary school fees and reduced costs to travel to/from school or self-board will improve access to secondary schools.
- Increased access to secondary schools will improve student and caregiver interest in and expectations for educational attainment, and will increase secondary school and transition rates.
- Increased student and caregiver education-related interest and expectations will decrease child labor and household chore obligations.
- Gender norms may be influenced by an up-to-date Life Skills/sexual and reproductive health (SRH) curriculum content and wrap-around WASH services that improve conditions for menstrual hygiene management (MHM) at school for adolescent girls and young women (AGYW). Gender norms can influence sexual debut, risky sexual behavior, early and child marriage practices, as well as caregiver aspirations and expectations for daughters' education.

Figure 1. Malawi SEED theory of change



Source: Adapted from Statement of Work: Socio-Economic Impact Evaluation of the SEED CDSS Construction in Malawi Activity.

3. Methods

This evaluation is a mixed methods impact evaluation that will synthesize both quantitative and qualitative data to address the evaluation questions. The quantitative component will focus on rural communities, while the qualitative component will cover both urban and rural areas. Three rounds of data collection are planned:

- Baseline survey in October to November 2021 (completed)
- Midline survey in May to June 2023 (tentative, based on anticipated MoE handover completion)
- Endline survey in mid-2024 (tentative)

3.1 Quantitative Sampling Design

The objective of the quantitative component of the evaluation is to examine changes in key outcome indicators that are attributable to the rural SEED intervention. The quantitative component focuses on education, attitudes and perceptions, sexual and reproductive health, WASH, and child safety outcomes in rural areas. The evaluation is based on a prospective, quasi-experimental research design using a DID approach to evaluate the quantitative impact of SEED interventions in rural areas on outcomes of interest. Primary baseline data were collected from a planned panel of students in treatment and comparison groups. We also collected students' household information and community-level data, as well as school-level aggregate data from a panel of primary and secondary schools to understand potential schooling spillover effects.

3.2 Study Populations

The target population for the rural quantitative component includes male and female students enrolled in primary school Standard 7 during the 2021 academic year (January 4, 2021–November 19, 2021) in treatment and comparison areas. These students were surveyed as a prospective cohort at baseline because they will benefit from the new schools to be built by SEED. To measure the pre-intervention primary to secondary school transition rate, we also surveyed a retrospective cohort of students enrolled in Standard 8 during the academic year prior to baseline data collection (the 2019–2020 academic year which lasted from September 16, 2019, to December 18, 2020). In addition to student interviews, the households of the sampled students were located and visited by survey teams to conduct household and primary caregiver interviews. We also implemented a brief community survey with local leaders in communities where sampled students reside.

School questionnaires were administered in all sampled primary feeder schools. All primary schools sampled at baseline in treatment and comparison areas will be revisited at midline and endline, even if no sampled students are attending the primary school during that round of data collection. The panel of secondary schools were the secondary schools that the sampled primary schools indicated were the ones most of their students transition to, in both treatment and comparison areas. The new SEED rural CDSSs will be added to the secondary school panel at midline and revisited at endline.

Sampling Strategy for the Quantitative Component

The quantitative component of the Malawi SEED impact evaluation is designed to be representative of the rural SEED activity at the national level. The sampling strategy and power calculations were based on the primary to secondary school transition rate, which is the key outcome of interest in the evaluation.

We sampled both a retrospective and prospective cohort of students in treatment and comparison areas at baseline to measure change in the primary to secondary school transition rate over time. An important consideration for the evaluation design was that rural CDSSs select most of their students from a list of assigned primary "feeder" schools, with only a small percentage of students selected from non-feeder schools. The baseline prospective cohort consisted of students in the current-at-baseline year's primary school Standard 7 roster (academic year January 4, 2021–November 19, 2021), and the baseline retrospective cohort consisted of students from the Standard 8 roster in the previous academic year (September 16, 2019–December 18, 2020). Only the prospective treatment and comparison samples will be followed over time at evaluation midline and endline surveys.

> **Prospective cohort**: Children in Standard 7 at baseline (2021). Will revisit at midline and endline. Recruited from 32 treatment and 32 comparison *rural* primary schools, 6 girls and 6 boys per school.
>
> **Retrospective cohort**: Children in Standard 8 during academic year prior to baseline (September 2019–December 2020). Measurement of pre-intervention information. Sampled from the same 64 schools, 5 boys and 5 girls per school.

Statistical Power and Sample Size Calculations

In consultation with USAID/Malawi, we powered the evaluation study to detect a 14 percentage point change in the transition rate from primary school Standard 8 to secondary school Form 1 at 80 percent power among a mixed group of boys and girls. We assumed the following for our sample size calculations: a baseline transition rate of 33 percent (based on estimates of the 2019 primary to public secondary transition rate using the 2018 Standard 8 enrollment and 2019 Secondary School Selection Data for the rural areas of the SEED districts (GoM MoEST, 2018)); a 5 percent non-response rate at baseline and at midline; a 10 percent attrition rate between baseline and midline; an intra-class correlation coefficient of 0.021 for the transition to secondary school; a correlation of 0.3 between transition rates within the same school over time; and a design effect based on the 0.021 intra-class correlation coefficient and 10 children in school per cluster based on 2016 Malawi Integrated Household Survey data.

Sample size calculations were conducted in four steps: (1) base estimate assuming zero non-response with a simple random sample; (2) adjustment for cluster sampling effects; (3) adjustment for baseline non-response in the retrospective cohort and adjustment for baseline non-response, midline non-response, and attrition in the prospective cohort; and (4) allocation of students across 32 primary schools in treatment areas and 32 primary schools in comparison areas. This resulted in a total baseline sample size of 1,408 students, implemented as a 32

cluster (primary feeder school) by 704 individual student design (320 retrospective cohort and 384 prospective cohort) in both treatment and comparison groups. In each of the 32 sampled primary feeder schools in treatment areas and 32 sampled schools in comparison areas, 10 children (5 boys and 5 girls) were randomly selected from the 2019/2020 Grade 8 roster for a total retrospective cohort of 640 students; 12 students (6 boys and 6 girls) were randomly selected from the 2021 academic year's Grade 7 roster for a total prospective cohort of 768 students. Table 1 provides a summary of the baseline sample.

Selection of the Treatment Group

The primary sampling units (PSU) for the treatment group were primary feeder schools assigned to the new SEED CDSSs; thus, the primary sampling frame for the treatment group comprises 137 primary schools assigned as "feeder schools" to the 38 new rural SEED CDSSs nationwide. A total of 32 primary schools were randomly selected from the list of feeder primary schools of the new rural SEED schools. The PSUs were stratified by region (North, Central, and South) proportional to the total number of treatment schools to ensure representativeness at the national level. In each selected school, 10 children (5 boys and 5 girls) were randomly selected from the Standard 8 roster of the 2019–2020 academic year for a total retrospective treatment cohort of 320 children; 12 children (6 boys and 6 girls) were randomly selected from the 2021 academic year's Standard 7 roster for a total prospective treatment cohort of 384 children (the student-level panel consists only of the prospective cohort) (Table 1).

Table 1. Quantitative component sample sizes by intervention arm

	Treatment	Comparison	Total
Sampled primary feeder schools	32	32	**64**
Sampled students			
Retrospective cohort (Enrolled in Grade 8 2019/2020 academic year)	320	320	640
Prospective cohort (Enrolled in Grade 7 2021 academic year)	384	384	768
Total	704	704	**1,408**

Identification and Selection of the Comparison Group

It is necessary to have data from a credible comparison group to conduct an impact analysis. In the absence of a randomly assigned control group, the best comparison group is one that does not receive the intervention and is as similar as possible to the treatment group in every factor influencing both the selective treatment assignment and the outcome of interest. For this non-experimental evaluation, the comparison group was identified at the PSU-level; 32 primary schools were randomly selected that are non-feeders to the new rural SEED schools. Within each region, the universe of potential comparison schools included primary feeder schools for non-SEED CDSS schools, excluding any feeder school that is within 5 kilometers of a SEED school. Each of the 32 schools selected for the treatment group were matched to a comparison school in neighboring areas of the same region based on primary feeder school characteristics, as well as similar education supply (transition rates for boys and for girls, student-teacher ratio, distance to the nearest public secondary school, and the ratio of students to classrooms).

3.3 Sampling Strategy for the Qualitative Component

Based on a review of relevant sampling literature, researchers set numbers of KIIs, IDIs, and FGDs that were expected to yield a high level of theme saturation within a limited budget (Guest, et al., 2006 and Guest, et al, 2017)

Urban

The evaluation team implemented the urban qualitative component at two newly expanded CDSSs in each of three urban areas: Mzuzu, Blantyre, and Lilongwe. Researchers purposively selected the CDSSs to represent one peri-urban and one urban area in each city. At each of the six sites, four FGDs were held—one with Form 1 girls, one with Form 1 boys, one with female caregivers of Form 1 youth, and one with male caregivers of Form 1 youth. In addition, in depth interviews (IDIs) were conducted at each site with one Form 1 girl and one Form 1 boy, as were key informant interviews (KIIs) with one Form 1 teacher and one community leader. Urban data collection therefore consisted of a total of 12 FGDs with Form 1 youth from urban expanded schools, 12 FGDs with caregivers of targeted youth, 12 IDIs with targeted youth, six KIIs with Form 1 teachers, and six KIIs with community leaders.

Students who participated in IDIs are a prospective cohort that will be reinterviewed at study midline and endline. The FGDs and KIIs are cross-sectional and to be repeated at midline and endline, but not necessarily with the same respondents.

Rural

The evaluation team implemented the rural qualitative component at two primary schools that will feed into new CDSSs in each of three regions—North, Central, and South. The research team purposively selected the schools to achieve ethnic and geographic diversity. At each of the six sites, four FGDs were held—one with Standard 7 girls, one with Standard 7 boys, one with female caregivers of Standard 7 youth, and one with male caregivers of Standard 7 youth. In addition, a KII was held with one community leader. Rural data collection therefore consisted of a total of 12 FGDs with Standard 7 youth, 12 FGDs with caregivers of targeted youth, and six KIIs with community leaders.

At both urban and rural sites, there was a different FGD, IDI, or KII guide for each category of respondent, and interviewers/facilitators were sex-matched to respondents (e.g., a woman led FGDs with female students). Respondents were selected by the data collection team in collaboration with the head teacher and respective class teacher (i.e., standard 7 and Form 1).

3.4 Survey Instruments

Questionnaires for the Quantitative Component

The prospective cohort of students, including their households, caregivers, schools, and communities, will be reinterviewed at study midline and endline, whereas the retrospective cohort students, households, caregivers, communities, and schools will only be interviewed at baseline. The following five questionnaires were administered at baseline:

1. **Student Questionnaire:** Separate questionnaires were administered by direct interviews to male and female students (note that the SR-GBV module was only implemented among girls, administered to one girl per household); content focused on evaluation questions 1–3 and program implementation.
2. **Caregiver Questionnaire:** Major content focused on evaluation question 2 and program implementation. The respondent was the household member identified as the person most responsible for the sampled student.
3. **Household Questionnaire:** Major content included demographic, socio-economic, and household WASH characteristics. The respondent was the household head or the caregiver.
4. **School Questionnaire:** Content focused on WASH components of evaluation question 3 and school conditions related to program implementation and possible spillovers outlined in evaluation question 4. A module on school-level aggregate performance measures was included to collect data such as primary and secondary completion rates, enrollment numbers, and grade-specific dropout rates, subject to data availability at each school. The respondent was the head teacher or his/her designee.
5. **Community Questionnaire:** Content focused on community infrastructure, access to schools and other public services, presence of community organizations, and other basic community characteristics.

We collected geographical coordinates, other relevant location information, and reference contacts from households and schools to facilitate revisiting them in subsequent years. We also collected data on salient COVID-19 conditions and considerations to understand how education outcomes, student and parent/caregiver attitudes and expectations, WASH access and use, and rural SEED program implementation may have changed in response to the pandemic.

Figure 2 provides a summary of the respondents and cohorts intended to serve as rural quantitative midline evaluation comparisons by evaluation question and key indicator group.

Figure 2. Respondents and reference cohorts for rural quantitative evaluation questions (EQs)

EQ1. Education	• **Retrospective cohort**: Form 1 transition rate, Standard 8 repetition rate, dropout rate • **Primary school instrument**: Secondary school selection rate • **Both retrospective cohort and primary school instrument**: PSLCE pass rate
EQ1. SR-GBV	• **Retrospective cohort**: experience of SR-GBV and SR-GBV-related school absence
EQ1. CEFM	• **Prospective cohort**: all CEFM indicators
EQ2. Attitudinal/ behavioral impacts	• **Prospective cohort**: aspirations, expectations, optimism, and perceived barriers to educational attainment • **Retrospective cohort**: perceived barriers to educational attainment
EQ3. Sexual behavior	• **Prospective cohort**: all sexual behavior indicators
EQ3. WASH environment	• **Retrospective cohort**: MHM barriers and experiences • **Secondary school instrument**: WASH and MHM environment
EQ3. Safety	• **Retrospective cohort**: indicators related to secondary school travel safety
EQ4. Schooling and business environment spillovers	• **Primary school instrument**: teacher transfers to secondary schools • **Secondary school instrument**: under-qualified teachers staffing secondary schools

Data Collection Tools for the Qualitative Component

We developed interview guides for FGDs with students, FGDs with parents, and KIIs guides for teachers (Form 1 at urban sites only) and community leaders. In addition, we developed an IDI guide for Form 1 students at urban sites.

Themes explored in the FGDs were similar for students and caregivers, albeit from different perspectives and at different levels. FGDs with students explored their attitudes towards school and their futures, experience of the new/expanded school, the construction period, transit to school, perceived impact(s) of the new/expanded school and knowledge of GBV amongst peers. FGDs with caregivers explored the community and household experience of the expanded/new schools and the construction period, perceived impact(s) of the new/improved schools, caregiver attitudes towards children's schooling and future, and the existence of other health, education, or related programs in the area.

For all rural FGDs, schools were not yet constructed so perceived impact(s) of the new schools will not be addressed until midterm and endline data collection.

IDIs with Form 1 students provided more in-depth information on the same topics addressed with students in the FGDs and explored more sensitive topics that students may not feel comfortable discussing in a group, such as GBV, sexuality, and menstruation. At midline and endline we will follow-up with the same girls interviewed at baseline.

KIIs with Form 1 teachers addressed perceived impact(s) of the SEED CDSSs, how teachers experienced the SEED CDSSs and construction period, other factors potentially affecting student health and education. KIIs with community leaders addressed the perceived impact(s) of the SEED CDSSs on households and the community at urban sites (including infrastructure and business environment), how the community experiences the new/expanded school and construction period, perceived barriers to secondary education in the community, and other factors potentially affecting student health and education.

Similar to the FGDs, the perceived impact(s) of the SEED CDSSs in rural areas will not be addressed in IDIs and KIIs until midterm and endline data collection.

3.5 Data Collection

The data collection team was trained by CSR in collaboration with the D4I team. Training topics included an in-depth review of all data collection tools in English, Chichewa, and Tumbuka, as well as sessions on human subjects' protection, interviewing techniques, GBV, and use of tablets (quantitative) and audio recorders (qualitative). In addition, the team role played interviews and carried out a two-day pilot of the study tools in Zomba. Researchers piloted the translated tools to refine the translations, test the methods, and allow the data collection team to internalize the tools. Translation changes were made following the pilot. In addition, to better broach the sensitive topic of GBV, the team made changes to the youth IDIs to add a question for girls on whether they had friends who had experienced GBV; if they were uncomfortable reporting on personal experience of GBV, it could help to instead be asked to report on someone else's experience. The youth FGD guides were also changed to allow a plenary report instead of paired report out following the appreciative inquiry component. Training, including the pilot, took place in Zomba from September 28 to October 8, 2021. Data collection occurred from October 11 to November 15, 2021.

3.6 Response Rates

The response rate for the retrospective and prospective cohorts was 98.1 and 99.6, respectively. Students with inconsistent data were removed from the analysis sample, such that the percent of interviewed students in the analysis sample was 94.2 and 99.3 percent in the retrospective and prospective cohorts, respectively (Table 2).

Table 2. Quantitative sample rates

	Selected sample	Interviewed sample	Completed interviews	Response rate (%)	Inconsistent data*	Analysis sample	% Interviewed sample in analysis
Retrospective cohort	640	636	628	98.1	29	599	94.2
Comparison	320	317	311	97.2	17	294	92.7
Treatment	320	319	317	99.1	12	305	95.6
Prospective cohort	768	766	765	99.6	3	761	99.3
Comparison	384	382	382	99.5	1	381	99.7
Treatment	384	384	383	99.7	2	380	99.0

Notes: *Includes retrospective cohort respondents who indicated they were not attending school or Standard 8 in 2019–2020 academic year and prospective cohort respondents who indicated they were not attending school in 2021 academic year or being in a grade different than Standard 7.

3.7 Analysis

Quantitative Component

The objective of the analysis presented in this baseline report is twofold: first, to present baseline values of key indicators for the different topics of interest of the evaluation, and second, to examine the degree of balance between the treatment and comparison groups. While the SEED construction intervention is at the secondary school level, we present results for retrospective and prospective cohorts because program effects along the theory of change are expected to occur mostly among primary school students. We present baseline indicator values for treatment and comparison groups separately, and for each indicator we present the p-value of a statistical test for the difference of the treatment and comparison values. We define statistical significance as a p-value lower than 0.05. Indicators values are presented as percentages or means and standard deviations; chi-square significance tests are conducted for categorical variables, and ordinary least squares regression was used to test significance among continuous variables. We present unweighted sample sizes, and indicator values and the statistical tests of differences use relevant sampling design features (i.e., stratification, clustering, and sampling weights). Lastly, we do not report secondary school results by intervention group because secondary schools were not purposively sampled and students from both intervention areas could be attending the same CDSS at baseline. Data processing and analysis were conducted using Stata16 (StataCorp, 2019).

Qualitative Component

The evaluation team audio recorded and simultaneously translated and transcribed all interviews into English. Researchers developed a codebook with deductive and inductive codes. Initially, the codebook developed was based on the categories of topics in the guides. The team used Dedoose software (https://www.dedoose.com/) to code the interviews. To improve intercoder reliability, each member initially coded the same two interviews and then met as a group to discuss the use of the codes and agree on a common understating of each. Inductive codes were added during the coding process as needed. Findings were summarized by topic area and differences or similarities by type of respondent were noted.

3.8 Limitations

Difficulties arose while finding students or households, particularly those in the retrospective cohort who moved away from the household. To mitigate this, at each school we sampled a group of male and female replacements students for both the prospective and retrospective cohorts, and this enabled us to reach our desired sample size. We relied on data provided by household heads or caregivers to calculate education indicators, including the transition rates, which may be inaccurate. Also, some schools in the quantitative sample needed to be replaced because class registers were lost or unavailable during the fieldwork visit. Other schools needed to be replaced because they had very small numbers of students in Standard 7 or 8. The number of caregivers exceeds the number of sampled students in the retrospective cohort as caregivers were interviewed if the sampled student was a household member but away at school or for another temporary reason and could not be interviewed.

Urban qualitative data collection took place after the school expansions were completed and there was no "baseline" against which to compare outcomes for students, caregivers, or community leaders. We relied on respondent's retrospective reports, which may have been inaccurate. Also, reports of perceived reduced absenteeism and increased enrollment were not triangulated with official school records, as that was outside the scope of the evaluation.

There were inconsistencies between quantitative versus qualitative reports on selected outcomes such as GBV. Due to social desirability bias, respondents may have underreported their own behaviors or experiences in the survey component, compared to their report of the behaviors or experiences of others in qualitative components.

Lastly, all data collection occurred during the COVID-19 pandemic. As described herein, this significantly impacted the attitudes and behaviors of interest to this evaluation.

3.9 Ethical Considerations

The University of Malawi Research Ethics Committee reviewed and approved the study protocol and tools (P.09/21/82). The Institutional Review Board of University of North Carolina, Chapel Hill also reviewed the study and determined that it was not human subjects research. Special precautions and protections were implemented for the administration of survey questions on GBV among female students. The evaluation and data collection teams followed recommendations for the ethical and safe conduct of research on GBV and violence among

children and adolescents (CDC, 2017; Fontes, 2004; Innovations for Poverty Action, 2018; WHO, 2018; WHO, 2017; WHO, 2016; WHO, 2001).

3.10 Gender Integration

Gender has been explicitly integrated throughout the evaluation design and data collection and analysis. Data collection tools and the data collection process included attention to gender. D4I quantitative data analysis explored potential gender-related patterns. In addition, qualitative data analysis explored whether emerging themes differ by similar demographic factors when possible and examined data that specifically addressed gender, such as that about GBV and attitudes towards girls' education.

We trained interviewers and supervisors to sensitize them to issues surrounding GBV and to the specific concerns regarding collection of data on violence. We administered the GBV questions to only one eligible female student in each selected household; interviewing only one female per household for GBV questions minimizes security breaches due to other household members knowing that information on GBV was shared. Also, we did not ask males about GBV; interviewing male and female peers in the same community about GBV would alert potential male peer perpetrators to the fact that girls in the survey are being asked about GBV and pose a security risk.

We sampled males and females for FGDs, but these groups were sex segregated. In FGD set-up, CSR determined the best times and places to hold the FGDs, considering local gender norms on where and when it is acceptable for males versus females to meet. Male and female key informants were interviewed to gather balanced perspectives on the outcomes. D4I data collectors also included females and males and we sex matched interviewers and enumerators and participants as needed based on local cultural norms.

D4I data analysis explored potential gender-related patterns. In addition, qualitative data analysis explored whether emerging themes differ by similar demographic factors when possible and examined data that specifically addressed gender, such as that about GBV and attitudes towards girls' education.

This report includes and other evaluation products will include reflection on gender-related results. Data use and action planning activities will seek to help stakeholders interpret these results, and plan for program adjustments as needed.

4. Baseline Balance Between Intervention Groups

As the Malawi SEED impact evaluation uses a non-experimental study design, it is important to statistically assess the similarity between the treatment and matched comparison groups at baseline to determine whether the matching process resulted in a balanced sample. We examined baseline balance for key education outcomes, intermediate outcomes and mediating variables, and potential control variables for the sampled and matched primary schools (the PSUs), as well as among students, caregivers, and households within each retrospective and prospective cohort. We defined statistical significance as a p-value lower than 0.05, which indicates that baseline values differ significantly between treatment and comparison groups.

Table 3 presents the balance summary between the comparison and treatment groups for the retrospective cohort, prospective cohort, and primary schools by result area. We tested over 1,200 indicators (552 in the retrospective cohort, 520 prospective cohort, and 134 primary schools) and found only 62 statistically significant differences between the treatment and comparison groups. This level of overall balance (94.9 percent of assessed variables) is acceptable as we expected to detect spurious imbalance in five percent of tested indicators given the 0.05 alpha level for significance.

Within the retrospective cohort, 95 percent or more of the assessed variables were balanced for seven of the 11 results areas, and 90 percent or more of the assessed variables were balanced for an additional three of the 11 result areas. In the remaining result area, school-related safety and GBV, 82.9 percent of the assessed variables were balanced.

Within the prospective cohort, we found balance for 95 percent or more of the assessed variables for eight of the 10 results areas, and 93 percent or more of the assessed variables for the remaining two result areas.

Among matched primary schools, 94 percent or more of the assessed variables were balanced for five of the six result areas. For the remaining result area, CDSS and related program exposure, 50 percent of the assessed variables were balanced (Table 3).

Table 3. Baseline balance at the 0.05 significance level

	Retrospective cohort			Prospective cohort			Primary schools		
	# Imbalanced variables	# Assessed variables	% Balanced	# Imbalanced variables	# Assessed variables	% Balanced	# Imbalanced variables	# Assessed variables	% Balanced
Sample **c**haracteristics	1	47	97.9	2	47	95.7	1	38	97.4
CDSS and **r**elated **p**rogram **e**xposure	0	15	100.0	0	15	100.0	1	2	50
Education	2	28	92.9		0		0	5	100
Aspirations, **e**xpectations, **a**ttitudes, and **b**eliefs	4	43	90.7	3	43	93.0		0	
Schooling norms and perceived barriers to education	7	135	94.8	4	135	97.0	4	65	93.8
Enabling environment	1	29	96.6	1	29	96.6	0	22	100
School-related safety and GBV	12	70	82.9	4	70	94.3	0	2	100
Marriage	2	44	95.5	1	40	97.5		0	
Sexual and reproductive health	5	57	91.2	2	57	96.5		0	
Gender and GBV attitudes and norms	1	41	97.6	0	41	100		0	
Effects of the COVID-19 pandemic	1	43	97.7	3	43	93		0	
Overall balance	**36**	**552**	**93.5**	**20**	**520**	**96.2**	**6**	**134**	**95.5**

Notes: * Includes specific items or scale components reported in appendix tables

4.1 Baseline Implications for the Impact Evaluation

Balance in four key indicator groups is particularly important to the impact evaluation: (1) characteristics used to match comparison schools to sampled treatment schools, (2) exposure to intervention components, (3) main educational outcomes, and (4) important intermediate outcomes along the SEED program theory of change.

Characteristics Used for Matching

We used primary school and education supply characteristics to match the sampled primary feeder schools in the treatment group with comparison primary schools in neighboring areas of the same region. Examination of these variables in the baseline survey data is important because it provides insight into the validity of using Education Management Information System (EMIS) data from several years before the evaluation baseline to match study arms and because it reveals similarity in selective treatment assignment criteria. We found balance for treatment and comparison schools on each of these criteria at baseline, including distance to the nearest

public secondary school, Standard 7 and Standard 8 student-teacher and student-classroom ratios, and incidence of over-capacity.

Baseline Program Exposure

Although we collected baseline data before new secondary school completion, it is possible that students, caregivers, or primary school faculty were aware that the schools were being built in their area. Awareness of the SEED program at baseline could indicate there is a risk of anticipation effects by which respondents in treatment areas know they will have access to new CDSSs and change their behavior and decision-making based on the knowledge that these services will be available soon. We found that primary school respondents in treatment areas were nearly three times as likely to be aware of nearby CDSS construction relative to comparison schools (57.2% vs. 20.4%, p=0.003). However, this imbalance is not observed among students or caregivers, with roughly 10 percent of caregivers and 12 percent of students reporting awareness of new CDSS construction. While school-level imbalance will be controlled for during midline and endline program impact estimation, the observed balance at the individual levels suggests that anticipation effects are not a problematic within the student and caregiver samples.

Educational Outcomes

We also used school-level transition rates from EMIS data to match comparison primary schools to the sampled treatment primary schools. We examined school transition, dropout, and repetition using household survey data for the retrospective cohort at evaluation baseline. Educational status is imbalanced at the 0.05 significance level overall and for males, and at the 0.1 significance level for females, with treatment group students performing better than comparison group students. Overall, students in the treatment group were nine percentage points less likely to have dropped out of school or repeated Standard 8 than comparison group students, and 18 percentage points more likely to have transitioned to Form 1; the performance differences were larger among males than females. The DID impact estimation approach will control for these differences between groups during midline and endline impact estimation.

Intermediate and Additional Outcomes

A key barrier that the SEED program seeks to directly address is long distances to secondary schools. Students in the treatment group were 12 percentage points more likely to report that distance to school was a barrier to achieving their own educational goals (p=0.048). However, student-reported travel time to school was greater in the comparison group (p=0.021), and comparison primary school respondents were 29 percentage points more likely to report distance to school as a problem for selected male and female students to enroll in secondary school (p=0.011 and p=0.016, respectively). Caregivers were also 18 percentage points more likely to report lack of transportation as a barrier to household girls' secondary school attendance in comparison groups (p=0.007), and over 10 percentage points more likely to report inability to afford self-boarding as a barrier to community youth enrolling in secondary school (p=0.027) and completing secondary school (p=0.025).

The SEED program is intended to indirectly improve youth outcomes related to early marriage, early pregnancy, HIV exposure, and SR-GBV among girls, as well as education-related aspirations and future outlooks among youth and their caregivers. Key marriage, pregnancy, and HIV exposure measures were balanced between treatment and comparison groups. The reported incidence of SR-GBV among retrospective cohort girls was higher in treatment than comparison areas. Girls in treatment areas were significantly more likely to have missed school during the academic year due to SR-GBV related safety concerns at or traveling to/from school ($p=0.012$), reported experiencing more types of sexual violence acts at least once ($p=0.006$), and were 10 percentage points more likely to report experiencing solicitation and four types of physical violence.

Lastly, key measures of student and caregiver education ideals and expectations are balanced at baseline, as are summary measures of student optimism, self-esteem, and agency over the future. While we did detect significant differences between treatment and comparison groups for retrospective students who agreed attending secondary school is important ($p=0.001$) and prospective cohort students who agreed completing secondary school is important ($p=0.047$), the differences in these indicators are small and relatively meaningless as over 95 percent of students in both program groups agreed with the statements.

Overall balance results establish an acceptable level of similarity between treatment and comparison groups, and existing differences between these two groups will be controlled for during program impact estimation.

5. Rural Results: Sample Characteristics

Key Findings

- Slightly over half of student respondents in the retrospective and prospective cohorts were female. The average student age was 17 years in the retrospective cohort and 15 years in the prospective cohort. Approximately 20 percent of students in both cohorts were single or double orphans.
- Across cohorts, approximately 70 to 77 percent of caregivers were female. The average age of caregivers ranged from 42 to 47, and 71 to 79 percent were currently married or living with a partner.
- Approximately half of all households in both cohorts were living under the national poverty line, nearly three-fourths reported financial difficulties, and over 70 percent were experiencing moderate to severe food insecurity.
- All sampled primary schools and traced secondary schools were public and co-educational; all secondary schools were CDSSs.
- Gender parity in student enrollment was found in Standard 7, Standard 8, and Form 1 grades at study schools in treatment and comparison areas. Over 25 percent of primary schools reported the Standard 7 and Standard 8 grades were over capacity, compared to 36 percent of Form 1 grades in secondary schools.

5.1 Characteristics of Rural Respondents and their Households

Student and Caregiver Respondent Demographics

Female students[2] comprised half of the retrospective cohort and 54 percent of the prospective cohort. The average age of students was 17 in the retrospective cohort and 15 in the prospective cohort, indicating that most students were three years behind grade-for-age per their baseline sample roster (i.e., 2019/2020 grade 8 retrospective cohort, 2021 grade 7 prospective cohort).[3]

Less than 5 percent of sampled students had a chronic illness or a difficulty (difficulty seeing evening with glasses, hearing even with a hearing aid, walking or climbing steps, speaking, remembering or concentrating, or with self-care). Across cohorts, approximately 70–77 percent of caregivers were female. The average age of caregivers ranged from 42–47, and 71–79 percent were currently married or living with a partner (Table 4).

[2] For convenience we refer to all youth respondents as students; however, some have dropped out of school.
[3] Primary education in Malawi begins at age six and has an eight-year duration; the official Form 1 entry age is 14 years.

Table 4. Characteristics of sampled students, student respondents, and caregiver respondents

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Sampled students (information from Household Questionnaire)						
Female	50.8	50.0		54.4	53.6	
Average age (SE)	17.4 (0.110)	17.2 (0.140)	0.383	15.3 (0.124)	15.2 (0.134)	0.687
Percent of sampled students with any difficulty reported	5.1	2.7	0.187	3.5	4.6	0.478
Percent of sampled students suffer from a chronic illness	1.4	2.5	0.413	3.1	4.5	0.536
N (sampled students)	**294**	**305**		**381**	**380**	
Student respondents						
Female	48.5	51.6	0.278	54.0	53.5	0.807
Average age (SE)	17.4 (0.1)	17.2 (0.1)	0.228	15.2 (0.1)	15.2 (0.1)	0.963
N (student respondents)	**227**	**237**		**381**	**380**	
Caregiver respondents						
Female	69.1	74.4	0.206	77.0	75.0	0.612
Average age (SE)	46.9 (0.7)	46.2 (0.8)	0.489	43.0 (0.6)	42.2 (0.8)	0.417
Marital status			0.545			0.030
Currently married	71.1	73.7		69.2	78.5	
Currently living with a partner	3.7	2.1		1.7	0.4	
Not in a union	26.2	24.3		29.0	21.1	
N (caregiver respondents)	**266**	**287**		**379**	**375**	

Notes: These are unweighted sample sizes and weighted statistics and significance tests. Detailed characteristics of sampled students are in Appendix A, Table A1. The number of caregivers exceeds the number of sampled students in the retrospective cohort as caregivers were interviewed if the sampled student was a household member but away at school or for some other temporary reason and could not be interviewed.

Household Members

The average household size was approximately six in both cohorts. The average number of children ages 6–13 was slightly higher in the prospective cohort (1.7) than in the retrospective cohort (1.2 and 1.4 in the comparison and treatment groups, respectively). The average number of children ages 14–17 was just over one and similar across cohorts.

In the retrospective cohort, the percent of households with single or double orphans was 23.4 in the comparison group and 21.6 the treatment group. In the prospective cohort, the percentages were 15.9 and 18.1 in the comparison and treatment groups, respectively. Orphanhood did not differ significantly between treatment and comparison groups in either cohort.

Less than 40 percent of households in both cohorts were headed by females, and the average age of household heads was approximately 46. In the retrospective cohort, approximately 75 percent of the household heads were married, compared to 70 (comparison) to 80 (treatment) percent of household heads in the prospective cohort (p=0.026). The average years of education of the household head ranged from approximately 6 to 7 years across cohorts.

Across cohorts, 80 to 90 percent of households were Christian, 37 to 40 percent were members of the Chewa ethnic group, and 67 to 71 percent were Chichewa-speaking (Table 5).

Table 5. Characteristics of household members

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Household composition						
Average number of household members (household size)	5.7	5.8	0.701	6.1	6.0	0.333
Number of HH members primary school age (6–13)	1.2	1.4	0.124	1.7	1.7	0.773
Number of HH members secondary school age (14–17)	1.1	1.1	0.811	1.3	1.2	0.895
Orphanhood						
Percentage of households with orphan children under 18 years of age						
Single orphans	18.6	19.0	0.900	14.6	14.8	0.951
Double orphans	4.8	2.6	0.282	1.3	3.3	0.151
Household headship						
Female	36.4	38.5		38.8	31.6	
HH head age (mean SD) *	46.3 (0.8)	46.9 (0.7)	0.605	46.3 (0.6)	45.3 (0.7)	0.310
Marital status of HH head			0.564			0.026
Never married	1.3	0.9		1.8	0.7	
Married	75.8	76.0		69.3	79.1	
Divorced/separated	12.5	15.5		20.0	11.4	
Widow/widower	10.4	7.6		8.9	8.8	
Education level of HH head			0.126			0.112
No education	12.8	7.0		7.6	9.6	
Primary incomplete	44.7	39.8		50.3	44.2	
Primary complete	19.2	21.4		17.3	15.9	
Secondary incomplete	13.4	14.7		11.5	13.9	
Secondary complete	6.6	13.3		11.8	10.9	
Higher	3.5	3.9		1.6	5.5	

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Religion, ethnicity, and language						
Religion			0.203			0.884
Christianity	89.6	79.7		87.8	85.9	
Islam	2.2	7.8		5.0	4.5	
Other/none	8.2	12.5		7.2	9.6	
Ethnic group			0.468			0.852
Chewa	39.7	39.0		36.7	38.2	
Tumbuka	9.2	6.9		8.0	8.4	
Lomwe	29.9	35.0		31.3	33.1	
Other	21.2	19.2		24.0	20.2	
Main language spoken at home			0.484			0.656
Chewa	71.1	68.5		69.6	66.6	
Tumbuka	8.4	8.3		8.7	9.1	
Lomwe	6.8	2.0		6.5	2.5	
Other	13.7	21.2		15.2	21.8	
N (households)	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests. Detailed information about household members is presented in Appendix A, Table A2, A3, A4, and A5. 84 household head ages coded as unknown.

Household Welfare

We estimated poverty rates for the national poverty line, extreme/food national poverty line, and the $1.90/day 2011 PPP international poverty line using the Malawi 2016 Poverty Probability Index methodology (Innovations for Poverty Action, 2020); the national and extreme national poverty lines correspond to Malawian poverty lines developed from the 2016–2017 fourth Integrated Household Survey by the National Statistics Office of Malawi. The extreme poverty rate ranged from 16.1 to 19.1 across cohorts, the national poverty rate for households in both cohorts was approximately 50 percent, and roughly 70 percent of households in both cohorts were living below the $1.90 global extreme poverty line. Estimated poverty rates in the evaluation sample align closely with 2020 reference rates for rural zones in Malawi (18.9 percent extremely poor, 51.9 percent poor, and 75.1 percent under the international extreme poverty threshold).

While nearly three-fourths of study households reported financial difficulties, few reported receiving direct cash assistance. Across study arms in both cohorts over 70 percent of households reported their total household income in the past 12 months was less than the year before, nearly half of households reported their income was not sufficient and thus had to use savings or borrow to meet expenses, and approximately 80 percent of households reported that they felt less financially secure than they did one year ago. Less than 6 percent of households reported that they received cash transfers from the government or an NGO (Table 6).

Table 6. Financial welfare and support

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Poverty rate of all households for the selected poverty line (Malawi Poverty Probability Index)						
Extreme poverty line, mean (SD)	17.0 (2.0)	16.1 (2.0)	0.739	19.1 (1.4)	16.8 (1.5)	0.285
National poverty line, mean (SD)	49.3 (3.2)	46.4(2.7)	0.491	51.5 (2.2)	47.7 (2.4)	0.263
$1.90/day 2011 PPP, mean (SD)	70.7 (2.5)	67.4 (2.2)	0.336	71.2 (1.9)	68.9 (2.3)	0.459
Notes: The Malawi PPI is based on 2016/2017 IHS4 poverty data. The 2016/2017 IHS4 poverty line was MWK 137,428 per person per year (updated 2019/2020 IHS5 poverty line MWK 165,879). The IHS4 2016/2017 ultra-poverty line was MWK 85,260 per person per year (updated IHS5 2019/2020 ultra-poverty line 101,293).						
Perceived financial well-being						
Which of the following is true about your current income:			0.893			0.860
Allows you to build your savings	3.8	3.1		4.2	4.0	
Allows you to save just a little	7.6	7.7		8.1	6.8	
Only just meets your expenses	39.9	38.8		37.5	41.1	
Is not sufficient, so you need to use your savings to meet expenses	11.2	14.4		14.7	12.4	
Is really not sufficient, so you need to borrow to meet expenses	37.5	36.0		35.4	35.8	
Thinking about your total income over the last 12 months, would you say it is more, less, or about the same as the year before? Consider all money that came into your household.			0.928			0.895
More	13.0	11.8		13.3	14.4	
Less	72.0	73.2		72.6	70.9	
The same	15.0	15.0		14.2	14.7	
Compared to last year, do you feel that your household is more or less financially secure:			0.773			0.805
More secure	7.4	8.3		7.9	8.2	
Less secure	80.8	78.2		78.4	79.8	
No change from last year	11.9	13.5		13.7	12.0	
Economic support						
In the last 12 months, has any member of your household received direct cash transfers from:						
Government	5.3	5.9	0.760	4.7	4.1	0.720
Others (development partners, NGOs)	4.0	5.2	0.541	3.7	4.4	0.707
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests. Detailed information is provided in Appendix A, Table A6.

We estimated baseline household welfare using the Food Insecurity Experience Scale (FIES) global reference (Cafiero, Viviani, and Nord, 2018). Over 70 percent of households across cohorts reported experiencing moderate to severe food insecurity, and between 35–40 percent of households reported experiencing severe food insecurity. Additionally, 60 percent of households reported that food consumption over the last month was less than adequate for the household's needs (Table 7).

Table 7. Household food security

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Food insecurity experience scale (FIES) *						
Household experiencing moderate or severe food insecurity	72.0	71.0		72.7	73.0	
Household experiencing severe food insecurity	34.7	39.6		35.0	35.7	
Household food consumption over the past one month was less than adequate for household needs	59.4	60.2	0.897	59.0	62.2	0.610
N (households)	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests. Additional details are in Appendix A, Table A7. * Chi-square tests of statistical difference not available for FIES estimates. FIES estimates use -0.25 and 1.81 thresholds to permit comparability with global SDG 2.1.2 indicators.

Approximately 75 percent of households owned a mobile phone. In the retrospective cohort, 31–39 percent owned a radio, as did 38–43 percent of households in the prospective cohort. Internet access was rare (less than 8 percent of households) (Table 8).

Table 8. Household possessions

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Mobile phone	73.5	73.7	0.966	78.2	72.6	0.124
Radio	31.0	38.5	0.156	38.2	43.2	0.332
Television	9.5	10.8	0.644	8.1	11.7	0.261
Access to internet	5.3	7.7	0.354	6.6	6.6	0.976
Computer	2.0	1.0	0.317	1.7	4.2	0.080
N (households)	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests. Detailed information provided in Appendix A, Table A8.

Over 85 percent of households reported experiencing one or more negative economic shocks in the last 12 months. The three most reported shocks were lower crop yields, significant rises in food prices, and high education costs (Appendix A, Table A13). These were also the three most significant shocks among households in both cohorts, 50–55 percent of households experienced

lower crop yields, 33–42 percent experienced significant rise in food prices, and 20–32 percent of households reported high education costs.

In response to negative shocks, 23.4 (comparison) and 33.4 (treatment) of households in the retrospective cohort did nothing, as did 30.6 (comparison) and 35.8 (treatment) percent of households in the prospective cohort. Only two to three percent of households across cohorts had an underage child find work/ganyu in response to a negative shock, less than two percent of retrospective cohort households took a child out of school because they could not afford education expenses, and fewer than 0.2 percent of prospective households reported having a daughter marry earlier than planned in response to a negative shock (Table 9).

Table 9. Household shocks and coping strategies

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Household was not affected negatively by any shock during the last 12 months	13.8	10.7	0.500	10.2	11.0	0.829
N (households)	**294**	**305**		**381**	**380**	
Most significant negative shocks experienced in the last 12 months *						
Lower crop yields due to drought, flood, crop disease, or pests	51.5	54.7	0.606	50.9	55.5	0.268
Significant rise in food prices	33.5	39.3	0.332	41.2	41.7	0.925
High education costs	27.6	31.9	0.294	20.4	19.6	0.786
Household response to significant negative shocks to try to regain former welfare level						
Did not do anything	23.4	33.4	0.021	30.6	35.8	0.233
Child (under age 18) household members who were previously not working had to find work/ganyu	2.8	1.9	0.512	1.9	1.7	0.888
Employed child (under age 18) household members took on more employment	1.1	0.3	0.287	1.3	0.6	0.347
Went without something/sold something to keep child in school	0.8	0.7	0.894	0.1	0.6	0.105
Took child out of school because could not afford education expenses	0.8	1.7	0.258	0.0	0.0	
Sent children to live elsewhere	0.2	0.0	0.258	0.4	0.6	0.754
Reduced expenditures on education	0.0	0.3	0.398	0.2	0	0.158
Took child out of school to work	0.0	0.6	0.178	0.8	0.0	0.155
Had daughter married earlier than planned	0.0	0.0		0.2	0.0	0.313
N (households that experienced shock)	**254**	**270**		**342**	**342**	

Notes: Unweighted sample sizes and weighted statistics and significance tests. * See Appendix A, Table A13 for full list of shocks, most significant shocks, and coping strategies.

5.2 School Characteristics

Descriptive results for school and respondent characteristics are presented in Table 10, school capacity and gender parity in Table 11, and additional enrollment and student characteristics based on EMIS indicators are given in Appendix C, Table C1.

Most respondents to the primary and secondary school surveys were male and the head or deputy head teacher. All schools were public and coeducational. While only 7.7 percent of primary comparison schools had a female head teacher, 22.5 percent of primary treatment schools did; however, this difference was not statistically significant. Among secondary schools, 8.6 were headed by a female. Students were reported to self-board at 11 and 17 percent of primary comparison and treatment schools, respectively, and at 81 percent of secondary schools.

Respondents reported only 68 percent of primary comparison schools to be accessible during rainy season, compared to 85.6 percent of primary treatment schools and 84.5 percent of secondary schools. The average distance to the farthest village that sends students to the school was approximately 5 kms for primary schools and 13 kms for secondary schools. Approximately 85 percent of treatment and comparison primary schools feed to the nearest public secondary school, which is roughly 9 kms away from the primary school on average.

While approximately 85 percent of primary schools had a library, only half of secondary schools did. No schools had internet access and only 10.3 percent of secondary schools had computers or tablets that students could access. Among primary schools, 12.7 and 26.0 percent of comparison and treatment schools, respectively, reported they had electricity, as did 84.5 percent of secondary schools (Table 10).

Table 10. School characteristics, accessibility, and infrastructure

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Respondent				
Female	7.7	19.3	0.214	5.2
Position			0.038	
Head teacher	73.6	93.7		56.9
Deputy head teacher	24.3	3.2		37.9
Other	2.2	3.2		5.2
School characteristics				
Female head teacher	7.7	22.5	0.133	8.6
Public school	100.0	100.0	.	100.0
Co-ed school	100.0	100.0	.	100.0
School has double-shift	5.4	6.7	0.828	1.7
School has boarding facilities	5.3	0.0	0.067	25.9
Any students self-board in local community	11.0	17.0	0.514	81.0
Accessibility				
School is accessible during rainy season	68.0	85.6	0.100	84.5
Roadway material			0.878	
Tar	7.4	6.7		12.1
Gravel	16.2	21.5		25.9
Earth	76.5	71.8		62.1
Distance to farthest village that sends students to the school (mean km, SD)	5.3 (0.4)	4.5 (0.3)	0.106	12.6 (6.3)
Distance to nearest public secondary school (mean km, SD)	9.1 (1.1)	8.4 (0.9)	0.635	n/a
School feeds to nearest public secondary school	86.7	84.2	0.775	n/a
Infrastructure				
Library	86.7	84.2	0.294	50.0
Working computers/tablets that students can access	0.0	0.0	.	10.3
Internet that students can access and use	0.0	0.0	.	0.0
Electricity	12.7	26.0	0.202	84.5
Electricity is currently working	7.4	22.8	0.118	72.4
N (schools)	**32**	**32**		**58**

Notes: Of the twelve primary schools with electricity, the main source was ESCOM for six schools and solar power for the remaining six schools. All secondary schools are CDSS.

The average number of Standard 7 classrooms was 1 and 3 for comparison and treatment primary schools, respectively, and the average student enrollment in Standard 7 as of January 2021 was 68 and 60, respectively, approximately 54 percent of whom were female. Over one-quarter of schools were over capacity for Standard 7. Primary schools averaged 2 Standard 7 teachers and 17.9 and 22.3 percent of teachers at comparison and treatment schools, respectively, were female.

The average number of Standard 8 classrooms was 1.1 and 2.5 for comparison and treatment primary schools, respectively, and the average student enrollment in Standard 8 as of January 2021 was 51 and 48, respectively, approximately half of whom were female. About one-quarter of schools were over capacity for Standard 8. Primary schools averaged between 2 and 3 Standard 8 teachers and 8.8 and 13.5 percent of teachers at comparison and treatment schools, respectively, were female.

Secondary schools averaged 1 Form 1 classroom and had an average of 72.2 students enrolled in Form 1 as of January 2021, approximately half of whom were female. Over a third of schools were over capacity for Form 1. Secondary schools averaged seven Form 1 teachers, approximately a quarter of whom were female (Table 11).

We found gender parity in the percentage of enrolled students who are female in Standard 7, Standard 8, and Form 1 sampled schools. Baseline evaluation findings closely align with EMIS 2021 statistics at the national level for public schools: 53.0 percent of Standard 7 enrolled students were female, compared to 50.0 percent Standard 8 and 49.3 percent Form 1 (Malawi MoE, 2021).

Table 11. School capacity and gender parity

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	Form 1
Standard 7				
Number of classrooms (mean, SD)	1.0 (0.0)	2.9 (1.9)	0.312	1.2 (0.4)
Student capacity (mean, SD)	68.2 (5.3)	58.4 (6.0)	0.232	72.3 (25.9)
Number of teachers (mean, SD)	1.9 (0.2)	2.0 (0.2)	0.539	6.7 (3.4)
Number of students enrolled at the beginning of the January 2021 year (mean, SD)	68.2 (5.6)	60.0 (5.2)	0.300	72.2 (26.2)
Over capacity (mean, SD)	25.6	29.6	0.728	35.6
Pupil-to-teacher ratio (mean, SD)	43.0 (4.5)	33.7 (2.8)	0.085	n/a
Pupil-to-classroom ratio (mean, SD)	65.0 (4.9)	53.8 (4.3)	0.099	63.1 (20.5)
Percentage of enrolled students who are Female (mean, SD)	54.8 (1.2)	53.3 (1.6)	0.463	49.6 (4.6)
Female teachers				
No female teachers	64.8	60.9	0.762	18.6
Percentage of teachers who are Female (mean, SD)	17.9 (5.1)	22.3 (5.6)	0.573	24.1 (20.3)
Standard 8				
Number of classrooms (mean, SD)	1.1 (0.1)	2.5 (1.4)	0.320	
Student capacity (mean, SD)	57.4 (4.8)	53.1 (4.5)	0.513	
Number of teachers	2.6 (0.3)	2.2 (0.1)	0.338	
Number of students enrolled at the beginning of the January 2021 year (mean, SD)	51.2 (5.2)	48.1 (4.7)	0.660	
Over capacity	24.0	26.1	0.858	
Pupil-to-teacher ratio (mean, SD)	26.0 (3.2)	22.7 (2.2)	0.399	
Pupil-to-classroom ratio (mean, SD)	46.6 (3.5)	43.4 (3.8)	0.545	
Percentage of enrolled students who are female (mean, SD)	49.5 (2.1)	52.7 (1.3)	0.195	
Female teachers				
No female teachers	77.1	73.4	0.738	
Percentage of teachers who are female (mean, SD)	8.8 (3.4)	13.5 (4.2)	0.394	
N (schools)	**32**	**32**		**58**

Notes: Weighted means, standard deviations, percentages, and significance tests presented for primary schools; unweighted information presented for secondary schools. The pupil-to-teacher ratio is not reported for secondary schools as instructors teach different subjects.

6. Rural Results: Secondary School Construction and Related Program Exposure

Key Findings

- Approximately 11 percent of students and 10 percent of caregivers across cohorts and intervention groups were aware a new secondary school was being built nearby, compared to nearly 60 percent of head teachers from treatment group primary schools.
- Thirty-one percent of primary schools and 41 percent of secondary schools reported their sexual and reproductive health curriculum had been updated within the past year.
- Exposure to any gender-related media programming among students and caregivers in the past six months was high for students and caregivers in both cohorts and intervention groups (over 90%).

6.1 Awareness of New Secondary School Construction

Students, caregivers, and school respondents were asked if they were aware of any new secondary school being built nearby, and if so when the new secondary school would open (note that respondents were asked about secondary schools in general, not SEED CDSSs specifically). Awareness of new secondary school construction was measured at baseline to check for the presence of potential student or caregiver anticipation effects in treatment areas, control for general secondary school expansion in estimates of program impacts, and to understand whether awareness differed among students, caregivers, and teachers.

Approximately 11 percent of students and 10 percent of caregivers across intervention groups were aware a new secondary school was being built nearby. Nearly 60 percent of head teachers from treatment group primary schools were aware of a new CDSS being built nearby, compared to 20 percent in comparison primary schools ($p=0.003$). These findings suggest that awareness of planned SEED CDSS construction does not seem to have passed from primary school leadership to students or caregivers at evaluation baseline (Table 12).

Among respondents who were aware of the new school construction, most students in treatment areas did not know when the new secondary school would open (80.9 percent retrospective cohort, 95.7 percent prospective cohort). Nearly all caregivers in treatment areas did not know when the new secondary school would open (98.7 percent retrospective cohort, 90.4 percent prospective cohort). Among primary schools that were aware of the new school construction, 87.6 percent in the treatment group did not know when the new school would open (data not shown).

Table 12. Awareness of new secondary school being built nearby

	Comparison		Treatment		
	N	%	N	%	p-value
Students - Retrospective cohort	227	14.5	237	12.0	0.648
Caregivers - Retrospective cohort	266	10.3	287	8.4	0.648
Students - Prospective cohort	381	10.8	380	11.0	0.948
Caregivers - Prospective cohort	380	10.2	375	10.1	0.976
Primary School	32	20.4	32	57.2	0.003

Notes: Unweighted sample sizes and weighted summary and test statistics.

6.2 Implementation of Modernized Sexual and Reproductive Health (SRH) Curriculum

Among primary schools, 27.5 percent in the treatment group and 34.6 percent in the comparison group reported that the government had made significant changes to the Standard 7 or Standard 8 Life Skills/SRH curriculum in the past year (Table 13).

Table 13. Government changes to Life Skills/SRH curriculum during the past year

	Comparison	Treatment	p-value
Government has changed Std. 7 or Std. 8 Life Skills/SRH curriculum during the past year	34.6	27.5	0.552
N (primary schools)	**32**	**32**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

6.3 Student and Caregiver Exposure to Gender-Related Media

Table 14 presents exposure to media programming among students and caregivers in the past six months. Exposure to any gender-related topic (ending child marriage, importance of girls' education, preventing GBV, and preventing SR-GBV) was high for students in both cohorts (over 92%). Of the gender-related topics, exposure to media programming focused on preventing SR-GBV was lowest (approximately 75%).

Exposure to gender-related media in the past six months was also high for caregivers in both cohorts (over 90%). Caregivers were also asked if they had ever received parenting guidance from any group, program, government institution, or service (e.g. health or social services provider), or other entity/person. Just over 25 percent in the retrospective cohort reported they had, as did over 30 percent in the treatment group. Among caregivers in the retrospective cohort that had received parenting guidance, 14.4 percent in the comparison group and group and 20.5 percent in the treatment group reported they had received guidance on supporting children in school. In the prospective cohort, 18.5 percent and 23.8 percent in the comparison and treatment groups, respectively, reported the same (Table 14).

Table 14. Exposure to gender-related programming

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student media exposure during the past 6 months						
Ending child marriage	87.0	85.2	0.563	79.7	77.0	0.401
Importance of girls' education	85.2	85.2	1.000	85.3	81.1	0.214
Preventing GBV	80.9	80.7	0.963	81.6	78.8	0.412
Preventing SR-GBV	75.7	78.2	0.599	72.7	76.7	0.292
Any gender-related topic	94.7	94.5	0.942	93.1	92.4	0.776
N (student)	**227**	**237**		**381**	**380**	
Caregiver media exposure during the past 6 months						
Ending child marriage	86.5	88.6	0.594	88.0	83.6	0.156
Importance of girls' education	85.3	86.5	0.753	85.6	82.0	0.309
Preventing GBV	93.4	89.9	0.186	90.4	87.4	0.268
Other gender-related topic	88.5	86.3	0.478	86.7	84.1	0.397
Any gender-related topic	96.4	93.9	0.210	94.1	90.9	0.120
Caregiver ever received parenting guidance	25.5	28.6	0.450	30.7	32.4	0.780
Caregiver received guidance/ discussed supporting children in school	14.4	20.5	0.153	18.5	23.8	0.259
N (caregiver)	**266**	**287**		**380**	**375**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

7. Rural Results: Education

Key Findings

- Pre-intervention secondary school transition rates, Standard 8 repetition rates, and school dropout rates differed significantly overall (p=0.034) in the retrospective cohort. Based on household-reported data:
    - 23.2 percent of the comparison group and 37.5 percent of the treatment group transitioned to a public secondary school
    - 35.6 percent of the comparison group and 26.6 percent of the treatment group repeated Standard 8
    - 30.7 percent of the comparison group and 22.0 percent of the treatment group dropped out of school
- Transition rates calculated from primary school-reported data indicate that 27.1 percent of students in both intervention groups who sat for the PSLCE were selected to a public secondary school.
- The average PSLCE pass rate ranged from 71.5 to 83.6 percent based on student self-reported data and ranged from 77.3 to 81.0 percent based on primary school-reported data.
- The most frequently reported reason for school dropout was lack of money for fees or uniforms, reported by 46.1 and 61.9 percent of retrospective cohort households in comparison and treatment groups, respectively (p=0.096*)*.

7.1 Transition, Dropout, and Standard 8 Repetition Rates

Table 15 presents key education findings from the baseline survey. Additional EMIS-type repetition and dropout figures are reported for sampled schools in Appendix C, Table C1. Additionally, key indicators for each evaluation question are summarized by repetition, transition, or drop-out status for the retrospective cohort in Appendix F to present a profile of students who transitioned to Form 1 before the SEED rural intervention began.

The transition rate from primary to secondary school was calculated in two ways. First, household report of transition to a public secondary school in 2021 among students in the retrospective cohort (students in Standard 8 in the academic year 2019–2020) was used. Using this method, 23.2 percent of the comparison group and 37.5 percent of the treatment group transitioned to a public secondary school; these rates differed significantly (p=0.034).

Second, the transition rate was calculated using data provided by primary schools as the number of students who were selected for secondary school divided by the number that sat for the PSLCE. Using this method, the transition rates were 24.3 and 29.8 percent for the comparison and treatment groups, respectively.

Student self-reported PSLCE pass rates were 75.1 and 83.6 in the comparison and treatment groups, respectively. The average school-reported pass rates (81.0 percent comparison and 77.3 percent treatment) were similar (Table 15).

Table 15. Key education outcomes: Baseline rates

	Retrospective cohort		
	Comparison	Treatment	p-value
Household and student report			
2021 academic year status of students in Standar8 during the 2019 –2020 academic year			**0.034**
Repeated Standard 8	35.6	26.6	
Transitioned to Form 1 (Public)	23.2	37.5	
Transitioned to Form 1 (other)	10.5	13.9	
Dropped out	30.7	22.0	
District SS	1.7	2.2	0.679
N (households)	**294**	**305**	
PSLCE pass rate: Student self-report	75.1	83.6	0.153
N (students with PSLCE results)	**192**	**200**	
Primary school report			
Average percent of students selected among thoswho sat for the PSLCE			
National SS	0.2	0.1	0.482
District SS	1.7	2.2	0.679
Day SS	0.9	1.6	0.601
CDSS	21.4	25.7	0.395
Total public secondary schools	24.3	29.8	0.338
PSLCE pass rate: Primary school report[4]	81.0	77.3	0.468
N (primary schools)	**32**	**32**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

7.2 Reasons for School Dropout

Household respondents reported reasons why students in the household in the retrospective cohort did not continue school in the 2021 academic year. The most frequently reported reason for dropping out was lack of money for fees or uniforms, reported by 46.1 and 61.9 percent of households in the comparison and treatment groups, respectively. Approximately 18 percent of households in the comparison group reported that students dropped out because of marriage or pregnancy. In the treatment group, 13.0 and 11.2 percent of households reported that students dropped out because of marriage or pregnancy, respectively (Table 16).

Primary and secondary schools also reported reasons for student drop out by sex during the previous and current academic year (Appendix C Table C1). The most frequently reported reasons for dropping out during the previous school year among girls in Standard 7, Standard 8, and Form 1 were marriage and pregnancy, and for boys it was the inability to pay required school financial contributions and marriage.

[4] The national PSLCE pass rate for 2019/2020 was 81.4 percent (GoM NSO, 2021).

Table 16. Reasons retrospective cohort students did not continue school in the 2021 academic year, as reported by household survey respondent

	Retrospective cohort		
	Comparison	Treatment	p-value
Reasons for not continuing school:			
No money for fees or uniform	46.1	61.9	0.096
Failed exam	11.7	18.8	0.228
Not interested, lazy	15.2	13.4	0.793
Married	18.5	13.0	0.344
Became pregnant	18.3	11.2	0.212
Failed promotion exam	4.4	5.7	0.743
Parent died	1.8	4.9	0.419
School too far from home	0.0	3.8	0.225
Illness or disability	3.9	2.9	0.723
Had to work or help at home	1.6	1.9	0.130
Found work	0.0	1.3	0.329
Too old to continue	2.8	0.0	0.055
School conflict with beliefs	1.4	0.0	0.310
Parents separated, divorced	1.3	0.0	0.298
Left to care for others	1.0	0.0	0.322
Other	4.7	4.4	0.924
N	**90**	**65**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

7.3 Performance on PSLCE Exams

Nearly all students in the retrospective cohort had taken the PSLCE exam. Over half had taken the exam more than once (Table 17).

Table 17. Student self-reported performance on PSLCE

	Retrospective cohort		
	Comparison	Treatment	p-value
Ever took PSLCE	95.4	93.9	0.492
N	**227**	**237**	
Number of times took the PSLCE			0.426
One	49.6	47.0	
Two	44.5	50.2	
Three or more	5.9	2.8	
N	**216**	**225**	
Passed the PSLCE (if results are out)	75.1	83.6	0.153
N	**192**	**200**	
Most recent exam results (among students who know or have received grades)			
English (mean, SD)	C 3.0 (0.1)	B- 2.8 (0.1)	0.085
N	**107**	**118**	
Chichewa (mean, SD)	B 2.5 (0.1)	B 2.3 (0.1)	0.159
N	**108**	**117**	
Arithmetic (mean, SD)	C 3.4 (0.1)	C 3.2 (0.1)	0.241
N	**107**	**115**	
Science and Technology (mean, SD)	C 3.4 (0.1)	C 3.2 (0.1)	0.312
N	**104**	**115**	
Social and Environmental Sciences (mean, SD)	C 3.3 (0.1)	C 3.3 (0.1)	0.954
N	**103**	**114**	

Notes: Unweighted sample sizes and weighted statistics and significance tests. Additional details are provided in Appendix A, Table A14. Letter grade equivalent presented with mean (1 for A through 5 for F).

8. Rural Results: Aspirations, Expectations, Attitudes, and Beliefs

Key Findings

- Across cohorts and intervention groups, 42 to 50 percent of students reported that both their ideal and actual expected level of educational attainment was university education. Qualitative student respondents aspired to be educated, become independent, and be able to support their parents and siblings.
- Over 70 percent of students in both cohorts and intervention groups perceived a high chance of finishing primary school and passing the PSLCE. Retrospective cohort students were less optimistic about their chances of being selected for secondary school (roughly 45%), joining secondary school if selected (roughly 50%), or finishing secondary school (under 60%) compared to prospective cohort students (approximately 74 percent for each milestone).
- Students in both study cohorts and intervention groups were generally optimistic about their futures. Three-quarters of students felt their life would be better a year from now, and over 80 percent felt their life would be better in five years. Retrospective cohort students who had dropped out of school were significantly more likely to report more pessimistic beliefs about the future.
- Qualitative data supported quantitative findings related to student attitudes and beliefs about the future.

8.1 Educational Aspirations and Expectations

Students reported their ideal level of education and the level of education they thought they would attain. Across cohorts, 42 to 50 percent reported that both their ideal and actual level was university education. Most students (78 to 86 percent across cohorts) reported that their ideal and actual levels were the same, compared to between 11.0 to 19.0 percent of students across cohorts who expected to complete less than their ideal level of education (Table 18). Among retrospective cohort students who had dropped out of school, 28.1 percent reported university and 27.8 percent reported training college to be their ideal level of education. Over half of retrospective cohort students who repeated Standard 8 or transitioned to Form 1 reported university as their expected level of education; over 85 percent of retrospective cohort students who dropped out reported secondary or higher education as their expected level of education (Table F1). Most caregivers (52 to 63 percent across cohorts) also reported they would like to see their child (the sampled student) earn a university degree (Table 18).

Table 18. Educational ideals and expectations

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Students						
Ideal level of education			0.506			0.309
None	0.4	0.0		0.0	0.7	
Primary (through Std. 8)	2.2	2.3		0.3	0.6	
Secondary (through Form 4)	10.8	10.1		17.9	13.0	
University (through Univ4)	41.9	48.1		49.6	46.6	
Post-university (Univ5 and above)	22.3	22.9		17.8	19.7	
Training college (through TC4)	21.9	16.6		14.4	19.2	
Adult informal education	0.5	0.0		0.0	0.3	
Actual level of education student believes they will complete			0.350			0.303
Primary (through Std. 8)	6.6	4.0		0.9	2.8	
Secondary (through Form 4)	18.3	14.1		23.1	19.0	
University (through Univ4)	43.2	50.2		46.7	43.2	
Post-university (Univ5 and above)	16.1	18.0		14.5	15.2	
Training college (through TC4)	15.7	13.6		14.8	19.6	
Adult informal education	0.0	0.0		0.0	0.3	
Ideal vs. actual			0.330			0.043
Equal	78.4	81.8		86.3	78.1	
Ideal > actual	19.0	14.0		11.0	16.1	
Ideal < actual	2.5	4.2		2.7	5.8	
N (students)	**227**	**237**		**381**	**380**	
Caregivers						
Education level caregiver would like student to complete			0.898			0.541
PSLCE	0.3	0.0		0.4	0.0	
JCE	0.0	0.0		0.4	0.0	
MSCE/GCSE	17.8	16.8		24.8	24.6	
A-Level	0.5	0.6		0.2	0.2	
Diploma	14.1	13.6		14.4	11.3	
Bachelor's Degree	59.8	63.4		52.3	58.6	
Masters	2.4	2.3		1.9	1.5	
PhD	5.1	3.3		5.6	3.8	
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

Nearly all students reported it was very important for them to be selected for, attend, and complete secondary school. However, only about 45 percent of the retrospective cohort, and three-quarters of the prospective cohort, thought their chances of being selected for and joining secondary school if they passed the PSLCE were high. Under 60 percent of students in the retrospective cohort thought their chance of completing secondary school was high, compared to over 70 percent of students in the prospective cohort (Table 19).

Table 19. Importance and likelihood of achieving educational milestones to students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Educational goal is very important to student						
Finish primary school	97.6	97.1	0.771	98.8	97.3	0.168
Pass the PSLCE	97.9	99.0	0.430	99.1	99.0	0.858
Be selected for secondary school	92.4	88.5	0.360	99.5	99.0	0.463
Attend secondary school	99.5	94.6	0.001	98.9	98.9	0.990
Finish secondary school	99.7	98.9	0.173	99.8	98.9	0.047
Attend university	97.8	95.8	0.234	96.3	95.0	0.509
Student perceives the chances of achieving the educational goal to be high						
Finish primary school	71.4	74.9	0.585	78.0	76.5	0.694
Pass the PSLCE	69.3	71.1	0.815	75.8	77.2	0.689
Be selected for secondary school if pass PSLCE	46.5	43.8	0.712	73.1	75.6	0.516
Join secondary school if selected	53.6	48.5	0.493	74.8	74.4	0.934
Finish secondary school	58.8	56.6	0.679	72.0	71.0	0.817
Attend university	48.6	50.4	0.761	55.6	57.4	0.749
N (students)	**227**	**237**		**381**	**380**	

Notes: Retrospective cohort students who transitioned to Form 1 are excluded from analysis of finish primary school, pass the PSLCE, be selected for secondary school, and attend secondary school goals; 148 comparison and 133 treatment students from the retrospective cohort were included in analysis of these goals. Unweighted sample sizes and weighted summary and test statistics.

Nearly all caregivers reported it was very important for the sampled student to finish primary and secondary school, attend university, own their own home, help care for the family when older, move out of the neighborhood, have a good source of income, and be admired and respected int the community. Over 77 percent of caregivers across cohorts reported it was very important for the sampled student to get married and over 83 percent it was very important they had children (Table 20).

Table 20. Importance of educational and general milestones to caregivers

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Goal is very important to caregiver						
Finish primary school	99.7	99.6	0.834	99.8	99.6	0.724
Finish secondary school	99.8	99.6	0.478	99.9	99.8	0.524
Attend university	96.5	98.2	0.291	96.7	95.2	0.460
Own their own home	96.5	97.1	0.733	95.5	97.2	0.377
Helps care for you or other family when older	97.8	98.0	0.868	97.3	96.5	0.529
Moves out of this neighborhood	92.5	84.7	0.024	93.4	87.2	0.008
Has children	85.6	82.6	0.408	85.5	85.4	0.957
Gets married or finds a partner	80.0	77.5	0.509	80.6	84.4	0.300
Has a good job/source of income	98.7	98.4	0.764	98.8	98.8	0.985
Is admired and respected in the community	94.8	93.2	0.517	94.5	95.4	0.616
N (caregiver)	**266**	**287**		**380**	**375**	

Notes: Caregivers whose sampled student had transitioned to Form 1 were excluded from analysis of the 'finish primary school' goal. Unweighted sample sizes and weighted summary and test statistics.

Qualitative Findings: Educational Expectations and Aspirations

Caregivers who participated in the qualitative component echoed the sentiments expressed by quantitative respondents that youth should pursue an education, secure a 'good' job, and become independent and 'better off' in the future. Caregivers also expressed expectations that their educated children would be able to support them and their siblings. Student respondents shared aspirations similar to the caregivers, which were to be educated, become independent, and be able to support their parents and siblings, including paying their siblings' school fees.

While nearly all caregivers generally expressed similar educational expectations for both male and female youth, there was some variation. For example, some caregivers noted that some parents prioritize education of girls in order to bring more benefits back to the girl's family and community. Caregivers also commented on the importance of education for girls in being able to be independent, especially before marrying. A few respondents noted a preference to prioritize education of boys because boys are considered 'strong-minded' and more likely to complete their education than girls.

> *"Parents always wish to educate their girl child because if they educate a girl, they know that they have educated the whole nation, unlike educating a son. A girl child is more passionate and caring than a son. A girl child will quickly respond to problems which parents are going through unlike a boy child. It is against this background that parents wish a bright future for their daughters so that in future they should not be in dire need. Besides that, they want her not to cling much on her husband whenever she gets married but rather be self-reliant. That is, she should not face the challenges her fellow girls face in marriages when they are not educated."*
>
> —Female caregiver

A few caregivers expressed a preference for sending their children to schools far from home to expose them to a new environment with new friends. In addition, some caregivers opted for schools that are farther from home based on the quality of education. They felt schools within their community (e.g., CDSSs) had lower education standards.

A small number of the caregivers who preferred to send their child away for school stated a preference for a boarding school versus self-boarding due to the lack of supervision when self-boarding.

Conversely, many caregivers preferred schools closer to home in order to monitor their child's education and well-being.

Caregivers also commented that nearby schools do not require money for transportation costs which is especially challenging for some families.

"The life here is all about children drinking alcohol. So, it is better I … find a place for rent at [a faraway] CDSS. I see a difference when she was here and now that she is there alone. She is staying well and there is no complaint I heard from the teacher … It is better I send my child to a school that is far away."

—Female caregiver

"Being in self-boarding erodes a student's zeal and enthusiasm to learn as he is usually preoccupied by those other undertakings that are not academic. The preference is to be at a boarding school because he's assured of constant support from teachers both academically and morally."

—Male community leader

There may be no money for transport for the school that is far so it is better to be learning at a school which is near since she will just be walking to school. She will not need money."

—Female caregiver

8.2 Student Attitudes and Beliefs about the Future

We measured baseline levels of students' general optimism by directly asking students about their expectations for a better life in the future. Approximately 20 percent of students in the retrospective cohort felt their life had worsened compared to the prior year, compared with less than 10 percent of students in the prospective cohort. Three-quarters of students across cohorts felt their life would be better a year from now, and over 80 percent felt their life would be better five years from now (Table 21). Among retrospective cohort students, students who dropped out were significantly more likely to report more pessimistic beliefs about the future compared to students who repeated Standard 8 or transitioned to Form 1 (Table F1).

We also measured student optimism and self-esteem about the future with the Chinese Positive Youth Development Scale (CPYDS) subscale on positive beliefs about the future (Shek, Siu, and Lee, 2007; Hinson et al., 2016). The CPYDS subscale consists of seven items with response options ranging from one point for 'strongly disagree' up to five points for 'strongly agree'; potential scores range from a low of seven to a high of 35, with higher scores indicative of more positive beliefs about the future and a higher level of positive youth development. The mean CPYDS score was 29 across cohorts, indicating that most students agreed or strongly agreed with the majority of the seven subscale items on positive beliefs about the future.

"I will be working after completing my education and my parents will be happy since I will be fully educated."

—Standard 7 female student

Lastly, we measured students' perceived agency over the future with a five-item scale from the Young Lives Study (Espinoza Revollo and Portela, 2019). The scale uses the same five-point Likert response scale as the CPYDS; all items within the scale are coded prior to analysis such that a higher value indicates a better outcome (i.e., more agency), and the score is constructed by averaging responses across the five items. The average score across both cohorts was 19 points, indicating that most students agreed or strongly agreed with most statements, and suggesting that students more strongly believe that future outcomes are a result of their efforts and behaviors (Table 21).

Table 21. Optimism, self-esteem, and agency over the future

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Happiness and optimism about the future						
Compared to this time last year, my life has:			0.437			0.248
Improved	45.6	52.1		51.1	58.1	
Is more or less the same	32.0	29.8		39.2	32.6	
Worsened	22.3	18.1		9.7	9.2	
In one year from now, I expect that my life will be:			0.573			0.334
Better	78.8	74.1		82.6	77.3	
More or less the same	15.5	18.5		15.7	19.4	
Worsened	5.7	7.4		1.7	3.3	
In five years from now, I expect that my life will be:			0.912			0.460
Better	84.3	82.9		88.1	84.8	
More or less the same	11.0	12.3		10.2	12.6	
Worsened	4.6	4.8		1.7	2.6	
N (students)	**227**	**237**		**381**	**380**	
Positive beliefs about the future						
Mean CPYDS score (SD) (range 7–35)	28.6 (0.4)	28.5 (0.3)	0.887	29.0 (0.2)	28.5 (0.2)	0.231
N (students)	**207**	**224**		**364**	**358**	
Self-efficacy and agency over the future						
Mean score (SD) (range 5–25)	18.9 (0.2)	18.7 (0.2)	0.662	18.6 (0.2)	18.8 (0.1)	0.421
N (students)	**209**	**227**		**372**	**370**	

Notes: Unweighted sample sizes and weighted summary and test statistics. Detailed information on positive beliefs about the future and self-efficacy and agency over the future scale items available in Appendix A, Table A15.

Qualitative Findings: Student Attitudes and Beliefs about the Future

Qualitative data supported the quantitative findings related to student attitudes and beliefs about the future. Most male and female students reported that they envisioned a bright future

and considered education to be the main tool to help them to achieve their goals. Students were generally optimistic that they would be in secondary school in five years' time. Looking ahead ten years, most said they would be working or pursuing further studies.

Similarly, caregivers also hoped that through education, their children would have a bright future. Caregivers and community leaders discussed the importance of encouraging youth to work hard in school and supporting them with school supplies so that they would be able obtain employment, become independent, and support their parents/caregivers in their old age.

> *"Parents of these children have hopes and goals towards their children because I believe that when parents are sending their children to school, they try their best to provide them with all the school materials or necessities. The moment parents send their children to school, they want them to be educated so that after completing their education they might help them and other people."*
>
> —Male community leader

9. Rural Results: Schooling Norms and Perceived Barriers to Education

Key Findings

- Nearly all students and caregivers across cohorts and study groups felt the educational milestones of primary and secondary school completion were very important for both boys and girls.
- Student perceptions about school completion among most girls and boys in their community contrasted with their expectations for themselves and differed by gender:
    - Over 70 percent of prospective cohort students felt the chances were high they would complete primary and secondary school (previous chapter)
    - Less than 30 percent of prospective cohort students reported that most girls complete primary school, and less than 20 percent reported most girls complete secondary school
    - Less than 50 percent of prospective cohort students reported that most boys complete primary school and approximately 40 percent reported most boys complete secondary school
- Despite the elimination of secondary school tuition and select fees, costs persist as a predominant barrier to schooling.
    - Seventy-five percent of retrospective cohort students and 63 percent of prospective cohort students reported direct school costs as a barrier to reaching their own educational goals.
    - Over 70 percent of retrospective cohort students and over 60 percent of prospective cohort students reported exam fees and related costs as a barrier.
    - Between 80.2 to 88.4 percent of students across cohorts and study groups reported financial/cost barriers as a main reason students from their primary school who pass the PSLCE do not join secondary school.
- The most frequently reported problems hindering boys' and girls' ability to join secondary school as reported by primary school head teachers include:
    - Not enough Form 1 secondary school admissions spaces (67.4 percent boys, 67.0 percent girls)
    - Direct costs of secondary school (52.7 percent boys, 57.0 percent girls) and exam fees/related costs (56.3 percent boys and 54.9 percent girls)
    - Distance to secondary schools (over 80 percent boys and girls in comparison primary schools compared to over 50 percent boys and girls in treatment primary schools, $p<0.05$)
- Among secondary schools, 13.8 percent reported half or more Form 1 students incur costs related to tuition fees, roughly 90 percent for compulsory uniforms and shoes, 69.0 percent examination fees, 60.3 percent PTA/SMC dues, and 56.9 percent fees for small-scale school projects. The average total non-tuition fees charged by secondary schools was MWK 11,580 per term (excluding boarding).
- Ninety-seven percent of secondary schools reported that bursaries, subsidies, scholarships, and/or school fee waiver programs were available to students. However, among retrospective cohort students who had transitioned to Form 1 in a public secondary school, seven percent reported receiving any school tuition support and five percent reported receiving any materials or cash support for supplies.

9.1 Schooling Opinions and Norms

Like students' and caregivers' ideals and expectations around the sampled student's achievement of educational milestones (Tables 19 and 20), nearly all students and caregivers across cohorts felt that the educational milestones of completing primary and secondary school were very important for both boys and girls in general (Table 22). Retrospective cohort students were equally likely to think educational milestones were important regardless of their repetition, transition, or dropout status (Table F1).

Table 22. Student and caregiver opinions on importance of educational milestones

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student thinks educational milestone is very important						
Girls complete primary school	99.1	99.2	0.908	99.4	97.5	0.046
Girls to complete secondary school	99.6	99.4	0.725	99.2	98.2	0.240
Boys to complete primary school	98.5	97.9	0.696	98.0	98.8	0.499
Boys to complete secondary school	99.5	98.7	0.446	98.5	98.5	0.936
N (students)	**227**	**237**		**381**	**380**	
Caregiver thinks educational milestone is very important						
Girls to complete primary school	100.0	99.6	0.415	100.0	99.6	0.202
Girls to complete secondary school	99.7	100.0	0.250	99.9	100.0	0.316
Boys to complete primary school	99.6	99.2	0.539	100.0	99.9	0.358
Boys to complete secondary school	97.5	99.4	0.117	99.2	99.4	0.799
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

Roughly twenty percent of retrospective cohort students reported that most girls in their community complete secondary school, while roughly forty percent reported that most boys in their community complete secondary school. Reported secondary school completion norms for community youth were slightly higher in the prospective cohort, with prospective students twice as likely to report that most boys complete secondary school than to report that most girls complete secondary school. Even fewer caregivers (under 16%) across cohorts reported that most girls in the community completed secondary school (Table 23).

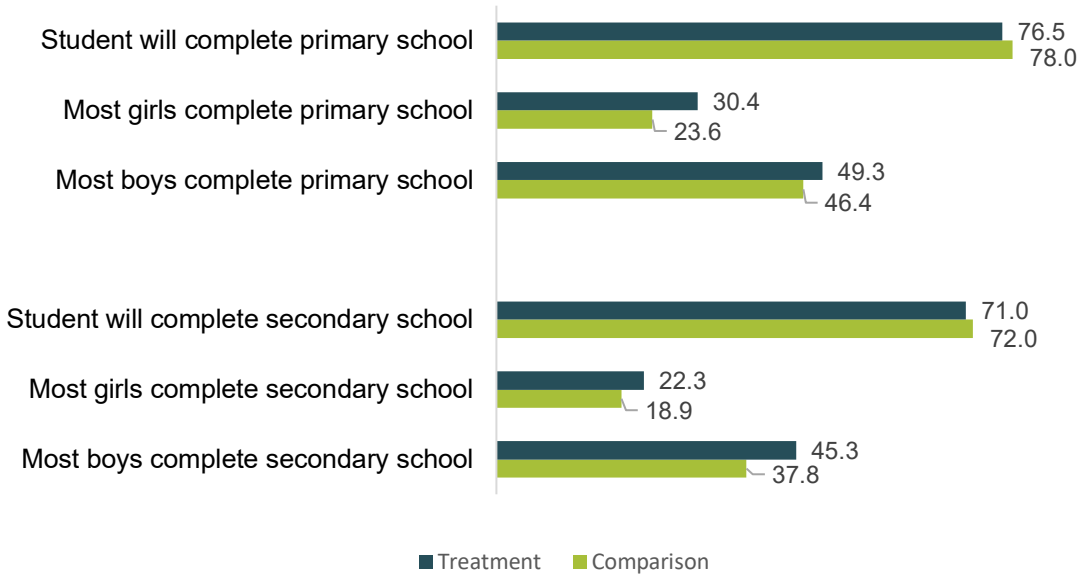
Table 23. Student and caregiver perceptions of community educational norms

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student report of community norms						
Most girls complete primary school	18.2	26.9	0.062	23.6	30.4	0.103
Most girls complete secondary school	16.2	21.4	0.246	18.9	22.3	0.401
Most boys complete primary school	41.9	44.3	0.735	46.4	49.3	0.550
Most boys complete secondary school	35.8	41.2	0.326	37.8	45.3	0.082
N (students)	**227**	**237**		**381**	**380**	
Caregiver report of community norms						
Most girls complete primary school	20.3	19.3	0.775	21.5	18.2	0.356
Most girls complete secondary school	12.4	13.5	0.757	15.5	12.8	0.343
Most boys complete primary school	44.1	43.0	0.810	43.5	47.1	0.434
Most boys complete secondary school	36.2	34.3	0.674	32.7	37.2	0.394
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

Figure 3 compares the education students in the prospective cohort expect they will achieve with their report of community school completion rates which are notably lower than what students reported expecting for themselves. The discrepancies between what students report expecting for themselves and what they expect for their peers may be due in part to social desirability bias, where respondents may have inflated their own behaviors or experiences, compared to their report of the behaviors or experiences of their peers.

Figure 3. Student beliefs about own education compared to their perceptions of community education norms, prospective cohort



9.2 Factors that Limit Educational Quality

Survey respondents were asked about problems related to educational quality at their school. Approximately half of students across cohorts reported that teachers did not have adequate instructional materials and supplies, and schools lacked sufficient desks. About a third of students reported that the schools' toilets were dirty or unusable. About half of the retrospective cohort, and 40 percent of the prospective cohort, reported overcrowded classrooms (Table 24).

> *"They do not learn adequately due to various factors such as lack of qualified and motivated teachers and lack of adequate teaching and learning materials, among others."*
>
> —Female caregiver

Table 24. Student-reported problems with educational quality at their school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
No desk, sitting on floor	54.3	45.8	0.162	50.3	55.7	0.495
Teachers do not have adequate instructional materials and supplies	47.6	49.0	0.827	49.4	54.0	0.430
High pupil-to-teacher ratios	51.0	52.4	0.837	36.4	44.4	0.155
Overcrowded classrooms	52.2	49.3	0.656	39.5	39.3	0.976
No toilets/latrines or toilets/latrines are dirty or unusable	31.2	35.0	0.527	35.5	37.2	0.764
Shortage of qualified teachers	46.1	45.6	0.908	34.7	36.2	0.754
Teacher absenteeism	31.9	23.6	0.146	22.4	28.1	0.250
Teachers arriving late at school	37.7	27.1	0.079	26.9	27.2	0.966
N (students)	**227**	**237**		**381**	**380**	

Notes: Respondents included here indicated the barrier was a "serious" problem at their schools. These are unweighted sample sizes and weighted summary and test statistics.

Between 63–73 percent of primary schools reported that teachers did not have adequate instructional materials and supplies, as did 46.6 percent of secondary schools. About half of the primary schools, and 31 percent of secondary schools, reported overcrowded classrooms. A shortage of qualified teachers was reported by about a third of both primary and secondary schools (Table 25).

> *"What was happening is that when we wanted to learn English, we were learning it in groups because the books were inadequate. So, one group, which was comprised of a lot of students, was using only one book and this was making other students fail to understand."*
>
> —Standard 7 male student

Table 25. School-reported problems with educational quality

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Teachers do not have adequate instructional materials and supplies	72.9	63.1	0.403	46.6
Overcrowded classrooms	49.5	49.4	0.991	31.0
High pupil-to-teacher ratios	37.5	46.2	0.499	25.9
Shortage of qualified teachers	33.5	34.4	0.947	32.8
Teachers arriving late at school	14.9	13.0	0.839	12.1
Teacher absenteeism	13.5	6.7	0.385	6.9
N (schools)	**32**	**32**		**58**

Notes: Respondents included here indicated the barrier was a "serious" problem at their schools. These are unweighted sample sizes and weighted summary and test statistics.

Results from student and head teacher interviews are reinforced by school data on overcrowding, pupil-to teacher ratios, and pupil-to-classroom ratios.

- Approximately 50 percent of retrospective cohort and 40 percent of prospective cohort students in both intervention groups reported overcrowded classrooms, as did half of primary school and 31 percent of secondary school main respondents. Similarly, over one-fourth of Standard 7 and Standard 8 grades and over one-third of Form 1 grades were over-capacity, with average pupil-to-classroom ratios of 59.4 in Standard 7, 45.0 in Standard 8, and 63.1 in Form 1 across comparison and treatment areas (Table 11)
- Over 50 percent of retrospective cohort and 40 percent of prospective cohort students in both study areas reported high pupil-to-teacher ratios in their schools, as did 42 percent of primary school respondents. The average pupil-to-teacher ratio in comparison and treatment schools was 38.4 for Standard 7 and 24.4 for Standard 8 (Table 11).

9.3 Perceived Barriers to Achieving Educational Milestones

Student Report

Students were asked about barriers to reaching their educational goals. In the retrospective cohort, three-quarters reported direct school costs (school fees, PTA fees, uniforms, and school supplies) were a problem, as did just under two-thirds of students in the prospective cohort. Exam fees and related costs were a problem reported by just over 70 percent of the retrospective cohort and just over 60 percent of the prospective cohort. Approximately 49–61 percent of the retrospective cohort, and 40 percent of the prospective cohort, reported that distance to school was too far. About a third of the retrospective cohort, and a quarter of the prospective cohort, reported that it was not safe traveling to and from school. Not enough Form 1 spaces was a barrier reported by 37.9 and 36.2 percent of the retrospective comparison and treatment groups, respectively, and by 21.9 and 30.2 percent of the prospective comparison and treatment groups, respectively (Table 26).

> *"When I come to school, they demand for money for examinations, [and a] development fund for improving other things here at school …I don't know if my life will be better in the next 10 years. However, I think if I can manage to find work then it would be better, especially if fees will be available."*
>
> —Standard 7 male student

> *"We are not certain about our future since the secondary schools are very far and our parents are poor which means they cannot pay for our school fees."*
>
> —Standard 7 male student

> *"Secondary schools are very far and we cannot manage to commute there every day. On the days that we do go, we find that our friends have already started learning by the time we get there. This is a big challenge that will make it impossible for us to complete our secondary school education.*

We did not detect significant differences in student-reported barriers to reaching their own educational goals among retrospective cohort students by repetition, transition, or dropout status (Table F1).

Table 26. Student-reported barriers to reaching their own educational goals

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Direct school costs	74.1	75.7	0.733	62.4	64.3	0.663
Exam fees and related costs	71.3	72.6	0.797	60.3	60.7	0.926
Getting married	44.4	48.8	0.549	37.4	40.6	0.645
Getting pregnant/fathering a child	43.4	48.8	0.401	35.7	40.4	0.503
Distance to school	49.0	60.9	0.048	39.5	39.7	0.969
Not enough Form 1 secondary school admissions spaces	37.9	36.2	0.713	21.9	30.2	0.054
Parents/caregivers do not support or encourage schooling	23.4	25.1	0.764	22.3	27.5	0.377
Not safe travelling to/from school	33.3	36.3	0.554	22.7	25.8	0.558
Education quality is poor at my school	24.4	26.3	0.694	12.4	16.5	0.275
Paid work	15.4	15.9	0.884	13.2	15.6	0.538
Chores at home	19.1	16.1	0.558	11.9	12.5	0.869
Caregiving responsibilities	11.2	14.5	0.486	10.0	9.9	0.960
N (students)	**227**	**237**		**381**	**380**	

Notes: Direct school costs include school fees, PTA dues, uniforms, and school supplies. Respondents included here indicated the barrier was a "serious" problem at their schools. These are unweighted sample sizes and weighted summary and test statistics. Additional information provided in Appendix A, Table A16.

Students also reported on barriers to secondary school transition among students from their primary school. Across cohorts, between 60–66 percent of students reported there was a secondary school nearby. Approximately 86–87 percent reported that students who pass the PSLCE are typically selected for secondary and join secondary school; these student perceptions contrast with the approximately 80 percent PSLCE pass rate and 27 percent public secondary selection rate calculated from primary school data (Table 15). The main reason for not joining secondary school after passing the PSLCE was said to be financial (reported by 80–88% of students across cohorts). Approximately 17–20 percent of students across cohorts said distance to the secondary school was too far (Table 27).

Table 27. Student-reported barriers to secondary school transition among students from their primary school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
There is a secondary school nearby that students in your community could join if they pass the PSLCE	59.4	62.6	0.685	61.3	65.7	0.394
Students from your primary school who pass the PSLCE are typically selected for secondary school	84.3	85.7	0.746	86.0	85.6	0.914
Students from your primary school selected for secondary school typically join secondary school	88.3	86.2	0.580	86.5	87.2	0.848
Main reasons students from your primary school who pass the PSLCE do not join secondary school						
Financial/costs	88.4	87.9	0.893	85.3	80.2	0.086
Marriage	17.8	29.5	0.012	18.6	22.4	0.320

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Getting pregnant/fathering a child	15.7	28.9	0.004	18.9	20.6	0.702
Travel/distance to secondary school is too far	19.9	17.5	0.627	19.0	17.1	0.657
Did not like school, would rather do something else	9.2	7.3	0.601	11.8	9.9	0.502
Poor grades	11.3	10.4	0.739	10.4	7.5	0.183
Not selected to secondary school	8.7	4.0	0.062	7.2	6.1	0.479
Travel/distance to secondary school is not safe	0.9	2.7	0.195	1.6	1.8	0.856
Not enough Form 1 seats	1.8	2.3	0.745	1.5	1.5	0.950
N (students)	**227**	**237**		**381**	**380**	

Notes: Respondents included here indicated the barrier was a "serious" problem at their school. These are unweighted sample sizes and weighted summary and test statistics. Additional information provided in Appendix A, Table A17.

Caregiver Report

Approximately 17 percent of caregivers in the retrospective cohort and 11 percent in the prospective cohort reported there were girls in their household who were selected for secondary school but did not attend. The main reasons girls did not join secondary school were pregnancy (reported by 31–56% of caregivers across cohorts), inability to afford self-boarding (20–47% across cohorts), secondary school being too far away (22–32% across cohorts), and marriage (16–34% across cohorts).

> *"There may be no money for transport for the school that is far so it is better to be learning at a school which is near since she will just be walking to school. She will not need money."*
>
> —Female caregiver

Approximately 15 percent of caregivers in the retrospective cohort and 11 percent in the prospective cohort reported there were boys in their household who were selected for secondary school but did not attend. The main reasons boys did not join secondary school were marriage (reported by 20–38% of caregivers across cohorts), inability to afford self-boarding (21 to 35 percent across cohorts), school costs (27–34% across cohorts), and secondary school being too far away (14–33% across cohorts) (Table 28).

Almost no caregivers reported SR-GBV at or on the way to/from school as reasons students did not join or complete secondary school (see Appendix A, Table A18).

Table 28. Caregiver-reported barriers to secondary school transition among household children

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Household girls selected to secondary school but did not enroll/attend	17.0	16.6	0.930	11.2	10.6	0.830
Household boys selected to secondary school but did not enroll/attend	14.2	16.1	0.618	9.6	11.7	0.474
N (caregivers)	**266**	**287**		**380**	**375**	
Top three reasons girls did not enroll/attend secondary school						
Pregnancy	47.0	31.1	0.090	56.1	42.6	0.374
Cannot afford boarding	20.5	29.4	0.570	34.1	34.4	0.982
Secondary school too far away	26.8	22.2	0.631	28.1	32.2	0.725
School costs	15.6	37.8	0.083	17.2	26.5	0.367
Caregiving responsibilities	2.6	19.0	0.004	4.8	24.1	0.058
Cannot afford self-boarding	46.5	33.3	0.306	30.6	20.3	0.396
Marriage	30.4	32.6	0.863	34.0	16.3	0.073
No transportation	20.9	3.0	0.007	3.2	11.9	0.206
Not a priority	2.6	6.0	0.369	13.7	4.5	0.215
N (caregivers, any girl selected but did not enroll/attend secondary school)	**41**	**42**		**34**	**41**	
Top three reasons boys did not enroll/attend secondary school						
Cannot afford boarding	21.0	26.1	0.617	23.2	34.7	0.428
Marriage	38.2	19.6	0.082	36.1	34.5	0.899
School costs	29.4	28.3	0.940	27.0	33.7	0.648
Secondary school too far away	26.1	14.4	0.202	28.9	32.7	0.778
Cannot afford self-boarding	33.5	30.9	0.818	38.7	30.3	0.590
Not a priority	11.3	14.5	0.653	10.7	20.0	0.301
Caregiving responsibilities	7.8	19.5	0.132	10.1	19.6	0.293
No transportation	23.1	7.9	0.052	9.1	19.1	0.257
Fathering a child	21.5	22.0	0.963	28.1	11.9	0.102
Got a job	4.6	8.9	0.530	11.3	2.5	0.139
N (caregivers, any boy selected but did not enroll/attend secondary school)	**39**	**43**		**31**	**48**	

Notes: Respondents included here indicated the barrier was a "serious" problem at their children's schools. These are unweighted sample sizes and weighted summary and test statistics. Additional information provided in Appendix A, Table A18.

Caregivers reported on the top reasons children in their community do not complete primary school. In the retrospective cohort, the top three reasons were pregnancy (reported by 37–42 % of caregivers), marriage (38–39 % of caregivers), and completing school not a priority (35–36% of caregivers). In the prospective cohort, not a priority (41–42% of caregivers), pregnancy (41% of caregivers), and marriage (33–41% of caregivers) were the top reasons.

Caregivers also reported on the top reasons children in their community who complete primary school do not go to secondary school. In the retrospective cohort, the top reasons were pregnancy (reported by 34–42% of caregivers), marriage (35–37% of caregivers), and the secondary school being too far away (28–31% of caregivers). In the prospective cohort,

pregnancy (38–39% of caregivers), marriage (31–41% of caregivers), and the secondary school being too far away (25–28% of caregivers) were also the top reasons.

Finally, caregivers were asked why youth who begin secondary school do not complete it. In the retrospective cohort, the top reasons were marriage (reported by 40–43% of caregivers), pregnancy (32–42% of caregivers), and the secondary school being too far away (28–32% of caregivers). In the prospective cohort, pregnancy (43–48% of caregivers), marriage (37–38% of caregivers), and the secondary school being too far away (27–31% of caregivers) were the top reasons (Table 29).

Table 29. Caregiver-reported barriers to achieving educational milestones among children/youth in their community

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Top three reasons children/youth in the community do not complete primary school						
Pregnancy	37.1	41.8	0.370	40.8	41.3	0.943
Not a priority	35.3	35.8	0.931	41.8	40.8	0.824
Marriage	37.6	39.0	0.842	40.6	32.5	0.138
Exam fees for PSLCE	24.7	31.2	0.173	31.2	31.9	0.855
Caregiving responsibilities	10.1	13.6	0.300	11.0	14.3	0.238
Secondary school too far away	11.7	8.2	0.194	7.1	7.5	0.866
Got a job	6.5	6.8	0.924	9.7	7.1	0.309
Self-Boarding - cannot afford	8.4	8.3	0.979	4.3	5.6	0.539
Boarding - cannot afford	5.2	7.6	0.317	5.8	5.5	0.899
No transportation	8.2	4.2	0.082	4.8	5.4	0.735
Not enough seats	0.7	0.3	0.480	0.1	0.9	0.085
Top three reasons children/youth in the community who complete primary school do not go to secondary school						
Pregnancy	33.5	41.8	0.156	38.2	38.9	0.901
Marriage	34.8	36.9	0.769	41.0	30.6	0.074
Not a priority	17.1	21.6	0.245	22.5	24.9	0.497
Secondary school too far away	28.2	31.3	0.474	27.5	24.6	0.526
Self-boarding - cannot afford	33.3	19.6	0.027	22.5	19.7	0.567
Boarding - cannot afford	20.6	21.2	0.927	21.7	18.7	0.547
Exam fees for PSLCE	13.5	9.5	0.274	13.6	15.7	0.651
Caregiving responsibilities	7.8	12.2	0.155	8.2	14.1	0.057
No transportation	10.7	5.8	0.064	9.6	10.9	0.619
Got a job	7.7	7.3	0.911	6.2	7.8	0.551
Not enough seats	1.1	2.0	0.466	1.0	2.8	0.128
Top three reasons children/youth in the community who begin secondary school do not complete secondary school						
Pregnancy	32.1	41.7	0.067	42.7	47.7	0.375
Marriage	42.8	40.3	0.724	37.9	37.2	0.904
Secondary school too far away	31.9	27.7	0.417	30.7	26.6	0.401
Not a priority	18.9	19.7	0.835	23.9	23.0	0.789
Self-Boarding - cannot afford	30.8	19.7	0.025	23.2	20.7	0.578
Boarding - cannot afford	26.8	19.6	0.234	21.7	18.9	0.586

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Exam fees for PSLCE	10.9	11.2	0.947	11.9	10.7	76.000
No transportation	11.4	9.7	0.571	12.6	10.5	0.581
Caregiving responsibilities	6.1	10.0	0.159	4.7	9.3	0.030
Got a job	8.3	5.7	0.416	9.0	4.8	0.090
Not enough seats	0.7	0.6	0.876	0.6	1.5	0.254
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: Respondents included here indicated the barrier was a "serious" problem at community schools. These are unweighted sample sizes and weighted summary and test statistics. Additional information provided in Appendix A, Table A19.

School Report

We asked primary schools about problems that hindered boys' and girls' ability to complete primary school and join secondary school. Secondary schools were asked about problems that hindered boys' and girls' ability to complete secondary school.

The most frequently cited barrier to completing primary school was a lack of Form 1 secondary school admissions spaces (74.9 and 56.3 percent of comparison and treatment primary schools, respectively). Approximately half of primary school respondents also reported lack of caregiver support and lack of student optimism about their futures as barriers to primary completion.

Approximately 50–60 percent of primary schools reported that direct costs of secondary school and exam fees and related costs were serious problems that hindered both boys' and girls' ability to join secondary school. Comparison group primary schools were nearly 30 percentage points more likely than treatment group primary schools to report that distance to secondary school was a serious problem for both boys (p=0.011) and girls (p=0.016) to join secondary school. Lack of Form 1 seats was said to be a serious problem for both boys and girls by over 70 percent of primary comparison schools and about 60 percent of primary treatment schools. Unsafe travel to and from school was said to be a serious problem for girls by 30 to 37 percent of primary schools, and a serious problem for boys by 20 to 24 percent of primary schools.

Direct costs of secondary school were reported as a serious problem that hindered girls' and boys' completion of secondary school—approximately 47 percent of secondary schools reported this as a serious problem for girls and approximately 43 percent of secondary schools reported the same for boys. Distance to secondary school was reported as a serious problem for both boys and girls by over half of secondary schools. Approximately 29 percent of secondary schools reported that unsafe travel to and from school was a serious problem for girls, and approximately 21 percent reported similarly for boys (Table 30).

Table 30. School-reported barriers to student ability/motivation to achieve educational milestones

	Primary schools			Primary schools			Primary schools			Secondary schools	
	Comp	Treat	p-value	Comp	Treat	p-value	Comp	Treat	p-value		
Serious problem among students at this school for ability/motivation to:											
	Complete primary school			Boys to join secondary school			Girls to join secondary school			Boys to complete secondary school	Girls to complete secondary school
Direct costs of (primary/secondary) school	5.7	13.0	0.322	48.5	56.9	0.522	53.5	60.4	0.588	43.1	46.6
Exam fees and related costs	11.0	15.8	0.581	52.5	60.0	0.561	56.1	53.7	0.854	36.2	43.1
Distance to (primary/secondary) school	33.8	9.5	0.024	84.6	56.0	0.011	80.7	51.5	0.016	53.4	50.0
Not safe travelling to/from school	24.0	9.5	0.136	24.1	20.1	0.715	36.7	29.6	0.567	20.7	29.3
Not enough Form 1 secondary school admissions spaces	74.9	56.3	0.118	71.3	63.5	0.503	76.7	57.3	0.098	n/a	n/a
Chores at home	37.5	33.6	0.748	33.4	19.3	0.224	40.9	32.4	0.498	25.9	41.4
Caregiving responsibilities	22.6	32.8	0.378	23.8	13.0	0.288	39.1	26.1	0.290	15.5	31.0
Paid work	19.4	25.7	0.566	18.7	19.3	0.950	22.0	16.2	0.562	25.9	20.7
Students are not optimistic about their future	54.4	46.6	0.549	33.5	35.9	0.845	39.3	36.7	0.841	37.9	29.3
Parents/caregivers do not support or encourage schooling	44.3	56.1	0.368	40.9	39.1	0.886	40.9	39.5	0.911	37.9	36.2
Getting pregnant/fathering a child	37.1	32.8	0.730	33.3	16.2	0.134	46.5	35.5	0.390	17.2	36.2
Getting married	37.5	35.5	0.873	27.9	15.8	0.260	46.5	28.8	0.159	13.8	25.9
N (schools)	32	32		32	32		32	32		58	58

Notes: Respondents included indicated that the barrier was a serious problem. These are unweighted sample sizes and weighted summary and test statistics. Additional information provided in Appendix A, Table A20.

9.4 Travel to School

Nearly all students reported they walked to school, with the exception of students in the retrospective group, where 6 and 10 percent of the comparison and treatment groups, respectively, bicycled to school. Approximately half of the students in the retrospective cohort traveled 30 minutes or less to reach school. In the prospective cohort, approximately half of the comparison group, and 62 percent of the treatment group, traveled 30 or less minutes to reach school (Table 31).

Table 31. Student-reported travel to school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Usual transport to school			0.344			0.545
Walking	94.0	89.7		99.6	98.9	
Bicycle (own/household)	6.0	9.9		0.4	0.8	
Other	0.0	0.4		0.0	0.2	
Usual travel time to school			0.911			0.021
≤ 15 min	24.3	26.4		21.6	34.3	
16 - 30 min	25.2	25.3		28.9	27.5	
31 min - 1 hour	29.1	24.9		31.4	23.6	
1 - 1.5 hour	9.0	10.5		7.9	8.4	
> 1.5 hour	12.4	13.0		10.2	6.3	
N (students)	**226**	**234**		**376**	**367**	

Notes: Table includes students who reported travel time to school. Unweighted sample sizes and weighted summary and test statistics.

Among primary schools, approximately half of the comparison group, and 40 percent of the treatment group, reported the farthest village that sent students to the school was 5 or more kms away. Among secondary schools, approximately 57 percent reported the farthest village that sent students to the school was more than 10 kms away (Table 32).

Table 32. School-reported distance (km) to farthest village that sends students to the school

	Primary schools		
	Comparison	Treatment	p-value
Distance (km)			**0.203**
2 - 3 km	12.5	39.0	
4 km	36.4	20.7	
5 - 6km	32.1	26.0	
7 - 9 km	13.1	11.2	
10+ km	6.0	3.2	
N (schools)	**32**	**32**	
Secondary schools			
Distance (km)			
3 - 7 km	20.7		
8 - 10 km	22.4		
11 - 14 km	17.2		
15 - 19 km	24.1		
20+ km	15.5		
N (schools)	**58**		

Note: Unweighted sample sizes and weighted summary and test statistics.

9.5 Student Requirements and Costs

The primary and secondary school baseline survey instruments collected information on which types of school costs half or more students incurred (Table 33). Follow-up information was collected from head teachers at primary and secondary schools in June 2022 about specific types and amounts of non-tuition fees students are required to pay to the school per term (Appendix E).

Approximately 90 and 80 percent of primary comparison and treatment schools, respectively, reported that half or more Standard 7 and 8 students incur exam fees. Thirty eight percent (comparison) and 44 (treatment) percent of primary schools reported that half or more students incurred costs for compulsory uniforms. Thirty three percent (comparison) and 53 (treatment) percent of primary schools reported that half or more students incurred general purpose fund fees. Between 11 and 25 percent of primary schools reported that half or more of their students incurred costs for small-scale school projects, PTA/School Management (SMC) dues, required shoes, and school maintenance fees (Table 33). Fewer than 30 percent of primary schools reported in June 2022 that students had to pay any general fees or other fees per term. On average, primary schools reported general fee amounts of MWK 152 per term (MWK 621 excluding schools with no general fees) and other fee amounts of MWK 350 per term, for a total of MWK 181 per term on average (MWK 632 excluding schools reporting no fees) (Appendix E, Table E1). Over 88 percent of secondary schools reported that half or more Form 1 students incurred costs for required shoes and compulsory uniforms. Over sixty percent reported that half or more Form 1 students incur PTA/SMC fees and exam fees. Approximately 57 percent of schools reported half or more students incurred fees for small-scale school projects, and 31 percent said half or more students incurred school maintenance fees. Less than 16 percent of secondary schools reported that half or more Form 1 students incurred general purpose fund and tuition fees (Table 33). All secondary schools reported that students had to pay general fees (average MWK 10,587 per term), and 28.3 percent reported other fees (average MWK 21,133 per term); exam-related fees comprised most other fee types. Total school level fees averaged MWK 16,939 per term (MWK 11,580 excluding boarding) (Appendix E, Table E1).

Table 33. School-reported costs

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Half or more (Standard 7 and 8)/(Form 1) students incur costs				
Examination fees	90.4	78.8	0.217	69.0
Compulsory uniforms	32.7	53.0	0.117	94.8
General purpose fund	37.9	44.2	0.621	15.5
Fees for small-scale school projects	10.9	24.6	0.183	56.9
PTA/SMC dues	13.1	17.0	0.679	60.3
Required shoes	10.8	14.4	0.628	87.9
School maintenance fees	13.1	13.0	0.994	31.0
Tuition fees	3.6	3.2	0.934	13.8
Textbook revolving fund	3.6	0.0	0.258	1.7
Other textbook costs or fees	0.0	0.0	.	10.3
Transportation to/from school	3.6	0.0	0.258	1.7
General school supplies	1.8	0.0	0.271	5.2
Boarding at school	0.0	0.0	.	8.6
Self-boarding	0.0	0.0	.	20.7
N (schools)	**32**	**32**		**58**

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Educational Materials and Expenditures

Just over three-quarters of retrospective and prospective cohort students reported they had a school uniform, and a third or more reported they had shoes for school. Over 80 percent said they had their own pens and pencils and an exercise/workbook. In the retrospective cohort, approximately 16 percent said they had all their textbooks, compared to approximately 9 percent in the prospective cohort (Table 34).

Table 34. Student-reported possession of school items

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Exercise/workbook	88.5	90.1	0.612	86.9	89.5	0.436
Own pens/pencils	90.7	89.4	0.614	83.8	82.3	0.668
School uniform	75.5	79.8	0.323	74.9	77.9	0.464
Shoes for school	34.0	41.6	0.135	34.0	32.5	0.725
Own bag for books	21.9	24.9	0.474	17.3	20.9	0.290
All textbooks	15.7	15.6	0.976	9.7	8.9	0.740
No items	2.4	2.2	0.934	1.4	2.8	0.212
All items	1.4	4.0	0.077	0.8	2.9	0.038
N (students)	**227**	**237**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

In the retrospective cohort, approximately 90 percent of households reported they had educational expenses in the current year, as did 97 percent of the prospective cohort. Approximately 80 percent of households in the retrospective cohort, and 96 percent in the prospective cohort, reported they had educational expenses for the sampled student, which ranged from an average of 55,600–63,009 MWK (~$68–$77) in the retrospective cohort, and from 15,280–16, 426 MWK (~$19–$20) in the prospective cohort (Table 35). The average educational expense for retrospective students who repeated Standard 8 was MWK 30,098, compared to MWK 74,074 for retrospective cohort students who transitioned to Form 1 in a public secondary school (Table F1). Across cohorts, 76–84 percent of households with children in school in the current year who had educational expenses did not have the money to pay for all the expenses (Table 35).

Table 35. Household education expenditures during current academic year

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Household had any educational expenditures for any child attending school in the household during current academic year	89.2	91.4	0.371	97.5	97.0	0.689
Household had any educational expenditures for sampled student during current academic year	77.7	82.3	0.272	96.9	95.3	0.383
N (households)	**294**	**305**		**381**	**380**	
Average educational expenditure (Mean MWK, SD) for sampled student during current academic year (among households with any student expenditure)	55,624.3 (7,940.1)	63,009.1 (9,277.0)	0.547	15,279.7 (1,765.8)	16,425.7 (1,336.7)	0.609
N (households with any education expenditures for sampled student)	**228**	**254**		**369**	**366**	
Household did not have enough money to pay for all children with education expenditures during current academic year (among households with any children attending school who had education expenditures during current academic year)	79.1	83.6	0.329	76.4	77.7	0.772
N (households with any education expenditures)	**264**	**281**		**372**	**372**	

Notes: Unweighted sample sizes and weighted statistics and significance tests. MWK = Malawi Kwacha; SD = standard deviation.

9.6 Financial and Material Support for Students

We asked schools about support programs available to students. Approximately 50 percent of primary schools reported availability of free uniforms/vouchers, and over one-third had a school feeding program. Over 40 percent of primary comparison schools had school supply resources, as did 17 percent of primary treatment schools. Textbooks cost waivers/vouchers existed at 27 and 13 percent of primary comparison and treatment schools, respectively, and exam fee

waivers/ vouchers existed at 22 and 17 percent of primary comparison and treatment schools, respectively.

Nearly all secondary schools had bursaries, subsidies, scholarships and/or school fee waiver programs. Over 30 percent had school supply resources and free uniforms/vouchers. Approximately 20 percent had textbook and exam fee waivers/vouchers (Table 36).

Table 36. Support programs available to students

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Free uniforms or vouchers	50.9	48.0	0.826	32.8
School feeding program	33.1	41.3	0.514	1.7
Bursaries, subsidies, scholarships, and/or school fee waiver program	5.6	17.4	0.161	96.6
Examination fee waivers or vouchers	22.2	16.6	0.589	19.0
School supply resources	40.5	16.6	0.048	34.5
Textbook cost waivers or vouchers	26.5	13.0	0.197	20.7
Vouchers for transportation to/from school	3.6	0.0	0.258	1.7
Direct provision of transportation to/from school	0.0	0.0		1.7
N (schools)	**32**	**32**		**58**

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Only 4–8 percent of households across cohorts reported they received any support for educational expenses for any children in the current school year, and only 2–7 percent reported they received support for the sampled student's educational expenses. The most common type of support received in the past 12 months was assistance from a school feeding program, reported by approximately 8 percent of households in the retrospective cohort and 13 percent in the prospective cohort. Among households that received support from the school feeding program, the sampled student was a beneficiary in approximately 40 percent of households in the retrospective cohort and 96 percent of households in the prospective cohort (Table 37).

Table 37. Household receipt of education-related financial and material support

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Educational expenses support during the current school year						
Household received any financial support for school fees or other school-related expenses for any children	4.2	8.3	0.071	5.0	4.4	0.712
Household received any school tuition support for the sampled student	3.6	6.8	0.169	2.4	1.2	0.532
Sampled student received any materials support or cash to purchase school supplies	2.2	3.6	0.534	3.5	3.5	0.620
Educational expenses support during the last 12 months						
Any household member received assistance from the school feeding program	8.3	8.9	0.863	13.5	13.4	0.989
Among beneficiary households, sampled student received the assistance (N=161 households)	37.2	43.2	0.748	96.2	96.6	0.938
Any household member received assistance from Scholarships/Bursaries for Secondary Education (e.g., CRECCOM)	2.4	2.1	0.838	0.7	1.1	0.594
Among beneficiary households, sampled student received the assistance (N=23 households)	74.0	83.7	0.678	85.6	69.3	0.569
Any household member received other education-related assistance	2.9	4.9	0.280	2.6	2.6	0.968
Among beneficiary households, sampled student received the assistance (N=39 households)	78.4	90.0	0.552	38.7	79.0	0.063
N (households)	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

10. Rural Results: Enabling Environment

Key Findings

- Nearly 10 percent of retrospective cohort students and four percent of prospective cohort students reported typically working throughout the year. Over half of working students reported unpaid household agricultural labor as their main economic activity during the past 12 months. Qualitative respondents discussed how child labor negatively affects access to education for youth.
- Ninety-four percent of primary schools and 87.9 percent of secondary schools have a Parent and Teacher Association. Sixty-five percent of retrospective cohort caregivers and 77.0 percent of prospective cohort caregivers reported an adult household member participated in school governing body meetings during the past 12 months.
- Based on definitions from the Joint Monitoring Programme's 2018 indicators for monitoring WASH and MHM in schools:
    - Basic WASH services: 93.2 percent of secondary schools had a basic drinking water service, 55.9 percent had basic sanitation services, and 86.2 percent had basic hygiene services.
    - MHM Provisions: 27.1 percent of secondary schools had both water and soap available in a private space for girls to manage menstrual hygiene, 44.1 percent had at least one girls-only change room in use, and 25.4 percent had MHM materials available at the school. Qualitative caregiver and community leader respondents reported the lack of adequate facilities at schools for girls to manage their periods resulted in menstruating girls missing school unnecessarily.

10.1 Student Labor

Approximately 20 percent of households across cohorts reported the sampled student worked once in a while, and between 10–20 percent of households reported the sampled student worked seasonally or part of the year. The main economic activity the student engaged in was unpaid household labor (agriculture), reported by 56.0 and 58.1 of the retrospective comparison and treatment groups, respectively, and 65.9 and 48.5 percent of the prospective comparison and treatment groups, respectively. About one third of the retrospective cohort students engaged in piece work (ganyu), as did 27 and 48.5 percent of the students in the prospective comparison and treatment groups, respectively (Table 38).

Table 38. Student labor participation

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Percent of sampled students usually work throughout the year, or does (name) work seasonally, or only once in a while			0.280			0.421
Throughout the year	11.4	7.6		3.5	4.4	
Seasonally/part of the year	19.0	15.5		14.1	10.8	
Once in a while	20.6	19.4		21.2	18.2	
No, does not work	49.0	57.6		61.2	66.6	
What main economic activity did sampled students spend most of time on the last 12 months			0.748			0.067
Unpaid household labor (agriculture)	56.0	58.1		65.9	48.5	
Ganyu	34.3	32.9		27.0	44.3	
Household business (non-agriculture)	7.8	9.1		2.6	0.9	
Unpaid apprenticeship	1.0	0.0		0.6	0.6	
Wage employment excluding ganyu	1.0	0.0		0.4	0.0	
Other	0.0	0.0		3.5	5.7	
What main economic activity did sampled students spend most of time on the last 7 days			0.067			0.070
Did not work	62.9	75.3		77.2	84.1	
Ganyu	10.8	9.1		7.1	7.9	
Unpaid household labor (agriculture)	21.0	11.9		14.5	7.2	
Household business (non-agriculture)	3.0	3.1		1.0	0.6	
Wage employment excluding ganyu	1.5	0.6		0.2	0.0	
Other	0.8	0.0		0.0	0.3	
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

Qualitative findings: Child labor

Qualitative respondents discussed how child labor negatively affects access to education for youth. For example, a community leader observed that some caregivers have their children work on the farm instead of attending school. Caregivers and students echoed this sentiment.

> *"There are situations where parents let their children miss classes because they want them to go to the maize mill and do some household chores. This is bad because children end up being absent from school."*
>
> —Female caregiver

> *"At home there is a certain girl whom they leave to do all the household chores. She comes late to school and sometimes she finds we have already started learning. So, the teacher gives her a punishment. And when she goes home late because of the punishment they tell her that she was with boys so prepare nsima [a thick porridge made of corn]."*
>
> —Standard 7 female student

10.2 Parental and Community Engagement

Among caregivers whose children were currently enrolled in school and had homework, over one-third of caregivers in the retrospective cohort and nearly one-half in the prospective cohort reported their child had received support with their homework. Just over one-third of caregivers in both cohorts discussed their child's progress with teachers in the past 12 months. Between 85–90 percent of caregivers whose children were currently enrolled in school stated that their child's school is open to parental participation, with 60–80 percent of caregivers reporting they had participated in a school governing body meeting in the past 12 months (Table 39).

Table 39. Parental involvement in school

	Retrospective cohort					Prospective cohort				
	Comparison		Treatment			Comparison		Treatment		
	N	%	N	%	p-value	N	%	N	%	p-value
Student received support with homework	126	38.1	142	35.9	0.761	329	48.4	336	47.9	0.906
Caregiver discussed child's progress with teachers during past 12 months	160	38.3	188	37.9	0.957	353	34.8	357	34.6	0.969
School's governing body is open to parental participation	116	84.8	145	85.9	0.827	307	90.9	327	86.9	0.108
Adult household member participated in school governing body meetings during past 12 months	103	70.5	123	60.5	0.150	276	78.4	289	75.6	0.638

Notes: Unweighted sample sizes and weighted summary and test statistics.

Only 69.6 percent of primary schools in the comparison group sent report cards home once a year, compared to 86.6 percent of schools in the treatment group.

Over 93 percent of secondary schools sent report cards home once a year. Approximately 82 percent of secondary schools had active Mother's Groups and SMC, and 87.9 percent had active

PTAs. Nearly all schools provided opportunities for teacher-parent conferences at least once per year (Table 40).

Table 40. Opportunities for parental and community engagement in schools

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Report cards sent home at least once per academic year	69.6	86.6	0.123	93.1
School has active/partially active group				
School Management Committee	97.8	95.5	0.552	82.8
Village Education Committee	3.6	9.9	0.348	5.2
School Development Committee	7.1	22.1	0.116	27.6
Parent and Teachers Association	97.8	91.0	0.178	87.9
Mothers' Group	100.0	97.7	0.380	82.8
Fathers' Group	0.0	6.3	0.200	5.2
Community Volunteers	26.2	33.2	0.558	15.5
School provides opportunity for (Std. 7 and 8/ Form 1) students at least once per academic year				
Teacher-parent conferences (individual or group)	96.2	100.0	0.259	93.1
Teacher home visits	59.1	63.7	0.718	37.9
Events at school to which parents are invited	92.3	100.0	0.100	79.3
N	**32**	**32**		**58**

Notes: Unweighted sample sizes and weighted summary and test statistics.

10.3 WASH and Menstrual Hygiene Management (MHM) at School

School Report of WASH Facilities and MHM Provisions

We measured baseline school WASH service levels using the Joint Monitoring Programme's (JMP) new harmonized core questions and indicators for monitoring WASH in schools (WHO and UNICEF, 2018). The JMP defines basic service levels for drinking water, sanitation, and hygiene in schools. Schools with an improved drinking water source with water available at the time of the survey are classified as having a 'basic' drinking water service; schools with improved sanitation facilities which are single-sex and usable at the time of the survey are classified as having a 'basic' sanitation service; and schools with handwashing facilities with both water and soap available at the time of the survey are classified as having 'basic' hygiene services. The percent of schools with drinking water from an improved water source available at the school on the day of survey was 81.3 and 90.6 percent for primary schools in comparison and treatment groups, respectively, and 93.2 percent for secondary schools. Over half of the primary and secondary schools had improved sanitation facilities at the school which were single-sex and usable. Approximately two-thirds of primary schools had handwashing facilities with soap and water available, as did 86.2 percent of secondary schools (Table 41).

Table 41. WASH in schools

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Basic drinking water service				
Drinking water from an improved source available at the school on day of survey	81.3	90.6	0.281	93.2
Basic sanitation service				
Improved toilets which are usable and single-sex	52.8	58.2	0.676	55.9
Basic hygiene service				
Handwashing facilities have water and soap available	67.2	69.1	0.872	86.2
N	**32**	**32**		**58**

Notes: These are unweighted sample sizes and weighted summary and test statistics. Additional information provided in Appendix A, Table A21. Improved drinking water sources include piped water, boreholes or tube wells, protected dug wells, protected springs, rainwater, and packaged or delivered water. Improved sanitation facilities include flush/pour-flush to sewer, septic tanks or pit latrines, ventilated improved pit latrines, composting toilets, or pit latrines with slabs.

The school menstrual hygiene management (MHM) environment was assessed using expanded questions from the JMP WASH in schools questionnaire (UNICEF and WHO, 2018). Water and soap were available in a private space for girls to manage menstrual hygiene at 47.4 and 30.0 percent of the primary comparison and treatment schools, respectively, and 27.1 percent of secondary schools. Covered bins for disposal of menstrual hygiene materials in girls' toilets were available at 36.0 and 28.7 percent of primary comparison and treatment schools, respectively, and 32.3 percent of secondary schools. One or more girls-only changing rooms were available at approximately 55 and 46 percent of primary comparison and treatment schools, respectively, and 44 percent of secondary schools. Approximately one-quarter of primary comparison schools, and a third of primary treatment schools and secondary schools, lacked bathing areas, MHM materials, and MHM education (Table 42).

Table 42. Menstrual hygiene management provisions at school

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Availability of water and soap in a private space for girls to manage menstrual hygiene			0.387	
Yes, water and soap	47.4	30.0		27.1
Water, but not soap	3.8	7.1		13.6
No water	48.8	62.9		57.6
School has covered bins for disposal of menstrual hygiene materials in girls' toilets	36.0	28.7	0.548	32.2
School has disposal mechanisms for menstrual hygiene waste	39.7	40.3	0.962	35.6

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
How many girls-only change rooms are completed and in use at the school?			0.645	
0	44.4	53.9		55.9
1	46.8	42.5		33.9
2	5.2	3.6		3.4
3	3.6	0.0		3.4
Which of the following provisions for MHM are available				
Bathing areas	36.6	33.1	0.772	33.9
MHM materials (e.g. pads)	44.5	42.0	0.844	25.4
MHM education	56.1	54.2	0.882	47.5
None of the above	27.6	35.6	0.487	32.2
N	**32**	**32**		**58**

Notes: Unweighted sample sizes and weighted summary and test statistics.

Menstruation Norms and Onset

In the retrospective cohort, 91.2 percent (comparison) and 87.2 (treatment) disagreed/strongly disagreed that girls should not go to school when menstruating, and in the prospective cohort, 90 percent (comparison) and 85 percent (treatment) also disagreed/strongly disagreed. Nearly all girls currently in school in the retrospective cohort had started their period, compared to a little over three-quarters of girls in the prospective cohort (Table 43).

Table 43. Menstruation norms and onset

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Disagrees/strongly disagrees that girls should not go to school when they are menstruating	91.2	87.2	0.485	90.0	85.0	0.119
Believe other people in the community disagree/strongly disagree that girls should not go to school when menstruating	96.1	86.8	0.017	83.9	83.6	0.953
N (girls)	**110**	**120**		**189**	**189**	
Among girls who were currently in school, percent who have started to have periods	97.6	99.1	0.312	79.5	76.4	0.510
N (girls)	**110**	**120**		**179**	**178**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

Student Report of Menstruation-Related School Absenteeism

The percent of girls that missed school during their last period ranged from 9 to 13 percent across cohorts. Of these, 57.3 (4 girls) and 50.5 percent (10 girls) of the retrospective comparison and treatment groups, respectively, and 38.0 (14 girls) and 28.4 percent (16 girls) of the prospective comparison and treatment groups, respectively, missed school because of their period for reasons other than menstrual pain or discomfort.

Of these, 2 of the 14 girls in the retrospective cohort and 3 of 30 in the prospective cohort missed school because they had no sanitary pads or changing materials. Four of the 14 girls in the retrospective cohort and 2 of 30 in the prospective cohort missed school because they were ashamed to go to school when menstruating. One student in each cohort missed school because there were no private facilities for changing materials (Table 44).

Table 44. Among girls who missed school the last time they had their period, reasons why

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Missed school last period	8.9	12.5	0.513	10.3	11.7	0.755
N (menstruating girls currently in school)	**51**	**81**		**134**	**117**	
Missed school due to their last menstrual period for a reason other than menstrual pain or discomfort *	57.3	50.5	*	38.0	28.4	*
Had no sanitary pad/changing materials*	1	1		3	0	
Felt ashamed to go to school while menstruating *	1	3		1	1	
No private facilities for changing materials *	0	1		1	0	
N (menstruating girls currently in school)	**4**	**10**		**14**	**16**	

Notes: *Unweighted response frequencies reported rather than weighted percentages and statistical significance not tested due to small/zero cell sizes. Unweighted sample sizes and weighted summary and test statistics.

Female Student Report of MHM Provisions at School

Among menstruating girls that were currently in school, approximately three-quarters across cohorts reported that the place where they last changed their menstrual materials at school was private and safe. Approximately two-thirds reported it was clean, able to be locked, and well ventilated, and approximately 50–60 percent reported it was supplied with water, soap, and was well lit. Just under half reported it was supplied with a covered bin. Twelve to 18 percent reported it was supplied with a shelf and hook, and only 4–13 percent reported it was supplied with a mirror. The WHO UNICEF Joint Monitoring Programme WASH in Schools definition for female-friendly space is to have all items (UNICEF and WHO, 2018; UNICEF, 2020a); less than 5 percent of girls reported all items were present, with the most frequently missing items being a shelf and hook and a mirror.

Nearly all girls reported toilets were located on the school premise and were separate for girls and boys. Between 62–72 percent reported the toilets were cleaned daily. Over 90 percent of

girls reported they were permitted to use the toilets whenever they wanted to; however, some had worried they would not be able to change their menstrual materials when they needed to during their last menstrual period when at school (20.5 and 20.7 percent of the retrospective comparison and treatment groups, respectively, and 11.8 and 32.6 percent of the prospective comparison and treatment groups, respectively) (Table 45).

Table 45. Female-friendly sanitation and changing facilities at school, menstruating girls currently in school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Washing and changing space at school						
Clean	67.8	71.7	0.623	69.5	71.1	0.842
Private	78.7	83.4	0.482	77.0	77.3	0.970
Safe	71.9	76.4	0.515	74.7	75.3	0.930
Able to be locked	66.6	62.8	0.62	68.2	62.1	0.436
Supplied with water	56.9	65.7	0.419	56.9	60.5	0.657
Supplied with soap	48.9	54.2	0.604	53.6	52.1	0.859
Supplied with a mirror	4.4	10.8	0.144	13.3	13.4	0.993
Supplied with a shelf and hook	11.9	13.1	0.86	16.5	18.3	0.775
Well lit	60.9	53.1	0.562	65.8	55.3	0.174
Supplied with a covered bin	43.0	37.8	0.66	49.9	42.7	0.421
Well ventilated	69.8	63.2	0.554	71.2	61.9	0.196
N (menstruating girls currently in school)	**55**	**83**		**141**	**124**	
Toilets/latrines located on school premises (within or outside the building)	98.0	97.3	0.803	98.8	99.6	0.349
Toilets/latrines are separate for girls and boys	97.2	95.5	0.589	98.1	93.6	0.129
Toilets/latrines cleaned daily	72.9	60.3	0.202	63.1	62.0	0.905
N (menstruating girls currently in school)	**56**	**87**		**141**	**130**	
Percentage with female-friendly space for washing and changing at school	0.0	1.0	0.498	4.4	3.8	0.851
N (menstruating girls currently in school)	**55**	**83**		**141**	**124**	
Able to change their menstrual materials when they wanted to while at school						
Students permitted to use the toilets/latrines at all times	96.8	96.9	0.967	91.8	90.5	0.796
N (menstruating girls currently in school)	**56**	**87**		**141**	**130**	
Worried would not be able to change your menstrual materials when you needed to during last menstrual period when at school	20.5	27.0	0.544	11.8	32.6	0.001
N (menstruating girls currently in school)	**51**	**81**		**134**	**114**	

Notes: 11 girls responded "don't know" for all washing/changing space questions. Unweighted sample sizes and weighted summary and test statistics.

Among menstruating girls currently in school in the retrospective cohort, 33.4 percent and 18.7 percent in the comparison and treatment groups, respectively, reported menstrual materials were available on the school premises. A little over one-quarter of menstruating girls currently in school in the prospective cohort reported the same.

Menstruating girls currently attending school reported on their usual management strategy if they began to menstruate while at school. The most frequently reported strategy was to go home and not return for the day (30.4 and 44.8% of the retrospective comparison and treatment groups, respectively, and 39.1 and 43.6% of the prospective comparison and treatment groups, respectively). About one-quarter of girls in the retrospective cohort said they would go home and change and come back to school, as did approximately 30 percent of girls in the prospective cohort. In the retrospective cohort, 26.3 (comparison) and 16.1 (treatment) said they would use materials available at school for free. Approximately 16 percent of girls in the prospective cohort said they would do the same (Table 46).

Table 46. Menstruation materials, menstruating girls currently in school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Availability of menstrual materials on school premises	33.4	18.7	0.085	26.6	28.9	0.787
N (menstruating girls currently in school)	**55**	**85**		**140**	**126**	
Usual management strategies if begin to menstruate while at school			*			*
Go home and do not return to school for the day	30.4	44.8		39.1	43.6	
Go home, change, and come back	23.0	27.3		30.8	30.1	
Use materials available at school for free	26.3	16.1		16.4	15.9	
Use materials brought with you	15.3	11.4		9.6	7.1	
Go home and do not return to school until after finished menstruating	3.2	1.4		0.4	4.4	
Ask friends for materials	5.2	3.3		3.1	3.0	
Do nothing, stay at school	4.0	0.0		6.6	2.5	
Purchase materials from canteen on premises	0.0	0.3		0.0	1.1	
N (menstruating girls currently in school)	**56**	**87**		**141**	**130**	

Notes: * Statistical significance not tested due to small cell sizes. Unweighted sample sizes and weighted summary and test statistics.

Qualitative Findings: MHM While at School

Caregivers and community leaders reported that the lack of adequate facilities at schools for girls to manage their periods resulted in menstruating girls missing school unnecessarily.

A male community leader discussed the role that distance to school played for female students as not having access to a washroom facility both while in transit to school and while at school may deter them from attending school in the first place. Having schools closer to the community as well as having washroom facilities were perceived as a way to mitigate this problem.

"At our friends' schools, we see that there are bathrooms. Children bathe right there. They go together just as if they are going to be chatting there but then they will bath and go back to classes. But just because the child is in her period, and she should be staying home? No. That is the problem here."

—Female caregiver

"Long distance to school is one of the factors that is affecting girls to continue with their studies. If schools were nearby or not too far, girls could have managed to go to school even when they are experiencing menses, or they could manage to reach the school and find the changing rooms that are being built in some schools. Construction of changing rooms and provision of sanitary pads could help girls to clean up themselves when they are doing menses and they could continue attending classes or concentrating on their studies."

—Male community leader

11. Rural Results: School-Related Safety and GBV

Key Findings

- Based on definitions from USAID's SR-GBV measurement toolkit:
  - Eighty- four percent of retrospective cohort students and 88.4 percent of prospective cohort students reported experiencing any discipline involving corporal punishment at school.
  - 90.5 percent of primary schools and 98.3 percent of secondary schools report any form of disciplinary practice involving corporal punishment used by teachers.
- Sixty-three percent of retrospective cohort students who had transitioned to Form 1 in a public secondary school felt safe traveling to/from school, compared to 76.7 percent of prospective cohort students in the comparison group and 85.8 percent in the treatment group (p=0.030).
- Less than five percent of retrospective cohort girls currently attending school missed any days of school due to SR-GBV concerns during the past school term. Approximately 84 percent of retrospective cohort girls currently in Form 1 and 62 percent of all prospective cohort girls reported experiencing one or more sexual violence acts at least once during the current school year. Qualitative respondents reported only a few incidences of physical or sexual violence against girls at school.

11.1 Disciplinary Practices Involving Corporal Punishment at School

Caregiver Support for Physical Punishment by Teachers or Administrators in School

Approximately one-third of caregivers in the retrospective cohort agreed that teachers or administrators should be allowed to physically punish children at school. The percent was slightly higher, approximately 40 percent, in the prospective cohort (Table 47).

Table 47. Caregiver support for physical punishment by teachers or administrators in school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Caregiver strongly agrees or agrees that teachers or administrators should be allowed to physically punish children at school	33.4	33.1	0.957	38.9	40.5	0.714
N (caregivers)	**266**	**287**		**380**	**375**	

Note: Unweighted sample sizes and weighted statistics and significance tests.

Student Self-Report of Prevalence Disciplinary Practices Involving Corporal Punishment at School

The prevalence of corporal punishment and extent of corporal punishment acts at school were measured using questions from USAID's SR-GBV measurement toolkit (Dexis Consulting Group, 2020). Students were asked about their experience of disciplinary practices involving corporal punishment in the 2021 academic year if they attended school. If they had dropped out of school, they were asked about the last year they attended school. Students were also asked

about the frequency with which they experienced disciplinary practices involving corporal punishment at school.

In the retrospective cohort, 87.5 (comparison) and 80.8 percent (treatment) of students reported they had experienced at least one form of corporal punishment. In the prospective cohort, 89.1 (comparison) and 87.6 (treatment) reported the same. The most frequently reported form of corporal punishment was being made to work at school as punishment[5], reported by approximately 70–77 percent of students across cohorts. The second most reported punishment was being hit with any type of object such as a cane, stick, belt, or book, reported by 48.8 and 41.0 percent of retrospective students in the comparison and treatment groups, respectively, and 50.6 and 45.4 percent of prospective students in the comparison and treatment groups, respectively (Appendix A, Table A22). In the retrospective cohort, students reported receiving 1.9 (comparison) and 1.4 (treatment) out of the seven types of punishment more than once. In the prospective cohort, students reported receiving 1.7 (comparison) and 1.5 (treatment) out of the 7 types of punishment more than once (Table 48).

Table 48. Student experience of disciplinary practices involving corporal punishment at school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student reported experiencing any discipline involving corporal punishment at school	87.5	80.8	0.129	89.1	87.6	0.572
Extent of punishment acts (mean count out of 7)						
At least once (mean, SD)	2.7 (0.2)	2.2 (0.1)	0.023	2.4 (0.1)	2.2 (0.1)	0.253
More than once (mean, SD)	1.9 (0.2)	1.4 (0.1)	0.015	1.7 (0.1)	1.5 (0.1)	0.193
Many times (mean, SD)	0.7 (0.1)	0.4 (0.1)	0.030	0.6 (0.1)	0.5 (0.1)	0.569
N (students)	**227**	**237**		**381**	**380**	

Notes: Unweighted sample sizes and weighted summary and test statistics. Additional details provided in Appendix A, Table A22.

School Report of Disciplinary Practices Involving Corporal Punishment

The main respondent to the school surveys, usually the head teacher, was asked about the prevalence of disciplinary practices involving corporal punishment among Standard 7 and 8 teachers (for primary schools) and Form 1 teachers (for secondary schools). In both the primary school comparison and treatment groups, 90.5 percent reported that at least one form of the eight forms of punishment was practiced by teachers, as did 98.8 percent of secondary schools. Schools reported a much lower prevalence of physical types of corporal punishment at school than did students. For example, striking the student with an object was reported by only 3.6 percent of primary schools in the treatment group, no primary schools in the comparison group, and no secondary schools. The mean count of disciplinary practices used by teachers was

[5] Being made to work at the school is included in the USAID SR-GBV measurement toolkit as a form of corporal punishment (Dexis Consulting Group, 2020).

reported as 1.4 of out 8 for primary comparison schools and secondary schools, and 1.2 out of 8 for primary treatment schools (Table 49).

Table 49. School report of prevalence of disciplinary practices involving corporal punishment at school

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
School reports any form of disciplinary practice involving corporal punishment	90.5	90.5	0.993	98.3
Extent of disciplinary practices involving punishment (mean count out of 8, SD)	1.4 (0.1)	1.2 (0.1)	0.247	1.4 (0.1)
N (schools)	**32**	**32**		**58**

Notes: Unweighted sample sizes and weighted summary and test statistics. Additional details are in Appendix A, Table A23.

11.2 Perceptions and Experience of Child Safety on the Way to or at School

We adapted questions from the Global Early Adolescent Study baseline survey (n.d.), USAID's Safer Learning Environments toolkit (Education in Crisis and Conflict Network, 2018), and the INSPIRE indicator framework (UNICEF, 2018) to measure baseline levels of students' perceptions and safety experience at and on the way to or from school. Results for all students are presented in Table 50, and results for only female students are presented in Appendix A Table A24A.

> *"Our nearest secondary school … is 13 kilometers distance and [has many] thickets which make it dangerous for a girl child to travel."*
>
> —Male caregiver

> *"Walking to school is a problem for [girls] since [they] will be meeting the boys who will be forcing her into doing unnecessary things like sleeping with them. She might do that in order to protect herself from being disturbed by the boys along the way to school. This is a big problem that a girl child faces, and it is difficult for her to finish school as my colleagues have also said it."*
>
> —Male caregiver

> *"I had a friend. She was coming from [school] and she met a certain man who raped her … She dropped out of school because people laughed at her a lot."*
>
> —Standard 7 female student

Between 86 and 92 percent of students across cohorts agreed or strongly agreed with the statement, "I feel safe at school." Just over 70 percent of students in the retrospective cohort agreed/strongly agreed with the statement, "I feel safe traveling to/from school," compared to 76.7 and 85.8 percent of students in the prospective comparison and treatment groups, respectively. Results for females-only analyses were similar to those for all students (Table A24A). We did not find significant differences in responses among retrospective cohort students by repetition, transition, or dropout status (Table F1).

In the retrospective cohort, only 13.6 and 15.3 percent of students in the comparison and treatment groups, respectively, reported they felt unsafe or threatened in their neighborhood, on the way to school, or in school during the May 24–August 3, 2021, term (if currently in school) or during the last school year they attended (if no longer in school). Sixteen and 9.3 percent of the prospective comparison and treatment groups, respectively, reported the same. A lower percentage of female students compared to all students

reported feeling unsafe or threatened in the retrospective cohort (5.0 and 9.2%) and the prospective cohort (13.7 and 8.1 percent, comparison and treatment groups) (Table A24A).

Among those who felt unsafe, most felt unsafe on the way to and from school—reported by 81.1 and 94.1 of students in the retrospective comparison and controls groups, respectively, and 89.1 percent of students in the prospective cohort. In the retrospective cohort, 56.6 (comparison) and 62.1 (treatment) of students who felt unsafe reported that adults (other than teachers) made them feel this way. In the prospective cohort, 45.2 (comparison) and 56.1 (treatment) of students who felt unsafe reported the same.

Among students who felt unsafe, 32.4 and 55.2 percent of the retrospective comparison and treatment groups, respectively, and 50.5 and 54.3 percent of the prospective comparison and treatment groups, respectively, reported they did not miss any school due to feeling unsafe. However, 50.1 and 30.1 percent of the retrospective comparison and treatment groups, respectively, and 23.0 and 22.6 of the prospective comparison and treatment groups, respectively, reported they missed an average of two to five days a month because they felt unsafe.

Across cohorts, three to seven percent of caregivers whose child was in school reported the child missed school because they (the caregiver) felt they would be unsafe at or on their way to/from school during the past school term. Among those caregivers who kept their child home, 28.5 and 20.0 of caregivers in the retrospective cohort comparison and treatment group, respectively, and 24.7 and 39.1 of caregivers in the prospective cohort comparison and treatment group, respectively, kept their child home four or more days in the last school term (Table 50).

Table 50. Student safety at and on the way to/from school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student agrees/strongly agrees with statement on student safety						
I feel safe at school	86.1	89.5	0.371	86.1	92.3	0.067
I feel safe traveling to/from school	71.4	72.2	0.880	76.7	85.8	0.030
It is safe for children to be in my school	77.6	73.1	0.406	82.2	81.2	0.785
It is safe for children to travel to/from my school	70.4	65.8	0.398	75.7	77.5	0.593
Felt unsafe or threatened in neighborhood, on the way to school, or in school	13.6	15.3	0.656	16.0	9.3	0.020
N (students)	**227**	**237**		**381**	**380**	
Among students who felt unsafe in their neighborhood, on the way to school or in school, where they felt threatened						
On the way to/from school	81.1	94.1	0.128	89.1	89.1	0.999
In their classroom	15.5	6.9	0.311	15.6	7.6	0.230
In school toilets/latrines or changing areas	0.0	0.0	*	1.6	3.3	0.549
Other school	3.4	2.8	0.890	1.1	1.6	0.785
Among students who felt unsafe in their neighborhood, on the way to school or in school, who caused student to feel unsafe						
Teachers	12.6	0.0	0.090	1.7	3.6	0.573

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Adults	56.6	61.3	0.714	45.2	51.6	0.590
Classmates, girls of their age	0.0	1.4	0.437	1.9	2.8	0.757
Classmates, boys of their age	14.2	19.0	0.608	23.3	17.1	0.419
Among students who felt unsafe in their neighborhood, on the way to school or in school, percent that reported school absenteeism due to safety concerns at or on the way to/from school			0.279			0.646
Never absent	32.4	55.2		50.5	54.3	
Less than one day per month	4.5	6.8		20.0	12.5	
2–5 days per month	50.1	30.1		23.0	22.6	
6–10 days per month	13.0	7.9		4.9	10.6	
More than 10 days per month	0.0	0.0		1.6	0.0	
N (students)	**32**	**38**		**66**	**41**	
Caregiver reported student did not go to school because caregiver felt they would be unsafe at or on their way to/from school during the past school term						
Missed any days	4.9	3.0	0.366	4.9	7.2	0.259
Number of days absent, if any			*			*
1	16.0	12.5		36.9	39.2	
2	41.7	30.5		22.4	17.4	
3	13.7	36.2		15.9	4.4	
4 or more	28.5	20.8		24.7	39.1	
N (caregiver with student in school past term)	**160**	**188**		**353**	**357**	

Notes: * Statistical significance tests not conducted due to small cell sizes. Unweighted sample sizes and weighted summary and test statistics.

We asked female students about absenteeism from school due to concerns about SR-GBV. Among girls currently in school in the retrospective cohort, no students in the comparison group and 7.8 percent in the treatment group said they had been absent from school due to SR-GBV concerns. In the prospective cohort, 5.8 (comparison) and 3.7 (treatment) percent reported the same.

Girls not in school were asked the same question about the last school year they attended. Nearly all reported they had never been absent because of SR-GBV concerns (Table 51).

Table 51. School absenteeism among girls due to SR-GBV safety concerns at or traveling to/from school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
During the past school term						
Missed any days	0.0	7.8	0.143	5.8	3.7	0.440
Number of days absent, if any			*			0.436
1	0.0	23.0		33.1	29.1	
2	0.0	0.0		17.5	36.3	
3	0.0	0.0		32.0	0.0	
4 or more	0.0	77.0		17.4	34.6	
N (girls currently attending school)	**51**	**78**		**155**	**154**	
During the academic year			0.012			0.621
Never absent	98.2	90.0		92.6	94.6	
Less than one day/ month	0.9	2.0		3.6	1.6	
2–5 days per month	0.9	6.1		2.1	2.9	
6–10 days per month	0.0	2.0		1.1	0.8	
More than 10 days/ month	0.0	0.0		0.6	0.0	
N (girls)	**99**	**107**		**164**	**165**	

Notes: * Statistical significance tests not conducted due to small cell sizes. Unweighted sample sizes and weighted summary and test statistics.

11.3 Experience of School-Related Psychological, Physical and/or Sexual Violence Against Girls

Questions from USAID's SR-GBV measurement toolkit were used to assess the prevalence of bullying and the prevalence and extent of sexual violence among girls (Dexis Consulting Group, 2020).

Female students were asked about their experience of bullying at school in the last term (if currently in school) or in the last year they attended school (if out of school). In the retrospective cohort, 37.9 (comparison) and 46.5 (treatment) percent of female students reported they had been bullied, as did over half of the prospective cohort (Table 52). A detailed breakdown of bullying acts is presented in Appendix A, Table A24B.

Table 52. Prevalence of bullying at school among girls

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Experienced bullying acts more than once	37.9	46.5	0.413	52.2	53.1	0.904
N (girls)	**99**	**107**		**164**	**165**	

Notes: Unweighted sample sizes and weighted summary and test statistics. Additional information on types of bullying acts provided in Appendix A, Table A24.

Female students were asked if they had experienced 21 types of sexual violence (see Appendix A, Table A25) in the current year if still in school or during the last academic year if they were not currently in school. In the retrospective cohort, 66.1 (comparison) and 81.2 (treatment) percent of female students reported experiencing one or more acts of sexual violence at least once. The mean count of sexual violence acts female students experienced at least once was 1.8 and 3.2 out

of 21 (retrospective comparison and treatment groups, respectively) (Table 53). Female retrospective cohort students who had transitioned to a public or other secondary school were most likely to report experiencing sexual violence during the current academic year (83–85%), compared to 63.7 percent of students who repeated Standard 8 and 74.4 percent (during the last academic year) who dropped out of school (p=0.052*)* (Table F1). Sixty-two percent of female students in the prospective cohort reported experiencing sexual violence, with a mean of 1.7 and 1.6 out of 21 types (prospective comparison and treatment groups, respectively) (Table 53).

In the retrospective cohort, 3.4 and 13.4 percent of comparison and treatment female students, respectively, and 3.7 and 6.1 percent of prospective comparison and treatment students, respectively, reported they were forced to do something sexual other than kissing, including sexual intercourse. In the retrospective cohort, 4.3 and 11.1 percent of comparison and treatment female students, respectively, and 3.7 and 1.3 percent of prospective comparison and treatment students, respectively, reported they were offered food or drink if they did something sexual, like kissing or bad touching, in exchange. Less than 6 percent across cohorts said someone offered to give them a ride in their taxi, motorbike, or bicycle if you did something sexual, like kissing or bad touching, in exchange. Less than 5 percent of female students across cohorts said they were offered something like a cell phone, airtime, radio, or jewelry if they did something sexual, like kissing or bad touching, in exchange (Appendix A, Table A25).

Table 53. Prevalence and extent of sexual violence among girls

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Reported experiencing one or more sexual violence acts at least once	66.1	81.2	0.051	62.1	61.5	0.933
Mean count of sexual violence acts experienced (out of 21)						
At least once (mean, SD)	1.8 (0.3)	3.2 (0.4)	0.006	1.7 (0.3)	1.6 (0.2)	0.719
More than once (mean, SD)	1.4 (0.3)	2.2 (0.4)	0.094	1.0 (0.2)	1.0 (0.2)	0.938
Many times	0.6 (0.2)	0.8 (0.2)	0.407	0.4 (0.1)	0.3 (0.1)	0.536
N (girls)	**99**	**107**		**164**	**165**	

Notes: Unweighted sample sizes and weighted summary and test statistics. Detailed information on sexual violence acts provided in Appendix A, Table A25.

Qualitative Findings: Experience of School-Related Physical and/or Sexual Violence Against Girls

Qualitative respondents reported only a few incidences of physical or sexual violence against girls at school. Several reported accounts of friends who were raped by relatives, stepfathers, and others unrelated to school. A few caregivers and students expressed concerns about inappropriate sexual relationships with adults, such as teachers or community members who wanted sex in exchange for assisting girls with school-related fees.

"She knocks off at 1:30 pm and she will be coming home at 6:00 o'clock and saying she had a punishment and yet she is lying. Or sometimes she will be escorted by the teacher she is dating."

—Female caregiver

"Some people when they ask for an exam fee [from a community member], they are told that for me to give you, I have to have sex with you."

—Standard 7 female student

"I heard a rumor but it really happened that a teacher coaxed a student to have sex with him in exchange of good grades … After starting [a] sexual affair the student got pregnant and the teacher responsible for the pregnancy did not help her to pass exams as initially agreed so she decided to quit school."

—Standard 7 male student

12. Rural Results: Gender and GBV Attitudes and Norms

Key Findings

- Across cohorts and study groups, students indicated gender-equitable attitudes toward education on approximately two-thirds of nine gender-related statements.
- Caregiver responses across cohorts and study groups to the Gender Norms and Attitudes Scale indicated more egalitarian beliefs for both the rights and privileges of men subscale and the equity for girls subscale.
- Students in both cohorts and study groups believed dating violence was unacceptable: between 91 to 94 percent of student responses to nine statements indicated negative attitudes towards dating violence.
- Between 14 to 16 percent of caregivers across cohorts and study groups agreed that a husband is justified in hitting or beating their wife in at least one of five circumstances.

12.1 Student Gender Norms and Attitudes

Students were asked if they disagreed or agreed with nine gender-related statements adapted from the USAID SR-GBV measurement toolkit (Dexis Consulting Group, 2020), the Global Early Adolescent Study, and the Gender Norm Attitudes Scale (Nanda, 2011). Example statements include "Boys are smarter than girls" and "It is important that sons have more education than daughters" (see Appendix A, Table A29). Students indicated gender-equitable attitudes toward education on approximately two-thirds of the statements on average across cohorts (Table 54).

Table 54. Education gender norms and attitudes among students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Mean percent of responses indicating gender-equitable attitudes toward education (9 items) (mean, SD)	68.2 (1.4)	69.1 (1.4)	0.663	64.9 (1.2)	66.8 (0.8)	0.215
N (students)	**222**	**233**		**377**	**376**	

Notes: Unweighted sample sizes and weighted summary and test statistics. Detailed information on responses to gender-equitable education attitude items is presented in Appendix A, Table A29.

12.2 Caregiver Gender Norms and Attitudes

Caregivers responded to a 14-item gender norms and attitudes scale (GNAS; Nanda, 2011) that included a rights and privileges of men subscale and an equity for girls subscale (see Appendix A, Table A30). The rights and privileges of men subscale included ten statements such as "It is important that sons have more education than daughters" to which respondents answered on a five-point scale (lowest strongly agree to highest strongly disagree). Responses to the ten rights and privileges of men subscale items were summed, with higher scores corresponding to less

agreement with men having more rights and privileges than women, reflecting more egalitarian beliefs. The equity for girls subscale contained four statements, such as "Daughters should have just the same chance to work outside the home as sons," that respondents indicated their agreement with using a five-point scale. The equity for girls subscale was reverse scored such that a lower score represented a traditional response and a higher score an egalitarian response.

The average rights and privileges of men score was approximately 35 points across study cohorts, with a good internal reliability statistic (Cronbach's alpha = 0.8160). Given that the potential median score is 27.5 points, the average baseline score indicates more egalitarian beliefs among the study sample. The mean equity for girls subscale score was 15 (out of a possible 20) across cohorts, also indicating more egalitarian beliefs; this subscale had a good internal reliability statistic (Cronbach's alpha = 0.8103). The mean overall GNAS score was approximately 50 points across cohorts (Cronbach's alpha = 0.7287) (Table 55).

Table 55. Caregiver Gender Norm Attitudes Scale

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Rights and privileges of men subscale (5–50) (mean, SD)	33.7 (0.9)	35.4 (0.7)	0.166	35.8 (0.5)	35.3 (0.5)	0.503
Equity for girls subscale (4–20) (mean, SD)	14.9 (0.3)	14.7 (0.3)	0.557	15.4 (0.3)	14.8 (0.3)	0.168
GNAS scale (9–70) (mean, SD)	48.7 (0.9)	50.0 (0.8)	0.268	51.2 (0.5)	50.1 (0.6)	0.198
N (caregivers)	**255**	**279**		**365**	**360**	

Notes: Rights and privileges of men subscale Cronbach's alpha = 0.8160; Equity for girls subscale Cronbach's alpha = 0.8103; GNAS Cronbach's alpha = 0.7287. Unweighted sample sizes and weighted summary and test statistics. Detailed information on responses to caregiver GNAS items is provided in Appendix Table A, A30.

12.3 Attitudes towards GBV

Students reported their agreement with seven statements on dating violence (see Append A, Table A31), such as "Hitting a boyfriend or girlfriend is not a big deal" (Dexis Consulting Group, 2020). Student responses in both cohorts indicated they believed dating violence was unacceptable—between 91–94 percent of student responses expressed negative attitudes towards dating violence.

To gauge caregivers' attitudes toward domestic violence, we asked them whether they agreed or disagreed with five circumstances under which a husband might beat his wife, such as "A husband is justified in hitting or beating his wife if she argues with him" (based on the 2020 UNICEF MICS updated questionnaires). The percent of caregivers that agreed that a husband is justified in hitting or beating their wife in at least one of the five circumstances was low, ranging from 14–16 percent across cohorts (Table 56).

Table 56. Student and caregiver attitudes towards gender-based violence

	Retrospective cohort			Prospective Cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student attitudes toward dating violence						
Mean percent of responses indicating non-acceptability of dating violence (7 items)	93.4 (0.9)	93.5 (1.4)	0.929	91.4 (1.3)	91.9 (1.0)	0.769
N (students)	**227**	**237**		**381**	**380**	
Caregiver attitudes towards domestic violence						
State that a husband is justified in hitting or beating his wife in at least one of five circumstances	16.0	15.5	0.860	13.8	15.6	0.649
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: Unweighted sample sizes and weighted summary and test statistics. Detailed information on responses to student dating violence and caregiver domestic violence questions is provided in Appendix A, Table A31.

13. Rural Results: Marriage

Key Findings

- Less than two percent of prospective cohort students and 10.4 percent of retrospective cohort students had ever been married or in a union.
- Early marriage: Approximately two percent of students across cohorts and study groups agree that it is acceptable for a girl or a boy to get married before age 15 years. No students reported being married/in union before age 15.
- Child marriage: Approximately six percent of students across cohorts and study groups agree that it is acceptable for a girl or boy to get married before age 18 years. Approximately 10 percent of out-of-school youth in the retrospective cohort reported being married/in union before age 18, compared to less than one percent of students in the prospective cohort.
- Forced marriage: Ninety-two percent of students across cohorts and study groups agreed that boys and girls have the right to refuse an arranged marriage. Eight retrospective cohort female students and one prospective cohort female student reported they were forced into marriage.
- Qualitative respondents highlighted several factors that contribute to CEFM:
    - Female and male students reported girls who experience early pregnancy are forced by their caregivers to marry the child's father.
    - Poverty is a major driver of early marriage, as students who are not able to pay school fees drop out of school and opt for marriage.

13.1 Marriage Ideals and Expectations

Across cohorts, students reported the ideal age for girls to be married was 21 or 22 years, and for boys, 25–28 years. Unmarried students reported both the ideal age they would like to get married and the actual age they thought they would get married as 25 or 26. Across cohorts, caregivers similarly reported the ideal age when girls should marry as 21 and for boys, 24. However, caregivers reported the ideal age when their child (the sampled student) should marry at 26 or 27 (Table 57).

Table 57. Student and caregiver marriage ideals and expectations

	Retroective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student ideals and expectations						
Ideal age for a girl to get married	21.2 (0.3)	21.6 (0.3)	0.373	22.0 (0.3)	21.5 (0.2)	0.240
N (students)*	**225**	**233**		**378**	**373**	
Ideal age for a boy to get married	25.3 (0.8)	28.2 (1.8)	0.147	25.2 (0.7)	26.7 (0.9)	0.265
N (students)*	**227**	**237**		**381**	**380**	

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Among unmarried students						
Ideal age you would like to get married	25.6 (0.3)	26.6 (0.5)	0.102	25.8 (0.4)	25.6 (0.3)	0.690
N (unmarried students) *	**209**	**217**		**365**	**358**	
Actual age when you think you will get married	26.4 (0.3)	26.8 (0.3)	0.424	26.3 (0.3)	26.0 (0.3)	0.516
N (unmarried students) *	**187**	**205**		**360**	**351**	
Caregiver ideals						
Age when a girl should get married	20.9 (0.2)	21.2 (0.2)	0.202	21.1 (0.2)	20.9 (0.2)	0.440
N (caregivers) *	**264**	**280**		**376**	**371**	
Age when a boy should get married	23.5 (0.2)	23.7 (0.3)	0.480	23.8 (0.2)	23.9 (0.2)	0.878
N (caregivers) *	**262**	**276**		**374**	**368**	
Ideal age when student will get married	26.7 (0.2)	27.6 (0.2)	0.002	26.6 (0.2)	26.7 (0.2)	0.807
N (caregivers) *	**255**	**267**		**371**	**368**	

* Notes: The following students and caregivers were excluded from analysis: * 16 students responded “don’t know” for ideal age of marriage for girls and 32 “don’t know” for boys. Among unmarried students, 8 indicated they would ideally never marry and 47 “don’t know” for ideal age to be married. When asked when they would actually marry, 7 unmarried students reported they would never marry and 59 “don’t know." Among caregivers, 17 responded "don't know" for ideal age for girls to marry and 28 "don't know" for boys. When asked about the sampled student, 11 caregivers reported the student was already married, 22 that the student would never get married, 13 "don't know," and one age 0 years.

13.2 Child, Early, and Forced Marriage Attitudes and Norms

Less than 3 percent of students across cohorts agreed/strongly agreed that it was acceptable for a boy or girl to marry before the age of 15. Caregivers reported the disadvantages of early child (before age 15) marriage for girls. Approximately 75 percent across cohorts said a disadvantage was increased risk of pregnancy-related injuries and 70 to 75 percent across cohorts reported young girls were more likely to die in childbirth than women. Approximately 20 to 30 percent of caregivers across cohorts said loss of education was a disadvantage of early child marriage for girls and seven to 14 percent said it increased the risk of violation and exploitation of girls (Table 58).

Table 58. Student and caregiver attitudes and norms toward early marriage

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student strongly agrees/agrees with statement						
It is acceptable for a girl to get married before she is 15 years old	1.1	2.9	0.179	2.3	2.4	0.924
It is acceptable for a boy to get married before he is 15 years old	1.2	1.7	0.652	1.8	2.3	0.663
N (students)	**227**	**237**		**381**	**380**	

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Caregiver-reported disadvantages of early child marriage for girls (before age 15)						
Increased risk of pregnancy-related injuries, like obstetric fistula	75.4	74.9	0.931	72.0	75.0	0.473
Young girls more likely to die in childbirth than women	76.0	69.3	0.127	74.5	70.4	0.311
Loss of education	19.8	27.5	0.059	20.8	29.7	0.069
It ends childhood	14.3	16.6	0.481	19.6	14.6	0.169
Children of child brides more likely to die in first year of life	15.2	10.9	0.291	15.5	9.9	0.062
At higher risk of HIV and other sexually transmitted infections	5.0	9.8	0.047	6.9	8.4	0.527
It violates their rights	5.2	6.6	0.578	7.3	7.4	0.967
Increased risk of violence, exploitation	14.1	12.5	0.692	12.4	7.0	0.075
Minimizes girls' job opportunities	3.4	5.4	0.338	6.4	2.9	0.045
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

Half or less of students correctly reported that 18 as the legal age of marriage in Malawi. Under 8 percent of students across cohorts agreed/strongly agreed that it was acceptable for a girl or boy to marry before the age of 18. At the same time, 35–40 percent of students across cohorts agreed/strongly agreed that most people in their community approve of marriage before age 18. A slightly higher percentage of caregivers (37–44% across cohorts) agreed/strongly agreed that most people in their community approve of marriage before age 18.

Over half of caregivers correctly reported the legal age of marriage in Malawi as 18. Less than 3 percent said they would marry off their son or daughter before age 18, and 87 and 92 percent of caregivers across cohorts believed it is harmful to marry before age 18 (Table 59).

> *"We should be hard working at school so that we should never think of getting married early."*
>
> —Standard 7 male student

> *"[A girl] should get educated, after school, she should get a job and afterwards get married and start bearing children and support the children since she will be working."*
>
> —Standard 7 female student

Table 59. Student and caregiver attitudes and norms toward child marriage

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student correctly reported age 18 as the legal age of marriage in Malawi	53.9	52.7	0.847	45.0	47.3	0.656
Student strongly agrees/agrees with statement						
It is acceptable for a girl to get married before she is 18 years old	5.7	5.4	0.889	5.7	7.8	0.302
It is acceptable for a boy to get married before he is 18 years old	5.4	5.6	0.945	5.3	6.8	0.394

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Most people in my community approve of child marriage (before age 18)	38.4	38.9	0.936	36.5	34.9	0.777
N (students)	**227**	**237**		**381**	**380**	
Caregiver strongly agrees/agrees with statement						
Most people in my community approve of child marriage (before age 18)	38.6	42.1	0.527	36.8	43.5	0.253
N (caregivers)	**264**	**286**		**377**	**374**	
Caregiver correctly reported age 18 as the legal age of marriage in Malawi	54.8	53.0	0.735	55.9	50.2	0.203
Caregiver would marry off daughter(s) before age 18	2.3	2.6	0.796	1.6	1.2	0.647
Caregiver would marry off son(s) to a girl younger than 18	1.5	2.3	0.529	1.7	1.0	0.415
Caregiver believes it is harmful to get married before age 18	88.1	87.4	0.838	89.1	92.0	0.274
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: These are unweighted sample sizes and weighted summary and test statistics.

Between 88–95 percent of students across cohorts agreed/strongly agreed that boys and girls have the right to refuse an arranged marriage. Less than 8 percent across cohorts agreed/strongly agreed that if a girl or boy in their community experienced GBV, they would be encouraged to marry the perpetrator.

Between 14–19 percent of caregivers across cohorts reported their family engaged in dowry/bride price practices, and between 60–70 percent across cohorts agreed/strongly agreed that their family opposed the practice of dowry/bride price. Nearly all caregivers agreed/strongly agreed that both boys and girls have the right to refuse an arranged marriage. Approximately 17–21 percent of caregivers across cohorts agreed/strongly agreed that most people in their community approve of dowry/bride price practices. Less than 6 percent across cohorts agreed/strongly agreed that if a boy or girl experiences GBV, they are encouraged to marry the perpetrator (Table 60).

> *"A parent can only wish their child to get married after she has finished school, she has landed a job, and she is self-reliant. This is because marriage is not the epitome of a boy or a girl that they should be rushing into. One can go up to 40 years before getting married so long she has something substantive to do. Those girls who get married in their teens, be it at 18 or 17 usually it is because they don't have anything positive to do."*
>
> —Male caregiver

Table 60. Student and caregiver attitudes and norms toward forced marriage

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student strongly agrees/agrees with statement						
Boys have the right to refuse an arranged marriage	92.6	94.5	0.462	88.1	93.6	0.059
Girls have the right to refuse an arranged marriage	90.6	94.2	0.201	89.6	93.4	0.139
In my community, if a girl/boy experiences GBV they are encouraged to marry perpetrators	5.6	7.1	0.617	6.3	7.8	0.506
N (students)	**227**	**237**		**381**	**380**	
Family engages in dowry/bride price practices	19.1	14.0	0.430	15.6	18.1	0.676
N (caregivers)	**266**	**287**		**380**	**375**	
Caregiver strongly agrees/agrees with statement						
My family opposes the practice of dowry/bride price	59.2	67.5	0.189	68.7	70.4	0.736
N (caregivers)	**260**	**280**		**339**	**366**	
Boys have the right to refuse arranged marriage	96.5	96.3	0.912	97.6	95.0	0.093
N (caregivers)	**266**	**287**		**379**	**373**	
Girls have the right to refuse an arranged marriage	95.8	97.1	0.511	97.7	95.2	0.120
N (caregivers)	**266**	**286**		**379**	**374**	
Most people in my community approve of dowry/bride price practices	20.9	16.6	0.544	19.2	19.8	0.922
N (caregivers)	**256**	**278**		**368**	**365**	
In my community, if a girl/boy experiences GBV they are encouraged to marry perpetrators	5.3	5.3	0.993	3.4	5.4	0.264
N (caregivers)	**265**	**286**		**379**	**371**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

13.3 Married or Cohabitating Students

In the retrospective cohort, 29.3 (comparison) and 32.0 (treatment) percent of out-of-school youth reported they had ever married or been in a union, compared to less than 1.3 percent of in-school youth. Less than two percent of students in the prospective cohort reported they had ever been married or in a union. No students reported marrying before age 15 in either cohort. In the retrospective cohort, 10.0 (comparison) and 11.9 (treatment) percent of out-of-school youth reported they first married before age 18, compared to less than one percent of in-school youth. In the prospective cohort, less than two percent reported they first married before age 18.

Additional analysis of marriage indicators by schooling status is presented in Appendix D Tables D2A–D3B, including statistical testing by schooling status and study arm. Retrospective cohort students in both the comparison and treatment groups who were not in school were

approximately 30 percentage points more likely to have ever been married/in union compared to their in-school peers (p<0.001), and were approximately 10 percentage points more likely to have first married before age 18 years (p<0.01).

All ever-married/in union students reported they and their partner chose each other. Over 40 percent of students in the retrospective cohort married due to pregnancy, as did six of the seven ever-married/in union students in the prospective cohort. In the retrospective cohort, 65.9 (comparison) and 51.1 (treatment) felt they married or cohabitated when they were too young, as did four of the seven ever-married/in union students in the prospective cohort (Table 61).

Table 61. Marriage and cohabitation among students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Ever married or in union	*11.5*	*9.3*	*0.516*	*1.3*	*1.6*	*0.810*
In school youth	0.0	1.3				
Out of school youth	29.3	32.0				
Currently married or in union	*10.2*	*8.0*	*0.486*	*1.3*	*1.6*	*0.810*
In school youth	0.0	0.7				
Out of school youth	26.0	28.4				
First married/in union before age 15	0.0	0.0		0.0	0.0	
First married/in union before age 18	*3.9*	*3.8*	*0.936*	*0.4*	*1.3*	*0.277*
In school youth	0.0	0.8				
Out of school youth	10.0	11.9				
N (students)	**227**	**237**		**381**	**380**	
Among ever-married students						
Felt too young the first time ever married or began cohabitating	65.9	51.1	0.302	2*	2*	
Spouse is 10 or more years older	0*	0*		1*	0*	
Married couple chose each other	100.0	100.0		100.0	100.0	
Married current/most recent spouse due to pregnancy	44.2	43.3	0.959	3*	3*	
N (ever-married students)	**29**	**20**		**3**	**4**	
Among ever-married female students						
Polygynous union	1*	2*		0*	0*	
Marriage was payment of a debt	2*	0*		0*	0*	
Forced into marriage	6*	2*		1*	0*	
N (ever-married female students)	**26**	**15**		**3**	**4**	

Notes: * Unweighted response frequencies are presented due to low/zero cell sizes. Four retrospective cohort students are currently separated, and two retrospective cohort students are currently divorced. One prospective cohort student excluded from age first married because did not know her age when first married. Among ever-married students, 10/29 comparison group and 9/20 treatment group retrospective cohort students were married before age 18 (N=49); 1/2 comparison group and 3/4 treatment group prospective cohort students were married before age 18 (N=6). Among ever-married students, one student in retrospective cohort felt they were older than ordinary the first time they were ever married or began cohabitating. Only one student (prospective cohort) had spouse who was 10 or more years older (student was 18 and spouse was 31). The 8 retrospective and 1 prospective cohort students who reported they were forced into marriage represent 2.2 percent of the total retrospective comparison group, 0.8 percent of the total retrospective treatment group, 0.4 percent of the total prospective comparison group, and 0.0 percent of the total prospective treatment group.

13.4 Qualitative Findings: Attitudes Towards Early and Forced Marriage

> *"She got married because her parents were disappointed in her and sent her to her boyfriend's home after she got pregnant."*
>
> —Standard 7 male student

Respondents highlighted a number of factors that contribute to early and forced marriages. For example, as reported by some quantitative survey respondents, female and male students reported that girls who experience early pregnancy are forced by their caregivers to marry the child's father.

A community leader noted that child abuse in the parental home contributes to early marriage as it is perceived as a way to escape the abuse.

Respondents also felt that poverty was a major driver of early marriage, as students who are not able to pay school fees drop out of school and opt for marriage.

A few caregivers reported that cultural norms encouraged early marriage for girls in some communities.

> *"It has been observed that once girls are being abused or ill-treated, they end up getting married while still young … Same applies to boys. When boys are being abused, they end up getting married early or they end up engaging in risky behaviors like robbery."*
>
> —Female community leader

> *"In this community, most of the people fail to go further with their studies due to lack of money to pay for school fees and they end up getting married earlier."*
>
> —Standard 7 male student

> *"When we ask our parents in this community to give us money for the school, they refuse. They say just leave school and get married."*
>
> —Standard 7 female student

> *"In our area they don't really encourage a girl child to go to school. Almost three-quarters of girls here are married, even before reaching marriage age … people don't like a girl child to be educated, rather they should be married and they should have grandchildren."*
>
> —Male caregiver

14. Rural Results: Sexual and Reproductive Health

Key Findings

- Thirty-seven percent of retrospective cohort students and 11.5 percent of prospective cohort students had ever had sex. Two percent of retrospective cohort and 4.1 percent of prospective cohort students sexually debuted before age 15 years.
- Sixty-eight percent of sexually active students across cohorts and study groups used a modern family planning method during the past 12 months.
- Among female retrospective cohort students in both study groups, 28.4 percent of out-of-school females had ever had a live birth (compared to 2.1 percent in-school females), and 13.2 percent had a live birth before age 18 (compared to 1.4 percent of in-school females). Both female and male student qualitative respondents reported numerous examples of girls from their community who dropped out of school due to pregnancy.
- Among male retrospective cohort students in both study groups, 7.3 percent of out-of-school males had ever fathered a live birth (compared to 2.3 percent in-school males), and 2.9 percent had fathered a live birth before age 18 (compared to 0 percent of in-school males).
- Fifty-five percent of retrospective cohort students had ever tested for HIV and know the results, and 35.5 percent tested for HIV in the last 12 months. HIV testing rates were lower among prospective cohort students, with 38.9 percent reporting ever testing for HIV and knowing the results, and 21.6 percent testing for HIV in the last 12 months.

14.1 Sexual Behavior and Health

In the retrospective cohort, 40.4 and 33.9 percent of students in the comparison and treatment groups, respectively, reported they had ever had sex, as did approximately 11 percent of the prospective cohort. Out-of-school youth were more likely to have ever had sex, with 56.5–67.1 percent of out-of-school youth reporting they had ever had sex, compared to approximately 25 percent of in-school youth.

Among students who ever had sex, 8.1 and 2.7 percent of the retrospective comparison and treatment groups, respectively, and 33.7 and 37.2 percent of the prospective comparison and treatment groups, respectively, reported they first had sex before age 15. Condom use at first sex was reported by approximately 80 percent of the retrospective cohort, and 65.7 (comparison) and 58.7 (treatment) percent of the prospective cohort. Approximately one-quarter of students who had sex in the past 12 months had multiple partners, and 10 or more percent across cohorts reported concurrent sexual partners. About two-thirds of students who had sex in the last 12 months used a condom at last sex. Between nine and 14 percent of students across cohorts had ever had transactional sex with their most current or most recent partner (Table 62).

Additional analysis of sexual debut indicators by schooling status is presented in Appendix D, Tables D2A–D3B, including statistical testing by schooling status and study arm. Out-of-school

retrospective cohort students were over twice as likely as in-school respondents to have ever had sex in both comparison and treatment groups ($p<0.001$), but there was no significant difference in incidence of sexual debut before age 15 years by schooling status.

Table 62. Student sexual behavior

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
All students						
Ever had sex	40.4	33.9	0.265	11.8	11.2	0.841
In school youth	23.2	25.9				
Out of school youth	67.1	56.5				
Sexual debut before age 15	3.3	0.9	0.054	4.0	4.2	0.907
N (students)	**227**	**237**		**380**	**379**	
Students who ever had sex						
Sexual debut before age 15	8.1	2.7	0.103	33.7	37.2	0.788
First partner age-mixing (partner 10+ years older)	0.0	0.0	.	0.0	6.0	0.284
Condom used at first sex	78.9	81.0	0.733	65.7	58.7	0.625
N (students who ever had sex)	**91**	**74**		**42**	**48**	
Students who had sex past 12 months						
Multiple sexual partnerships	25.7	22.7	0.727	26.3	25.1	0.901
Concurrent sexual partnerships	9.9	10.1	0.973	10.9	13.2	0.784
Condom used at last sex	64.8	63.0	0.840	71.9	64.5	0.603
Ever had transactional sex with current/most recent partner	8.6	13.3	0.419	14.0	9.1	0.582
N (students who had sex past 12 months)	**77**	**62**		**34**	**37**	
Students who had sex past 3 months						
Condom used every time	63.7	54.6	0.533	8*	10*	.
Condom never used	30.3	27.6	0.853	4*	5*	.
N (students who had sex past 3 months)	**34**	**32**		**14**	**16**	

Notes: * Unweighted response frequencies are presented due to low/zero cell sizes.

14.2 Fertility Intentions and Family Planning

Across cohorts, students reported they would ideally like to have a mean of 2.6–2.8 children, and that they would like to have their first child at age 25 or 26. Students felt that the best age for a man to have a child was 24 or 25, and for women, 22 (Table 63).

Table 63. Fertility ideals, as reported by students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Ideal number of children student would like (mean, SD)	2.8 (0.2)	2.7 (0.2)	0.825	2.6 (0.1)	2.6 (0.1)	0.944
N (students)	**224**	**235**		**375**	**374**	
Ideal age you would like/have liked to have your first child (mean, SD)	25.2 (0.4)	26.3 (0.4)	0.041	25.4 (0.2)	25.9 (0.3)	0.202
N (students)	**209**	**220**		**346**	**345**	
Best age for a man to have children (mean, SD)	23.9 (0.3)	25.0 (0.3)	0.022	24.2 (0.4)	24.5 (0.3)	0.452
N (students)	**216**	**223**		**360**	**361**	
Best age for a woman to have children (mean, SD)	21.8 (0.4)	22.2 (0.3)	0.424	22.2 (0.3)	22.2 (0.2)	0.991
N (students)	**216**	**231**		**362**	**370**	

Notes: 10 retrospective cohort students and 20 prospective cohort students excluded from own ideal age analysis because did not want to have a child. Unweighted sample sizes and weighted summary and test statistics.

Among students who reported they were sexually active in the past 12 months, approximately two -thirds of the retrospective cohort reported they used a modern family planning method, as did 71.7 and 66.1 percent of the students in the prospective comparison and treatment groups (Table 64).

Table 64. Family planning use among sexually active students, past 12 months

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student or partner did anything or used any method to delay/avoid pregnancy	68.1	68.6	0.965	71.7	66.1	0.708
Use of modern family planning method	68.1	67.1	0.917	71.7	66.1	0.708
N (sexually active past 12 months)	**77**	**62**		**34**	**37**	

Notes: Modern methods include female sterilization, male sterilization, IUD, injectables, implants, pills, male condom, diaphragm, foam, or jelly. Traditional methods refer to standard days method, lactational amenorrhea method, periodic abstinence, and withdrawal.

14.3 Pregnancy or Fathering a Child

In the retrospective cohort, 24.7 and 13.7 percent of female students in the comparison and treatment groups, respectively, reported they had ever been pregnant, as did 2.9 and 4.4 percent of female students in the prospective comparison and treatment groups, respectively. Approximately 13 (comparison) and 9 (treatment) percent of female students in the retrospective cohort had ever had a live birth, as had less than two percent of female students the prospective cohort. In the retrospective cohort, 8.2 (comparison) and 4.4 (treatment) percent of female students were pregnant at the time of survey, as were 1.5 (comparison) and 3.2 (treatment) percent of females in the prospective cohort. Of the 28 female students in the retrospective cohort who had a live birth before age 18, only five wanted to have the child when they did. In the prospective cohort, none of the three students who had a live birth before age 18 wanted to have the child then.

Out-of-school girls in the retrospective cohort were much more likely to have ever been pregnant, pregnant before age 18, ever have a live birth, and have a live birth before age 18 (Table 65).

Information on antenatal care and delivery care is provided in Appendix A, Table A26. Additional analysis of fertility and birth history indictors by schooling status is presented in Appendix D Tables D2A–D3B, including statistical testing by schooling status and study arm.

Table 65. Fertility and birth history, female students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Ever been pregnant	24.7	13.7	0.114	2.9	4.4	0.566
In school girls	1.0	4.3				
Out of school girls	55.1	43.3				
Pregnant before age 18	12.1	7.6	0.304	1.9	2.3	0.776
In school girls	1.0	2.4				
Out of school girls	26.2	23.8				
Ever had a live birth	12.7	9.3	0.473	1.4	1.3	0.930
In school girls	0.0	3.5				
Out of school girls	29.0	27.5				
Had a live birth before age 18	6.4	4.5	0.547	0.7	1.3	0.673
In school girls	0.0	2.4				
Out of school girls	14.5	11.0				
Currently pregnant	8.2	4.4	0.350	1.5	3.2	0.381
N (female students)	**110**	**120**		**189**	**189**	
Had a live birth before age 18*	7	7		1	1	
Total number of live births*	1	1		1	1	
Desired timing of first pregnancy*						
Wanted to have a child then	2	3		0	0	

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Wanted to wait until later	6	3		1	1	
Did not want to have any children at all	8	6		1	0	
N (female students who ever had live birth)	**16**	**12**		**2**	**1**	

Notes: Unweighted frequencies and weighted estimates and test statistics. *Unweighted frequencies reported due to low/zero cell sizes.

Less than five percent of male students in the retrospective cohort reported they had fathered a live birth, as did less than one percent of male students in the prospective cohort. Of the seven male students in the retrospective cohort who fathered a child before age 18, only one wanted to have the child when they did. In the prospective cohort, the one male student that fathered a child before age 18 did not want to have the child at that time (Table 66). Appendix D Tables D2A–D3B present additional analysis of birth history variables among male students by schooling status.

Table 66. Birth history, male students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Ever fathered a live birth	3.0	4.8	0.548	0.0	0.7	0.344
Ever fathered a live birth	*3.0*	*4.8*	*0.548*	*0.0*	*0.7*	*0.344*
In school boys	1.2	3.3				
Out of school boys	6.4	8.4				
N (male students)	**117**	**117**		**192**	**191**	
Fathered a live birth before age 18*	2	0		0	1	
Total number of women you have fathered children with*	1	1		0	1	
Desired timing of first pregnancy*						
Wanted to have a child then	1	0		0	0	
Wanted to wait until later	1	0		0	0	
Did not want to have any children	2	3		0	1	
N (male students who ever fathered a child)	**4**	**3**		**0**	**1**	

Notes: *Unweighted frequencies reported due to low/zero cell sizes. One male student in the comparison group prospective cohort reported being unsure if he had ever fathered a live birth. All respondents who ever fathered a live birth reported ever fathering children with only one woman each.

Qualitative Findings: Early Pregnancy

While qualitative respondents reported they had never been pregnant themselves, both female and male students reported numerous examples of girls from their community who dropped out of school due to pregnancy.

Although some caregivers stated that girls who get pregnant early are encouraged to go back to school after delivery, female students discussed the disparaging environment they may experience, compelling them to drop out.

Most respondents felt that early pregnancy was common in rural areas and that the cases of early pregnancy increased during the COVID-19 pandemic.

Students and community leaders also reported that some girls engaged in transactional sex to have their basic needs met due to poverty and lack of support from their caregivers and then become pregnant.

"Her parents demanded that she must go and stay with the boy who impregnated her. They did not want to look after her anymore … She has stopped school before finishing."

—Standard 7 female student

"It affected her education [in] that she dropped out of school since the other children would tease her about the pregnancy every time she goes to school."

—Standard 7 female student

"They started having relationships so that they may be helped but unfortunately, they got pregnant."

—Standard 7 female student

"They engage in sexual activity with someone not their age, they sleep with adults who destroy their future. The adults use money in order to defeat their will to resist, they want to destroy their innocence."

—Male community leader

14.4 Adolescent Sexual Behavior Opinions and Norms

Students were asked whether they agreed or disagreed with a series of statements related to adolescent sexual behavior and norms; the statements were taken from the Global Early Adolescent Study gender norms module (GEAS). Across cohorts, 82–87 percent of students agreed/strongly agreed that it is a girl's responsibility to prevent pregnancy and that older boys and men were wrong to make sexual comments to girls when they were walking to school. Three-quarters or more agreed/strongly agreed that most of the time if a girl says no to sex, her boyfriend will leave her, and that girls who have boyfriends are irresponsible. About three-quarters of students in the retrospective cohort, and 72.8 (comparison) and 63.2 (treatment) percent of students in the prospective cohort agreed/strongly agreed that adolescent boys fool girls into having sex. Less than eight percent of students across cohorts agreed/strongly agreed that it is acceptable for girls to take things such as a cell phone, money, or jewelry in exchange for sexual favors (Table 67).

Table 67. Adolescent sexual behavior gender norms

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Strongly agree or agree with adolescent sexual behavior gender norm statement						
It's the girl's responsibility to prevent pregnancy	82.4	86.1	0.331	83.7	86.8	0.240
Older boys and men are wrong to make sexual comments to girls when the girls are walking to school	83.0	83.2	0.965	82.4	82.7	0.936
Most of the time, if an adolescent girl says "no" to sex, her boyfriend will dump her	78.0	83.6	0.075	78.5	76.5	0.667
Girls who have boyfriends are Irresponsible	76.3	75.7	0.911	74.7	76.1	0.746
Teenagers should not engage in touching, kissing, or sexual activity unless both partners are comfortable with it.	69.6	78.2	0.187	64.5	69.7	0.328
Adolescent boys fool girls into having sex	75.5	73.0	0.582	72.8	63.2	0.023
When girls and boys are dating, it is important that the girl does what the boy wants her to do.	15.4	11.6	0.391	19.1	13.2	0.130
It is ok for an adolescent boy to have sex as long as he avoids getting a girl pregnant	3.5	5.9	0.296	7.9	6.9	0.648
In order for a boy to be accepted by his teenage friends he should have sex with his girlfriend.	8.2	8.5	0.928	9.0	5.9	0.299
It is ok for an adolescent girl to have sex as long as she avoids getting pregnant	2.9	3.0	0.980	6.4	4.6	0.321
It is acceptable for girls to take things such as a cell phone, money, or jewelry in exchange for sexual favors.	7.3	2.0	0.017	3.8	3.6	0.922
N (students with complete responses)	**220**	**225**		**361**	**348**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

14.5 HIV Knowledge and Testing

Student HIV Knowledge

Nearly all students had ever heard of HIV or AIDS. Approximately 55 percent of students in the retrospective cohort, and 44.2 (comparison) and 49.8 (treatment) percent of students in the prospective cohort had comprehensive knowledge about HIV prevention. Knowledge of mother to-child transmission ranged from 50–61 percent across cohorts (Table 68).

Table 68. HIV knowledge among students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Ever heard of HIV or AIDS	99.8	97.6	0.006	95.8	95.7	0.969
N (students)	**227**	**237**		**381**	**380**	
Comprehensive knowledge about HIV prevention	54.5	54.9	0.927	44.2	49.8	0.266
Knowledge of mother-to-child transmission of HIV	57.8	61.2	0.625	56.6	49.5	0.092
N (students who have heard of HIV or AIDS)	**226**	**232**		**364**	**365**	

Notes: Comprehensive knowledge about HIV prevention is the percentage of respondents who correctly identify the two ways of preventing the sexual transmission of HIV (using condoms and limiting sex to one faithful uninfected partner), who know that a healthy-looking person can be HIV-positive, and who reject the three most common misconceptions about HIV transmission (mosquito bites, sharing food, or supernatural means). Knowledge of mother-to-child transmission is the percentage of respondents who correctly identify all three means (transmission during pregnancy, during delivery, and by breastfeeding) of mother-to-child transmission of HIV. These are unweighted sample sizes and weighted summary and test statistics. Detailed information about knowledge items is presented in Appendix A, Table A28.

HIV Testing and Perceived HIV Risk

Over 90 percent of students across cohorts knew where they could be tested for HIV. Approximately 55 percent of students in the retrospective cohort, and 41.4 (comparison) and 36.7 (treatment) of students in the prospective cohort had ever tested for HIV and know the results. Approximately three-quarters of students across cohorts who had heard of HIV or AIDS perceived they had no risk of contracting HIV.

Nearly all caregivers across cohorts knew where they could be tested for HIV. Approximately 89 and 94 percent of caregivers in the retrospective and prospective cohorts, respectively, have ever tested for HIV and know the results. Approximately 20 to 26 percent of caregivers across cohorts reported that the chances the sampled student would *not* get HIV were low (Table 69).

Table 69. Student- and caregiver-reported HIV testing and perceived infection risk

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Students						
Know where to be tested for HIV	97.2	93.0	0.159	90.3	92.2	0.47
N (students who have heard of HIV or AIDS)	**226**	**232**		**364**	**365**	
Ever tested for HIV	55.7	55.7	0.999	42.4	36.9	0.434
Ever tested for HIV and know the results	54.6	55.7	0.903	41.4	36.7	0.499
Tested for HIV in last 12 months	37.4	33.5	0.607	19.7	23.5	0.412
N (students who know HIV test location)	**219**	**216**		**330**	**338**	
Perceived risk of contracting HIV			0.691			0.717
No risk	70.3	75.0		77.7	76.4	
Small	14.5	13.0		11.2	12.2	
Moderate	7.9	5.1		3.8	2.4	
Great	7.4	6.9		7.3	9.0	
N (students who have heard of HIV or AIDS)	**219**	**225**		**353**	**347**	
Caregivers						
Know where to be tested for HIV	98.3	97.4	0.562	99.1	99.3	0.731
Ever tested for HIV	89.0	89.0	0.989	95.1	94.6	0.782
Ever tested for HIV and know the results	89.0	89.0	0.989	94.7	93.6	0.584
Tested for HIV in last 12 months	38.5	43.3	0.368	51.2	50.1	0.828
N (caregivers)	**266**	**287**		**380**	**375**	
Perceived chances that student will NOT get HIV/AIDS			0.104			0.642
High	33.9	43.8		34.6	39.2	
About 50–50	46.0	34.3		39.5	37.7	
Low	20.1	21.9		25.8	23.1	
N (caregivers)	**261**	**276**		**366**	**356**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

15. Rural Results: Effects of the COVID-19 Pandemic

Key Findings

- Over 90 percent of all study households had heard of COVID-19 and approximately 20 percent of household respondents received a COVID-19 vaccination in the past 12 months.
- Among retrospective and prospective cohort households with any children attending school before the COVID-19 school closures, between 33–42 percent of students
- Between 33–42 percent of all children continued their studies at home after the COVID-19 school closures (among retrospective and prospective cohort household children attending school before the COVID-19 school closures).
- Over 60 percent of all study households agreed/strongly agreed that their household was negatively financially impacted by COVID-19, and between 54–60 percent of all households agreed/strongly agreed their household experienced food shortages due to the COVID-19 pandemic and related lockdown/closures.
- Between 9–17 percent of caregivers across cohorts agreed/strongly agreed that girls were spending more time on chores now than before COVID-19, and 7–16 percent agreed/strongly agreed girls were spending more time caring for children and the elderly.
- Qualitative respondents detailed multiple negative consequences of the COVID-19 pandemic:
    - Students discussed feelings of hopelessness and hardship related to unknowns from COVID-19 and school closures.
    - All respondent types reported an increase in student pregnancies and/or marriage during the pandemic which resulted in high dropout rates, especially for girls.
    - Students emphasized that COVID-19 school closures led to decreased exam pass rates, forcing students to repeat a year or drop out of school.
    - Students reported that some of their female peers engaged in risky sexual behaviors due to increased financial pressures at home.

Nearly all households had heard of COVID-19 and approximately 20 percent of household respondents reported they had received a COVID-19 vaccine in the past 12 months. Only four to six percent of households believed a member had been ill with COVID-19, regardless of whether the person(s) had been tested (Table 70).

Table 70. COVID-19 illness and vaccination

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Percent of households receiving a vaccination for COVID-19 in the past 12 months	20.0	18.1	0.714	20.2	20.3	0.980
Percent of households heard about COVID-19 (coronavirus disease) vaccine(s)	88.4	93.2	0.109	95.8	93.7	0.348
Percent of households believe having or having had COVID-19 regardless of having done a test or not	4.6	6.7	0.310	5.1	4.6	0.786
Percent of households believe any household members have or have had COVID-19 regardless of having done a test or not	2.5	3.5	0.573	2.8	3.0	0.874
Percent of households having a friend/relative/neighbor (non-household member) who has been infected with COVID-19? (suspected or confirmed)	3.5	2.8	0.674	3.2	2.6	0.632
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

15.1 Continuation of Education or Learning Activities During COVID-19 School Closures

Households had an average of 1.5 female and 1.5 male children attending school before they were closed due to COVID-19. Approximately 33–42 percent of these students across cohorts continued their studies at home (Table 71).

Among retrospective cohort households with at least one male or female child who was able to continue their studies at home during 2019–2020 COVID-19 closures, 27.5 and 39.3 percent of the comparison and treatment groups, respectively, completed assignments provided by teachers. In the prospective cohort, about one-third of households reported the same. In the retrospective cohort, 21.1 and 11.8 percent of the comparison and treatment groups, respectively, engaged in sessions with a tutor, as did 18–19 percent of the students in the prospective cohort. Fourteen to 19 percent of the retrospective cohort reported the students listened to educational programs on the radio, as did 16–18 percent of the prospective cohort (Table 72).

Among retrospective cohort households with at least one male or female child who was able to continue their studies at home during 2021 COVID-19 closures, 27.5 and 41.1 percent of the comparison and treatment groups, respectively, completed assignments provided by teachers. In the prospective cohort, about one-third of households reported the same. In the retrospective cohort, 22.6 and 14.9 percent of the comparison and treatment groups, respectively, engaged in sessions with a tutor, as did 18–20 percent of the students in the prospective cohort. Sixteen to 23 percent of the retrospective cohort reported the student listened to educational programs on the radio, as did 21 percent of the prospective cohort (Table 73).

Table 71. Average number of students per household who continued their studies during COVID-19 school closures

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Average number of girls per household attending school before schools were closed due to coronavirus (mean, SD)	1.5 (0.1)	1.5 (0.1)	0.976	1.6 (0.1)	1.5 (0.1)	0.396
Average number of girls per household has been able to continue their studies while staying at home during the closure (mean, SD)	0.6 (0.1)	0.6 (0.1)	0.625	0.7 (0.1)	0.6 (0.1)	0.256
Average number of boys per household attending school before schools were closed due to coronavirus (mean, SD)	1.5 (0.1)	1.5 (0.1)	0.739	1.6 (0.1)	1.6 (0.1)	0.923
Average number of boys per household has been able to continue their studies while staying at home during the closure (mean, SD)	0.5 (0.1)	0.6 (0.1)	0.513	0.6 (0.1)	0.5 (0.1)	0.517
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table 72. Among students who continued their studies during 2019–2020 COVID-19 school closures, types of learning activities

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Only among those HHs with at least one boy or girl child who was able to continue their studies while staying at home during the closure						
During the last school year (2019–2020), when schools were closed due to coronavirus, what types of education or learning activities were the children engaged in:						
Completed assignments provided by the teacher	27.5	39.3	0.229	32.2	33.9	0.836
Listened to educational programs on radio	13.5	18.6	0.452	15.7	18.1	0.680
Session/meeting with lesson teacher (tutor)	21.1	11.8	0.051	19.9	18.1	0.757
Watched educational TV programs	1.2	0.0	0.128	0.4	1.4	0.279
Used mobile learning apps	1.0	0.0	0.238	0.3	1.0	0.315
Other	48.7	49.6	0.915	44.3	42.8	0.878
N	**121**	**129**		**146**	**138**	

Note: Unweighted sample sizes and weighted statistics and significance tests.

Table 73. Among students who continued their studies during 2021 COVID-19 school closures, types of learning activities

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Only among those HH with at least one boy or girl child have been able to continue their studies while staying at home during COVID-19 school closures						
During the last school year (2021), when schools were closed due to coronavirus, what types of education or learning activities were the children engaged in:						
Completed assignments provided by the teacher	27.5	41.1	0.160	34.0	35.7	0.829
Listened to educational programs on radio	15.6	22.7	0.287	21.1	21.3	0.972
Session/meeting with lesson teacher (tutor)	22.6	14.9	0.225	17.6	19.4	0.749
Watched educational TV programs	0	0		0.4	1.9	0.132
Used mobile learning apps	1.0	0.0	0.238	0.3	0.0	0.342
Other	49.9	41.7	0.435	42.8	39.2	0.685
N	**121**	**129**		**146**	**138**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

15.2 COVID-19 Precautions at Schools

Since schools reopened for the 2021 academic year, approximately 80 percent of households reported handwashing points were available at school. Eighty-five percent of households in the retrospective cohort reported face masks were available, as did 77–83 percent of prospective cohort households. Social distancing at school was reported by 40–44 percent of households across cohorts (Table 74).

Table 74. Safety precautions in schools related to COVID-19, per household report

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Since schools have reopened for the 2021 academic year, safety precautions against COVID-19 are available at the school						
Handwashing points	81.1	78.9	0.571	79.7	80.2	0.910
Face masks	84.7	84.7	0.993	82.5	77.4	0.332
Social distancing	43.6	42.1	0.719	39.9	42.5	0.621
Running water	17.8	19.1	0.775	20.6	24.9	0.390
Hand sanitizers	14.2	13.0	0.756	8.3	13.3	0.088
Reduced number of persons per class to meet social distancing guidelines	6.1	7.8	0.512	7.2	7.7	0.889
School fumigated	0.5	2.0	0.191	1.8	2.6	0.647
Face shields	0.7	2.2	0.169	0.3	1.0	0.151
Ambulance/school bus	0.2	0.0	0.260	0.0	0.0	
Other	0.7	0.8	0.879	0.8	0.6	0.728
Don't know	2.2	5.0	0.097	3.0	0.2	0.000
None	0.3	0.0	0.245	0.4	0.5	0.851
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

15.3 Perceived Impact of COVID on Household Finances and Food Security

Sixty to 68 percent of households across cohorts agreed/strongly agreed with the statement 'My household has been negatively financially impacted by COVID-19.' Similarly, 54–60 percent of households agreed or strongly agreed with the statement, 'Since March 2020 my household has experienced food shortages due to the COVID-19 pandemic and related lockdown/closures.' (Table 75).

Table 75. Perceived impact of COVID on household finances and food security

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
My household has been negatively financially impacted by COVID-19.			0.994			0.276
Strongly agree	33.7	32.7		35.5	39.8	
Agree	27.8	28.2		24.9	27.7	
Neither agree nor disagree	3.5	3.1		3.1	0.7	
Disagree	23.8	25.1		22.0	19.9	
Strongly disagree	11.1	10.8		14.5	12.0	
Since March 2020, my household has experienced food shortages due to the COVID-19 pandemic and related lockdown/closures.			0.323			0.472
Strongly agree	32.0	31.7		29.2	34.6	
Agree	24.4	26.2		24.4	24.6	
Neither agree nor disagree	5.1	1.8		4.4	2.4	
Disagree	24.8	27.3		26.5	26.7	
Strongly disagree	13.6	13.0		15.5	11.8	
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

15.4 Caregiver Report of Impact of COVID on Female Children

Caregivers were asked if they felt girls living in the household spent more time on household chores or caring for children now than before COVID-19. Between 9–17 percent of caregivers across cohorts agreed/strongly agreed that girls were spending more time on chores, and 7–16 percent agreed/strongly agreed girls were spending more time caring for children and the elderly.

Eleven caregivers hoped their eldest (or only) female child would marry earlier due to COVID-19—three because the child had become pregnant, and two each because the child had recently had a child, was a financial burden, or school performance was poor.

In the retrospective cohort, 27.9 and 17.2 percent of caregivers in the comparison and treatment groups, respectively, and 22.5 (comparison) and 20.1 (treatment) percent of caregivers in the prospective cohort hoped their eldest (or only) daughter would marry later as a result of the COVID-19 pandemic. Three-quarters of caregivers in the retrospective cohort and 89.4

(comparison) and 80.6 (treatment) percent of caregivers in the prospective cohort reported the reason was their eldest (or only) daughter wanted to stay in school longer. Less than six percent of caregivers across cohorts reported the reason they wanted their eldest (only) child to marry later was because she had missed school during the pandemic (Table 76).

Table 76. Caregiver opinions on COVID-19 effects on female household members

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Agree/Strongly agree that daughters/girls living in the household spend more time now than before the COVID-19 situation						
On household chores	9.6	12.8	0.325	9.1	16.8	0.055
Caring for children and the Elderly	8.0	13.0	0.106	7.3	15.7	0.013
N (caregivers with girls living in household)	**246**	**265**		**344**	**337**	
COVID-19 pandemic changed your hopes for when your oldest unmarried daughter will be married			0.026			0.792
Yes, hope she will marry earlier	3.0	0.6		1.0	1.5	
Yes, hope she will marry later	27.9	17.2		22.5	20.1	
No, have not changed hopes	69.1	82.3		76.5	78.5	
N (caregivers with unmarried daughter)	**208**	**226**		**291**	**292**	
Main reasons you hope your daughter will marry earlier *						
She became pregnant recently	2	0		1	0	
She recently had a child	1	0		0	1	
Financial burden	1	0		0	1	
Poor school performance	1	0		0	1	
She will have better life	1	0		0	0	
She no longer wants to go to School	0	0		1	0	
She was staying at home a lot	0	1		0	0	
N (caregiver hopes earlier)	**5**	**1**		**2**	**3**	
Main reasons you hope your daughter will marry later						
Missed schooling during pandemic	5.6	3.4	0.594	4.0	3.9	0.963
Financial situation improved	0.0	0.0	.	3.9	0.0	0.170
Good school performance	10.2	2.8	0.110	0.9	9.2	0.011
She will have better life	27.3	24.0	0.749	16.4	25.0	0.374
She wishes to stay in school longer	76.7	75.7	0.896	89.4	80.6	0.219
N (caregiver hopes later)	**52**	**41**		**62**	**64**	

Notes: * Unweighted response frequencies presented due to low//zero cell sizes. Unweighted sample sizes and weighted statistics and significance tests.

15.5 Qualitative Findings: Perceived Impact of COVID-19

Hopelessness and Increased Pregnancy, Substance Abuse, and Dropout Rates

Qualitative respondents provided more details on ways in which they felt COVID-19 had impacted education. Students discussed feelings of hopelessness related to the unknowns and hardships from COVID-19 and school closures. Respondents of all types reported that there was an increase in student pregnancies and/or marriage during the pandemic which resulted in high dropout rates, especially for girls.

"During the COVID-19 holiday, we were just staying at home and we were not even studying or reading our notes because we thought that we will not go back to school since there was no vaccine or medication for COVID-19."

—Standard 7 male student

"Students were just staying at home as the results some girls were impregnated and a lot of boys were indulged in bad behaviors like drinking alcohol or smoking Indian hemp (chamba). So parents were worried because of the Covid-19 pandemic."

—Male community leader

Decrease in Pass Rate

Students emphasized that COVID-19 school closures led to a condensed school year, further affected by teacher strikes, as educators demanded risk allowances. As a result, syllabi were not fully covered, and students failed examinations and were forced to repeat a year or to drop out altogether.

"We find ourselves in a situation where we are in a third school term, but we haven't covered some of the syllabus for the previous school terms."

—Standard 7 male student

"COVID 19 affected our education because schools were closed, and this affected the passing rate which means may learners had to repeat classes."

—Standard 7 female student

Sex Work and HIV

Students reported that some of their female peers engaged in risky sexual behaviors like sex work and transactional sex because of increased financial pressures at home and as a result contracted HIV.

Students discussed how living with HIV affected their peers and gave examples of students who dropped out of school because of their HIV status.

[Female students] were engaging in prostitution in pubs. It's like they were hiding that they were infected with HIV and AIDS and one day at the prayers one of them just fell on the ground … When they took her to the hospital she was diagnosed with HIV and AIDS.

—Standard 7 male student

"This one was one of my friends and my neighbor… he was saying that he does not want to continue with school because he was already infected with HIV."

—Standard 7 male student

16. Urban Results

SEED urban qualitative results are reported here separately from SEED rural quantitative and qualitative results. Due to the different timelines of SEED urban versus rural, the urban data collection took place after SEED urban completion. These findings, therefore, do not comprise a "baseline," but rather a retrospective end line for SEED urban.

16.1 Characteristics of Respondents

The total number of FGD respondents that participated in the urban qualitative component was 166, with an average FGD size of eight for students and six for caregivers. An additional 24 individuals participated in IDIs/KIIs for a total of 190 respondents. The average age of students was approximately 15. The average age of caregivers was 41.1 for women and 44.4 for men. The average age of Form 1 teachers (five women and one man) was 36.7 and for community leaders (five men and one woman) 49.7 years.[6] Community leaders held positions as village head, group village head, PTA chairman (2), Mothers' Group chairwoman, and Village Development Committee chairman (Table 77).

Table 77. Number and age of qualitative urban respondents

	Number of respondents	Average age	Age range
FGD: Form 1 girls	46	15.0	13–17
FGD: Form 1 boys	48	15.4	13–19
FGD: Female caregivers of Form 1 youth	38	41.4	22–76
FGD: Male caregivers of Form 1 youth	34	44.4	21–67
IDI: Form 1 girls	6	15.7	14–18
IDI: Form 1 boys	6	15.3	13–18
KII: Form 1 teachers	6	36.7	32–46
KII: Community leaders	6	49.7	46–57

16.2 Description of School Expansion

SEED Urban involved the design-build construction of prefabricated classroom blocks, new boy and girl latrine blocks, and sanitary changing rooms for girls in 30 existing CDSSs in the cities of Blantyre, Zomba, Lilongwe, and Mzuzu. SEED Urban sites were handed over to the MoE between December 2020 and February 2021.

Interviewers asked respondents about their experience during the school expansion as well as how the expanded spaces were being used and maintained. All respondents (teachers, students, caregivers, and community leaders) reported that there were no problems during the construction of the new blocks, toilets, and changing rooms, other than minor noise disturbances. They explained that the expanded blocks were being used as classrooms for Form 4, and sometimes Form 3, students. The new toilets were being used by all students in three of the six schools in the sample. At one school, only girls and teachers were using the new toilets. At another, only Form 3 and 4 students were allowed to use the new toilets, and at the third

[6] Age was missing for three teachers and three community leaders.

school only teachers were using them. Four of the six schools had changing rooms built for girls. The new classrooms were being cleaned by students daily, and the toilets and changing rooms were being maintained by cleaning staff, and sometimes students, also daily.

Respondents of all types consistently described the expanded schools as "beautiful."

While highly appreciative of the SEED package of classrooms blocks, toilets and changing rooms, teachers, students, caregivers, and community leaders noted that the schools continue to lack good libraries and well-equipped science labs. Respondents also wished for more teachers (especially science teachers), a computer lab, a hall for writing exams (that could also be rented out for community events as an income generator), a fence to prevent theft and vandalism by community members, and housing for teachers.

"It's like a dream! People see the school and can't believe it's real. In their whole life they had never anticipated of such changes at [the CDSS]."

—Female caregiver

"The school is now beautiful … children are motivated to come to school comfortably since it's their wish to be in good places. In the households we are also encouraged since children are working hard in school due to the change at the school."

—Male caregiver

"A beautiful school environment has a positive impact on my mindset towards my education and the goals that I want to achieve. Such a beautiful school shows that great things can be achieved here."

—Form 1 male student (FGD)

16.3 Perceived Positive Impacts of the Expansion on Students, Teachers, and Caregivers

Respondents expressed numerous perceived positive impacts of the expansion.

Increased Sense of School Pride

Students expressed a newfound sense of pride in their expanded school. This sentiment was echoed by caregivers and community leaders.

> *"When I am walking, I respect my uniform because I am no longer being humiliated because the school is now remarkable."*
>
> —Form 1 male student (IDI)

> *"The change is not [only] physical. It can be mental too and I can say people's mentality and attitude towards the school has changed because of how it looks now. Most people want to send their child to this school. They are no longer worried that their child will go to a school with low standards."*
>
> —Male caregiver

> *"A lot of students who were selected at this school in the past years were being laughed at by their peers. This was happening because of the bad infrastructure that was here. The construction of the new classrooms [has] helped to improve the face of the school … Everything is just perfectly in place."*
>
> —Male community leader

Teachers reported that they were very happy to work in the expanded school and that their school pride had increased.

> *"I can proudly tell you that my fellow teachers are happy and … are now eager to come and work at a secondary school with new classrooms, toilets, and washrooms. I can tell you that we were a laughingstock and were so ashamed and lacked motivation in the past years, since we were teaching at an archaic school that had few and old blocks, that looked more less like some ruins. We are so comfortable to work here."*
>
> —Form 1 female teacher

> *"More selected students from surrounding communities are opting to stay and complete their studies at this school. This also applies to teachers … who do not feel being transferred to this school as a demotion any longer."*
>
> —Male community leader

Conducive Learning Environment

> *The way these new blocks have been constructed they act as a pull factor as [students] become motivated due to the good and improved classrooms and desks. Even learners who are usually absent from school are motivated to attend classes.*
>
> —Form 1 female teacher

> *The new infrastructures have created a credible environment for learning and teaching at our school. As a result of these new infrastructures, we are assured of walking in the corridors of various universities in the near future.*
>
> —Form 1 female student (FGD)

> *Construction of this block has helped our children to be learning in spacious classrooms because this additional block is spacious and of good quality. So, children are having their classes comfortably and are happy. And if children are happy with their learning environment, they are motivated.*
>
> —Female caregiver

Respondents emphasized that the expansion has created a conducive, clean, and uncrowded environment that has encouraged attendance and facilitated learning as students are able to concentrate better in class. Students explained that previously the environment overcrowded which resulted in a lot of noise and making it difficult to hear the teacher. The crowding also made the classrooms hot, which made students feel sleepy. Students would get dirty from sitting on the floor or outside. During the rainy season, students who learned outside under trees missed school.

Increased Student Motivation to Perform Well in Primary School

Students explained that they were in Standard 8 during the construction period and were motivated to work harder to ensure a place in the expanded CDSS. Caregivers and teachers also commented that students currently in primary school are motivated to work harder to be selected to the expanded CDSS.

> *"During the time the school was being expanded, we took [it] upon ourselves as a motivation to work hard in Standard 8 so we could be selected to this CDSS and occupy these prestigious classrooms."*
>
> —Form 1 male student (FGD)

Increased Motivation for Caregivers to Send Children to School

Teachers felt that the expanded schools were also motivating parents to acquire and pay school fees so their children could attend the expanded schools. The clean environment was also reported to be motivating for caregivers. This sentiment was echoed by students.

> *"[Parents] described [the school] as 'chigafa' [a shade where tobacco farmers cure tobacco]. It was not a conducive environment for students to learn … [The expansion is] also helping parents to encourage their children to attend school because the coming of the blocks has improved the school."*
>
> —Form 1 male teacher

> *"The children learn in an environment that is well taken care of and their clothes do not get dirty. They usually go home with clean clothes which motivates the parents to let their children go to school."*
>
> —Form 1 female teacher

Reduced Disease /Improved Hygiene

Students and caregivers also reported that the crowded classrooms contributed to the spread of infectious diseases like the flu, but this concern has been mitigated with the expansion. They explained that students are now better able to social distance to reduce the spread of COVID-19 due to the new spacious classrooms and smaller class sizes. Students and caregivers also expressed their belief that the new, modern toilets would improve hygiene and contribute to a reduction in diseases such as cholera and bilharzia as the old toilets were few and in such bad condition that students would use the bush instead.

Reduced Absenteeism Among Girls

Students, caregivers, and teachers noted that the addition of changing rooms had reduced absenteeism for girls, as previously girls missed school when menstruating. Before the construction of washrooms, respondents reported there were issues with hygiene because girls did not have anywhere to go to change their sanitary pads, and this resulted in them wearing the same pads for a long time and even soiling their uniforms. When asked who benefitted more from the expansion (boys or girls), female caregivers reported that girls benefitted more because of the changing rooms. In schools where additional desks and chairs were received, teachers reported that girls especially benefitted as they do not like to sit on the floor and get dirty, especially when they have their period, and will stay home.

> *"Another impact is that it has made our students [girls] to be in school rather than excuse themselves to have menstrual pads changed at home. The rate of absenteeism especially for girls has declined."*
>
> —Female teacher

> *"The change rooms which are menstrual hygiene-friendly have contributed enormously to the menstrual hygiene of girls which enables them to have dignified lives and not miss classes."*
>
> —Form 1 female student (FGD)

Longer School Day and Ability to Complete Full Syllabus

A caregiver explained that students were now in school from 7:30 am to 2:00 pm, whereas before the expansion they had to attend in morning and afternoon shifts which reduced the total hours they were in school each day. Students and caregivers further reported that, before the

expansion, students in the lower forms were sent on holiday during national (MSCE) exams so that Form 4 students could have enough space to write their exams. With the expansion, all forms can stay in school during exams (despite reported increases in enrollment). Prior to the expansion, these issues resulted in some forms not completing their full syllabi before students advanced to the next form.

16.4 Unintended Impacts

Increased Secondary School Enrollment

SEED Urban was not intended to increase enrollment, but rather to decrease overcrowding. However, respondents of all types noted that the expanded schools can accommodate more students and that some students who had dropped out after passing the PSLCE due to lack of secondary school space were returning to school. One student reported that in the past teachers did not encourage female students who were pregnant to stay in school because of the limited space, but were now reaching out to pregnant girls to continue their education.

Shortage of Desks and Books

While at most schools teachers and students stated they received additional desks and chairs for the new blocks, at one school they noted the expanded enrollment had exacerbated the problem of a shortage of desks. At all schools, respondents noted a need for more books to accommodate the increased number of students.

Increased Teacher Workload

> *"We had four streams, the expansion has increased the classes, we now have eight classes. The challenge is that teachers are few and the classes are more. We have more workload and we get tired…Science teachers, those that teach biology, agriculture, and mathematics in all the forms…have a huge workload because they teach in all the classes and they end up having 36 periods in a week."*
>
> —Form 1 female teacher

In one school, a teacher reported that their workload had decreased as there were fewer students in each class. More commonly, teachers explained that their workload had increased with the increased number of classes.

16.5 Hope for the Future

Hopes for Male and Female Children

Interviewers asked students about their hopes for their future and caregivers and community leaders were asked about the same for their children and children in the community, respectively. Caregivers, community leaders, and students generally expressed hope and optimism for a bright future. Caregivers and community leaders emphasized that most parents believed that boys and girls should have equal educational opportunities so that they can become independent. They also explained that children of both sexes should be educated and independent before getting married.

Challenges to a Bright Future

Respondents in all categories reported challenges that could compromise students' optimism for their future. A major challenge is that many parents lack adequate financial resources to pay various school fees and provide all the necessary school supplies for their child's education.[7]

Lack of employment opportunities in the country dampened the hopes of some respondents. They expressed concern that even with an education they envision a bleak future due to lack of a job.

Some female students and caregivers expressed concern about girls becoming pregnant and failing to achieve their goals. Female caregivers stated that the girls' futures are compromised when they become pregnant

> *"Most parents today hope for their daughters to be educated … unlike in the past when there was a belief that a girl child would get married and be part of her husband's family so there was no need to help her in her education since she would be part of the family of her in-laws."*
>
> —Male community leader

> *"We should be able to educate our children without considering whether they are female or male so that they can be independent. Then after being independent, they could decide to get married. Why am I saying so? What happens is that when children get married at an early stage without completing their education, the find themselves struggling."*
>
> —Female caregiver

> *"I do not see my future as promising … because my parents fail to pay my school fees in time. I'm always the last person to pay school fees. My parents always struggle to pay for my school fees … But my goal is to complete my education."*
>
> —Form 1 female student (FGD)

> *"My child came back from school because of school fees. She stayed home for three days without going to school while I was searching money for school fees. My wish is that my child should be better off."*
>
> —Female caregiver

> *"People are completing their studies but they are failing to get a job … So, maybe we can work hard at school and complete our studies but in the end, we may not benefit anything due to lack of job security."*
>
> —Form 1 male student (FGD)

> *"There are some things that can disturb my education, for example boys, they can impregnate us and make us dropout of school. I don't want this to happen to me."*
>
> —Form 1 female student (FGD)

[7] Respondents were not specific about the different types of school fees. See the quantitative section *Student Requirements and Costs* for more specifics on the types of school fees households and schools reported students incur.

16.6 Sexual Behavior and Pregnancy

Students who participated in individual interviews were asked questions about their sexual behavior. All these students reported that they had never engaged in sex. The main reason given for not being sexually active was a desire to focus on their education to achieve their future goals. Other reasons included religious beliefs, fear of getting pregnant or getting someone pregnant, and being afraid of contracting a sexually transmitted infection.

> *"Because [I] am afraid [sex] would tamper with my schooling which is something that I don't want …. For instance, you may get pregnant in the process and if that happens, you may be told to stay at home until you give birth. If that happens, my friends will still be learning at school without me."*
>
> —Form 1 female student (IDI)

> *"[Getting my partner pregnant] can affect me in terms of my education because it will shift all my attention from school. The time when I will be doing my studies will be same time she might be needing me. This can totally affect my education … That means I will start doing some casual work so that I can support her, and as a result, I will not continue with my studies."*
>
> —Form 1 male student (IDI)

Only a few students who participated in individual interviews reported being pressured to engage in sexual activity. Among those that were pressured, most reported that they were pressured by their friends or boyfriend/girlfriend.

Respondents were asked their views on early pregnancy and marriage, as these may impede students' ability to continue their education. A female teacher explained that some girls get pregnant early because it is part of their culture and parents find pride in their child's pregnancy.

> *"There are some parents who are not worried about the future of their daughters … to them having grandchildren is an achievement because they receive gifts from their friends … it is part of their culture for girls to get pregnant at an early stage. I don't think these parents are able to encourage their daughters about the importance of education."*
>
> —Form 1 female teacher

> *"She got pregnant but when she gave birth her mother told her that she cannot take her child to be raising her. So, in that way, she stays home but she wants to go back to school."*
>
> —Form 1 female student (FGD)

> *"A young girl got impregnated by her fellow youth, so they got married. After getting married the girl was being beaten by her spouse every day, I think that was happening so that the man can find his way out of the marriage as he was failing to support his family."*
>
> —Form 1 female student (FGD)

While none of the female student respondents (both IDI and FGD) reported they had ever been pregnant, they narrated the experiences of friends who had been pregnant. They explained that many drop out of school to get married or care for their child after giving birth. They further reported that some girls who get pregnant at an early stage become victims of violence in their marriages.

While many girls who get pregnant drop out of school, respondents of all types reported that pregnant girls are now encouraged to go back to school after giving birth unlike in the past. A community leader explained that there are bylaws in their area that encourage pregnant girls to go back to school and fine the parents of the pregnant girl if she does not return to school.

In some schools, there were Mothers' Groups encouraging girls to return to school after delivery. Additionally, a teacher explained that they invite girls who previously became pregnant at an early age, but continued with their education, to serve as role models and encourage pregnant girls to continue their education.

> *"We had our friends who got pregnant. They dropped out of school, and they cannot come back to school because people will be laughing at them. They are shy since the society sees them as parents."*
>
> —Form 1 female student (FGD)

Although girls who get pregnant at an early age were encouraged to return to school after giving birth, stigma still prevents some from returning.

16.7 Marriage

Generally, all participants (students, teachers, caregivers, and community leaders) stated that most parents encouraged their children to focus on their education and get married when they are financially stable and mature enough to make good decisions.

Some parents who married early are able to tell their children about the benefits of education and the dangers of early marriages. However, a community leader explained that some parents force their children to marry early due to poverty and the inability to support their children with school fees and school necessities.

Nearly all interviewed students reported they did not want to marry early as they viewed early marriage as a hindrance to their education and future aspirations.

> *"We were getting married with no knowledge of anything. We were just focusing on getting married. But because of the problems that we are facing, that is why we are saying that children should be encouraged to go to school. If they can work hard in class and get their diplomas or degrees, then they will be better off."*
>
> —Female caregiver

> *"It's true that other children … got married while they were still young maybe because they were forced by their parents, 'go and get married, see the way things are in this household, we cannot manage to pay school fees for you, we don't have money for school fees.' So, this forces some children into early marriages."*
>
> —Male community leader

16.8 Physical, Sexual, and Psychological Violence

To understand the different forms of violence experienced by children either at school or in their communities, respondents were asked if they had had ever experienced or knew someone who had ever experienced physical, sexual, or psychological violence. A few students experienced physical violence at the hands of a fellow student. One student reported they had seen a fellow student beaten by a stranger at school.

"What happened here is great. When the construction started some community members had an opportunity to get temporary employment … I heard people saying they are benefitting from the project as they were earning some money."

–Male community leader

"When this development started, I was one of individuals who had an opportunity to work with those people in building these blocks and the toilets, which means we have learned some of the things we didn't know back then."

—Male caregiver

"There were some changes because when these people were constructing these blocks, they were buying goods from the people from the community…like bananas, cassava, potatoes, so most people were coming here to sell their goods."

—Form 1 female teacher

While no students reported that they themselves had been sexually assaulted or raped, several female students recounted stories about friends who had been raped—by uncles, stepfathers, neighbors, and even male friends. None of the reported sexual violence occurred at school or enroute to school.

Reports of psychological violence within the school environment were common among student respondents and involved verbal abuse or harassment. For example, one male student was bullied by fellow students because he had a beard. Another male student reported that sometimes other students made fun of his poor performance in class which affected him psychologically. Concerns about psychological violence were also raised by some female students. One female student reported how she was fearful of going to school after refusing to have sex with her boyfriend.

16.9 Business Environment Spillovers

Respondents reported that the school expansion had a positive effect on the local economy. During the construction/expansion, community members were hired to draw water, carry bricks and soil, and serve as watchmen.

One male caregiver reported he was employed during the construction and learned new skills.

During the expansion, local businesses benefitted as they sold goods to the construction workers.

> *"There are a few changes that I have just observed, for example some of the roads have been maintained by some contractors who came to smoothen the earth roads which is to me a very good development."*
>
> —Form 1 female teacher
>
> *"The more we enroll students, the more we create businesses for tailors who sew uniforms, those who sell [school] bags, those who have groceries like that."*
>
> —Form 1 female teacher
>
> *"Students are coming from far places … renting houses and learning at this school because it has developed. This development has made this area popular."*
>
> —Female caregiver

Long-term benefits were also described by respondents and included improvement in roads and, with the increase in school enrollment, more business for tailors who sew uniforms, merchants who sell school supplies, and for those who rent to students who self-board.

16.10 Perceived Impact of COVID-19

As previously noted, respondents reported that students are now better able to social distance to reduce the spread of COVID-19 due to the new spacious classrooms and smaller class sizes.

> *"I think a lot of girls got pregnant because in their mind they thought that COVID-19 will not come to an end so they may not go back to school … Some parents were discouraging their children by telling them that schools will not be opened again, and that they should just get married."*
>
> —Form 1 female student (FGD)

While unrelated to SEED, respondents shared their views on how COVID-19 affected schooling. They reported that that school closures during the pandemic and uncertainty about when schools would reopen, if at all, was demotivating to students. They explained that the pandemic led to an increase in school dropouts which they believed disproportionately affected girls' enrollment as some became pregnant and/or married during the school closure. Respondents explained there was also an increase in sexual activity, smoking, and drinking among youth during the school closures.

Respondents of all types reported that the effects of COVID-19 on education continued after schools were reopened. Teachers explained that their workload increased as some opted to teach extra hours to complete the syllabus. They also explained that the pandemic continued to negatively affect students' performance as some stayed home out of fear of getting COVID-19 or because they were ill.

Both male and female caregivers reported that the pandemic affected their livelihoods. They explained that COVID-19 restrictions negatively affected businesses and other income generating activities. Some stated that the pandemic caused them to lose their jobs. As such, it was hard for many to meet their basic needs including education for their children. According to one student, some girls were forced to engage in transactional sex to make ends meet.

"[COVID-19] really affected the performance and students were affected. We always predict the pass rate, but COVID really affected performance since not all lessons were covered. For instance … a lot of [Form 2] students failed their mock examination, because the exams covered the whole syllabus including the lessons that were not covered. Out of 133 who sat for mock exams 17 passed, six girls and eleven boys. Not only our school has been affected but other schools as well."

—Form 1 female teacher

"COVID-19 affected the economic situation of families as such girls were forced to indulge in sexual behaviours as one way of trying to get their daily needs [met], a practice that actually made them contract HIV."

—Form 1 male student (FGD)

17. Summary and Implications

The objectives of this study were to:

- Describe levels of key SEED impact evaluation indicators in rural areas prior to program implementation using a mixed-methods approach
- Describe key evaluation outcomes to date in urban areas
- Assess the degree of statistical balance between the treatment and matched comparison groups in rural areas

Quantitative results are based on surveys of Standard 7 prospective cohort students and their caregivers, surveys of caregivers and students enrolled in Standard 8 during the 2019–2020 academic year (retrospective cohort), and key informants at sampled primary and traced secondary schools. Qualitative results are based on FGDs with students and caregivers, KIIs with community leaders and teachers, and IDIs with students in rural and urban sites.

17.1 Rural Summary

Females comprised approximately half of the evaluation student study quantitative sample. The average age of sampled students in the retrospective cohort was 17 years and 15 years in the prospective cohort. Single or double orphanhood rates were over 20 percent in the retrospective cohort and nearly 20 percent in the prospective cohort.

Approximately half of all households in both cohorts were estimated to be living under the national poverty line, nearly three-fourths of study households reported financial difficulties, and over 70 percent of households across cohorts were experiencing moderate to severe food insecurity.

All sampled primary schools and traced secondary schools were public and co-educational, and all secondary schools surveyed were CDSSs.

Baseline Levels of Key Evaluation Outcomes

The SEED program's main development hypothesis is that increased access to secondary schools will result in improved secondary enrollment and completion. Additional hypothesized final outcomes include reduction of early pregnancy, early marriage, and HIV exposure risks.

School Progression

- Pre-intervention secondary school transition rates, Standard 8 repetition rates, and school dropout rates differed significantly overall (p=0.034) in the retrospective cohort. Based on household-reported data:
    - 23.2 percent of the comparison group and 37.5 percent of the treatment group transitioned to a public secondary school
    - 35.6 percent of the comparison group and 26.6 percent of the treatment group repeated Standard 8

    - 30.7 percent of the comparison group and 22.0 percent of the treatment group dropped out of school
- Based on primary school-reported data, the PSLCE pass rate was 79.2 percent across study groups, yet only 27.1 percent of students in both intervention groups who sat for the PSLCE were selected to a public secondary school.
- Among prospective cohort students, less than 50 percent across study groups reported that most boys in their community complete primary school, compared to less than 30 percent reporting most girls complete primary school.
- Among prospective cohort students, approximately 40 percent reported that most boys in their community complete secondary school, compared to less than 20 percent reporting most girls complete secondary school.
- Sixteen percent of retrospective cohort caregivers and 10.8 percent of prospective cohort caregivers reported a household youth had been selected to secondary school but did not enroll/attend.
- Qualitative participants described the COVID-19 pandemic affecting school progression. Students emphasized that COVID-19 school closures led to a condensed school year, further affected by teacher strikes. As a result, syllabi were not fully covered, and students failed examinations and were forced to repeat a year or to drop out altogether.

Marriage, Sexual Debut, HIV Risk, and Pregnancy

- Less than two percent of prospective cohort students and 10.4 percent of retrospective cohort students had ever been married or in a union.
    - No students reported being married/in union before age 15.
    - Approximately 10 percent of out-of-school youth in the retrospective cohort reported being married/in union before age 18, compared to less than one percent of students in the prospective cohort.
    - Eight retrospective cohort female students and one prospective cohort female student reported they were forced into marriage.
    - Qualitative female and male student respondents reported girls who experience early pregnancy are forced by their caregivers to marry the child's father. They also noted that poverty is a major driver of early marriage, as students who are not able to pay school fees drop out of school and opt for marriage.
- Over one-third of retrospective cohort students and 11.5 percent of prospective cohort students reported they had ever had sexual intercourse.
    - Two percent of retrospective cohort and 4.1 percent of prospective cohort students sexually debuted before age 15.

    - Prevalence of risky sexual behavior among students who had sex in the past 12 months was common across cohorts and study groups: 34.6 percent reported not using a condom at last sex, 24.8 percent multiple sexual partnerships, 10.7 percent concurrent sexual partnerships, and 11.0 percent ever having transactional sex with their current/most recent partner.
    - Students and community leaders reported that some girls engaged in transactional sex to have their basic needs met due to poverty and lack of support from their caregivers and became pregnant.
- Among female retrospective cohort students in both study groups, 28.4 percent of out-of-school females had ever had a live birth (compared to 2.1% in-school females), and 13.2 percent had a live birth before age 18 (compared to 1.4% of in-school females). Among male retrospective cohort students in both study groups, 7.3 percent of out-of-school males had ever fathered a live birth (compared to 2.3% in-school males), and 2.9 percent had fathered a live birth before age 18 (compared to 0% of in-school males).
    - Sixty-eight percent of sexually active students across cohorts and study groups used a modern family planning method during the past 12 months.
    - Qualitative respondents felt that early pregnancy was common in rural areas and that the cases of early pregnancy increased during the COVID-19 pandemic when schools closed.
- Fifty-five percent of retrospective cohort students had ever tested for HIV and know the results, and 35.5 percent tested for HIV in the last 12 months. HIV testing rates were lower among prospective cohort students, with 38.9 percent reporting ever testing for HIV and knowing the results, and 21.6 percent testing for HIV in the last 12 months.

17.2 Factors Along the Malawi SEED Theory of Change at Baseline

In addition to the construction of new CDSSs in rural communities, auxiliary program components include abolishment of secondary school tuition fees, implementation of a revised Life Skills/SRH curriculum, and attention to improved WASH and MHM conditions in new secondary schools.

- While nearly 60 percent of treatment group and 20 percent of comparison group primary school respondents were aware that a new secondary school was being built nearby, this knowledge does not appear to be widespread among students or caregivers in either cohort or study arm; 11 percent of students and caregivers were aware a new secondary school was being opened.
- Roughly one-third of primary schools reported government-imposed changes to the Life Skills/SRH curriculum at the school during the past year.
- Based on definitions from the Joint Monitoring Programme's 2018 indicators for monitoring WASH and MHM in schools:

- Basic WASH services: 93.2 percent of secondary schools had a basic drinking water service, 55.9 percent had basic sanitation services, and 86.2 percent had basic hygiene services.
- MHM Provisions: 27.1 percent of secondary schools had both water and soap available in a private space for girls to manage menstrual hygiene, 44.1 percent had at least one girls-only change room in use, and 25.4 percent had MHM materials available at the school.
- Qualitative caregiver and community leader respondents reported the lack of adequate facilities at schools for girls to manage their periods resulted in menstruating girls missing school unnecessarily.

Embedding newly constructed CDSSs in underserved rural communities will increase the number of Form 1 seats available and decrease travel distance to secondary schools, thereby increasing access to secondary school.

Lack of Form 1 secondary school admissions spaces:

- Over one-third of secondary school Form 1 classes were over-capacity at evaluation baseline.
- Primary school main respondents reported the lack of Form 1 secondary school admissions spaces as a problem hindering the ability of boys and girls to complete primary school (65.5%) and to join secondary school (67.4% boys and 67.0% girls).
- When asked about barriers to achieving their own educational goals, over 35 percent of retrospective cohort students, 22 percent of prospective cohort comparison group students, and 30 percent of prospective cohort treatment group students (p=0.054) cited a lack of Form 1 secondary school admissions spaces.
- Student and caregiver quantitative respondent perceptions of Form 1 admissions spaces as a barrier for themselves contrasted with their perceptions for other youth. Only two percent of students across cohorts reported a lack of Form 1 seats as a main reason students from their primary school who pass the PSLCE do not join secondary school, and less than one percent of caregivers reported it as a barrier to community youth joining secondary school.

Distance to secondary school:

- Over 60 percent of students across cohorts reported there is a nearby secondary school students from their community could join if they pass the PSLCE.
- Nearly 60 percent of secondary schools reported that the farthest village that sent students to the school was more than 10 kms away.
- Sixty-one percent of treatment group and 49 percent of comparison group students in the retrospective cohort cited distance to school as a barrier to reaching their educational goals (p=0.048), as did 40 percent of prospective cohort students.

- Over eighty percent of comparison group primary school main respondents and over 50 percent in the treatment group reported distance to secondary schools as a problem hindering the ability of boys and girls in their school to join secondary school ($p<0.05$).
- Nearly 20 percent of students across cohorts reported long distance to secondary school as a main barrier preventing students from their primary school who pass the PSLCE from joining secondary school. Caregivers across both cohorts also reported distance to secondary school as a barrier for community youth to join secondary school (25–31%) and to complete secondary school (27–32%).
- Caregivers who reported that household children had been selected to secondary school but did not attend cited long distance to the secondary school as a main barrier (between 22–32% across cohorts for girls and 14–33% for boys).
- The negative effects of long distances to school on youth school participation and attendance were common views among rural qualitative respondents.

Reduced distance to secondary school will lead to a reduction in SR-GBV risk associated with travel to/from school and self-boarding.

Travel safety concerns were reported as a barrier to educational attainment:

- One-third of retrospective cohort students and a quarter of prospective cohort students reported that safety concerns traveling to/from school were a barrier to reaching their own educational goals.
- Over 20 percent of primary school main respondents reported safety traveling to/from school as a barrier to male students' ability to join secondary school, and approximately one-third reported travel safety as a barrier to female students joining secondary school.
- Twenty-one percent of secondary school main respondents cited travel safety as a barrier for male students' secondary school completion and 29 percent cited it as a barrier for female students to complete secondary school.
- Rural qualitative respondents reported safety concerns related to traveling long distances to school as a barrier to accessing education, especially for girls.

However, most students reported feeing safe while traveling to/from school:

- Sixty-three percent of retrospective cohort students who had transitioned to Form 1 in a public secondary school reported that they felt safe traveling to/from school, compared to 76.6 percent of prospective cohort students in the comparison group and 85.8 percent in the treatment group ($p=0.030$).

Most female students reported experiencing SR-GBV, but few reported missing school due to SR-GBV concerns during the past term:

- Eighty-four percent of retrospective cohort girls currently in Form 1 and 62 percent of all prospective cohort girls reported experiencing one or more sexual violence acts at least once during the current school year. The most frequently reported types of sexual violence included comments and gestures, and we found limited prevalence of physical or coercive violence among girls in the prospective cohort.
- Less than five percent of retrospective cohort girls currently attending school missed any days of school due to SR-GBV during the past school term.
- Qualitative caregiver and student respondents emphasized SR-GBV risks, including vulnerability to sexual and physical assault, when students must travel long distances to school. This was particularly a concern when traveling through wooded areas or when maize crops were very tall.

Abolishment of secondary school fees and reduced costs to travel to/from school or self-board will improve access to secondary schools.

Cost was a predominant barrier reported by students and school main respondents:

- Among retrospective cohort students who dropped out of school, not having money for fees or uniforms was cited by 61.9 percent of treatment and 46.1 percent of comparison students (*p=0.096)*.
- Secondary schools reported that inability to pay school fees was the main reason for dropout for 18 percent of female dropouts and 38 percent of male dropouts
- Eighty percent of treatment and 85 percent of comparison group prospective cohort students reported finances/cost as a barrier to secondary school transition among other students at their primary school.
- Among retrospective cohort students who had transitioned to Form 1 in a public secondary school:
    - Ninety-eight percent had incurred education expenditures during the current academic year (average MWK 74,074).

Secondary schools reported the types and amounts of costs students typically incur.

- Secondary schools reported that half or more students incurred the following costs: tuition fees (14%), PTA/SMC dues (60%), general purpose fund (16%), small-scale school projects (57%), and school maintenance fees (31%).
- All secondary schools reported charging non-tuition general fees (average MWK 10,587 per term), and 28 percent disclosed charging other fees (average MWK 21,133 per term).
    - The average total non-tuition fees disclosed among secondary schools was MWK 16,939 per term (MWK 11,580 excluding boarding fees).

- Ninety-seven percent of secondary schools reported bursaries, subsidies, scholarships, and/or school fee waiver programs are available to students. However, only seven percent of retrospective cohort students who had transitioned to Form 1 in a public secondary school reported receiving any school tuition support and five percent received any materials/cash support for supplies.

Increased access to secondary schools will improve student and caregiver interest in and expectations for educational attainment.

- Nearly all students and caregivers across cohorts and study groups felt the educational milestones of primary and secondary school completion were very important for both boys and girls.
- Across cohorts and intervention groups, 42 to 50 percent of students reported that both their ideal and actual expected level of educational attainment was university education.
- Qualitative student respondents aspired to be educated, become independent, and be able to support their parents and siblings.
- Student perceptions about school completion among most girls and boys in their community contrasted with their expectations for themselves and differed by gender.
    - Over 70 percent of prospective cohort students felt the chances were high they would complete primary and secondary school (previous chapter)
    - Less than 30 percent of prospective cohort students reported that most girls complete primary school, and less than 20 percent reported most girls complete secondary school
    - Less than 50 percent of prospective cohort students reported that most boys complete primary school and approximately 40 percent reported most boys complete secondary school

Increased student and caregiver education-related interest and expectations will: (1) improve primary school performance and completion and increase secondary school transition and completion rates; (2) decrease child labor and household chore obligations; and (3) delay sexual debut, reduce risky sexual behaviors, and reduce early and child marriage.

School performance:

- The average PSLCE pass rate ranged from 71.5 to 83.6 percent based on student self-reported data and ranged from 77.3 to 81.0 percent based on primary school-reported data.
- Among both study groups in the retrospective cohort, the average student-reported Chichewa exam grade was a B, and the average grade for English, Arithmetic, Science and Technology, and Social and Environmental Sciences was a C.

Youth labor and household chore obligations:

- Nearly 10 percent of retrospective cohort students and four percent of prospective cohort students reported typically working throughout the year. Over half of working students reported unpaid household agricultural labor as their main economic activity during the past 12 months.
- Fewer than two percent of retrospective cohort students who dropped out of school cited working/helping at home or finding work as a main reason for dropout.
- Over 20 percent of retrospective cohort students who transitioned to public secondary school reported chores at home or paid work as a barrier to reaching their own educational goals, compared to less than 15 percent of retrospective cohort students who dropped out of school and less than 15 percent of prospective cohort students.
- Among households where youth had been selected to secondary school but did not enroll/attend, 0% of caregivers reported getting a job as a reason girls did not attend and 6.4% reported boys did not attend.
- Across cohorts and study groups, caregivers did not frequently report getting a job to be one of the top three reasons community youth do not complete primary school (7.7%), go to secondary school (7.2%), or complete secondary school (6.9%).
- Primary and secondary school main respondents were more likely than students or caregivers to report chores at home and paid work to be serious problems for student ability and motivation to join and complete secondary school. Over 25 percent reported chores at home as a barrier to boys joining secondary school, boys completing secondary school, and girls completing secondary school, compared to 36.7 percent reporting chores at home as a barrier to girls joining secondary school. Approximately 20 percent of school main respondents reported paid work as a barrier to boys joining secondary school, girls joining secondary school, and girls completing secondary school, compared to 41.4 percent who reported paid work as a barrier to boys completing secondary school.
- Qualitative respondents discussed how child labor negatively affects access to education for youth.

Pregnancy:

- Qualitative student respondents reported pregnancy as a reason for school dropout.
- Fifteen percent of retrospective cohort students who dropped out of school reported pregnancy/fathering a child as a reason for dropout.
- Forty-six percent of retrospective cohort and 38 percent of prospective cohort students reported getting pregnant/fathering a child as a barrier to reaching their own educational goals.
- Among households with youth selected to secondary school that did not enroll/attend, 43.6 percent of caregivers in both study cohorts and groups reported pregnancy as one of

the top three reasons girls did not attend secondary school and 20.0 percent reported fathering a child for boys.

- Nearly 20 percent of prospective cohort students, 15.7 percent of retrospective cohort comparison students, and 28.9 percent of retrospective cohort treatment students (p=0.004) reported getting pregnant/father a child as a main reason students from their primary school who passed the PSLCE did not join secondary school.
- Across both cohorts and study groups, pregnancy/fathering a child was one of the top three reasons reported by caregivers that community youth do not complete primary school (40.4%), do not go to secondary school (38.2%), and do not complete secondary school (41.8%).
- Primary and secondary school main respondents reported pregnancy/fathering a child as a serious problem preventing students from completing primary school (35.0%), boys joining secondary school (24.8%) and completing secondary school (17.2%), and girls joining secondary school (41.0%) and completing secondary school (36.2%).

Marriage:

- Qualitative student respondents reported they wanted to delay marriage to pursue more education.
- Sixteen percent of retrospective cohort students who dropped out of school reported marriage as a reason for dropout.
- Forty-seven percent of retrospective cohort and 39.0 percent of prospective cohort students reported getting married as a barrier to reaching their own educational goals.
- Nearly 21 percent of prospective cohort students, 17.8 percent of retrospective cohort comparison students, and 29.5 percent of retrospective cohort treatment students (p=0.012) reported marriage as a main reason students from their primary school who passed the PSLCE did not join secondary school.
- Among households with youth selected to secondary school that did not enroll/attend, 28.1 percent of caregivers in both study cohorts and groups reported marriage as one of the top three reasons girls did not attend secondary school and 31.7 percent reported marriage for boys.
- Across both cohorts and study groups, marriage was one of the top three reasons reported by caregivers that community youth do not complete primary school (37.2%), do not go to secondary school (35.9%), and do not complete secondary school (39.2%).
- Primary and secondary school main respondents reported marriage as a serious problem preventing students from completing primary school (36.5%), boys joining secondary school (21.9%) and completing secondary school (13.8%), and girls joining secondary school (37.7%) and completing secondary school (25.9%).

Gender norms may be influenced by Life Skills/SRH curriculum content or improved school MHM conditions. Gender norms can influence sexual debut, risky sexual behavior, early and child marriage practices, as well as caregiver aspirations and expectations for daughters' education.

- Roughly one-third of primary schools and 41 percent of secondary schools reported government-imposed changes to the Life Skills/SRH curriculum at the school during the past year.
- Over half of primary schools and nearly half of secondary schools reported MHM education was available at the school. Qualitative caregiver, student, and community leader respondents reported that the lack of adequate facilities at schools for girls to manage their periods resulted in menstruating girls missing school unnecessarily.
- Nearly all students and caregivers thought that primary school and secondary school completion milestones were very important for both boys and girls.
- Students had moderately high levels of gender-equitable attitudes toward education across cohorts and study groups. Similarly, caregivers across cohorts and study groups had moderately high egalitarian beliefs related to the rights and privileges of men and women as well as equity for girls.
- Qualitative caregiver respondents, with few exceptions, also expressed similar aspirations for boys and girls—obtain a good education, get a job and become independent, and only then marry and have children.

Baseline Equivalence

We examined baseline balance for key quantitative education outcomes, intermediate outcomes and mediating variables, and potential control variables for the sampled and matched primary schools, as well as among students, caregivers, and households in the retrospective and prospective cohorts. We tested over 1,200 indicators (552 in the retrospective cohort, 520 prospective cohort, and 134 primary schools) and found only 62 statistically significant differences between the treatment and comparison groups. This level of overall balance (94.9% of assessed variables) is acceptable as we expected to detect spurious imbalance in five percent of tested indicators given the 0.05 alpha level for significance. Existing differences between treatment and comparison groups will be controlled for during program impact estimation.

17.3 Benchmarking Rural Findings

This section presents a high-level comparison of the rural SEED IE sample, which includes youth who have already survived in school to Standard 7 or above, against the general youth population in Malawi. Appendix G presents expanded comparison tables, and Table 78 provides a summary overview. For reference,

- 14.9 percent of the population ages 15 years and above in rural areas reported to have never attended school, and 77.1 percent had no education qualification (IHS5 2019/2020 general report – GoM NSO, 2020).
- The rural out-of-school rate for children ages 14–15 years was 17.0 percent and for ages 16–17 years 40.0 percent (UNICEF MICS 2019/20 report – GoM NSO, 2021a).
- The Standard 5 survival rate, an indication of the percentage of students who will complete the first cycle of primary education, decreased from 68 percent nationally in 2020 to 61 percent in 2021. The Standard 8 survival rate dropped from 41 percent in 2020 to 36 percent in 2021 (EMIS 2021 report).

In general, the SEED IE rural cohorts had better marriage, SRH, child labor, and subjective well-being outcomes than the general youth population. Educational indicators were somewhat worse among SEED IE rural youth than the national population, reflecting the targeted nature of SEED rural program placement: the Standard 8 repetition rate was higher, the Form 1 transition rate in comparison areas was lower, and the primary school-reported secondary selection rate was lower in the SEED IE rural sample compared to national results from the 2910/2020 academic year. The SEED IE rural sample had similar poverty, food insecurity, and social benefit levels as the general rural population. Overall, these results call into stark contrast the educational, SRH, and marriage outcomes of in-school youth compared to the general youth population and highlight the importance of the SEED project for Malawi youth in general.

Table 78. Summary of benchmark findings by category

Comparison	Baseline summary	Reference population
Household welfare and social benefits *Similar*	SEED IE households were slightly less likely to be poor, ultra-poor, or experiencing low/very low food security compared to national rural households. SEED IE households were also slightly more likely to report receiving direct cash transfers from the government and scholarship/bursary for secondary education benefits.	National rural households/rural population. IHS5 2019/2020
Education *Mixed*	Standard 8 repetition rates in the SEED IE rural sample were twice the level as male and female learners nationally. The Form 1 transition rate based on household-reported data were similar in treatment areas and national data (37%) but were 14 percentage points lower in comparison areas. However, public secondary school selection rates for the 2019/2020 year based on school-reported data of number of students selected out of those who sat the PSLCE were roughly 10 percentage points lower in the SEED IE sample compared to national learners. The most frequently reported reasons for dropout in both the SEED IE sample and 2021 EMIS report for national learners were not having money for school fees, pregnancy, and marriage.	National male and female learners, 2019/2020 academic year. EMIS 2021 report.
Marriage *SEED - better*	SEED IE retrospective and prospective cohort students were less likely to be currently married, married before age 15, and married before age 18 compared to the general population of rural youth and young adults.	Rural women and men ages 15–24 years. MICS 2019/2020
Sexual debut *SEED – better*	Compared to the general population of rural women and men ages 15–24 years, SEED IE retrospective and prospective cohort students were less likely to have ever had sex and to have sexually debuted before age 15 years.	Rural women and men ages 15–24 years. MICS 2019/2020
Live births *SEED – females better, males similar*	Female students in the SEED IE retrospective and prospective cohorts were between 13–23 percentage points less likely to have ever had a live birth compared to the general population of rural women ages 15–19 years. Rates of ever fathering a live birth were similarly low in the SEED IE sample and the general population of rural men ages 15–19 years.	Rural women and men ages 15–19 years. MICS 2019/2020
Labor force participation *SEED - better*	SEED IE retrospective and prospective cohort students were less likely to work compared to all rural youth ages 12–17 years.	Rural women and men ages 12–17 years. MICS 2019/2020.
Perception of a better life *SEED - better*	SEED IE retrospective and prospective cohort students were more likely to report their life had improved over the past year and they expected their life to improve during the next year compared to all rural youth ages 15–24 years.	Rural women and men ages 15–24 years. MICS 2019/2020.

17.4 Implications of Rural Quantitative Baseline Findings for Expected Program Impacts

Tables 79A–79D present a summary of findings for key indicators under each evaluation question and associated evaluation implications based on the SEED rural theory of change. Baseline levels in the retrospective cohort may provide insight into what prospective cohort girls in comparison areas may experience in the future for some indicators.

Table 79.A. Evaluation Question 1 key indicators and SEED IE implications

Indicator	Sample *	Comp. (%)	Treat. (%)	Sig. *	SEED IE implications
Evaluation Question 1. Key outcome impacts: What is the impact of SEED Rural on children enrolled in Standard 7 at baseline in the SEED CDSS catchment areas?					
Education					
PSLCE pass rate (student self-report)	Retro	75.1	83.6		Primary school performance is expected to improve in new SEED CDSS catchment areas due to improved student motivation resulting from increased access to secondary schools.
PSLCE pass rate (primary school report)	Primary	81.0	77.3		
Percent of students selected to public secondary school among those who sat for PSLCE	Primary	24.3	29.8		Secondary school selection rates in new SEED CDSS catchment areas are expected to improve due to increased Form 1 admission spaces and improved PSLCE performance.
School progression	Retro			*	Public secondary school transition rates are expected to increase while Standard 8 repetition and school dropout rates are expected to decrease due to improvements in PSLCE performance and secondary school access.
Transition to public Form 1		23.2	37.5		
Transition to other Form 1		10.5	13.9		
Dropped out of school		30.7	22.0		
Repeated Standard 8		35.6	26.6		
SR-GBV					
Girls ever absent from school during academic year due to SR-GBV safety concerns at or traveling to/from school	Retro	1.8	10.0	*	Change in SR-GBV related school absenteeism is likely to be minimal in comparison areas due to low baseline incidence. However, improvements in treatment areas, where baseline values of absenteeism are significantly higher, is expected to result from decreased travel and boarding to the new SEED CDSSs.
Girls reported experiencing one or more of 21 sexual violence acts at least once	Retro	66.1	81.2		
CEFM					
Forced into marriage	Retro	2.2	0.8		Program impacts on incidence of marriage and of marriage before 18 are expected to result from improved student and caregiver education expectations and increased secondary school access. Program impacts on marriage before age 15 and forced marriage may not be possible because of low or zero baseline levels.
First married/in union before age 15	Retro	0.0	0.0		
First married/in union before age 18	Retro	3.9	3.8		
Ever married or in union	Retro	11.5	9.3		

* Notes: *Retro* indicates retrospective cohort, *prosp* indicates prospective cohort, *primary* indicates respondents to the primary school questionnaire, and *secondary* indicates respondents to the secondary school questionnaire. Significance levels indicated as * p<0.05, ** p<0.01, and *** p<0.001.

Table 79.B. Evaluation Question 2 key indicators and SEED IE implications

Indicator	Sample *	Comp. (%)	Treat. (%)	Sig. *	SEED IE implications
Evaluation Question 2. General attitudinal/behavioral impacts: To what extent does construction of new SEED CDSSs in rural Malawi change the perceptions, attitudes, aspirations, or behaviors related to education and future outlooks among children enrolled in Standard 7 at baseline, their parents/caregivers, local leaders, and educators?					
Student's ideal level of education is secondary or higher	Prosp	99.7	98.5		Detecting any program impact on ideal or expected education levels is unlikely given to already high findings at baseline. However, we may observe positive impact on student perceptions of community schooling norms due to increased secondary school access.
Student's expected actual level of education is secondary or higher	Prosp	99.1	97.0		
Student perceives their chances of finishing secondary school to be high	Prosp	72.0	71.0		Student expectations of completing secondary school are expected to increase in SEED CDSS catchment areas due to increased access to secondary schools.
Student expects their life will be better five years from now	Prosp	88.1	84.8		Student optimism is expected to increase in SEED CDSS catchment areas due to increased expectations around secondary school access and completion.
Student-perceived barriers to reaching own educational goals					
Direct school costs	Prosp	62.4	64.3		While direct secondary school costs have been lowered for all students, it is unknown how perceptions of financial barriers will change due to the SEED intervention. Caregivers and students may conflate costs related to travel, general school fees, and special school fees such as the school development fund. If travel costs decrease in treatment areas due to new SEED CDSSs, we may observe decreased reporting of financial barriers. If general and other secondary school fees increase to compensate for lost tuition revenue, particularly in the new rural SEED CDSS schools, we may observe increased reporting of financial barriers.
Exam fees and related costs	Prosp	60.3	60.7		
Not enough Form 1 secondary admissions spaces	Prosp	21.9	30.2		Form 1 admission space, distance to secondary school, and school travel safety concern constraints are expected to improve in SEED CDSS catchment areas.
Distance to school	Prosp	39.5	39.7		
Not safe traveling to/from school	Prosp	22.7	25.8		
Getting married	Prosp	37.4	40.6		SEED rural is expected to decrease marriage and pregnancy rates due to improved expectations around educational achievement possibilities resulting from increased secondary school access.
Getting pregnant/fathering a child	Prosp	35.7	40.4		

* Notes: *Retro* indicates retrospective cohort, *prosp* indicates prospective cohort, *primary* indicates respondents to the primary school questionnaire, and *secondary* indicates respondents to the secondary school questionnaire. Significance levels indicated as * p<0.05, ** p<0.01, and *** p<0.001.

Table 79.C. Evaluation Question 3 key indicators and SEED IE implications

Indicator	Sample *	Comp. (%)	Treat. (%)	Sig. *	SEED IE implications
Evaluation Question 3. Healthy behavioral impacts: To what extent does the construction of a new rural CDSS positively or negatively affect sexual behaviors, WASH behaviors, and child safety?					
Sexual behavior					
Ever had sex	Prosp	11.8	11.2		Student sexual debut and risky sexual behavior are expected to decrease in SEED CDSS catchment areas due to increased financial and geographical opportunities to attend secondary school.
Sexually active student used modern family planning method past 12 months	Prosp	71.7	66.1		
Sexually active student had concurrent sexual partnerships past 12 months	Prosp	10.9	13.2		
Sexually active student used condom at last sex past 12 months	Prosp	71.9	64.5		
Sexually active student ever had transactional sex with current/most recent partner past 12 months	Prosp	14.0	9.1		
WASH environment and behaviors					
School has basic drinking water service	Secondary	93.2			The overall secondary school WASH environment is expected to improve due to the inclusion of water, sanitation, hygiene, and MHM design elements in rural SEED CDSS construction.
School has basic sanitation service	Secondary	55.9			
School has basic hygiene service	Secondary	86.2			
School has water and soap available in a private space for girls to manage menstrual hygiene	Secondary	27.1			
School has one or more girls-only change rooms in use at the school	Secondary	44.1			
Menstruating girl currently in school worried would not be able to change menstrual materials when needed during last menstrual period when at school	Retro	20.5	27.0		Student concern over restricted MHM at school is expected to improve in SEED CDSS catchment areas due to the WASH design elements embedded in the rural greenfield construction plans.
Safety					
Student agrees/strongly agrees with statement on student safety					
I feel safe traveling to/from school	Retro	71.4	72.2		Student concerns about safety while traveling to/from school are expected to improve in SEED CDSS catchment areas due to decreased travel distances and reduced need for self-boarding.
Felt unsafe or threatened in neighborhood, on the way to school, or in school	Retro	13.6	15.3		

* Notes: *Retro* indicates retrospective cohort, *prosp* indicates prospective cohort, *primary* indicates respondents to the primary school questionnaire, and *secondary* indicates respondents to the secondary school questionnaire. Significance levels indicated as * p<0.05, ** p<0.01, and *** p<0.001.

Table 79.D. Evaluation Question 4 key indicators and SEED IE implications

Indicator	Sample *	Comp. (%)	Treat. (%)	Sig. *	SEED IE implications
Evaluation Question 4. Schooling and business environment spillovers: To what extent have there been changes in the education environment because of new rural SEED CDSS construction?					
Primary school had any teacher leave during the 2020 academic year because they transferred to a secondary school	Primary	7.1	9.9		Incidence of primary school teachers transferring to a secondary school and incidence of secondary schools with teachers only qualified for primary teaching may increase in SEED CDSS catchment areas due to staffing needs of the new secondary schools and local opportunities for teacher job upgrading.
Any teacher at the school has only a primary teaching professional qualification level	Secondary	87.9			

* Notes: *Retro* indicates retrospective cohort, *prosp* indicates prospective cohort, *primary* indicates respondents to the primary school questionnaire, and *secondary* indicates respondents to the secondary school questionnaire. Significance levels indicated as * p<0.05, ** p<0.01, and *** p<0.001.

17.5 Urban Summary

Students, caregivers, teachers, and community leaders reported many positive outcomes resulting from the SEED urban school expansion. These included an increased sense of school pride, a conducive learning environment, increased student motivation to do well in school, increased motivation for parents to send their children to school, higher enrollment and attendance rates, and reduced absenteeism among girls. At the same time, some unintended outcomes were noted by respondents, such as increased teacher workloads and exacerbation of existing book shortages.

Respondents reported that the expanded classroom space and smaller class size because of SEED enabled students to better social distance to mitigate the spread of COVID-19.

Students reported that they were not sexually active because they feared getting pregnant or making someone pregnant, which would affect their ability to continue their schooling. Nearly all students that were interviewed reported they did not want to marry early as they viewed early marriage as a hindrance to their education and future aspirations.

Some students experienced physical violence at the hands of fellow students. Reports of psychological violence within the school environment were common among student respondents and involved verbal abuse or harassment. While no students reported they themselves had been sexually assaulted or raped, several female students recounted stories about friends who had been raped. None of the reported sexual violence occurred at school or enroute to school.

Respondents reported that the school expansion had a positive effect on the local economy. Short-term effects included piece work at construction sites and an increased demand for goods such as food due to the presence of construction workers. Long-term benefits such as improved roads and increased business for local merchants due to increased student enrollment were also reported.

17.6 Preliminary Programmatic Implications

The following preliminary programmatic implications are based on baseline evaluation findings. They were discussed and refined with stakeholders during results validation events.

Based on Rural Findings

- **Hold community awareness events once the opening date for the new local CDSS is announced.** We did not detect high levels of planned secondary school construction awareness among students or caregivers at baseline. It will be important to ensure that caregivers and students in Standards 6, 7, and 8, as well as community and primary school leaders, are aware that Form 1 admissions spaces have increased in their community for the SEED rural CDSS construction program to influence education and related behavior change.
- **Monitor whether abolishment of secondary school tuition is being implemented.** While 97 percent of secondary schools reported that bursaries, subsidies, scholarships, and/or school fee waiver programs were available to students, direct school costs were a frequently cited barrier to attendance. It is also possible that some CDSSs will increase overall fees to compensate for reduced revenue from abolished tuition fees and to mitigate challenges of staffing remote rural public secondary schools.
- **Consider cost reduction or elimination for PSLCE and secondary school exam fees.** Although roughly 20 percent of primary and secondary schools reported examination fee waivers or vouchers were available to students, caregivers, primary school main respondents, and secondary school main respondents cited exam fees and related costs as serious problems for students' motivation and ability to complete primary school, join secondary school, and complete secondary school.
- **Monitor availability of WASH spaces supportive of MHM and availability of MHM commodities at secondary schools.** Less than 30 percent of secondary schools surveyed at baseline had both water and soap available in a private space for girls to manage menstrual hygiene, over half did not have any girls-only change rooms available, and only a quarter had MHM materials available at the school.

Based on Urban Findings

- **Create clear school guidance that students should be allowed to use new toilet and changing facilities.** At several urban sites, students reported restricted access.
- **Address community expectations around job creation in ongoing and future construction efforts.** Some urban qualitative respondents wished for more opportunities to benefit from the construction as only a few people were able to obtain piecework and builders were brought from elsewhere. While the rural construction may have different approaches to site job creation, it will be important from the beginning to be clear with the community what that approach is.
- **Monitor teacher workloads at urban sites**. Teachers at these sites often noted increased workloads since additional students were enrolled after the expansion. This may not be sustainable and could lead to teacher burnout.

17.7 Next Steps

Midline quantitative and qualitative data collection is tentatively planned for the third term of the 2022–2023 academic year (May/June 2023) based on planned Group 1 rural MoE school handover timelines. Midline quantitative data collection will focus on populating short-term program impact estimates in rural areas. Based on evaluation rural baseline and urban qualitative findings and stakeholder inputs, midline quantitative and/or qualitative data collection will also pay particular attention to:

- Understanding how school readmission processes are working for students who dropped out of school, particularly due to pregnancy/fathering a child
- Monitoring the availability and utilization of WASH and MHM services at CDSSs
- Monitoring enrollment, staffing, and teacher workloads at CDSSs
- Developing a deeper understanding of secondary school costs, including: (1) the extent to which the abolishment of secondary school tuition fees is being implemented, and (2) changes in non-tuition fees to understand if general and/or other fee types have increased to compensate for reduced revenue from abolished tuition fees and to mitigate the challenges of staffing the remote rural public CDSSs

18. References

Cafiero, C., Viviani, S., and Nord, M. (2018). Food security measurement in a global context: The food insecurity experience scale. *Measurement*. 116, 146–152.

Centers for Disease Control and Prevention. (2017). *Critical elements of interviewer training for engaging children and adolescents in global violence research: best practices and lessons learned from the Violence Against Children Survey*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Dexis Consulting Group. (2020). *School-Related Gender-Based Violence Measurement Toolkit*. Washington, DC: U.S. Agency for International Development.

Education in Crisis and Conflict Network. (2018). *Safer learning environments tools and resource annexes*. Washington, DC: USAID. https://www.eccnetwork.net/resources/safer-learning-environments-assessment-toolkit

Espinoza Revollo, P., and Portela, M.J.O. (2019). *Self-efficacy, agency, and empowerment during adolescence and young adulthood in Ethiopia, India, Peru, and Vietnam*. Young Lives Study Working Paper 184. Oxford, UK: University of Oxford Department of International Development.

Fontes, L.A. (2004). Ethics in violence against women research: the sensitive, the dangerous, and the overlooked. *Ethics & Behavior*, 14(2), 141–172.

Global Early Adolescent Study. (n.d.). Baseline survey. https://www.geastudy.org/

Guest G, Bunce A, Johnson L. How many interviews are enough?: An experiment with data saturation and variability. Field Methods. 2006;18(1):59–82. doi:10.1177/1525822X05279903.

Guest G, Namey E, McKenna K. How many focus groups are enough? Building an evidence base for nonprobability sample sizes. Field Methods. 2017;29(1):3–22. doi:10.1177/1525822X16639015)

Hinson, L., Kapungu, C., Jessee, C., Skinner, M., Bardini, M., and Evans-Whipp, T. (2016). *Measuring positive youth development toolkit: A guide for implementers of youth programs*. Washington, DC: YouthPower Learning, Making Cents International.

Innovations for Poverty Action. (May 2020). Malawi 2016 Poverty Probability Index. https://www.povertyindex.org/country/malawi

Innovations for Poverty Action. (2018). *The safe and ethical conduct of violence research: guidance for researchers and research staff*. https://www.poverty-action.org/publication/ipv-ethical-guidance

Ministry of Education, Science and Technology, Government of Malawi. (2019). Statement: *Abolition of the Tuition Fees, Textbook Revolving Fund and General Purpose Fund in Malawi Secondary Schools*. Lilongwe: Government of Malawi.

Ministry of Education, Government of Malawi. (2021). *2021 Malawi Education Statistics Report. Education Management Information Systems (EMIS).*

Ministry of Education, Science and Technology. (2018). *Education Management Information (EMIS) Report*.

National Statistical Office, Government of Malawi. (2020). *The Fifth Integrated Household Survey (IHS5) 2020 Report*. Zomba, Malawi: National Statistical Office.

National Statistical Office, Government of Malawi. (2021). *Malawi Multiple Indicator Cluster Survey 2019–20, Survey Findings Report*. Zomba, Malawi: National Statistical Office.

National Statistical Office, Government of Malawi. (2021). *Malawi Poverty Report 2020*. Zomba, Malawi: National Statistical Office.

Shek, D.T.L., Siu, A.M.H., and Lee, T.Y. (2007). The Chinese positive youth development scale: A validation study. *Research on Social Work Practice*, 17(3), p. 380–391.

StataCorp. (2019). *Stata statistical software: Release 16*. College Station, TX: StataCorp LLC.

UNICEF. (2020). *Guidance for monitoring menstrual health and hygiene*. UNICEF, New York.

UNICEF. (2020). Sixth Multiple Indicator Cluster Surveys (MICS6) questionnaires and indicator list. https://mics.unicef.org/tools

UNICEF. (2018). *INSPIRE indicator guidance and results framework – Ending violence against children: How to define and measure change*. UNICEF, New York.

World Health Organization. (2018). *Guidance on ethical considerations in planning and reviewing research studies on sexual and reproductive health in adolescents*. Geneva: World Health Organization.

World Health Organization. (2017). *Responding to children and adolescents who have been sexually abused: WHO clinical guidelines*. Geneva: World Health Organization.

World Health Organization. (2016). *Ethical and safety recommendations for intervention research on violence against women. Building on lessons from the WHO publication Putting women first: ethical and safety recommendations for research on domestic violence against women*. Geneva: World Health Organization.

World Health Organization. (2001). *Putting women first: ethical and safety recommendations for research on domestic violence against women*. Geneva: World Health Organization.

WHO and UNICEF. (2018). *Core questions and indicators for monitoring WASH in schools in the Sustainable Development Goals*. https://washdata.org/sites/default/files/documents/reports/2018-08/SDGs-monitoring-wash-in-schools-2018-August-web2.pdf

Appendix A. Expanded and Additional Results

Sample Characteristics

Table A1. Detailed characteristics of sampled students from household questionnaire

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Sex			0.753			0.752
Male	49.2	50.0		45.7	46.4	
Female	50.8	50.0		54.4	53.6	
Age			0.914			0.318
11–12	0.0	0.0		4.4	5.0	
13	0.8	1.1		9.6	13.3	
14	3.4	2.7		16.7	19.3	
15	9.7	13.9		24.0	18.0	
16	17.7	17.5		24.7	19.2	
17	20.5	19.3		10.1	15.4	
18	23.1	22.5		6.7	5.6	
19	9.7	8.7		0.8	0.5	
20	4.7	6.0		0.8	1.5	
21–27	7.5	4.9		1.3	0.8	
DK/Missing	2.8	3.5		1.1	1.6	
Average age (SE)	17.4 (0.110)	17.2 (0.140)	0.383	15.3 (0.124)	15.2 (0.134)	0.687
Students with functional difficulty or chronic illness						
Percent of sampled students with any difficulty reported	5.1	2.7	0.187	3.5	4.6	0.478
Percent of difficulties reduce the amount of work that sampled students can do at school			0.687			0.518
Yes, all the time	7.6	16.6		28.6	17.3	
Yes, sometimes	45.0	55.0		51.9	44.5	
No	17.0	14.2		19.6	38.2	
NA (if not working or not attending school)	30.4	14.2		0.0	0.0	
Percent of sampled students suffer from a chronic illness	1.4	2.5	0.413	3.1	4.5	0.536
N (sampled students)	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A2. Household composition

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Average number of household members (household size)	5.7	5.8	0.701	6.1	6.0	0.333
Number of HH members primary school age (0–5)	0.5	0.5	0.667	0.6	0.5	0.386
Boys	0.3	0.3	0.253	0.3	0.2	0.141
Girls	0.3	0.2	0.562	0.3	0.3	0.900
Number of HH members primary school age (6–13)	1.2	1.4	0.124	1.7	1.7	0.773
Boys	0.6	0.7	0.421	0.8	0.9	0.765
Girls	0.6	0.7	0.122	0.9	0.8	0.537
Number of HH members secondary school age (14–17)	1.1	1.1	0.811	1.3	1.2	0.895
Boys	0.5	0.5	0.854	0.6	0.6	0.379
Girls	0.6	0.6	0.551	0.6	0.7	0.532
Number age 18—24	1.2	1.1	0.301	0.8	0.7	0.725
Male	0.7	0.6	0.356	0.5	0.5	0.991
Female	0.5	0.5	0.509	0.3	0.3	0.479
Number age 25–64	1.5	1.5	0.848	1.6	1.7	0.596
Male	0.7	0.6	0.354	0.7	0.7	0.204
Female	0.9	0.9	0.197	1.0	0.9	0.389
Number age 65+	0.2	0.2	0.370	0.2	0.1	0.021
Male	0.1	0.1	0.319	0.1	0.1	0.121
Female	0.2	0.1	0.115	0.1	0.1	0.028
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A3. Children's orphanhood

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Percentage of households with orphan children under 18 years of age						
Single orphans	18.6	19.0	0.900	14.6	14.8	0.951
Double orphans	4.8	2.6	0.282	1.3	3.3	0.151
Number of children in the household by orphan status						
Number of children (0–5) total	0.50	0.50	0.667	0.60	0.50	0.386
Number of children (0–5) total who are orphaned	0.02	0.02	0.982	0.01	0.01	0.949
Number of children (6–13) total	1.20	1.40	0.124	1.70	1.70	0.773
Number of children (6–13) total who are orphaned	0.14	0.09	0.249	0.14	0.12	0.644
Number of children (14–17) total	1.10	1.10	0.811	1.30	1.20	0.895
Number of children (14–17) total who are orphaned	0.14	0.15	0.724	0.13	0.13	0.910
Number of children (0–17) total	2.77	3.01	0.179	3.54	3.46	0.433
Number of children (0–17) total who are orphaned	0.29	0.25	0.517	0.28	0.27	0.855
Boys	0.17	0.12	0.313	0.14	0.12	0.702
Girls	0.12	0.13	0.953	0.14	0.15	0.955
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A4. Household headship

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Sex of HH head			0.674			0.143
Female	36.4	38.5		38.8	31.6	
HH head age (mean, SD)*	46.3 (0.8)	46.9 (0.7)	0.605	46.3 (0.6)	45.3 (0.7)	0.310
Male	46.0 (1.1)	48.3 (1.0)	0.125	47.9 (0.8)	45.9 (0.8)	0.098
Female	46.8 (1.3)	44.7 (1.2)	0.254	44.0 (0.9)	44.1 (1.1)	0.904
Marital status of HH head			0.564			0.026
Never married	1.3	0.9		1.8	0.7	
Married	75.8	76.0		69.3	79.1	
Divorced/separated	12.5	15.5		20.0	11.4	
Widow/widower	10.4	7.6		8.9	8.8	
Education level of HH head			0.126			0.112
No education	12.8	7.0		7.6	9.6	
Primary incomplete	44.7	39.8		50.3	44.2	
Primary complete	19.2	21.4		17.3	15.9	
Secondary incomplete	13.4	14.7		11.5	13.9	
Secondary complete	6.6	13.3		11.8	10.9	
Higher	3.5	3.9		1.6	5.5	
Average years of education of HH head (mean, SD)	6.4 (0.3)	7.4 (0.3)	0.024	6.6 (0.3)	7.2 (0.3)	0.209
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.*84 HH head age coded as unknown.

Table A5. Religion, language, and ethic group

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Religion			0.203			0.884
None	2.6	3.5		1.2	0.9	
Traditional	0.5	1.2		1.7	2.9	
Christianity	89.6	79.7		87.8	85.9	
Islam	2.2	7.8		5.0	4.5	
Other religion	5.1	7.8		4.3	5.9	
Main language spoken at home			0.484			0.656
Chewa	71.1	68.5		69.6	66.6	
Nyanja	11.4	16.0		10.2	17.6	
Yao	1.4	4.0		3.6	2.9	
Tumbuka	8.4	8.3		8.7	9.1	
Lomwe	6.8	2.0		6.5	2.5	
Ngoni	0.7	1.0		1.1	1.3	
Sena	0.0	0.3		0.0	0.0	
Other	0.3	0.0		0.2	0.0	
Ethnic group			0.468			0.852
Chewa	39.7	39.0		36.7	38.2	
Tumbuka	9.2	6.9		8.0	8.4	
Lomwe	29.9	35.0		31.3	33.1	

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Tonga	0.0	0.0		0.0	0.2	
Yao	3.6	10.1		6.3	9.1	
Sena	0.5	0.3		1.9	0.4	
Nkhonde	0.0	0.5		0.0	0.2	
Ngoni	9.5	5.5		6.3	4.9	
Other	7.6	2.8		9.6	5.4	
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A6. Household welfare

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Poverty rate of all households for the selected poverty line						
$1.90/day 2011 PPP (mean, SD)	70.7 (2.5)	67.4 (2.2)	0.336	71.2 (1.9)	68.9 (2.3)	0.459
National poverty line (mean, SD)	49.3 (3.2)	46.4(2.7)	0.491	51.5 (2.2)	47.7 (2.4)	0.263
Extreme poverty line (mean, SD)	17.0 (2.0)	16.1 (2.0)	0.739	19.1 (1.4)	16.8 (1.5)	0.285
N	**294**	**305**		**381**	**380**	
Which of the following is true about your current income:			0.893			**0.860**
Allows you to build your savings	3.8	3.1		4.2	4.0	
Allows you to save just a little	7.6	7.7		8.1	6.8	
Only just meets your expenses	39.9	38.8		37.5	41.1	
Is not sufficient, so you need to use your savings to meet expenses	11.2	14.4		14.7	12.4	
Is really not sufficient, so you need to borrow to meet expenses	37.5	36.0		35.4	35.8	
Thinking about your total income over the last 12 months, would you say it is more, less, or about the same as the year before? Consider all money that came into your household.			0.928			0.895
More	13.0	11.8		13.3	14.4	
Less	72.0	73.2		72.6	70.9	
The same	15.0	15.0		14.2	14.7	
Compared to last year, do you feel that your household is more or less financially secure:			0.773			0.805
More secure	7.4	8.3		7.9	8.2	
Less secure	80.8	78.2		78.4	79.8	
No change from last year	11.9	13.5		13.7	12.0	
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A7. Food Security

Worried about not having enough food to eat because of a lack of money or other resources?	75.6	70.0	0.271	72.9	72.7	0.947
Were unable to eat healthy and nutritious food because of a lack of money or other resources?	79.8	76.9	0.557	80.6	80.1	0.896
Ate only a few kinds of foods because of a lack of money or other resources?	78.3	77.0	0.773	79.1	80.9	0.645
Had to skip a meal because there was not enough money or other resources to get food?	65.9	67.4	0.793	66.2	68.3	0.645
Ate less than you thought you should because of a lack of money or resources?	73.7	71.6	0.681	74.2	74.1	0.969
Ran out of food because of a lack of money or other resources?	63.4	65.1	0.764	65.3	63.4	0.672
Were hungry but did not eat because there was not enough money or other resources for food?	65.3	64.6	0.893	63.4	64.7	0.802
Went without eating for a whole day because of a lack of money or other resources?	42.7	44.9	0.725	42.9	43.6	0.892
It was less than adequate for household needs	59.4	60.2		59.0	62.2	
It was just adequate for household needs	34.6	35.4		34.7	34.1	
It was more than adequate for household needs	6.0	4.4		6.3	3.8	
By adults (3 missing values) (mean, SD)	2.3 (0.1)	2.2 (0.0)	0.738	2.2 (0.0)	2.2 (0.0)	0.988
By children (ages 5–17 years) (30 missing values) (mean, SD)	2.3 (0.1)	2.3 (0.0)	0.865	2.3 (0.0)	2.3 (0.0)	0.820

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A8. Household possessions

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Radio	31.0	38.5	0.156	38.2	43.2	0.332
Television	9.5	10.8	0.644	8.1	11.7	0.261
Mobile phone	73.5	73.7	0.966	78.2	72.6	0.124
Non-mobile telephone	1.0	2.6	0.146	2.5	1.5	0.409
Computer	2.0	1.0	0.317	1.7	4.2	0.080
Bed	27.9	36.6	0.139	31.4	30.1	0.831
Table	37.8	37.8	1.000	37.8	36.5	0.812
Iron (for pressing clothes)	14.6	18.7	0.101	16.2	17.9	0.590
Access to internet	5.3	7.7	0.354	6.6	6.6	0.976
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A9. Household drinking water

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Source of drinking water: Improved source	81.3	87.3	0.838	83.2	92.3	0.436
Piped into dwelling	0.7	0.6		0.6	1.7	
Piped into yard/plot	1.5	1.9		3.6	2.3	
Piped to neighbor	0.8	1.6		1.7	2.2	
Public tap/communal standpipe	6.1	4.2		5.4	5.1	
Tube well/borehole	65.4	68.6		65.3	73.8	
Protected dug well	6.3	9.8		5.4	6.9	
Protected spring	0.5	0.5		1.3	0.4	
Source of drinking water: Unimproved source	18.7	12.7		16.8	7.7	
Unprotected dug well	11.2	8.4		8.9	4.9	
Unprotected spring	3.1	1.5		3.1	1.2	
Surface water (river/dam/lake/pond/stream/ canal/irrigation channel)	4.4	2.8		4.9	1.6	
For HH with water outside dwelling, time to obtain drinking water (round trip)			0.387			0.316
Don't know	19.6	25.9		18.7	25.5	
Less than 30 minutes	57.2	52.2		53.8	53.1	
30 minutes or longer	23.2	22.0		27.5	21.4	
If the source of water is not in the HH, does the sampled student usually go to the source to collect water for the HH			0.115			0.111
Yes	74.6	79.5		84.7	89.2	
No	25.4	20.5		15.3	10.8	
In the past 7 days, # of times sampled student collected water (mean (SD))	8.7 (0.8)	7.3 (0.6)	0.199	7.9 (0.6)	8.8 (0.7)	0.351

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
If HH does anything to make the water safe, method usually used						
Water treatment prior to drinking			0.421			0.875
Boil	23.9	15.4		22.5	24.2	
Add bleach/chlorine	40.1	51.8		44.9	39.8	
Strain it through a cloth	0.0	3.0		2.5	2.2	
Use water filter (ceramic, sand, composite)	1.2	1.3		0.0	1.0	
Let it stand and settle	20.9	12.0		13.5	12.7	
Other	13.5	16.0		16.6	19.5	
Percentage using an appropriate water treatment method prior to drinking (include boiling, bleaching, filtering, and solar disinfecting)	65.2	68.5	0.746	67.4	65.0	0.781
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A10. Availability of water

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Availability of water last month			0.548			0.204
Water not available at least once in last month	22.9	20.6		27.0	21.8	
Water available always	77.1	79.4		73.0	78.2	
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A11. Household sanitation facilities

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Household sanitation facilities			0.323			0.252
Improved sanitation	24.9	29.5		30.2	24.5	
Flush to piped sewer system	0.0	0.0		0.0	0.7	
Flush to septic tank	0.4	0.0		0.2	0.0	
Ventilated improved pit latrine	5.0	5.0		6.7	3.8	
Pit latrine with slab	19.5	23.7		22.8	20.1	
Composting toilet	0.0	0.9		0.4	0.0	
Unimproved sanitation	74.0	70.3		69.5	75.5	
Shared facility						
Flush to septic tank	0.0	0.0		0.0	0.5	
Ventilated improved pit latrine	0.4	0.0		1.4	0.1	
Pit latrine with slab	4.4	3.9		3.1	6.1	
Composting toilet	0.0	0.3		0.0	0.0	
Unimproved facility						
Open defecation (no facility/bush/field)	69.2	66.1		64.9	68.8	
Other	1.1	0.2		0.3	0.0	
Location of the facility			0.302			0.292
In own dwelling	17.9	13.6		16.7	12.2	
In own yard/plot	74.1	79.9		78.5	81.4	
Elsewhere	8.0	6.5		4.8	6.4	
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A12. Hand washing

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Hand washing			0.589			0.334
Percentage of households in which the place for hand washing was observed	52.8	56.1		46.6	53.6	
Place for hand washing was in a fixed place	2.5	4.5		1.6	4.5	
Place for hand washing was mobile	50.3	51.6		45.0	49.1	
Among households in which the place for hand washing was observed, percentage with:			0.085			0.143
Soap (includes soap or detergent in bar, liquid, powder, or paste form) and water	42.5	41.2		38.0	34.9	
Water only, but no soap	30.7	33.0		36.1	29.1	
Soap only, but no water	2.0	8.7		6.2	2.9	
No water, no soap	24.8	17.1		19.7	33.2	
Percentage of households in which the place for hand washing was not observed	47.2	43.9		53.4	46.4	
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A13. Economic support and negative shocks

	Retrospective cohort			Prospective crt		
	Comparison	Treatent	p-value	Comparison	Treatment	p-value
In the last 12 months, has any member of your household received cash, food, or other aid from: School Feeding Programme	8.3	8.9	0.863	13.5	13.4	0.989
Was the assistance given to sampled student (sample size: 161)	37.2	2	0.748	96.2	96.6	0.938
In the last 12 months, has any member of your household received cash, food, or other aid from: Scholarships/Bursaries for Secondary Education (e.g., CRECCOM)	2.4	2.1	0.838	0.7	1.1	0.594
Was the assistance given to sampled student (sample size: 23)	74.0	7	0.678	85.6	69.3	0.569
In the last 12 months, has any member of your household received cash, food, or other aid from:						
Direct cash transfers from government	5.3	9	0.760	4.7	4.1	0.720
Direct cash transfers from others (development partners, NGOs)	4.0	2	0.541	3.7	4.4	0.707
Other education-related assistance	2.9	4.9	0.280	2.6	2.6	0.968
Was the assistance given to sampled student (sample size: 39)	78.4	0	0.552	38.7	79.0	0.063
During the last 12 months, was your household affected negatively by any of the following shocks						
Lower crop yields due to drought, flood, crop disease, or pests	54.8	9	0.393	56.2	59.5	0.457
Significant rise in food prices	41.8	49.4	0.244	49.1	49.8	0.904
High education costs	30.6	35.6	0.188	27.3	25.3	0.513

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Loss of livestock or poultry to disease or pests	23.3	24.1	0.865	27.5	26.0	0.699
Business failure	19.5	18.7	0.885	19.9	20.2	0.948
Significant fall in sales price of crops or livestock or poultry	17.0	21.5	0.365	17.6	16.5	0.777
Disruption of farming, livestock, or fishing activities	16.5	14.9	0.759	19.5	15.3	0.390
Serious illness or accident of household member(s)	14.5	9.6	0.099	16.7	15.1	0.617
Damage to/destruction of dwelling (for example, burning, flood, winds)	10.0	8.3	0.536	8.5	5.7	0.280
Death of other household member(s)	6.3	5.1	0.569	7.5	6.2	0.579
Theft/looting of cash and other property	6.2	7.1	0.702	6.9	6.6	0.886
Conflict/violence	3.9	3.8	0.966	3.9	3.1	0.634
Salary loss (household member died, lost job, was too ill to work, not paid as expected)	3.0	1.1	0.205	1.4	2.5	0.357
End of regular assistance, aid, or remittances from outside household	2.4	3.0	0.613	2.6	2.3	0.841
Birth in the household	2.0	2.3	0.859	2.7	1.5	0.345
Break-up of household (divorce/separation/death/migration)	1.9	2.2	0.761	5.0	1.3	0.007
Death of income earner(s)	0.3	1.1	0.175	0.2	2.7	0.002
Other	0.2	2.5	0.007	2.7	1.9	0.469
None	13.8	10.7	0.500	10.2	11.0	0.829
The three most significant negative shocks you experienced in the last 12 months.						
Lower crop yields due to drought, flood, crop disease, or pests	51.5	54.7	0.606	50.9	55.5	0.268
Significant rise in food prices	33.5	39.3	0.332	41.2	41.7	0.925
High education costs	27.6	31.9	0.294	20.4	19.6	0.786
Loss of livestock or poultry to disease or pests	17.0	16.0	0.776	20.9	19.8	0.743
Business failure	16.9	13.8	0.511	16.7	16.0	0.862
Serious illness or accident of household member(s)	13.0	8.7	0.123	15.5	12.2	0.275
Significant fall in sales price of crops or livestock or poultry	10.7	13.3	0.474	10.7	9.5	0.655
Disruption of farming, livestock, or fishing activities	8.0	11.9	0.267	11.9	10.4	0.655
Damage to/destruction of dwelling (for example, burning, flood, winds)	7.2	6.7	0.819	6.4	4.0	0.215
Death of other household member(s)	5.8	4.8	0.624	7.1	5.7	0.519
Theft/looting of cash and other property	4.9	4.9	0.982	5.5	5.4	0.929
Salary loss (household member died, lost job, was too ill to work, not paid as expected)	2.8	1.0	0.212	0.9	2.3	0.183
Conflict/violence	2.7	2.5	0.920	3.8	2.8	0.530
End of regular assistance, aid, or remittances from outside household	1.6	1.2	0.670	1.5	0.5	0.185
Break-up of household (divorce/separation/death/migration)	1.5	2.0	0.677	4.6	0.7	0.002

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Birth in the household	1.2	0.9	0.766	1.7	0.6	0.200
Death Of Income Earner(S)	0.3	1.1	0.175	0.2	2.5	0.003
Other	0.2	2.5	0.007	2.3	1.9	0.727
What did your household do in response to these [THREE] most significant negative shocks to try to regain your former welfare level						
Did not do anything	23.4	33.4	0.021	30.6	35.8	0.233
Relied on own-savings	11.2	12.6	0.694	11.1	11.1	0.990
Adult (age 18 and over) household members who were previously not working had to find work/ganyu	10.4	2.5	0.000	8.1	6.8	0.597
Sale of assets (agricultural)	8.6	9.8	0.630	10.6	9.1	0.629
Intensified fishing/farming	8.1	5.5	0.179	6.4	4.2	0.220
Received unconditional help from relatives/friends	5.8	5.0	0.709	5.3	4.6	0.758
Borrowed from relatives/friends	5.6	8.8	0.146	9.8	7.6	0.362
Obtained credit/took a loan from a financial institution	4.5	6.7	0.361	4.2	5.1	0.661
Employed adult (age 18 and older) household members took on more employment/ganyu	3.6	2.8	0.624	2.6	2.2	0.755
Sale of assets (non-agricultural)	3.4	3.8	0.845	4.0	1.5	0.069
Child (under age 18) household members who were previously not working had to find work/ganyu	2.8	1.9	0.512	1.9	1.7	0.888
Reduced expenditures on food	2.3	4.8	0.118	2.2	3.7	0.364
Reduced other expenditures	2.2	2.4	0.896	2.9	2.4	0.686
Engaged in spiritual efforts (prayer, sacrifices, diviner consultations)	2.0	1.6	0.780	3.1	2.3	0.596
Received unconditional help from NGO/religious institution	1.1	0.0	0.136	0.1	0.7	0.046
Employed child (under age 18) household members took on more employment	1.1	0.3	0.287	1.3	0.6	0.347
Went without something/sold something to keep child in school	0.8	0.7	0.894	0.1	0.6	0.105
Took child out of school because could not afford education expenses	0.8	1.7	0.258	0.0	0.0	
Changed eating patterns (relied on less preferred food options, reduced the proportion or number of meals per day, or household members skipped days of eating, etc.)	0.6	1.2	0.489	1.5	2.0	0.646
Household members migrated	0.4	0.6	0.616	0.6	0.2	0.297
Sent children to live elsewhere	0.2	0.0	0.258	0.4	0.6	0.754
Received unconditional help from government	0.1	0.1	0.763	0.0	0.4	0.185
Reduced expenditures on health	0.0	0.1	0.414	0.1	0	0.312
Reduced expenditures on education	0.0	0.3	0.398	0.2	0	0.158
Took child out of school to work	0.0	0.6	0.178	0.8	0.0	0.155
Had daughter married earlier than planned	0.0	0.0		0.2	0.0	0.313

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Other	10.9	9.6	0.758	4.7	6.9	0.297
N	**294**	**305**		**381**	**380**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Education

Table A14. Student self-reported grades on PSLCE (among students who know or have received grades)

	Retrospective cohort		
	Comparison	Treatment	p-value
English			0.141
A	2.1	0.5	
B	21.5	39.5	
C	49.9	42.1	
D	22.7	16.2	
F	3.9	1.7	
N	107	118	
Chichewa			0.257
A	9.4	16.8	
B	51.2	46.5	
C	26.7	31.5	
D	8.3	3.5	
F	4.4	1.7	
N	108	117	
Arithmetic			0.504
A	0	1.4	
B	14.4	18.2	
C	44.8	43.6	
D	28.5	31.4	
F	12.3	5.5	
N	107	115	
Science and technology			0.077
A	2.2	5.7	
B	12.8	10.7	
C	41.9	43.5	
D	29.7	38.4	
F	13.4	1.7	
N	104	115	
Social and environmental sciences			0.838
A	3.6	3.5	
B	13.2	13.9	

	Retrospective cohort		
	Comparison	Treatment	p-value
C	42.5	37.5	
D	28.6	36.2	
F	12.1	8.9	
N	**103**	**114**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Aspirations, Expectations, Attitudes, and Beliefs

Table A15. Self-esteem, self-efficacy, and agency about the future

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Self-esteem about the future (CPYDS subscale on positive beliefs about the future)						
I have confidence to solve my future			0.373			0.072
Strongly disagree	5.3	2.7		4.0	4.7	
Disagree	3.6	6.3		6.4	11.7	
Neither agree nor disagree	3.3	1.2		2.1	0.3	
Agree	40.4	38.3		32.7	33.3	
Strongly agree	47.5	51.6		54.8	50.0	
I have confidence that I will complete secondary school			0.049			0.193
Strongly disagree	6.1	1.9		1.6	2.8	
Disagree	5.1	3.3		1.0	3.3	
Neither agree nor disagree	6.6	1.9		4.1	2.4	
Agree	29.8	40.8		34.5	38.6	
Strongly agree	52.4	52.2		58.7	53.0	
I have confidence that I will be a useful person when I grow up			0.183			0.327
Strongly disagree	3.9	1.1		0.9	1.9	
Disagree	0.0	1.3		0.5	1.9	
Neither agree nor disagree	3.2	1.3		1.6	0.5	
Agree	34.9	41.0		38.0	42.0	
Strongly agree	58.0	55.3		59.0	53.8	
I do not expect to get what I want			0.183			0.663
Strongly disagree	7.2	7.4		8.5	5.6	
Disagree	10.7	19.9		16.6	18.3	
Neither agree nor disagree	7.3	4.6		6.5	5.4	
Agree	42.1	42.1		39.6	42.7	
Strongly agree	32.7	25.9		28.9	28.1	
I can see that my future is unpleasant			0.669			0.769
Strongly disagree	3.4	2.5		3.0	3.9	

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Disagree	4.1	7.4		4.6	5.6	
Neither agree nor disagree	5.1	3.8		6.2	4.0	
Agree	45.5	46.0		43.7	44.1	
Strongly agree	41.9	40.3		42.5	42.4	
It is not possible for me to have satisfaction in future			0.325			0.483
Strongly disagree	7.6	4.1		3.8	5.9	
Disagree	5.8	8.0		7.4	6.4	
Neither agree nor disagree	5.1	4.0		4.4	3.1	
Agree	39.0	46.6		41.1	45.9	
Strongly agree	42.5	37.4		43.2	38.7	
It is very probable that I will not get things that I want in future			0.168			0.571
Strongly disagree	9.0	7.3		6.1	5.5	
Disagree	15.9	20.7		15.5	17.4	
Neither agree nor disagree	5.5	6.0		7.5	5.5	
Agree	33.3	40.8		39.1	43.9	
Strongly agree	36.4	25.1		31.8	27.7	
N	**207**	**224**		**364**	**358**	
Self-efficacy and agency over the future (Young Lives Scale)						
If I try hard, I can improve my situation			0.749			0.243
Strongly disagree	0	0		1.7	1.7	
Disagree	0	0.9		0.2	0	
Neither agree nor disagree	0.5	0.7		0.7	0.9	
Agree	38.4	39.3		43	33.3	
Strongly agree	61.2	59.1		54.5	64.1	
I like to make plans for my future studies and work			0.545			0.432
Strongly disagree	1.9	2.2		0.8	1.4	
Disagree	4.2	4.3		3.9	2.8	
Neither agree nor disagree	4.9	3.3		3.1	1.2	
Agree	36.5	44.8		45.4	42.8	
Strongly agree	52.6	45.4		46.8	51.7	
Other people in my family make all the decisions about how I spend my time			0.153			0.955
Strongly disagree	27.1	26.8		27	26.1	
Disagree	27.4	39.5		38.2	41	
Neither agree nor disagree	5.5	4.2		8.9	7.8	
Agree	24.1	20.1		18.7	17.6	
Strongly agree	15.9	9.3		7.3	7.6	
			0.261			0.642

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
If I study hard at school I will be rewarded by a better job in the future						
Strongly disagree	1.5	2.1		1.2	2.3	
Disagree	3.9	0.9		0.8	0.4	
Neither agree nor disagree	5.5	2.7		3.9	2.9	
Agree	31.4	38.6		39.1	35.2	
Strongly agree	57.7	55.8		55.1	59.2	
I have no choice about the work I do – I must do this sort of work			0.025			0.702
Strongly disagree	21.9	13.6		16.3	12.2	
Disagree	30.1	34.4		32.1	37.6	
Neither agree nor disagree	8.3	2.5		8.2	8.3	
Agree	26.2	37.2		31.8	29.3	
Strongly agree	13.6	12.3		11.5	12.6	
N (students)	**209**	**227**		**372**	**370**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Schooling Norms and Perceived Barriers to Education

Table A16. Student-reported barriers to reaching their own educational goals

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Direct school costs	74.1	75.7	0.733	62.4	64.3	0.663
Exam fees and related costs	71.3	72.6	0.797	60.3	60.7	0.926
Getting married	44.4	48.8	0.549	37.4	40.6	0.645
Getting pregnant/fathering a child	43.4	48.8	0.401	35.7	40.4	0.503
Distance to school	49.0	60.9	0.048	39.5	39.7	0.969
Not enough Form 1 secondary school admissions spaces	37.9	36.2	0.713	21.9	30.2	0.054
Parents/caregivers do not support or encourage schooling	23.4	25.1	0.764	22.3	27.5	0.377
Not safe travelling to/from school	33.3	36.3	0.554	22.7	25.8	0.558
Education quality is poor at my school	24.4	26.3	0.694	12.4	16.5	0.275
Paid work	15.4	15.9	0.884	13.2	15.6	0.538
Chores at home	19.1	16.1	0.558	11.9	12.5	0.869
Caregiving responsibilities	11.2	14.5	0.486	10.0	9.9	0.960
N (students)	**227**	**237**		**381**	**380**	

Notes: Direct school costs include school fees, PTA dues, uniforms, and school supplies. Unweighted sample sizes and weighted summary and test statistics.

Table A17. Student-reported barriers to secondary school transition among students from their primary school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
There is a secondary school nearby that students in your community could join if they pass the PSLCE	59.4	62.6	0.685	61.3	65.7	0.394
Students from your primary school who pass the PSLCE are typically selected for secondary school	84.3	85.7	0.746	86.0	85.6	0.914
Students from your primary school selected for secondary school typically join secondary school	88.3	86.2	0.580	86.5	87.2	0.848
Main reasons students from your primary school who pass the PSLCE do not join secondary school						
Financial/costs	88.4	87.9	0.893	85.3	80.2	0.086
Marriage	17.8	29.5	0.012	18.6	22.4	0.320
Getting pregnant/fathering a child	15.7	28.9	0.004	18.9	20.6	0.702
Travel/distance to secondary school is too far	19.9	17.5	0.627	19.0	17.1	0.657
Did not like school, would rather do something else	9.2	7.3	0.601	11.8	9.9	0.502
Poor grades	11.3	10.4	0.739	10.4	7.5	0.183
Not selected to secondary school	8.7	4.0	0.062	7.2	6.1	0.479
Parents/guardian did not want	3.9	2.7	0.534	2.4	3.0	0.631
Need to work/earn money	3.5	3.3	0.926	2.8	3.0	0.881

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Travel/distance to secondary school is not safe	0.9	2.7	0.195	1.6	1.8	0.856
Do not want to board/self-board	1.1	1.7	0.574	0.9	1.7	0.370
Not enough Form 1 seats	1.8	2.3	0.745	1.5	1.5	0.950
Having a child/caring for own child	3.4	5.3	0.389	2.2	1.3	0.372
Need to work at home/fields	0.4	3.1	0.024	2.1	0.9	0.196
Completed all schooling desired	0.0	0.4	0.399	2.6	0.0	0.039
N (students)	227	237		381	380	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A18. Caregiver-reported barriers to secondary school transition among household children

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Household girls selected to secondary school but did not enroll/attend	17.0	16.6	0.930	11.2	10.6	0.830
Household boys selected to secondary school but did not enroll/attend	14.2	16.1	0.618	9.6	11.7	0.474
N (caregivers)	266	287		380	375	
Top three reasons girls did not enroll/attend secondary school						
SR-GBV at school	0.0	0.0	.	6.0	0.0	0.091
SR-GBV to/from school	0.0	0.0	.	0.0	0.0	.
Secondary school too far away	26.8	22.2	0.631	28.1	32.2	0.725
No transportation	20.9	3.0	0.007	3.2	11.9	0.206
Unsafe to go to school	0.0	0.0	.	0.0	0.0	.
Cannot afford boarding	20.5	29.4	0.570	34.1	34.4	0.982
Boarding not safe	0.0	0.0	.	0.0	0.0	.
Cannot afford self-boarding	46.5	33.3	0.306	30.6	20.3	0.396
Self-boarding not safe	0.0	0.0	.	0.0	0.0	.
Poor quality	1.4	0.0	0.278	4.8	3.3	0.744
Pregnancy	47.0	31.1	0.090	56.1	42.6	0.374
Marriage	30.4	32.6	0.863	34.0	16.3	0.073
Got a job	0.0	0.0	.	0.0	0.0	.
Chores	0.0	0.0	.	0.0	0.0	.
Caregiving responsibilities	2.6	19.0	0.004	4.8	24.1	0.058
Not a priority	2.6	6.0	0.369	13.7	4.5	0.215
COVID restrictions/issues	0.0	0.0	.	2.0	0.0	0.333
School costs	15.6	37.8	0.083	17.2	26.5	0.367
N (caregivers, any girl selected but did not enroll/attend secondary school)	41	42		34	41	
Top three reasons boys did not enroll/attend secondary school						
SR-GBV at school	0.0	0.0	.	0.0	0.0	.
SR-GBV to/from school	0.0	0.0	.	0.0	0.0	.
Secondary school too far away	26.1	14.4	0.202	28.9	32.7	0.778
No transportation	23.1	7.9	0.052	9.1	19.1	0.257
Unsafe to go to school	1.8	3.5	0.617	0.0	0.0	.
Cannot afford boarding	21.0	26.1	0.617	23.2	34.7	0.428

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Boarding not safe	0.0	0.0	.	0.0	0.0	.
Cannot afford self-boarding	33.5	30.9	0.818	38.7	30.3	0.590
Self-boarding not safe	0.0	0.0	.	0.0	2.5	0.359
Poor quality	0.0	6.2	0.279	0.0	0.0	.
Pregnancy	21.5	22.0	0.963	28.1	11.9	0.102
Marriage	38.2	19.6	0.082	36.1	34.5	0.899
Got a job	4.6	8.9	0.530	11.3	2.5	0.139
Chores	1.3	2.5	0.626	0.0	0.9	0.362
Caregiving responsibilities	7.8	19.5	0.132	10.1	19.6	0.293
Not a priority	11.3	14.5	0.653	10.7	20.0	0.301
COVID restrictions/issues	0.0	0.0		4.7	0.0	0.243
School costs	29.4	28.3	0.940	27.0	33.7	0.648
N (caregivers, any boy selected but did not enroll/attend secondary school)	39.0	43.0		31.0	48.0	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A19. Caregiver-reported barriers to achieving educational milestones among children/youth in their community

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Top three reasons children/youth in the community do not complete primary school						
SR-GBV at school	0.0	0.0		0.4	0.0	0.162
SR-GBV on the way to/from school	0.0	1.0	0.359	0.5	0.2	0.355
Secondary school too far away	11.7	8.2	0.194	7.1	7.5	0.866
Not enough seats	0.7	0.3	0.480	0.1	0.9	0.085
No transportation	8.2	4.2	0.082	4.8	5.4	0.735
Exam fees for PSLCE	24.7	31.2	0.173	31.2	31.9	0.855
Unsafe to go to school	0.5	0.7	0.775	0.5	0.2	0.467
Boarding - cannot afford	5.2	7.6	0.317	5.8	5.5	0.899
Boarding - unsafe	0.0	0.0		0.0	0.0	
Self-Boarding - cannot afford	8.4	8.3	0.979	4.3	5.6	0.539
Self-boarding - unsafe	0.0	0.5	0.269	0.5	0.1	0.203
Poor quality	2.3	1.2	0.398	2.6	1.9	0.570
Pregnancy	37.1	41.8	0.370	40.8	41.3	0.943
Marriage	37.6	39.0	0.842	40.6	32.5	0.138
Got a job	6.5	6.8	0.924	9.7	7.1	0.309
Chores	1.3	1.2	0.867	2.2	1.0	0.211
Caregiving responsibilities	10.1	13.6	0.300	11.0	14.3	0.238
Not a priority	35.3	35.8	0.931	41.8	40.8	0.824
Top three reasons children/youth in the community who complete primary school do not go to secondary school						
SR-GBV at school	0.0	1.0	0.359	0.4	0.0	0.162
SR-GBV on the way to/from school	0.0	0.0		0.0	0.0	

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Secondary school too far away	28.2	31.3	0.474	27.5	24.6	0.526
Not enough seats	1.1	2.0	0.466	1.0	2.8	0.128
No transportation	10.7	5.8	0.064	9.6	10.9	0.619
Exam fees for PSLCE	13.5	9.5	0.274	13.6	15.7	0.651
Unsafe to go to school	0.9	0.0	0.081	0.7	0.2	0.193
Boarding - cannot afford	20.6	21.2	0.927	21.7	18.7	0.547
Boarding - unsafe	0.0	0.0		0.0	0.2	0.351
Self-Boarding - cannot afford	33.3	19.6	0.027	22.5	19.7	0.567
Self-boarding - unsafe	0.6	0.5	0.965	1.3	0.6	0.301
Poor quality	1.7	1.3	0.657	1.8	1.0	0.384
Pregnancy	33.5	41.8	0.156	38.2	38.9	0.901
Marriage	34.8	36.9	0.769	41.0	30.6	0.074
Got a job	7.7	7.3	0.911	6.2	7.8	0.551
Chores	0.1	0.9	0.071	1.6	1.8	0.834
Caregiving responsibilities	7.8	12.2	0.155	8.2	14.1	0.057
Not a priority	17.1	21.6	0.245	22.5	24.9	0.497
Top three reasons children/youth in the community who begin secondary school do not complete secondary school						
SR-GBV at school	0.0	1.0	0.359	1.0	0.0	0.097
SR-GBV on the way to/from school	0.0	0.0		0.2	0.2	0.991
Secondary school too far away	31.9	27.7	0.417	30.7	26.6	0.401
Not enough seats	0.7	0.6	0.876	0.6	1.5	0.254
No transportation	11.4	9.7	0.571	12.6	10.5	0.581
Exam fees for PSLCE	10.9	11.2	0.947	11.9	10.7	76.000
Unsafe to go to school	1.2	0.5	0.445	0.8	0.1	0.090
Boarding - cannot afford	26.8	19.6	0.234	21.7	18.9	0.586
Boarding - unsafe	0.0	0.0		0.0	0.7	0.163
Self-Boarding - cannot afford	30.8	19.7	0.025	23.2	20.7	0.578
Self-boarding - unsafe	2.7	0.6	0.054	0.9	0.5	0.560
Poor quality	1.5	1.1	0.669	2.3	1.1	0.202
Pregnancy	32.1	41.7	0.067	42.7	47.7	0.375
Marriage	42.8	40.3	0.724	37.9	37.2	0.904
Got a job	8.3	5.7	0.416	9.0	4.8	0.090
Chores	0.5	0.5	0.955	1.5	0.8	0.359
Caregiving responsibilities	6.1	10.0	0.159	4.7	9.3	0.030
Not a priority	18.9	19.7	0.835	23.9	23.0	0.789
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

Table A20. School-reported barriers to student ability/motivation to achieve educational milestones

	Primary schools			Primary schools			Primary schools			Secondary schools	
	Comp.	Treat.	p-value	Comp.	Treat.	p-value	Comp.	Treat.	p-value		
Serious problem among students at this school for ability/motivation to:											
	Complete primary school			Boys to join secondary school			Girls to join secondary school			Boys to complete secondary school	Girls to complete secondary school
Direct costs of (primary/secondary) school	5.7	13.0	0.322	48.5	56.9	0.522	53.5	60.4	0.588	43.1	46.6
Exam fees and related costs	11.0	15.8	0.581	52.5	60.0	0.561	56.1	53.7	0.854	36.2	43.1
Distance to (primary/secondary) school	33.8	9.5	0.024	84.6	56.0	0.011	80.7	51.5	0.016	53.4	50.0
Not safe travelling to/from school	24.0	9.5	0.136	24.1	20.1	0.715	36.7	29.6	0.567	20.7	29.3
Not enough Form 1 secondary school admissions spaces	74.9	56.3	0.118	71.3	63.5	0.503	76.7	57.3	0.098	n/a	n/a
Chores at home	37.5	33.6	0.748	33.4	19.3	0.224	40.9	32.4	0.498	25.9	41.4
Caregiving responsibilities	22.6	32.8	0.378	23.8	13.0	0.288	39.1	26.1	0.290	15.5	31.0
Paid work	19.4	25.7	0.566	18.7	19.3	0.950	22.0	16.2	0.562	25.9	20.7
Students are not optimistic about their future	54.4	46.6	0.549	33.5	35.9	0.845	39.3	36.7	0.841	37.9	29.3
Parents/caregivers do not support or encourage schooling	44.3	56.1	0.368	40.9	39.1	0.886	40.9	39.5	0.911	37.9	36.2
Getting pregnant/fathering a child	37.1	32.8	0.730	33.3	16.2	0.134	46.5	35.5	0.390	17.2	36.2
Getting married	37.5	35.5	0.873	27.9	15.8	0.260	46.5	28.8	0.159	13.8	25.9
N (schools)	32	32		32	32		32	32		58	58

Notes: Respondents indicate barrier is a serious problem. Unweighted sample sizes and weighted summary and test statistics.

Enabling Environment

Table A21. WASH in schools

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Water				
Drinking water from improved source available at school on day of survey	81.3	90.6	0.281	93.2
School has an improved drinking water source	88.6	96.8	0.219	100.0
Sanitation				
Improved toilets which are usable and single-sex	52.8	58.2	0.676	55.9
Improved toilets	63.4	80.3	0.147	72.4
Improved toilets which are usable	52.8	58.2	0.676	58.6
Improved toilets which are single-sex	63.4	77.1	0.246	70.7
Hygiene				
Handwashing facilities have water and soap available	67.2	69.1	0.872	
Handwashing facilities have water available	83.9	81.6	0.803	
N	**32**	**32**		**58**

Notes: Unweighted sample sizes and weighted statistics and significance tests.

School-Related Safety and Gender-Based Violence

Table A22. Student experience of disciplinary practices involving corporal punishment at school

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Shouted things at you in front of your classmates that made you feel embarrassed	36.5	27.1	0.063	24.8	24.6	0.929
Hit you with a hand or closed fist on any part of your body	37.8	19.2	0.000	25.5	20.7	0.239
Hit you with any type of object, such as a cane, stick, belt, or book	48.8	41.0	0.202	50.6	45.2	0.406
Pulled or twisted your ear	31.9	18.3	0.007	27.5	22.7	0.300
Made you stand or kneel in a way that hurts or for a long period of time	32.7	30.6	0.597	26.5	24.7	0.702
Made you work at the school as punishment	73.5	69.7	0.394	76.8	74.6	0.582
Made you work at the teacher's house as punishment	12.9	10.3	0.453	9.3	8.4	0.759
Any form of punishment	87.5	80.8	0.129	89.1	87.6	0.572
Extent of punishment acts (mean count out of 7)						
At least once (mean, SD)	2.7 (0.2)	2.2 (0.1)	0.023	2.4 (0.1)	2.2 (0.1)	0.253

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
More than once (mean, SD)	1.9 (0.2)	1.4 (0.1)	0.015	1.7 (0.1)	1.5 (0.1)	0.193
Many times (mean, SD)	0.7 (0.1)	0.4 (0.1)	0.030	0.6 (0.1)	0.5 (0.1)	0.569
N (students)	**227**	**237**		**381**	**380**	

Notes: Unweighted sample sizes and weighted summary and test statistics.

Table A23. School report of prevalence of disciplinary practices involving corporal punishment at school

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Shout or yell at the student	37.5	27.2	0.402	36.2
Make the student sit in the corner of the room	4.0	0.0	0.257	5.2
Strike the student with their hand	3.6	0.0	0.258	1.7
Strike the student with any type of object such as a cane or stick	0.0	3.6	0.371	0.0
Pull or twist the ear of the student	3.8	3.6	0.957	0.0
Make the student stand or kneel as punishment	5.4	0.0	0.127	3.4
Have the student perform chores at the school	88.2	87.4	0.917	91.4
Have the student perform chores at the teacher's house	2.2	0.0	0.268	6.9
Any form of punishment	90.5	90.5	0.993	98.3
Extent of disciplinary practices involving punishment (mean count out of 8, SD)	1.4 (0.1)	1.2 (0.1)	0.247	1.4 (0.1)
N (schools)	**32**	**32**		**58**

Notes: Unweighted sample sizes and weighted summary and test statistics.

Table A24.A. Student safety at and on the way to/from school among girls

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student agrees/strongly agrees with statement on student safety						
I feel safe at school	90.8	88.4	0.612	84	94.2	0.017
I feel safe traveling to/from school	79.6	69	0.146	78.7	87.4	0.147
It is safe for children to be in my school	83.9	68.1	0.054	83.7	80.4	0.565
It is safe for children to travel to/from my school	78.0	60.5	0.038	78.7	79.4	0.918
Felt unsafe or threatened in neighborhood, on the way to school, or in school	5.0	9.2	0.214	13.7	8.1	0.079
N (female students)	**110**	**120**		**189**	**189**	
Where student felt unsafe or threatened						
On the way to/from school	91.9	85.4	0.628	91.9	83.3	0.418
In their classroom	8.1	7.7	0.973	8.1	9.3	0.888

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
In school toilets/latrines or changing areas	0.0	0.0	*	0.0	0.0	*
Other school	0.0	9.0	0.523	0.0	0.0	*
Who caused student to feel unsafe or threatened						
Teachers	0.0	0.0	*	0.0	0.0	*
Adults	91.9	78.8	0.377	43.2	56.5	0.450
Classmates, girls of their age	0.0	0.0	*	4	6.1	0.758
Classmates, boys of their age	17.0	17.1	0.995	18.8	15.4	0.748
School absenteeism due to safety concerns at or on the way to/from school			*			0.803
Never absent	44.7	62.3		52.5	58	
Less than one day per month	0.0	0.0		20.8	14.1	
2–5 days per month	17	37.7		16.3	24.8	
6–10 days per month	38.4	0		6.9	3.1	
More than 10 days per month	0.0	0.0		3.5	0.0	
N (female students)	**6**	**12**		**29**	**18**	
Caregiver reported student did not go to school because caregiver felt they would be unsafe at or on their way to/from school during the past school term						
Missed any days	5.3	4	0.668	1.8	7.3	0.009
Number of days absent, if any			0.498			0.891
1	11.7	0		28.5	42.3	
2	43.5	13.6		25.2	13.4	
3	25.7	54.9		0	3.8	
4 or more	19.1	31.5		46.3	40.4	
N (caregiver with female student in school past term)	**77**	**95**		**178**	**179**	

Notes: * Statistical significance tests not conducted due to small cell sizes. These are unweighted sample sizes and weighted summary and test statistics.

Table A24.B. Prevalence of bullying at school among girls

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Experienced bullying acts more than once	37.9	46.5	0.413	52.2	53.1	0.904
Made fun of you or teased you	16.5	25.1	0.187	26.2	27.5	0.830
Said mean things to you or called you names	26.7	35.6	0.325	43.5	41.7	0.795
Physically hurt you on purpose	18.8	17.0	0.794	24.8	22.2	0.663
Threatened to hurt you or your family	17.4	24.4	0.392	26.2	20.4	0.148
N (girls)	**99**	**107**		**164**	**165**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Table A25. Prevalence and extent of sexual violence among girls

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Made love proposals to you that upset you.	62.1	68.3	0.505	53.8	54.3	0.934
Made sexual comments about you, your body, or your clothes.	18.8	30.1	0.132	11.8	12.2	0.928
Made sexual gestures at you or looked at you in a sexual way.	15.5	28.6	0.137	9.9	13.8	0.433
Spread sexual rumors and lies about you.	20.7	26.0	0.440	22.9	14.0	0.046
Touched, grabbed, or pinched your bottom, breast, or private parts.	6.7	18.2	0.028	9.1	9.0	0.980
Tried to get you to do something sexual other than kissing, including sexual intercourse, but you didn't do it.	5.8	16.5	0.048	8.0	5.8	0.580
Showed you or gave you sexual pictures or sexual videos on a cell phone.	9.3	13.5	0.370	8.3	7.8	0.880
Forced you to do something sexual other than kissing, including sexual intercourse.	3.4	13.4	0.019	3.7	6.1	0.382
Offered to give you something like a cell phone, airtime, radio, or jewelry if you did something sexual like kissing or bad touching, in exchange.	1.4	11.9	0.015	4.3	2.9	0.534
Offered to give you food or a drink if you did something sexual, like kissing or bad touching, in exchange.	4.3	11.1	0.258	3.7	1.3	0.159
Pulled at your clothing to expose your underwear or your body.	0.9	10.5	0.003	5.8	2.7	0.174
Offered to give you a ride in their taxi, motorbike, or bicycle if you did something sexual, like kissing or bad touching, in exchange.	5.6	10.5	0.378	2.7	3.6	0.687
Intentionally brushed against you or bumped into you in a sexual way.	8.9	9.6	0.886	3.2	3.9	0.757
Sent you SMSs messages that were sexual jokes or love proposals that you didn't want.	3.9	9.1	0.222	6.8	1.2	0.006
Forced you to kiss them and you didn't want them to.	2.4	7.3	0.247	5.4	4.4	0.732
Showed you their bottom, breasts, or private parts when you didn't want them to.	2.1	7.1	0.100	3.4	2.3	0.617
Threatened to give you bad marks if you didn't do something sexual, like kissing or bad touching.	0.0	7.0	0.086	0.6	0.0	0.294

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Spied on you when you were not fully dressed such as when you were changing clothes or in the toilet at school.	0.9	6.1	0.055	2.6	5.6	0.204
Forced you to touch their private parts.	2.1	6.1	0.182	3.0	2.3	0.741
Tried to get you to touch their private parts but you didn't do it.	0.9	5.6	0.065	0.7	2.2	0.294
Offered to give you good marks if you did something sexual, like kissing or bad touching.	0.0	3.2	0.160	2.1	3.5	0.521
N (girls)	**99**	**107**		**164**	**165**	

Notes: Unweighted sample sizes and weighted statistics and significance tests.

Sexual and Reproductive Health

Table A26. Antenatal care, current pregnancy (unweighted frequencies)

	Retrospective cohort		Prospective cohort	
	Comparison	Treatment	Comparison	Treatment
Number of months pregnant				
2	1	0	0	0
3	0	0	0	2
4	0	0	1	0
5	1	0	0	0
6	6	1	0	1
7	2	2	1	0
8	1	2	0	2
Received any ANC for current pregnancy	10	4	1	4
ANC provider				
Doctor	5	0	0	3
Nurse	2	3	0	1
Midwife	4	2	0	2
Clinical officer	1	0	0	0
Traditional birth attendant	0	0	0	0
Community health worker	0	0	1	0
Relative/friend	0	0	0	0
Number of months pregnant at first ANC visit				
3	0	2	0	2
4	6	1	0	0
5	4	1	1	1
6	0	0	0	1
Total ANC visits				
1	2	0	1	2
2	6	0	0	0
3	1	2	0	1
4	1	1	0	1
5	0	1	0	0
N (current pregnancies)	**11**	**5**	**2**	**5**

Notes: Unweighted frequencies reported due to low/zero cell sizes.

Table A27. Delivery care, most recent live birth (unweighted frequencies)

	Retrospective cohort		Prospective cohort	
	Comparison	Treatment	Comparison	Treatment
Delivery attendant (multiple providers possible)				
Doctor	5	0	1	0
Nurse	7	6	0	1
Midwife	5	5	1	1
Clinical officer	1	0	0	0
Other (specify)*	0	1	0	0
Missing	1	0	0	0
Delivery location				
Respondent's home	0	1	0	0
Government hospital	8	5	2	0
Government clinic/health center	4	5	0	1
Government health post	1	0	0	0
Private hospital	2	1	0	0
Missing	1	9	0	0
N (most recent live births)	**16**	**12**	**2**	**1**

Notes: Unweighted frequencies reported due to low/zero cell sizes. * 'Other' delivery assistant reported as the mother-in-law.

Table A28. HIV knowledge among students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Comprehensive knowledge about HIV prevention	54.5	54.9	0.927	44.2	49.8	0.266
Can people reduce their chance of getting HIV by having just one uninfected sex partner who has no other sex partners?	89.2	86.5	0.591	84.4	85.7	0.161
Can people reduce their chance of getting HIV by using a condom every time they have sex?	76.5	76.5	0.900	74.4	76.4	0.242
Is it possible for a healthy-looking person to have HIV?	87.7	90.7	0.663	83.7	90.1	0.002
Can people get HIV from mosquito bites?	92.8	91.7	0.744	89.7	83.0	0.074
Can people get HIV by sharing food with a person who has HIV?	98.1	100.0	0.029	97.3	97.4	0.980
Can people get HIV because of witchcraft or other supernatural means?	96.3	96.6	0.927	95.5	94.9	0.912
Knowledge of mother-to-child transmission of HIV	57.8	61.2	0.625	56.6	49.5	0.092
Can HIV be transmitted from a mother to her baby:						
During pregnancy?	64.8	71.3	0.449	68.2	68.0	0.764
During delivery?	87.1	84.3	0.682	76.4	70.1	0.286
By breastfeeding?	95.4	95.1	0.870	89.2	84.8	0.365
N (students who have heard of HIV or AIDS)	**226**	**232**		**364**	**365**	

Notes: Unweighted frequencies reported due to low/zero cell sizes.

Gender and Gender-Based Violence Attitudes and Norms

Table A29. Education gender norms and attitudes among students

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Students agree or strongly agree with positively phrased statements						
It is as important for girls to complete secondary school as it is for boys	92.2	98.0	0.020	91.8	96.3	0.063
Girls should continue in school, even if they get married	75.3	68.8	0.306	68.5	64.9	0.450
A pregnant girl should be allowed to go to school	30.1	34.5	0.377	25.7	22.7	0.466
Students disagree or strongly disagree with negatively phrased statements						
It is important that sons have more education than daughters	74.8	76.0	0.832	72.7	72.2	0.882
Boys are smarter than girls	62.7	62.8	0.985	55.5	64.0	0.061
Daughters should be sent to school only if they are not needed to help at home	87.6	87.3	0.941	81.4	82.6	0.711
If there is a limited amount of money to pay for schooling, it should be spent on sons first	81.3	86.5	0.235	76.9	81.1	0.274
A girl should get married when she finds an appropriate spouse, even if she is still in school	86.6	89.0	0.451	85.8	88.6	0.386
A girl will lose interest in studying if she has a boyfriend	23.0	18.5	0.311	26.2	28.7	0.491
N (students)	**222**	**233**		**377**	**376**	

Notes: Unweighted frequencies reported due to low/zero cell sizes.

Table A30. Caregiver gender norm attitudes scale items

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Rights and privileges of men subscale (10–50) (mean, SD)	**33.7 (0.9)**	**35.4 (0.7)**	**0.166**	**35.8 (0.5)**	**35.3 (0.5)**	**0.503**
Disagree or strongly disagree						
It is important that sons have more education than daughters.	62.9	71.0	0.111	72.6	67.2	0.172
Daughters should be sent to school only if they are not needed to help at home.	87.5	89.4	0.645	90.2	87.1	0.282
The most important reason that sons should be more educated than daughters is so that they can better look after their parents when they are older.	56.6	60.3	0.460	66.4	59.6	0.072
If there is a limited amount of money to pay for tutoring, it should be spent on sons first.	65.3	69.9	0.368	74.0	73.6	0.938
A woman should take good care of her own children and	11.4	12.6	0.756	15.2	16.1	0.803

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
not worry about other people's affairs.						
Women should leave politics to the men.	71.0	78.7	0.136	75.4	77.5	0.592
A woman has to have a husband or sons or some other male kinsman to protect her.	38.7	48.2	0.173	47.2	45.8	0.774
The only thing a woman can really rely on in her old age is her sons.	55.9	65.2	0.081	67.5	64.0	0.424
A good woman never questions her husband's opinions, even if she is not sure she agrees with them.	70.5	74.4	0.432	77.2	79.5	0.484
When it is a question of children's health, it is best to do whatever the father wants.	64.1	73.5	0.100	67.0	70.1	0.340
Equity for girls subscale (4–20) (mean SD)	**14.9 (0.3)**	**14.7 (0.3)**	**0.557**	**15.4 (0.3)**	**14.8 (0.3)**	**0.168**
Agree or strongly agree						
Daughters should be able to work outside the home after they have children if they want to.	60.7	58.5	0.601	66.2	60.9	0.129
Daughters should have just the same chance to work outside the home as sons.	73.4	73.6	0.981	80.0	74.6	0.182
Daughters should be told that an important reason not to have too many children is so they can work outside the home and earn money.	62.1	65.2	0.636	69.8	66.8	0.530
I would like my daughter to be able to work outside the home so she can support herself if necessary.	80.2	79.5	0.883	82.3	79.0	0.361
N (caregivers)	**255**	**279**		**365**	**360**	

Notes: Rights and privileges of men subscale Cronbach's alpha = 0.8160; Equity for girls subscale Cronbach's alpha = 0.8103; GNAS Cronbach's alpha = 0.7287. Unweighted frequencies reported due to low/zero cell sizes.

Table A31. Student and caregiver attitudes towards gender-based violence

	Retrospective cohort			Prospective cohort		
	Comparison	Treatment	p-value	Comparison	Treatment	p-value
Student attitudes toward gender-based violence						
Disagree or strongly disagree with statements about acceptability of dating violence						
Hitting a boyfriend or girlfriend is not a big deal	91.7	92.4	0.789	90.9	93.0	0.459
Boys sometimes deserve to be hit by the girls they are dating	92.0	92.9	0.769	90.6	90.4	0.947
It is acceptable for a girl to hit her boyfriend	94.6	96.3	0.447	92.9	95.0	0.266
Girls sometimes deserve to be hit by the boys they are dating	92.4	91.9	0.858	92.2	92.5	0.880
It is acceptable for a boy to hit his girlfriend	97.5	95.8	0.414	95.0	95.0	0.994
If I hit my boyfriend or girlfriend, my friends would think that I was cool	94.9	94.6	0.893	92.1	91.9	0.913
If a boy and a girl have already been intimate, then it is OK for him to force her to have sex even if she wants him to stop	94.1	95.9	0.449	95.6	92.0	0.163
N (students)	**227**	**237**		**381**	**380**	
Caregiver attitudes towards domestic violence						
State that a husband is justified in hitting or beating hisife in at least one of five circumstances						
If she goes out without telling him	7.2	7.7	0.813	4.7	5.9	0.540
If she neglects the children	11.0	10.8	0.945	7.8	9.5	0.471
If she argues with him	4.6	5.4	0.593	4.4	6.5	0.236
If she refuses to have sex with him	4.0	6.2	0.343	5.5	8.6	0.403
If she burns the food	4.3	5.7	0.478	3.3	3.1	0.861
N (caregivers)	**266**	**287**		**380**	**375**	

Notes: Unweighted frequencies reported due to low/zero cell sizes.

Appendix B. Program Spillovers

We asked key respondents for the primary and secondary school questionnaires about teacher transfers to secondary schools, teacher opportunities for professional development and training opportunities, and teacher opportunities for job upgrading or career advancement to understand potential schooling spillover effects of the Malawi SEED program in rural areas.

Between 60–67 percent of primary schools and 60 percent of secondary schools reported that any teachers had transferred to another school during the previous academic year (2020), compared to approximately 40 percent of primary schools and 33 percent of secondary schools that reported any teacher had transferred to another school since the start of the current academic year (January 2021). The average number of teachers who transferred out of primary schools during the 2020 academic year was 1.4 in comparison schools and 1.3 in treatment schools; the average number who transferred since January 2021 was 0.7 in both comparison and treatment schools. The average number of teacher transfers was slightly lower in secondary schools for both academic years. Among primary schools reporting any teacher transfers, between 12 and 15 percent of teachers who transferred out of a primary school transferred to a secondary school in 2020, compared to between 8 to 17 percent who transferred to a secondary school during the current academic year. Less than 6 percent of teachers who transferred out of a secondary school in 2020 transferred to a newly constructed secondary school, and no secondary school reported a teacher transferring to a newly constructed secondary school since the beginning of the current academic year (Table B1).

Table B1. Teacher transfers during prior and current academic years

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Previous academic year (2020)				
Any teachers left school during the 2020 academic year because they transferred to another school	60.0	67.3	0.561	60.3
Number of teachers who left school during the 2020 academic year because they transferred to another school	1.4 (0.3)	1.3 (0.2)	0.747	1.2 (0.2)
N (schools)	**32**	**32**		**58**
Among teachers who transferred from a primary school, percent who transferred to a secondary school *	11.8	14.7	0.803	.
Among teachers who transferred from a secondary school, percent who transferred to a newly constructed secondary school				5.7
N (schools with teacher transfers)	**20**	**21**		**35**
Since the beginning of the current academic year (January 2021)				
Any teachers left school since beginning of current academic year because they transferred to another school	42.5	40.3	0.858	32.8
Number of teachers who left school since beginning of current academic year because they transferred to another school	0.7 (0.2)	0.7 (0.2)	0.911	0.6 (0.1)

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
N (schools)	**32**	**32**		**58**
Among teachers who transferred from a primary school, percent who transferred to a secondary school	16.7	7.8	0.516	.
Among teachers who transferred from a secondary school, percent who transferred to a newly constructed secondary school				0.0
N (schools with teacher transfers)	**14**	**12**		**19**

Notes: 7.1 percent comparison and 9.9 percent treatment primary schools had a teacher leave during the 2020 academic year because they transferred to another school. Across all primary schools, the number of teachers who transferred during the 2020 year ranged from 0 to 5, the number who transferred since January 2021 ranged from 0 to 4, and the number of teachers who transferred from a primary school to a secondary school in 2020 or since January 2021 ranged from 0 to 2. Among secondary schools, the number of teachers who transferred during the 2020 year ranged from 0 to 5, the number who transferred since January 2021 ranged from 0 to 6, and the number of teachers who transferred from a secondary school to a newly constructed secondary school in 2020 ranged from 0 to 1.

Roughly half of all primary and secondary schools reported that teachers at the school have no or very little opportunities and support for professional development and training opportunities (56.8 percent comparison primary schools, 48.8 percent treatment primary schools, and 50.0 percent secondary schools). Among primary schools, comparison schools were more likely to report that teachers have job upgrading or career advancement opportunities to some extent (45.5 percent among comparison schools, compared to 28.8 percent of treatment schools reporting to some extent or a lot, p=0.062). Over 60 percent of secondary schools reported that teachers have job upgrading or career advancement opportunities to some extent or a lot. Nearly 90 percent of secondary schools reported any teacher at the school has only a primary teaching professional qualification, with an average of 3.6 teachers per secondary school only having primary teaching qualifications (Table B2).

Table B2. Professional development for teachers

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Teachers at the school have opportunities and support for professional development and training opportunities			0.942	
Not at all	14.9	12.6		12.1
Very little	42.0	36.2		37.9
To some extent	37.6	44.8		37.9
A lot	5.6	6.3		12.1
Teachers at the school have job upgrading or career advancement opportunities			0.062	
Not at all	25.2	22.1		12.1
Very little	29.3	49.1		25.9
To some extent	45.5	18.9		46.6
A lot	0.0	9.9		15.5

	Primary schools			Secondary schools
	Comparison	Treatment	p-value	
Any teacher at the school has only a primary teaching professional qualification level				87.9
Number of teachers with only a primary teaching professional qualification level				3.6 (0.4)
N (schools)	**32**	**32**		**58**

Notes: Among secondary schools, the number of teachers with only a primary teaching professional qualification level ranges from 0 to 11.

Appendix C. Additional EMIS-Type Information for Standard 7, Standard 8, and Form 1 from School Survey Data

Table C1. Additional EMIS-Type information for primary and secondary schools with 2021 EMIS Report reference values

	Primary schools - Std. 7			Primary schools - Std. 8				Secondary schools	
	Comparison	Treatment	p-value	Comparison	Treatment	p-value	EMIS 2021 benchmark	Form 1	EMIS 2021 benchmark
Number of students enrolled at beginning of current academic year (January 2021)									
Female	37.2 (18.0)	31.7 (14.6)	0.192	25.0 (14.3)	25.3 (13.1)	0.934	53.0% Std 7 and 50.0% Std 8 enrolled students are female [Public schools, national]	36.6 (13.0)	49.3% Form 1 students are female [public schools, national]
Male	31.1 (16.8)	28.2 (15.6)	0.499	26.2 (17.1)	22.7 (13.5)	0.386		36.8 (12.3)	
Total	68.2 (33.4)	60.0 (28.6)	0.300	51.2 (30.1)	48.1 (25.7)	0.660		73.4 (24.6)	
Percentage of enrolled students who are female	54.8 (7.1)	53.3 (8.6)	0.463	49.5 (12.1)	52.7 (6.8)	0.195		49.6 (4.6)	
Number of students selected for Form 1 in the current year that did not enroll									
Female								13.1 (15.0)	
Male								13.7 (15.0)	
Total								26.8 (29.6)	
Percentage of selected students that did not enroll who are female*								49.4 (22.4)	
Percentage of schools with no students selected for Form 1 in the current year that did not enroll								6.8	
** Notes: N=54 secondary schools*									
Number of students who were readmitted									
Female	0.6 (0.9)	0.8 (1.4)	0.510	0.3 (0.7)	1.1 (1.9)	0.044	53.6% Std 7 and 57.8% Std 8 readmitted learners were female [all schools, national]	0.7 (1.2)	61.1% Form 1 readmitted learners were female [all schools, national]
Male	0.7 (1.5)	0.6 (1.4)	0.709	0.2 (0.6)	0.6 (1.6)	0.262		0.2 (0.5)	
Total	1.3 (2.4)	1.4 (2.6)	0.921	0.5 (0.8)	1.6 (3.1)	0.067		0.8 (1.5)	
Percentage of readmitted students who are female*	46.9 (.)	71.6 (.)	.	59.8 (53.4)	75.1 (30.8)	0.398		81.8 (31.1)	
Percentage of schools with no students readmitted to the grade	42.3	66	0.074	63.3	54.2	0.485		58.6	
** Notes: N=28 primary schools for Std 7 (no SD or p-value due to small cell sizes); N = 25 primary schools for Std 8; N = 34 secondary schools*									
Number of students who are single or double orphans									
Female	4.3 (4.1)	3.5 (2.6)	0.358	2.7 (2.6)	3.1 (2.4)	0.507		5.4 (8.0)	

	Primary schools - Std. 7			Primary schools - Std. 8			EMIS 2021 benchmark	Secondary schools	EMIS 2021 benchmark
	Comparison	Treatment	p-value	Comparison	Treatment	p-value		Form 1	
Male	2.6 (3.7)	2.5 (1.8)	0.934	2.9 (4.5)	3.4 (2.7)	0.592	52.3% Std 7 and 52.8% Std 8 orphans are female [all schools, national]	3.8 (6.2)	51.2% orphans are female [all schools, national]
Total	6.9 (7.3)	6.0 (4.0)	0.568	5.5 (6.8)	6.5 (4.6)	0.530		9.2 (13.0)	
Percentage of orphaned students who are female*	65.8 (22.3)	56.7 (21.0)	0.111	53.7 (29.5)	48.6 (26.0)	0.497		55.7 (16.7)	
Percentage of schools with no orphaned students	9.8	2.3	0.166	10	5.8	0.526		5.2	
** Notes: N=60 primary schools for Std 7; N = 58 for primary schools for Std 8; N = 55 secondary schools*									
Number of students with a learning or physical disability									
Female	0.6 (0.9)	0.4 (0.6)	0.341	0.3 (1.1)	0.8 (1.5)	0.180	49.0% of primary school special needs learners are female [Std1-Std8, all schools, national]	0.2 (0.8)	52.2% of secondary school special needs learners are female (Form1–Form4, all schools, national]
Male	0.3 (0.9)	0.9 (2.1)	0.169	0.4 (1.1)	1.1 (1.8)	0.115		0.3 (0.8)	
Total	0.9 (1.6)	1.3 (2.5)	0.452	0.7 (2.1)	1.9 (3.3)	0.133		0.5 (1.4)	
Percentage of disabled students who are female*	80.0 (33.6)	43.7 (40.2)	0.015	25.0 (37.6)	40.8 (34.3)	0.269		34.6 (45.4)	
Percentage of schools with no students with disabilities	54	45.5	0.517	71.9	55.7	0.199		75.9	
** Notes: N=30 primary schools for Std 7; N=22 primary schools for Std 8; N = 14 secondary schools*									
Number of students that repeated grade during the last school year (2020; in same grade for more than one year)									
Female	7.4 (6.7)	6.6 (4.7)	0.565	4.9 (5.4)	5.9 (4.4)	0.426	49.9% of primary school repeaters are female [Std1–Std8, all schools, national]	0.3 (0.6)	50.3% of Form 1 repeaters are female [all schools, national]
Male	6.9 (6.4)	6.1 (5.3)	0.593	6.1 (5.4)	5.7 (3.5)	0.767		0.2 (0.6)	
Total	14.3 (11.7)	12.7 (9.3)	0.539	11.1 (10.2)	11.6 (7.3)	0.733		0.5 (1.0)	
Percentage of repeaters who are female*	51.6 (18.1)	54.7 (14.9)	0.471	40.9 (26.6)	49.2 (13.2)	0.134		51.5 (45.2)	
Percentage of schools with no repeaters of the grade	0	2.3	0.381	7.7	9.4	0.824		72.4	
** Notes: N=63 primary schools for Std 7; N=58 primary schools for Std 8; N = 16 secondary schools*									
Number of students who dropped out of school during previous academic year (pupils who left before 2020 academic year completed; excludes known transfers out)*									
Female	3.4 (3.6)	5.7 (12.2)	0.262	2.0 (2.3)	2.3 (2.2)	0.736	52.9% of primary school learners who dropped out (previous academic year) are female [Std1–Std8, all schools, national]	3.8 (4.3)	61.2% of Form 1 learners who dropped out (previous academic year) were female [all schools, national]
Male	1.9 (2.5)	2.5 (2.4)	0.255	1.3 (1.7)	1.2 (1.3)	0.865		3.1 (4.2)	
Total	5.4 (5.5)	8.2 (12.4)	0.181	3.3 (3.8)	3.5 (3.1)	0.768		6.9 (8.0)	
Percentage of dropouts who are female*	63.9 (30.5)	54.6 (28.3)	0.431	63.9 (24.6)	64.6 (27.7)	0.919		63.2 (23.2)	
Percentage of schools with no dropouts during the previous academic year	19.2	14.8	0.643	20.7	20.6	0.994		22.8	
** Notes: N=52 primary schools for Std 7 and N=50 primary schools for Std 8. One secondary school did not know the number of dropouts during the previous academic year (N=57); denominator for percentage of dropouts who are female is N=44 secondary schools.*									

	Primary schools - Std. 7			Primary schools - Std. 8				Secondary schools	
	Comparison	Treatment	p-value	Comparison	Treatment	p-value	EMIS 2021 benchmark	Form 1	EMIS 2021 benchmark
Female percentage of dropouts by reason previous academic year)*									
	(N = 21)	(N = 25)		(N = 24)	(N = 23)		[Std1–Std8, all schools, national]	(N = 44)	[Form 1, all schools, national]
Pregnancy	15.3 (23.3)	30.6 (35.9)	0.095	43.0 (47.7)	32.3 (38.0)	0.392	11.3%	43.8 (41.6)	26.4%
Marriage	37.2 (41.3)	29.0 (32.2)	0.457	44.6 (46.4)	36.0 (40.6)	0.511	10.4%	31.2 (37.6)	16.9%
Unable to pay financial contributions required by the school	9.8 (20.7)	11.3 (28.0)	0.853	8.5 (25.0)	15.0 (29.8)	0.435	1.0%	18.4 (24.4)	30.1%
Long distances	5.4 (19.3)	0.8 (2.5)	0.272	6.3 (23.5)	0	0.192	8.0%	4.5 (12.6)	9.8%
Violence	0	0	.	0	0	.	0.3%	0.0 (0.0)	0.4%
Other*	24.3 (37.5)	21.0 (33.7)	0.767					7.3 (19.5)	
** Notes: Dropout percentages do not necessarily sum to 100% because schools can report multiple reasons for dropout for the same pupil. Data for 'other' dropout reason among Std 8 females not available. One primary school missing dropout reason data for all Std 7 girls.*									
Male dropouts by reason (previous academic year)									
	(N = 20)	(N = 23)		(N = 19)	(N = 18)		[Std1–Std8, all schools, national]	(N = 35)	[Form 1, all schools, national]
Made a girl pregnant	2.9 (12.7)	4.3 (19.3)	0.784	2.8 (17.7)	15.6 (31.3)	0.130	0.0%	5.0 (17.6)	2.2%
Marriage	12.5 (29.4)	6.0 (19.7)	0.405	13.8 (34.6)	24.2 (32.6)	0.372	2.3%	15.6 (27.8)	8.5%
Unable to pay financial contributions required by the school	7.1 (24.9)	26.6 (39.7)	0.061	16.0 (37.1)	19.6 (32.7)	0.764	1.2%	38.0 (37.4)	49.5%
Long distances	5.7 (25.5)	5.3 (19.6)	0.947	0	5.5 (22.0)	.	9.7%	10.8 (26.0)	11.8%
Violence	0	4.3 (19.3)	.	0	5.5 (22.0)	.	0.5%	0.0 (0.0)	0.5%
Other	64.8 (48.9)	49.2 (42.5)	0.277	49.4 (50.5)	35.7 (43.2)	0.382		21.2 (33.3)	
** Notes: Dropout percentages do not necessarily sum to 100% because schools can report multiple reasons for dropout for the same pupil*									
Number of students who dropped out of school during the current academic year (pupils who left before the academic year completed between January 2021 and today; excludes known transfers out)									
Female	1.0 (1.7)	1.8 (2.2)	0.132	0.8 (1.2)	1.5 (2.0)	0.082		2.4 (3.6)	
Male	0.9 (1.6)	1.2 (2.0)	0.633	1.8 (8.9)	0.7 (0.9)	0.344		1.7 (2.7)	
Total	2.0 (2.9)	2.9 (3.5)	0.233	2.6 (9.3)	2.2 (2.3)	0.589		4.1 (6.0)	
Percentage of dropouts who are female	57.4 (29.9)	66.3 (8.2)	0.456	52.6 (35.0)	62.6 (34.7)	0.325		61.3 (26.3)	
Percentage of schools with no dropouts during the current academic year	58.9	44.8	0.281	51.1	37.7	0.299		46.4	

	Primary schools - Std. 7			Primary schools - Std. 8				Secondary schools	
	Comparison	Treatment	p-value	Comparison	Treatment	p-value	EMIS 2021 benchmark	Form 1	EMIS 2021 benchmark
** Notes: N=31 primary schools for Std 7; N = 33 primary schools for Std 8. Two secondary schools did not know the number of dropouts during the current academic year (N=56); denominator for percentage of dropouts who are female is N=30 secondary schools.*									
Female dropouts by reason (current academic year)									
	(N = 13)	(N = 16)		(N = 12)	(N = 16)			(N = 29)	
Pregnancy	20.9 (43.3)	22.8 (30.2)	0.889	14.9 (35.2)	41.9 (35.3)	0.059		53.8 (43.2)	
Marriage	46.5 (48.4)	30.1 (33.7)	0.292	46.8 (44.0)	28.5 (33.9)	0.249		23.5 (34.0)	
Unable to pay financial contributions required by the school	18.8 (43.5)	0.9 (3.3)	0.158	3.2 (10.5)	21.3 (36.9)	0.093		21.6 (33.1)	
Long distances	9.1 (31.9)	0	0.308	8.6 (30.0)	0	0.305		2.9 (11.0)	
Violence	0	0	.	0	0	.		0.0 (0.0)	
Other	22.9 (40.2)	18.2 (33.6)	0.748	33.6 (43.1)	13.4 (28.4)	0.165		6.9 (25.8)	
** Notes: Dropout percentages do not necessarily sum to 100% because schools can report multiple reasons for dropout for the same pupil*									
Male dropouts by reason (current academic year)									
	(N = 11)	(N = 11)		(N = 11)	(N = 12)			(N = 25)	
Made a girl pregnant	0	0	.	6.3 (21.1)	0	.		8.8 (24.3)	
Marriage	0	2.2 (0.0)	.	6.3 (21.1)	0	.		11.1 (24.6)	
Unable to pay financial contributions required by the school	6.5 (0.0)	0	.	30.1 (49.7)	29.5 (42.5)	.		50.0 (45.2)	
Long distances	0	0	.	0	0	.		5.0 (20.4)	
Violence	0	0	.	0.6 (2.9)	0	.		0.0 (0.0)	
Other	78.4 (0.0)	71.4 (0.0)	.	55.7 (53.8)	70.5 (42.5)	.		12.7 (33.1)	
** Notes: Dropout percentages do not necessarily sum to 100% because schools can report multiple reasons for dropout for the same pupil*									

Study group mean (SD) presented. All sample sizes and secondary school results are unweighted, primary school estimates and significance tests are weighted and control for clustering.

The 2021 EMIS report also presents estimates of the survival rate to Standard 5 (measure of percentage of students who will complete the first cycle of primary education) and the survival rate to Standard 8 (measure of percentage of students who will complete the last cycle of primary education. Estimates of the Standard 5 survival rate were 59% boys, 63% girls, and 61% overall. Estimates of the Standard 8 survival rate were 37% boys, 35% girls, and 36% overall.

Appendix D. Sexual and Reproductive Health Indicators by Schooling Status

Table D1. Schooling status as self-reported by students in student questionnaire

	Retrospective cohort							Prospective cohort						
	Comparison			Treatment				Comparison			Treatment			
	n	N	%	n	N	%	p-value	n	N	%	n	N	%	p-value
Currently attending school	134	227	60.7	172	237	73.7	0.089	358	381	93.2	361	380	94.5	0.617

* n and N are unweighted; % and p-values are weighted.

Table D2A. Retrospective cohort – Marriage, sexual debut, and birth history by study arm and schooling status (*significance testing within study arm by school status)*

	Retrospective cohort													
	Comparison							Treatment						
	In school			Not in school				In school			Not in school			
	n	N	%	n	N	%	p-value	n	N	%	n	N	%	p-value
Marriage and cohabitation among students														
Ever married or in union	0	134	0	29	93	29.3	0.000	3	172	1.3	17	65	32.0	0.000
Currently married or in union	0	134	0	26	93	26.0	0.000	2	172	0.7	15	65	28.4	0.000
1st married or in union before age 18	0	134	0	10	93	10.0	0.016	2	172	0.8	7	65	11.9	0.000
Student sexual behavior														
Ever had sex	29	134	23.2	62	93	67.1	0.000	39	172	25.9	35	65	56.5	0.000
Sexual debut before age 15	7	134	3.8	3	93	2.4	0.502	2	172	1.0	1	65	0.6	0.681
Fertility and birth history, females														
Ever been pregnant	1	59	1.0	31	51	55.1	0.000	5	89	4.3	12	31	43.3	0.000
Pregnant before age 18	1	59	1.0	14	51	26.2	0.000	3	89	2.4	7	31	23.8	0.000
Ever had a live birth	0	59	0	16	51	29.0	0.000	4	89	3.5	8	31	27.5	0.002
Had a live birth before age 18	0	59	0	7	51	14.5	0.008	3	89	2.4	4	31	11.0	0.032
Currently pregnant	0	59	0	11	51	18.7	0.003	1	89	0.8	4	31	15.8	0.000
Birth history, males														
Ever fathered a live birth	1	74	1.2	3	42	6.4	0.134	1	83	3.3	2	34	8.4	0.403
Fathered a live birth before age 18	0	74	0	2	42	5.2	0.096	0	83	0	0	34	0.0	

* n and N are unweighted; % and p-values are weighted.

Table D2B. Prospective cohort – Marriage, sexual debut, and birth history by study arm and schooling status (*significance testing within study arm by school status)*

	Prospective cohort													
	Comparison							Treatment						
	In school			Not in school				In school			Not in school			
	n	N	%	n	N	%	p-value	n	N	%	n	N	%	p-value
Marriage and cohabitation among students														
Ever married or in union	0	358	0	3	23	18.9	0.000	1	361	0.3	3	19	22.7	0.000
Currently married or in union	0	358	0	3	23	18.9	0.000	1	361	0.3	3	19	22.7	0.000
1st married or in union before age 18	0	358	0	1	23	5.7	0.001	1	361	0.3	2	19	17.3	0.000
Student sexual behavior														
Ever had sex	33	357	9.8	9	23	40.1	0.000	40	360	9.0	8	19	49.6	0.000
Sexual debut before age 15	11	357	4.1	1	23	2.3	0.547	21	360	4.3	1	19	2.9	0.709
Fertility and birth history, females														
Ever been pregnant	0	179	0	4	10	40.3	0.000	2	178	0.9	4	11	54.5	0.000
Pregnant before age 18	0	179	0	3	10	26.3	0.000	1	178	0.6	2	11	27.0	0.000
Ever had a live birth	0	179	0	2	10	19.6	0.000	0	178	0	1	11	19.0	0.000
Had a live birth before age 18	0	179	0	1	10	10.0	0.001	0	178	0	1	11	19.0	0.000
Currently pregnant	0	179	0	2	10	20.7	0.000	2	178	0.9	3	11	35.6	0.000
Birth history, males														
Ever fathered a live birth	0	179	0	0	13	0.0		0	183	0	1	8	16.6	0.000

* n and N are unweighted; % and p-values are weighted.

Table D3A. Retrospective cohort – Marriage, sexual debut, and birth history by schooling status and study arm (*significance testing by study arm within school status group)*

	Retrospective cohort													
	In school							Not in school						
	Comparison			Treatment				Comparison			Treatment			
	n	N	%	n	N	%	p-value	n	N	%	n	N	%	p-value
Marriage and cohabitation among students														
Ever married or in union	0	134	0	3	172	1.3	0.242	29	93	29.3	17	65	32.0	0.800
Currently married or in union	0	134	0	2	172	0.7	0.326	26	93	26.0	15	65	28.4	0.818
1st married or in union before age 18	0	134	0	2	172	0.8	0.331	10	93	10.0	7	65	11.9	0.784
Student sexual behavior														
Ever had sex	29	134	23.2	39	172	25.9	0.661	62	93	67.1	35	65	56.5	0.279
Sexual debut before age 15	7	134	3.8	2	172	1.0	0.083	3	93	2.4	1	65	0.6	0.222
Fertility and birth history, females														
Ever been pregnant	1	59	1.0	5	89	4.3	0.192	31	51	55.1	12	31	43.3	0.481
Pregnant before age 18	1	59	1.0	3	89	2.4	0.460	14	51	26.2	7	31	23.8	0.839
Ever had a live birth	0	59	0	4	89	3.5	0.309	16	51	29.0	8	31	27.5	0.906
Had a live birth before age 18	0	59	0	3	89	2.4	0.269	7	51	14.5	4	31	11.0	0.660
Currently pregnant	0	59	0	1	89	0.8	0.501	11	51	18.7	4	31	15.8	0.789
Birth history, males														
Ever fathered a live birth	1	75	1.2	1	83	3.3	0.440	3	42	6.4	2	34	8.4	0.777
Fathered a live birth before age 18	0	75	0	0	83	0.0		2	42	5.2	0	34	0.0	0.207

* n and N are unweighted; % and p-values are weighted.

Table D3B. Prospective cohort – Marriage, sexual debut, and birth history by schooling status and study arm (significance testing by study arm within school status group)

	Prospective cohort													
	In school							Not in school						
	Comparison			Treatment				Comparison			Treatment			
	n	N	%	n	N	%	p-value	n	N	%	n	N	%	p-value
Marriage and cohabitation among students														
Ever married or in union	0	358	0	1	361	0.3	0.357	3	23	18.9	3	19	22.7	0.748
Currently married or in union	0	358	0	1	361	0.3	0.357	3	23	18.9	3	19	22.7	0.748
1st married or in union before age 18	0	358	0	1	361	0.3	0.357	1	23	5.7	2	19	12.3	0.280
Student sexual behavior														
Ever had sex	33	357	9.8	40	360	9.0	0.765	9	23	40.1	8	19	49.6	0.534
Sexual debut before age 15	11	357	4.1	21	360	4.3	0.934	1	23	2.3	1	19	2.9	0.859
Fertility and birth history, females														
Ever been pregnant	0	179	0	2	178	0.9	0.225	4	10	40.3	4	11	54.5	0.594
Pregnant before age 18	0	179	0	1	178	0.6	0.351	3	10	26.3	2	11	27.0	0.969
Ever had a live birth	0	179	0	0	178	0.0		2	10	19.6	1	11	19.0	0.971
Had a live birth before age 18	0	179	0	0	178	0.0		1	10	10.0	1	11	19.0	0.579
Currently pregnant	0	179	0	2	178	0.9	0.225	2	10	20.7	3	11	35.6	0.457
Birth history, males														
Ever fathered a live birth	0	179	0	0	183	0.0		0	13	0	1	8	16.6	0.240
Fathered a live birth before age 18	0	179	0	0	183	0.0		0	13	0	0	8	0.0	

* n and N are unweighted; % and p-values are weighted.

Appendix E. School-Reported Non-Tuition Fees

Head teachers/main respondents at sampled primary schools and surveyed secondary schools were re-contacted in June 2022 to collect information about the types and amounts of non-tuition fees students are required to make per term. The majority of primary schools do not require contributions from learners following the Government of Malawi's directive, whereas all secondary schools reported required general fees. Summary results are presented in Table E1 and include the percentage of schools reporting each fee type and the average, standard deviation, minimum, and maximum values reported.

Table E1. School-reported fees per term, by type (unweighted summary analysis)

Fee type	% Schools reporting	Average	SD	Minimum	Maximum
Primary Schools (N = 49)*					
General fees	100.0	152	299	0	1000
General fees among primary schools reporting any general fees	24.5	621	268	200	1000
Other fees	8.2	350	191	100	500
Examination fee	4.1	500	0	500	500
Watchman	2.0	200	.	.	.
Water bill	2.0	100	.	.	.
Teacher Development Centre	2.0	100	.	.	.
Total fees	100.0	181	320	0	1000
Total fees among primary schools reporting any fees	28.6	632	266	100	1000
* Notes: Of the 64 primary schools included in the baseline evaluation survey, 49 were contacted to report specific fees and amounts in June 2022. Of these 49 contacted schools, 35 reported charging no fees and 14 reported charging any fees. Of the 14 schools that reported charging any fees, 10 reported requiring general fees only, two reported other fees only, and two reported requiring both general and other fees.					
Secondary Schools (N = 53)*					
General fees *	100.0	10587	3269	4000	15000
Other fees					
Exam fees	20.8				
MSCE mock exams	7.5	3750	645	3000	4500
JCE mock exams	5.7	3333	577	3000	4000
Unspecified exam fee	3.8	3000	0	3000	3000
Non-MANEB exam fee	3.8	2500	707	2000	3000
Exams - no value specified	5.7				
Form 4 student laboratory	1.9	5000	.	.	.
Graduation contribution	1.9	1000	.	.	.

Fee type	% Schools reporting	Average	SD	Minimum	Maximum
Electricity	1.9	1000	.	.	.
Boarding	9.4				
General boarding	7.5	53500	3697	50000	58000
Girls boarding	1.9	70000	.	.	.
School-level total other fees	28.3	21133	26603	1000	70000
School-level total fees	100.0	16939	18465	5250	85000
School-level total fees (without boarding)	100.0	11580	3273	5250	18000

* Notes: Of the 58 secondary schools surveyed at evaluation baseline, 53 were contacted to report specific fees and amounts in June 2022. All of the 53 contacted secondary schools reported general fees used for SDF (54.7%), PTA (17.0%), or both (28.3%). 15 secondary schools reported additional fees. The school-level total other fees and total fees are reported as the maximum fee level for the school (e.g., a school may have reported K3000 for MSCE and K3500 for JCE mock exams).

Appendix F. Retrospective cohort profile by transition, repetition, and dropout status

Table F1. Profile of retrospective cohort students by study arm and schooling/transition status

	Comparison					Treatment					Total				
	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transiti (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value
Demographics															
Female	44.4	48.2	45.3	53.9	0.491	48.8	50.5	59.1	53.0	0.842	46.7	49.8	55.1	53.5	0.646
Age (mean and sd)	16.8 (0.2)	16.9 (0.2)	17.4 (0.4)	18.5 (0.2)	<0.001	16.8 (0.2)	17.1 (0.2)	16.4 (0.3)	18.4 (0.2)	<0.001	16.8 (0.2)	17.0 (0.1)	16.7 (0.3)	18.4 (0.1)	<0.001
Region					0.029					0.230					0.098
Central	41.9	22.0	19.9	58.2		27.9	41.9	19.1	36.6		34.7	36.0	19.4	47.9	
North	8.9	6.5	1.9	3.9		7.1	8.7	4.0	4.1		8.0	8.1	3.4	4.0	
South	49.2	71.4	78.2	37.8		65.0	49.4	76.8	59.3		57.4	56.0	77.2	48.1	
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
PSLCE attempts and results															
Ever took PSLCE	99.3	100.0	100.0	87.3	0.004	98.3	100.0	100.0	75.4	<0.001	98.8	100.0	100.0	81.6	<0.001
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Number of times took PSLCE					<0.001					<0.001					<0.001
One	16.9	72.9	94.5	66.4		7.5	64.8	56.7	73.9		12.0	67.2	67.6	69.7	
Two	6.6	5.5	0.0	6.8		4.3	2.8	0.0	2.2		5.4	3.6	0.0	4.8	
Three or more	76.5	21.7	5.5	26.9		88.2	32.4	43.3	23.9		82.6	29.2	32.4	25.5	
N (students)	**73**	**54**	**20**	**69**		**67**	**85**	**29**	**44**		**140**	**139**	**49**	**113**	
Passed the PSLCE	61.9	100.0	95.2	65.3	0.001	53.5	98.3	96.7	81.4	<0.001	57.7	98.8	96.2	72.6	<0.001
N (students who have received results)	**51**	**54**	**20**	**67**		**46**	**84**	**27**	**43**		**97**	**138**	**47**	**110**	
Education aspirations and expectations															
Ideal level of education					0.007					*					0.003
None	0.0	0.0	0.0	1.1		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.6	
Primary (through Std. 8)	1.1	0.0	0.0	5.1		3.8	0.0	0.0	5.1		2.5	0.0	0.0	5.1	
Secondary (through Form 4)	6.0	2.6	0.0	23.4		10.1	7.9	0.0	19.0		8.1	6.3	0.0	21.3	
University (through Univ4)	54.0	48.1	51.6	22.4		41.8	56.9	64.8	34.3		47.6	54.3	61.0	28.1	
Post-university (Univ5 and above)	18.9	35.1	38.9	15.3		29.9	21.9	18.0	17.5		24.7	25.8	24.0	16.3	

	Comparison					Treatment					Total				
	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value
Training college (through TC4)	20.0	14.1	9.5	31.2		14.5	13.3	17.2	24.1		17.2	13.6	15.0	27.8	
Adult informal education	0.0	0.0	0.0	1.6		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.8	
Actual level of education student believes they will complete					<0.001					0.0093					<0.001
Primary (through Std. 8)	4.7	0.0	0.0	14.0		3.0	0.0	0.0	13.7		3.8	0.0	0.0	13.9	
Secondary (through Form 4)	9.9	1.9	12.3	39.0		15.4	10.3	8.0	21.3		12.8	7.8	9.2	30.5	
University (through Univ4)	56.9	51.0	55.7	20.3		50.3	61.9	57.3	28.6		53.5	58.7	56.8	24.3	
Post-university (Univ5 and above)	13.5	31.8	22.5	8.6		24.3	15.7	18.0	13.1		19.1	20.5	19.3	10.8	
Training college (through TC4)	14.9	15.3	9.5	18.1		7.1	12.1	16.8	23.2		10.8	13.0	14.7	20.5	
Adult informal education	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Importance and likelihood of achieving educational milestones to students															
Educational goal is very important to student															
Finish primary school	97.2	100.0	100.0	98.5	0.628	98.8	99.4	100.0	94.4	0.092	98.0	99.6	100.0	96.5	0.181
Pass the PSLCE	98.9	100.0	100.0	97.0	0.531	100.0	99.4	100.0	97.4	0.354	99.5	99.6	100.0	97.2	0.0848
Be selected for secondary school	99.3	98.0	100.0	86.5	<0.001	100.0	96.0	93.8	79.8	<0.001	99.7	96.6	95.6	83.3	<0.001
Attend secondary school	100.0	100.0	100.0	99.0	0.741	100.0	98.7	96.0	89.7	0.017	100.0	99.1	97.1	94.6	0.0178
Finish secondary school	100.0	100.0	100.0	99.0	0.741	100.0	99.4	100.0	96.1	0.140	100.0	99.6	100.0	97.6	0.1469
Attend university	99.5	100.0	100.0	94.1	0.084	98.9	100.0	97.8	84.2	<0.001	99.2	100.0	98.4	89.4	<0.001
Student perceives chances of achieving educational goal to be high															
Finish primary school	76.0	96.9	95.2	69.2	0.016	78.4	100.0	94.3	70.1	0.006	77.3	99.1	94.6	69.6	<0.001
Pass the PSLCE	75.8	100.0	95.2	65.3	0.006	70.7	100.0	91.3	71.1	<0.001	73.1	100.0	92.4	68.1	<0.001
Be selected for secondary school if pass PSLCE	74.2	98.0	78.8	22.6	<0.001	66.9	94.5	78.7	20.3	<0.001	70.4	95.5	78.8	21.5	<0.001
Join secondary school if selected	75.3	93.0	88.1	32.2	<0.001	65.2	94.5	76.1	34.7	<0.001	70.1	94.1	79.6	33.4	<0.001

	Comparison					Treatment					Total				
	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value
Finish secondary school	72.3	74.7	64.4	32.7	<0.001	67.6	59.0	44.6	44.4	0.090	69.9	63.6	50.4	38.3	<0.001
Attend university	57.9	60.3	52.9	30.1	0.035	62.0	48.6	48.2	38.9	0.256	60.0	52.1	49.5	34.3	0.0177
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Optimism, self-esteem, and agency over the future															
Compared to this time last year, my life has:					<0.001					<0.001					<0.001
Improved	54.1	58.8	85.8	20.2		67.9	59.1	60.1	15.7		61.2	59.0	67.6	18.0	
Is more or less the same	33.6	27.1	6.1	38.3		26.4	25.9	30.1	40.3		29.8	26.3	23.2	39.3	
Worsened	12.4	14.1	8.0	41.5		5.8	15.0	9.8	44.0		9.0	14.7	9.3	42.7	
In one year from now, I expect that my life will be:					0.064					<0.001					<0.001
Better	82.5	82.0	96.3	69.3		90.9	74.5	84.7	45.3		86.9	76.7	88.1	57.8	
More or less the same	15.1	15.9	3.7	18.0		7.7	24.6	10.0	28.2		11.3	22.0	8.2	22.9	
Worsened	2.4	2.0	0.0	12.8		1.3	0.9	5.3	26.5		1.9	1.2	3.8	19.4	
In five years from now, I expect that my life will be:					0.399					0.017					0.008
Better	83.8	90.6	96.3	78.9		87.1	88.1	91.8	64.6		85.5	88.9	93.1	72.0	
More or less the same	12.2	9.4	3.7	12.1		11.6	8.4	7.0	21.9		11.9	8.7	6.1	16.8	
Worsened	4.0	0.0	0.0	9.0		1.3	3.5	1.1	13.6		2.6	2.4	0.8	11.2	
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Positive beliefs about the future (mean and sd)	29.8 (0.5)	29.3 (0.8)	28.5 (1.1)	26.5 (0.7)	<0.001	29.0 (0.6)	29.6 (0.4)	28.1 (1.0)	25.9 (0.8)	0.009	29.4 (0.4)	29.5 (0.4)	28.3 (0.8)	26.2 (0.5)	<0.001
N (students)	**71**	**52**	**20**	**64**		**66**	**85**	**28**	**45**		**137**	**137**	**48**	**109**	
Self-efficacy and agency over the future (mean and sd)	19.3 (0.4)	19.3 (0.3)	19.3 (0.6)	17.8 (0.3)	0.006	19.2 (0.2)	19.2 (0.3)	17.8 (0.5)	17.9 (0.5)	0.010	19.3 (0.2)	19.2 (0.2)	18.2 (0.4)	17.9 (0.3)	0.001
N (students)	**74**	**52**	**20**	**63**		**67**	**85**	**28**	**47**		**141**	**137**	**48**	**110**	
Student opinions on importance of educational milestones															
Student thinks educational milestone is very important															
Girls complete primary school	98.6	100.0	97.1	99.4	0.533	98.7	99.4	100.0	99.1	0.756	98.7	99.6	99.2	99.3	0.585
Girls to complete secondary school	100.0	99.0	100.0	99.4	0.702	100.0	99.4	100.0	98.3	0.611	100.0	99.3	100.0	98.9	0.568
Boys to complete primary school	96.8	100.0	97.1	100.0	0.354	100.0	94.5	100.0	99.1	0.123	98.5	96.1	99.2	99.6	0.235

	Comparison					Treatment					Total				
	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value
Boys to complete secondary school	98.6	100.0	100.0	100.0	0.702	100.0	97.4	100.0	98.3	0.542	99.3	98.2	100.0	99.2	0.695
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Student-reported barriers to reaching their own educational goals															
Direct school costs	72.9	82.1	59.5	73.7	0.376	66.1	72.2	85.1	89.1	0.009	69.4	75.2	77.7	81.1	0.168
Exam fees and related costs	73.4	74.8	54.7	70.2	0.423	67.0	69.5	69.5	86.5	0.093	70.1	71.1	65.2	78.0	0.335
Distance to school	41.2	58.0	76.8	47.1	0.011	53.3	69.9	59.8	57.9	0.430	47.5	66.3	64.7	52.2	0.054
Not safe travelling to/from school	36.1	40.4	41.0	24.5	0.206	36.1	39.6	35.1	32.3	0.840	36.1	39.9	36.8	28.2	0.258
Education quality is poor at my school	31.2	26.2	22.1	15.9	0.274	28.5	19.6	39.1	27.0	0.314	29.8	21.5	34.2	21.2	0.272
Not enough Form 1 secondary school admissions spaces	41.0	31.2	52.6	35.5	0.449	40.6	37.3	20.1	37.0	0.337	40.8	35.4	29.5	36.3	0.590
Chores at home	23.5	19.3	23.5	13.2	0.425	15.8	20.8	7.5	13.9	0.494	19.5	20.4	12.1	13.5	0.457
Caregiving responsibilities	14.9	11.9	8.0	7.0	0.501	16.2	18.2	3.1	12.5	0.289	15.6	16.3	4.5	9.6	0.178
Paid work	17.7	18.0	3.2	13.5	0.297	11.8	22.3	6.9	16.4	0.127	14.6	21.0	5.8	14.9	0.068
Parents/caregivers do not support or encourage schooling	25.7	19.2	19.7	23.9	0.880	24.0	30.4	21.0	20.7	0.603	24.8	27.1	20.6	22.4	0.813
Getting pregnant/fathering a child	39.5	34.4	39.8	54.1	0.154	52.5	52.3	44.0	41.2	0.617	46.2	47.0	42.8	47.9	0.957
Getting married	44.3	37.5	36.0	50.3	0.625	54.3	49.6	47.6	40.7	0.633	49.5	46.0	44.2	45.7	0.913
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Household education expenditures and receipt of education-related financial/material support during current academic year															
Household had any educational expenditures for any child attending school in the household during current academic year	98.9	100.0	95.2	66.8	<0.001	96.4	94.9	100.0	70.7	<0.001	97.6	96.4	98.6	68.7	<0.001
N (students)	**74**	**54**	**20**	**76**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**131**	
Household did not have enough money to pay for all children with education expenditures during current academic year (among households with any children attending school who had education expenditures during current academic year)	81.8	80.3	71.9	84.5	0.734	84.3	86.5	89.5	84.7	0.878	83.1	84.6	84.6	84.6	0.980
N (households with any education expenditures)	**73**	**54**	**19**	**22**		**65**	**83**	**29**	**15**		**138**	**137**	**48**	**37**	

	Comparison					Treatment					Total				
	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value
Household had any educational expenditures for sampled student during current academic year	98.9	100.0	100.0	31.9	<0.001	97.4	97.1	100.0	28.6	<0.001	98.1	98.0	100.0	30.3	<0.001
N (students)	**74**	**54**	**20**	**76**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**131**	
Average educational expenditure (MWK) for sampled student during current academic year (among households with any student expenditure)	27,253.5 (3,382.4)	39,240.0 (4,320.5)	55,413.4 (7,564.9)	7,380.0 (1,651.3)	<0.001	32,793.3 (4,723.1)	89,614.1 (23,873.6)	54,381.2 (8,284.8)	4,987.3 (1,433.7)	<0.001	30,098.2 (3,076.2)	74,073.6 (16,892.6)	54,669.3 (6,340.9)	6,182.9 (1,131.8)	<0.001
N (students with any educational expenditures)	**73**	**54**	**19.3 (0.6)**	**54**		**66**	**83**	**29**	**40**		**138**	**137**	**48**	**94**	
Household received any school tuition support for the sampled student during the current school year	2.2	7.2	0.0	2.0	0.150	9.2	6.7	0.0	2.5	<0.001	5.9	6.8	0.0	2.2	<0.001
Sampled student received any materials support or cash to purchase school supplies during the current school year	3.0	7.2	0.0	0.6	0.589	3.9	4.1	4.4	1.5	0.797	3.5	5.1	3.2	1.0	0.581
N (students)	**74**	**54**	**20**	**76**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**131**	
Student agrees/strongly agrees with statement on student safety															
I feel safe at school	81.6	88.9	85.3	89.7	0.593	92.2	86.9	100.0	84.4	0.242	87.1	87.5	95.8	87.2	0.545
I feel safe traveling to/from school	70.5	58.9	61.6	81.9	0.217	83.1	64.9	78.7	65.4	0.147	77.0	63.1	73.7	74.0	0.305
It is safe for children to be in my school	74.7	70.6	64.6	87.7	0.169	74.2	73.9	80.9	66.5	0.568	74.4	72.9	76.1	77.5	0.883
It is safe for children to travel to/from my school	73.5	55.4	61.6	77.6	0.207	69.0	65.1	71.7	59.7	0.733	71.2	62.2	68.8	69.0	0.619
Felt unsafe or threatened in neighborhood, on the way to school, or in school	14.4	16.1	10.4	11.9	0.898	15.1	18.9	2.2	17.2	0.228	14.7	18.0	4.6	14.4	0.227
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Prevalence of sexual violence among girls															
Reported experiencing one or more sexual violence acts at least once	56.2	73.9	48.6	72.6	0.297	70.9	87.8	92.3	76.4	0.174	63.7	83.7	85.1	74.4	0.052
N (girls)	**30**	**23**	**5**	**41**		**28**	**38**	**14**	**27**		**58**	**61**	**19**	**68**	
Education gender norms and attitudes among students															

	Comparison					Treatment					Total				
	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value	Repeat Std8	Transition (public)	Transition (other)	Dropout	P value
Mean percent of responses indicating gender-equitable attitudes toward education (9 items) (mean, SD)	70.7 (2.7)	68.4 (1.9)	70.0 (4.0)	64.8 (2.3)	0.318	66.9 (2.4)	71.7 (1.7)	72.6 (2.6)	65.9 (2.9)	0.225	68.7 (1.7)	70.7 (1.3)	71.8 (2.2)	65.3 (1.9)	0.058
N (students)	**72**	**54**	**19**	**77**		**68**	**83**	**29**	**53**		**140**	**137**	**48**	**130**	
Marriage and cohabitation among students															
Ever married or in union	3.2	0.0	0.0	30.2	<0.001	1.0	0.0	0.0	39.8	<0.001	2.1	0.0	0.0	34.8	<0.001
Currently married or in union	3.2	0.0	0.0	26.5	<0.001	1.0	0.0	0.0	33.9	<0.001	2.1	0.0	0.0	30.0	<0.001
First married before age 18	0.0	0.0	0.0	11.6	0.053	0.0	0.0	0.0	16.5	<0.001	0.0	0.0	0.0	14.0	<0.001
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Student sexual behavior															
Ever had sex	17.5	27.6	33.4	75.9	<0.001	26.5	25.5	13.8	67.5	<0.001	22.2	26.1	19.5	71.8	<0.001
Sexual debut before 15	2.8	6.1	3.5	2.1	0.555	1.4	1.0	0.0	0.7	0.873	2.1	2.5	1.0	1.4	0.796
N (students)	**74**	**54**	**20**	**79**		**68**	**85**	**29**	**55**		**142**	**139**	**49**	**134**	
Pregnancy and birth history, female students															
Ever been pregnant	4.1	0.0	0.0	61.5	<0.001	4.8	1.9	0.0	50.0	<0.001	4.5	1.4	0.0	56.0	<0.001
Pregnant before 18	1.6	0.0	0.0	30.4	<0.001	0.0	1.9	0.0	29.7	<0.001	0.7	1.4	0.0	30.1	<0.001
Ever had live birth	2.4	0.0	0.0	31.3	<0.001	2.7	1.9	0.0	33.6	<0.001	2.6	1.4	0.0	32.4	<0.001
Had a live birth before 18	0.0	0.0	0.0	16.8	0.0	0.0	1.9	0.0	16.5	0.014	0.0	1.4	0.0	16.7	<0.001
Currently pregnant	0.0	0.0	0.0	21.7	0.005	2.1	0.0	0.0	16.3	0.018	1.1	0.0	0.0	19.1	<0.001
N (female students)	**33**	**23**	**10**	**44**		**34**	**41**	**16**	**29**		**67**	**64**	**26**	**73**	
Birth history, male students															
Ever fathered a live birth	0.0	0.0	11.2	7.4	0.243	0.0	6.7	0.0	11.0	0.439	0.0	4.7	4.0	9.1	0.273
N (male students)	41	31	10	35		34	44	13	26		75	75	23	61	
Student-reported HIV testing															
Ever tested for HIV and know the results among those who know HIV test location	37.4	70.1	71.2	61.6	0.002	55.9	54.5	29.1	70.0	0.084	46.7	59.4	42.3	65.6	0.045
N (students who know HIV test location)	**73**	**54**	**20**	**79**		**66**	**84**	**28**	**54**		**139**	**138**	**48**	**133**	

Notes: Unweighted sample sizes and weighted summary statistics significance tests .

Appendix G. Benchmarking SEED IE Baseline Values against Population-Based Survey Data

Reference values from population-based survey reports are presented in Table G1 as benchmarks against which to consider SEED impact evaluation baseline values. Benchmark values should be compared against SEED results with caution as the SEED rural evaluation sample is selected from a specific subpopulation.

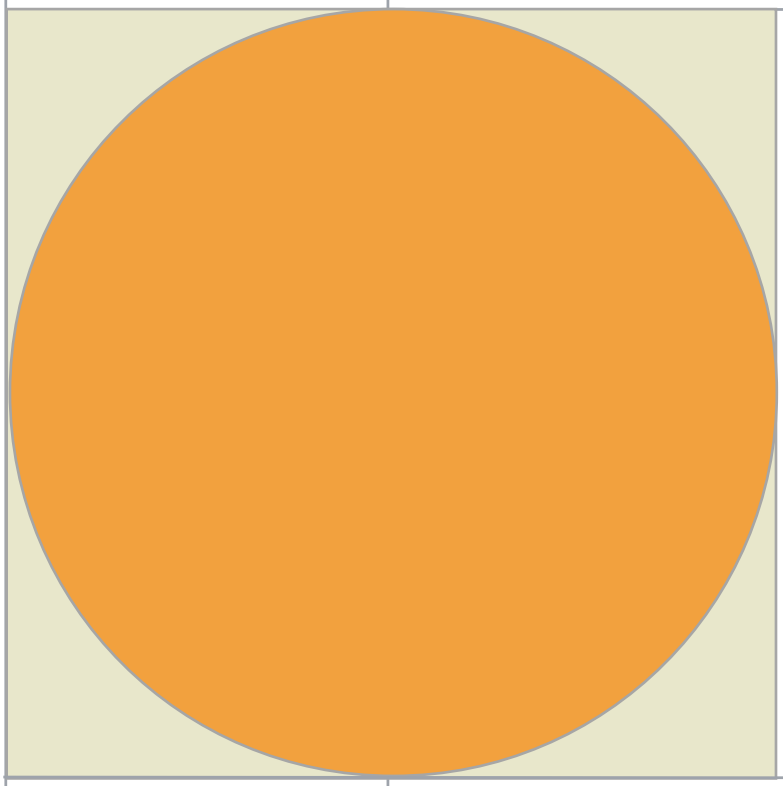
Table G1. Benchmark reference values

	SEED baseline survey				Benchmark		
Indicator	**Retro – comp**	**Retro – treat**	**Prosp – comp**	**Prosp – treat**	**Value**	**Reference population**	**Survey**
Poverty incidence (% of population)	49.3	46.4	51.5	47.7	56.6	Rural population	IHS5 2019/20
Ultra-poverty incidence (% of population)	17.0	16.1	19.1	16.8	23.6	Rural population	IHS5 2019/20
% households with inadequate food security	59.4	60.2	59.0	62.2	67.8	Rural households	IHS5 2019/20
% households with low or very low food security status	72.0	71.0	72.7	73.0	76.8	Rural households	IHS5 2019/20
% households received direct cash transfer from government	5.3	5.9	4.7	4.1	0.7	Rural households	IHS5 2019/20
% households received scholarship/bursary for secondary education	2.4	2.1	0.7	1.1	1.6	Rural households	IHS5 2019/20
Education							
Standard 8 repetition rate (2021)	35.6	26.6			15.0	National male and female learners	EMIS 2021 report
Transition rate (2021)	23.2	37.5			36.5	National male and female	EMIS 2021 report
*** Note: EMIS reports a national 6% decrease in secondary school enrollment numbers between 2019/20 and 2020/21 academic years							EMIS 2021 report
Public secondary school selection rate (2019/20 academic year number selected / number sat PSLCE)							
National SS	0.2	0.1			1.1	National male and female 2019/20	EMIS 2021 report
District SS	1.7	2.2			3.1	National male and female 2019/20	EMIS 2021 report

	SEED baseline survey				Benchmark		
Indicator	**Retro – comp**	**Retro – treat**	**Prosp – comp**	**Prosp – treat**	**Value**	**Reference population**	**Survey**
Day SS	0.9	1.6			4.3	National male and female 2019/20	EMIS 2021 report
CDSS	21.4	25.7			29.7	National male and female 2019/20	EMIS 2021 report
Total public	24.3	29.8			38.1	National male and female 2019/20	EMIS 2021 report
Reasons for dropout							
No money for fees or uniform	46.1	61.9			63.6	Reason for secondary dropout, rural	IHS5 2019/20
Unable to pay school fees					49.5	National male Form 1 learners	EMIS 2021 report
Not interested	11.7	18.8			3.8	Reason for secondary dropout, rural	IHS5 2019/20
General lack of interest					13.5	National male Form 1 learners	EMIS 2021 report
Married	18.5	13.0			19.1	Reason for secondary dropout, rural	IHS5 2019/20
Marriage					16.9	National female Form 1 learners	EMIS 2021 report
Became pregnant	18.3	11.2			26.4	National female Form 1 learners	EMIS 2021 report
School too far from home	0.0	3.8			11.8	National male Form 1 learners	EMIS 2021 report
Found work	0.0	1.3			0.0	Reason for secondary dropout, rural	IHS5 2019/20
Employment					1.2	National male Form 1 learners	EMIS 2021 report
Oher theory of change indicators							
Student currently married/in union	10.2	8.0	1.3	1.6	18.0	Rural women and men ages 15–19 (not tabulated 20–24 years)	MICS 2019/20
Married before age 15	0.0	0.0	0.0	0.0	4.1	Rural women and men ages 15–24 years	MICS 2019/20
Married before age 18	3.9	3.8	3.9	3.8	34.0	Rural women and men ages 20–24 years (not tabulated 15–19 years)	MICS 2019/20
Ever had sex	40.4	33.9	11.8	11.2	70.6	Rural women and men ages 15–24 years	MICS 2019/20

	SEED baseline survey				Benchmark		
Indicator	Retro – comp	Retro – treat	Prosp – comp	Prosp – treat	Value	Reference population	Survey
Sexual debut before age 15	3.3	0.9	4.0	4.2	11.8	Rural women and men ages 15–24 years	MICS 2019/20
Know where to be tested for HIV	97.2	93.0	90.3	92.2	91.0	National women and men ages 15–24 years - know a place to get tested	MICS 2019/20
Ever tested for HIV and know the results	54.6	55.7	41.4	36.7	69.2	National women and men ages 15–24 years - have ever been tested and know the result of the most recent test	MICS 2019/20
Tested for HIV in last 12 months	37.4	33.5	19.7	23.5	48.7	National women and men ages 15–24 years -have been tested in the last 12 months	MICS 2019/20
Female - ever had a live birth	12.7	9.3	1.4	1.3	23.5	Rural women ages 15–19 years (not tabulated 20–24 years)	MICS 2019/20
Female - had a live birth before age 18	6.4	4.5	0.7	1.3	30.7	Rural women ages 20–24 years (not tabulated 15–19 years)	MICS 2019/20
Male - ever fathered a live birth	3.0	4.8	0.0	0.7	2.3	Rural men ages 15–19 years (not tabulated 20–24 years)	MICS 2019/20
Male - fathered a live birth before age 18	1.8	0.0	0.0	0.0	1.8	Rural men ages 20–24 years (not tabulated 15–19 years)	MICS 2019/20
Compared to this time last year, my life has improved	45.6	52.1	51.1	58.1	35.0	Rural women and men ages 15–24 years	MICS 2019/20
In one year from now, I expect that my life will be better	78.8	74.1	82.6	77.3	65.9	Rural women and men ages 15–24 years	MICS 2019/20
Current school year - Household received any financial support for school fees or other school-related expenses for any children	4.2	8.3	5.0	4.4	41.9	Received school tuition or other school-related support during the current school year (national women and men ages 15–24 years currently attending primary education or greater)	MICS 2019/20
Current school year - Household received any school tuition support for the sampled student	3.6	6.8	2.4	1.2	36.0	Received school tuition support during the current school year (national women and men ages 15–24 years currently attending primary education or greater)	MICS 2019/20
Current school year - Sampled student received any materials	2.2	3.6	3.5	3.5	11.7	Received other school-related support during the current	MICS 2019/20

	SEED baseline survey				Benchmark		
Indicator	Retro – comp	Retro – treat	Prosp – comp	Prosp – treat	Value	Reference population	Survey
support or cash to purchase school supplies						school year (national women and men ages 15–24 years currently attending primary education or greater)	
Student received support with homework	38.1	35.9	48.4	47.9	44.1	National children ages 14 years old at start of school year who are attending school and had homework	MICS 2019/20
Caregiver discussed child's progress with teachers during past 12 months	38.3	37.9	34.8	34.6	36.7	National caregivers of children ages 14 years old at start of school year who are attending school	MICS 2019/20
School's governing body is open to parental participation	84.8	85.9	90.9	86.9	76.4	National caregivers of children ages 14 years old at start of school year who are attending school	MICS 2019/20
Student usually works throughout the year, part of the year, or once in a while	51.0	42.5	38.8	33.4	60.0	Rural women and men ages 12–17 years involved in economic activities during the previous week	MICS 2019/20
Student agrees/strongly agrees that they have felt unsafe or threatened in neighborhood, on the way to school, or in school	13.6	15.3	16.0	9.3	21.3	National women and men ages 15–24 years who walk alone in neighborhood after dark and feel unsafe/very unsafe	MICS 2019/20
Caregiver attitudes towards domestic violence - husband is justified in hitting or beating his wife in at least one of five circumstances	16.0	15.5	13.8	15.6	18.2	Rural women and men ages 15–49 years	MICS 2019/20
Menstruating girls currently in school who missed school during their last period	8.9	12.5	10.3	11.7	16.4	National women ages 15–24 years who reported menstruating in the last 12 months and did not participate in social activities, school, or work due to their last menstruation in the last 12 months	MICS 2019/20



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