Community participation and after-school support improve learning outcomes and transition to secondary school among disadvantaged girls:

A pilot study in informal settlements, Nairobi, Kenya

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Abbreviations

APHRC	African Population and Health Research Center
ARC GIS	Aeronautical Reconnaissance Coverage Geographic Information System
CBO	Community Based Organization
EA	Enumeration Area
EFA	Education for All
FGD	Focus Group Discussion
FI	Field Interviewer
FPE	Free Primary Education
GEC	Girls Education Challenge project
GIS	Geographic Information System
IB	Individual Behavior+
IDI	In-depth Interview
ISH	Individual Schooling History
KCPE	Kenya Certificate of Primary Education
KESSP	Kenya Education Sector Support Programme
MoE	Ministry of Education
NCC	Nairobi City Council
NGO	Non-governmental Organization
NUHDSS	Nairobi Urban Health Demographic System
PGI	Parent Guardian Involvement
SQL	Structured Query Language
SSA	Sub-Saharan Africa
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UPE	Universal Primary Education
USD	United States Dollar

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Executive Summary

Research shows that providing girls with after-school support and mentoring in addition to such incentives as stipends helps them to stay in school and transition into secondary school. This study tested several strategies to support girls' education. The first approach provided after-school mentoring/homework support in the core subjects of literacy and numeracy to girls from the same environment who had attained a grade of C+ or above, the minimum required for university entry. The second intervention targeted parents, community leaders, and gatekeepers to support schooling for girls aged 12-19 who are at risk of not completing primary school and consequently not transitioning to secondary school. The third intervention provides conditional financial support to girls from poor households who obtain a mean score of 250 or above on the Kenya Certificate of Primary Education (KCPE) at the end of the primary school cycle. This subsidy, the equivalent of USD 113, covers the cost of entering the first grade of secondary school, enabling the beneficiaries to continue their education.

This study was based on a theory of change that requires awareness and comprehension of the social and economic drivers of low participation in education among poor and marginalized girls in informal urban settlements. The project aimed to improve their learning outcomes and rate of transition to secondary education. It demonstrated an intervention that, with parental and community support, can remediate inequality of access to secondary education. The intervention was designed to answer two questions: Does after-school tutoring improve learning outcomes; and does parents and community leaders' increased awareness of the challenges girls face increase their support for improved learning outcomes?

Study evaluation focused on evidence of whether and how the intervention to improve literacy and numeracy among girls in grades 6, 7, and 8 and whether the two different models – after-school support and after-school support plus parental support – made a critical difference in learning outcomes. The baseline established benchmarks, so data in succeeding years of the intervention can be compared and the questions answered over the long term.

Data collection

Fieldwork was conducted from 12 June to 15 July 2013. Data collection started at the household level with the field interviewers (FIs) visiting only those eligible to participate in the study; that is, those with at least one girl in grade 6, 7, or 8 and aged between 12 and 19 years. Three questionnaires were administered: the Parental, Guardian Involvement (PGI), Individual School

History (ISH), and Individual Behavior (IBV). For the qualitative component of the baseline survey, a random sample of 120 parents/guardians from the list of recruited households was generated to assist in mobilizing participants for the focus group discussions (FGDs) and in-depth interviews (IDIs). Out of the 120, 71 parents were contacted for FGDs; 3 FGDs and 6 IDIs were conducted in Korogocho and Viwandani, respectively.

Key Findings:

Household characteristics:

- Of the girls included in the study, 45% were from households ranked in the poorest 33% within the study sites.
- Their average age, 13.7 years, did not differ significantly by study group.
- Overall, 49.8% were enrolled in government primary schools, but significant differences were observed in Viwandani, where about 66% of the girls in treatment 2 and the control were enrolled in government primary schools; in Korogocho, the percentage enrolled in government schools did not vary significantly by study group.
- Overall, the absenteeism rate was 11%. The control group recorded a significantly higher rate (15%) compared to the treatment groups. The two main reasons stated for absenteeism were sickness (65%) and lack of school fees (13%).
- About 50% received extra tuition for at least 4 days a week, 95% paid for extra tuition, generally weekly or monthly. Moreover, 99% of survey respondents believed that the extra tuition improves the girls' performance.
- Among all study groups, 90% of the girls reported having homework, at least 66% every day. Some 90% usually or always completed it, but only one in three received help from household members to complete it.
- In the 12 months immediately preceding the study, 90% of the parents or guardians had visited the school where their girl was enrolled to discuss her performance with either the teacher or head teacher. However, less than 10% reported offering either financial or material support to a school in the past year.

Pupil performance on mathematics and literacy tests

- Overall the mathematics performance of pupils in Korogocho and Viwandani hardly differed,

- In contrast, pupils in Korogocho greatly outperformed Viwandani pupils in literacy.
- Overall, the mathematics performance and the literacy of pupils in the two treatments (T1 and T2) and the control (C) group were roughly the same,
- As expected, pupil performance in mathematics and literacy improved as they moved up the grade levels.

Pupil performance in the content domains

- Performance in mathematics content domains was roughly the same as on the overall mathematics test.
- Performance in the speaking domain was significantly lower than in the reading and writing domains and on the overall literacy test.
- In the space and data domains in mathematics, Korogocho pupils greatly outperformed their Viwandani counterparts, especially at the Standard 6 and 7 levels.
- Pupils in Korogocho significantly outperformed pupils in Viwandani in all literacy content domains and more so at the Standard 7 level.
- When compared across grade levels, the improvement recorded among pupils in writing, speaking, listening, and reading skills, the improvement in reading was most notable.
- Compared to the improvement in other literacy domains across grade levels, the improvement in speaking skills was by far the least obvious.

Pupil performance in the cognitive domains

- Performance in each mathematics cognitive domain was roughly the same as performance on the overall mathematics test.
- Surprisingly, pupil performance generally increased with the complexity of the mathematics cognitive process involved.
- Overall, the performance of the pupils in Korogocho and Viwandani in the various mathematics cognitive domains did not differ significantly.

Pupil behavior and life skills

- Girls' educational aspirations go beyond primary school, as supported by their high self-confidence.
- Most girls felt good about themselves and spoke positively about friends.

- A high proportion practiced personal hygiene always or sometimes, yet discussion of puberty and safe sex was limited.
- A considerably high proportion of parents and guardians monitor their girls' whereabouts, time use, and spending, among other concerns.
- Almost all (98%) of the sampled girls indicated that they had not practiced sexual intercourse. For the remaining 24 girls who had sexual intercourse at an average age of 14 years, five girls were forced by either friends or strangers, one girl refused to answer while the rest consented. Menstruation was associated with school attendance, with pain and lack of sanitary pads cited as specific reasons for absenteeism. Teachers and parents, in that order, were the main source of prior information on menses.

Parental and community gatekeepers' perceptions about girls' education

- The community gatekeepers' main responsibility was to monitor parents to ensure they sent their daughters to school. Those who did not oblige were reported to the respective chiefs in the respective locations.
- Community gatekeepers sensitized parents about the positive value of education for girls by highlighting the success stories of women in Kenyan society.
- What really stood out was the theme of a community united to educate girls. This thread ran across the treatment and control zones.
- To deal with challenges affecting girls, parents proposed a multipronged approach that involved them, the community, teachers, and the child's peers.
- Parents identified one potential solution to the structural challenges affecting girls' education: a partnership among the school's parental community, nongovernmental organizations and the government.
- Poverty inhibited parents' ability to fulfill their obligations to their daughters, whose needs for food, lighting, school uniforms, school fees, and oil for the skin were often unmet. In Korogocho, poverty has been internalized. A village elder was emphatic: "We believe …we are poor." This belief prevented villagers from engaging in activities, economic or otherwise, that would change their circumstances and those of their daughters.
- Community gatekeepers in the two sites agreed that parents were not good role models for their daughters. Children in single-parent households were believed to be corrupted by following the parent in search of money and looking for money as well.

- Overall, children are better raised with the support of the whole community than by individual parents. This strategy was said to enable parents to support each other, particularly single parents who otherwise have to fend for their children alone.

Conclusions

In conclusion, the life skills component was a key part of the intervention. It will be strengthened to provide girls with knowledge that can protect them from sexual predators and sexually transmitted diseases (STIs).

The baseline survey shows a notable difference in overall literacy performance, with pupils in Korogocho outperforming pupils in Viwandani, and insignificant differences in mathematics performance between the two treatments and the control group, In evaluating the impact of the interventions, adjusting for the recorded differences in performance across the three (T1, T2, C) groups and in the content and cognitive domains will be important.

From the qualitative component, one of the outstanding findings was the theme of a community united to educate girls. A certain level of community social capital is required to support girls in their educational endeavors. Schools alone cannot do it without the support of the other stakeholders, key among them community members. Moreover, the perception among people in Korogocho that they are poor contributed significantly to their ambivalence about their daughters' education. Their internalization of this belief prevented them from engaging in activities, economic or otherwise, that would change their own circumstances and those of their daughters. Parental counseling sessions should work on the negative effects of the slum environment, so its inhabitants can develop a positive view of themselves and their daughters' chances of achievement through education.

Map of Nairobi

Chapter 1. Introduction

Secondary education plays a double role, equipping individuals with skills required for early employment and selecting and preparing some, depending on their interest and academic capabilities, to pursue higher education. Secondary education merges the fundamental skills learned in primary school, increasing students' preparation and chances for better jobs (UNESCO 2012). However, many young people are barred from secondary education in the worlds' poorest countries. Statistics show that globally, 71 million adolescents of secondary school age are out of school.

Completing primary school and transitioning to secondary are critical, particularly in the Kenyan context, for three main reasons. First, new evidence from APHRC shows that over 60% of pupils in the informal settlements are attending informal private schools for the poor that are poorly equipped, and most teachers are not well trained. In addition, we now have evidence that fewer pupils in slums (58.6%) transition to secondary education than those who live elsewhere (87.5%). Second, the Kenyan government has achieved a primary school gross enrolment rate of above 100% mainly due to the tuition-free Primary Education program. Though secondary school is subsidized to the equivalent of a day secondary school (about USD 125), the gross enrolment rate is below 50%. Clearly, new strategies must be put in place to improve transition to secondary school, particularly among the poor. Third, analysis based on APHRC data shows no difference in school and health-related decisions between mothers with primary-level education and those with no education at all. Their children are likely to miss out on the wider benefits of education, including better health and higher lifetime earnings. Other problems that argue for this project at this point include high teacher turnover and absenteeism and, among pupils, indulgence in risky behavior and high grade repetition.

All of these findings suggest that making the current generation of girls transitions to secondary education imperative. This multipronged intervention explored whether supporting after-school learning, subsidizing the cost of entering the first secondary grade, and increasing parents and community leaders' awareness about the challenges to girls' education increase support for and improve learning outcomes and ultimately improve primary school girls' transition to secondary school.

1.1 Contexts

The study is nested in the Nairobi Urban Health Demographic System (NUHDSS), which has been operating since 2002. It not only monitors vital statistics, such as deaths, births, and migration, but also provides a sampling framework and a platform for nesting other studies. It keeps a database of all dwelling units and their geographical position (GIS coordinates), households, and individuals in the two slums under study. Each of these data points is assigned an identifier that enables tracking in case of movement, updates, and linking with other information collected within the surveillance framework. The information is usually updated every 4 months (3 times a year).

1.1.1 Korogocho

Korogocho is an informal settlement in Nairobi North District, occupying an area of 0.9 km^2 within Kasarani Division, and approximately 11 km from Nairobi's central business district. It has a total of 12,909 households (Kenya Population and Housing Census, 2009). Most residents operate small businesses, as wage employment is difficult to come by. The slum is characterized by high levels of insecurity, poor accessibility, inadequate housing, poor sanitation and water quality, and poor access to basic services, like health care and education.

1.1.2 Viwandani

Viwandani is an informal settlement in Nairobi East District, occupying 5.7 km^2 in the industrial part of Nairobi, about 7 km from the city center. It has a total of 17,926 households (Kenya Population and Housing Census, 2009). It is characterized by overcrowding, insecurity, poor housing and sanitary conditions, and inadequate social amenities (Ochako et al., 2011).

1.1.3 Enrolment in, and transition to, secondary schools in Kenya

Universal education policies have increased school enrolment in most developing countries, particularly at the primary level. However, gross enrolment ratio at the lower secondary level remains below 60% in 19 sub-Saharan African (SSA) countries where data are available. Participation at the secondary level is greatly hindered by the low number of students who complete primary school (UNESCO, 2012). Although primary school enrolment in Kenya has increased, challenges related to completion and transition to secondary school continue. According to Sifuna (2007), the quality of education is threatened by overstretched facilities, congested classrooms, and a shortage of teachers, among other things. Research shows that when teachers have to handle classes of 60–80 or even 100 pupils, inadequate individual attention compromises learning (UNESCO, 2005; Abagi & Sifuna, 2006; Oketch & Rolleston, 2007). Thus, increased enrolment may have been achieved at the cost of quality. Majanga et al. (2011)

argue that large class sizes influence the teaching and learning interaction, especially in core subjects like mathematics that require frequent teacher attention. They found that teachers resort to lecturing as a way to handle large classes, leading to minimal teacher-pupil interaction during instruction time.

1.2 Purpose of the study

This project aimed to increase access and transition to quality secondary education among girls who live in informal urban settlements and to demonstrate how an intervention with parental and community support can address unequal access. The outcomes are improved learning, school attendance, and subsequent transition to secondary school for girls in grades 6, 7, and 8 from poor urban households. In the long term, we expect to generate more mothers in informal urban settlements who have a secondary level education and, hence, to improve child and maternal health outcomes.

The research questions guiding the project are as follows:

1. Does after-school learning support lead to improved learning outcomes?
2. Does subsidizing the cost of entering the first secondary grade increase the number of girls who transition to secondary education?
3. How does parents and community leaders' increased awareness of the challenges to girls' education lead to increased support for and improved learning outcomes?

1.3 Study hypotheses

In this study, we hypothesized that:

1. Community-based positive role models providing after-school support to vulnerable girls will improve learning outcomes.
2. Subsidizing the cost of entering the first secondary grade will increase the number of girls who transition to secondary education.
3. Community conversations with parents and community leaders will improve learning outcomes and transition to secondary school.

1.4 Study design and sampling procedure

The study is being conducted in two informal urban settlements, Korogocho and Viwandani, in Nairobi, Kenya. It is nested within the Nairobi Urban Health and Demographic Surveillance System (NUHDSS) and run by the African Population and Health Research Center (APHRC). The NUHDSS tracks a population of slightly more than 60,000 people; 57% and 43% from

Viwandani and Korogocho, respectively. Both sites are slums, characterized by poor or lack of basic infrastructure, such as roads, sanitation, and clean, affordable water. Education levels are low, mobility and the sense of insecurity high compared to other areas. Analysis of the distribution of the NUHDSS population aged 15 years and above shows that 6% have no education, and 35% have attended at least secondary school. Boys are more likely to attend school than girls; 8% of women and 4% of men have no formal education, while 27% of women and 35% of men have attained at least secondary school education. About 28% of women of reproductive age (15-49) have at least a secondary education.

The design of the pilot project is quasi-experimental, focusing on 2 treatments and 1 comparison group in each of the informal settlements. The three target areas within each of the two slums were selected to minimize contamination. Thereafter, the 2 treatment groups and the comparison group were randomly assigned to these *enumeration areas*. Treatment group 1 is exposed to remedial instruction and community-based intervention; group 2 is exposed to remedial instruction only; the comparison group receives no intervention.

Using coordinates from NUHDSS, all the dwelling units in each of the sites were grouped into three zones, using ARC GIS 10.0. Two zones were selected randomly to receive the intervention, while the third served as the control. The zones were created to minimize contamination while ensuring a fair distribution of the study sample. To implement the project in a way that allows evaluation of whether the intervention works, the NUHDSS sites were categorized into treatment and comparison groups (see Evaluation Design for details).

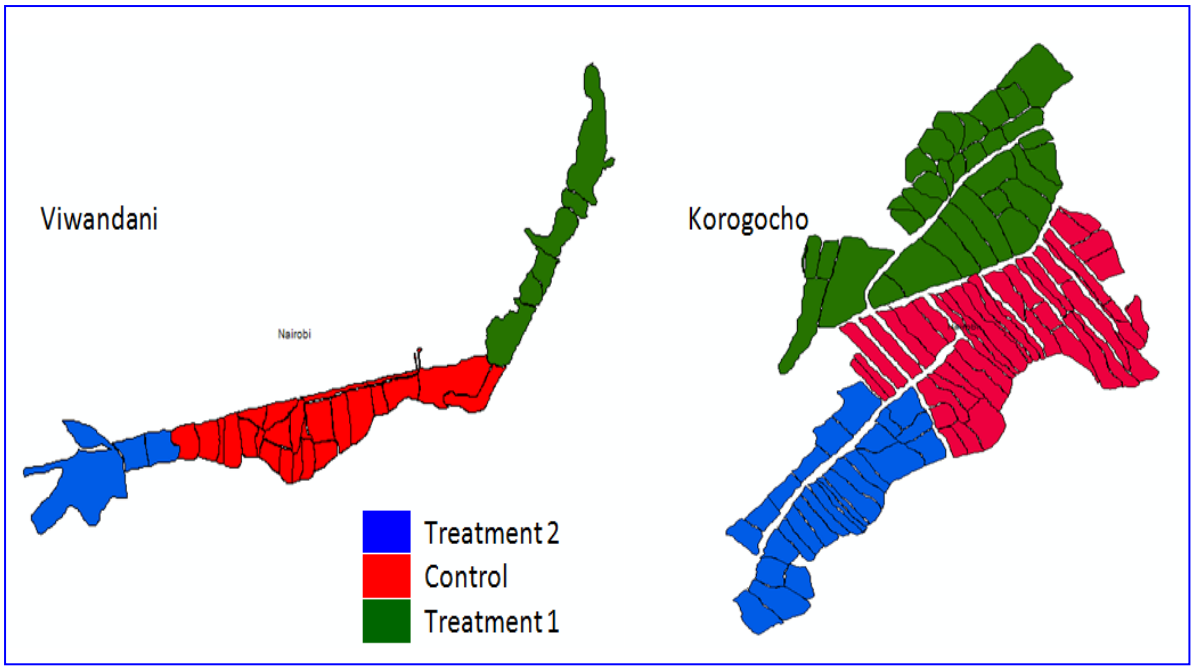
Using the NUHDSS database, all households with girls aged between 12 and 19 years were extracted and listed. We then visited the households to confirm the age, level, and school grade of the girls. Inclusion criteria were as follows: a) girls belonging to households in the bottom 40% in terms of poverty; b) information about the household is available in the NUHDSS 2012 data system; c) girls' individual schooling information is available in the 2010 Education Research Program (ERP) data system; and d) based on 'b' and 'c', households with girls aged 12-19 years and in primary grades 6, 7, or 8.

A sample of 1421 households was included, targeting a maximum of 2132 girls. In addition, the project targets the parents of girls and community leaders in the two urban settlements with a view to increase their after-school support through the use of peer mentors and community conversations involving parents and community leaders. At baseline, a total of 1134 households participated in the study, with 1270 girls. Most (60%) households were in Korogocho and 40%

in Viwandani. Korogocho has a fair distribution of households across study groups: 30.3%, 35.0%, and 34.8% in treatment 1, treatment 2, and control, respectively. In Viwandani, 46% of the households were in the treatment 2 zone, 26% in the treatment 1 zone, and 28% in the control zone.

In addition, a random sample of 120 parents and guardians from the populated list of recruited households was generated to mobilize participants for the FGDs. Out of the 120 parents sampled, 71 participated in the FGDs. Therefore, 6 FGDs were conducted in the two sites, 3 in each. Both men and women participated. Specifically, of the 38 FGD participants in Korogocho, 15 were men and 23 women. In Viwandani, 22 were men and 11 women. Further, 12 IDIs were conducted, six in each site, and all the key informants were men. Using the location identifier, households were grouped and mapped to the three zones (2 treatments and control) in each study site. This final sample was used to collect baseline data.

Figure 1: Intervention and control zones in the two study sites.



1.5 Survey instruments

The six survey instruments administered to collect quantitative data on the girls and their parents or guardians during the study are described below.

Individual schooling history questionnaire

This tool focuses on the girl's schooling patterns, schooling history, and school attendance. It also sought information on the type of school attended and attended previously, their locations, reasons for changing schools, class repetition, and reasons for repetition.

Individual behavior/life skills questionnaire

The individual behavior questionnaire sought information on the girls' educational goals and future aspirations; level of self-confidence; personal behavior; substance use; sexual activity; source of information on sex, drugs, smoking, and alcohol; and knowledge about HIV /AIDS and other sexually transmitted diseases. The tool also sought to dispel myths about puberty, sex, and HIV/AIDS.

Parental/guardian involvement questionnaire

This tool focused on parental support in response to the need for learning materials focusing on life skills guidance and counseling for girls. It was designed to investigate parental understanding of their role and that of the community in educating their daughters and the challenges that affect girls' education in the two informal urban settlements.

Literacy test

This tool focused on the four skills of literacy - listening, writing, reading, and speaking - using one-on-one (picture), one-on-one (words), and one-on-one score cards. A whole class composition exercise tested the students' skills in reading, writing, grammar, and vocabulary.

Numeracy test

This tool assessed the three learning domains: knowledge, comprehension, and application. It focused on the curricular outcome areas of numbers and operations, patterns and algebra, geometry, measurement, and basic statistics.

Conducting FGDs and IDIs

In addition to the quantitative survey, we collected qualitative data by conducting 6 focus group discussions (FGDs) in each category (T1, T2, and C) and 12 in-depth interviews (IDISs) at each study site. The FGs comprised both male and female participants, with some gathering only women and some only men. Twelve key informant interviews were also conducted at each of the two sites. Participants included area chiefs and village elders, all of whom were men. The IDI protocol investigated community gatekeepers' understanding of their role and that of the community in the education of girls and the challenges that affect girls' education. The FIs

guided the participants to fill in their socio-demographic characteristics. The discussions were recorded to ensure that all of the data were captured.

1.6 Recruitment, training, and pretesting

A total of 25 field staff was recruited for training, 14 from Korogocho and 11 from Viwandani. They were divided into two teams, and each had two team leaders. The teams mixed new staff and staff who had worked in other Education Research Projects at APHRC and could impart their experiences to the rest of the team.

Prior to the training workshops, researchers met and reviewed all tools to ensure similar understanding and to minimize training bias. FIs were trained for 6 days on all the questionnaires, voice recording, and research ethics. The team was trained on both qualitative and quantitative methods of data collection and given an opportunity to pilot test the study tools. On the fifth day, all field staff and the APHRC research team carried out a pilot on the study tools. Pretesting of the study instruments was organized and conducted concurrently outside of the study areas, one in Korogocho (Ngomongo) and the other in Viwandani (Kingstone). Every field staff member visited two households and completed 6 questionnaires. Another 6 FIs pretested the FGD guide.

1.7 Data collection

Fieldwork was conducted from 12 June to 15 July 2013. Data collection started at the household level, with FIs visiting only the eligible households. Code 1 was given to every eligible household and code 8 to all ineligible households. A household was considered eligible if it had at least one girl 12-19 years old and in grade 6, 7, or 8. Three different questionnaires were administered to every eligible girl at the household level. Qualitative data collection was guided by a moderator and captured on a voice recorder. In addition, one FI took notes during the interviews.

1.8 Quality assurance

Several measures were taken to ensure that quality data were collected. First, team members at the various study sites held daily meetings to discuss the fieldwork. Second, team leaders went through all the questionnaires, checking for errors, including inconsistencies. If a team leader found inconsistent information, he/she had to go back to the household to confirm the information with the respondent. All team members edited their work daily before submitting it to their team leader. Third, team leaders accompanied different teams to observe data collection. They sat in with household FIs and conducted random spot-checks in households and during the

administration of numeracy and literacy tests at the school level. The core research team conducted spot checks during the after-school mentoring sessions to ensure that the girls were exposed to full-time support as intended. Following these visits, the core research team met with the other teams and communicated the challenges that they witnessed and brainstormed on ways to improve data collection. In general, close, intensive supervision by team leaders and researchers ensured that the study was conducted in professional way and that quality data were collected.

1.9 Analysis

Both descriptive and bivariate analyses were used to assess the quantitative data. The descriptive analysis included 1) mean achievement in math and literacy and their standard deviations; and 2) frequencies, percentages, and proportions for the categorical variables. Test data analysis involved scoring individual girls on the individual items and competency areas. The item scores were summed and converted into percentages. Bivariate analysis involved cross-tabulating the variables of interest by study group (T1, T2, C). Chi-square, F-tests, and t-tests were used to establish any baseline imbalance between study groups. Where possible, we attempted to stratify the analysis by study site. The results are presented in tables and figures.

Qualitative data analysis involved generating codes both inductively and deductively. The inductive coding was largely based on the research questions guiding the study, while deductive coding involved relevant concepts that emerged but were not defined in the initial research questions. These codes were mainly generated after reading the first set of interview transcripts. Vital moments in the data were identified and coded before beginning the process of interpretation (Fereday & Cochrane, 2006). The codes were subsequently categorized into themes as described Rice and Ezzy (1999).

1.10 Study justification

APHRC longitudinal data for the urban slums under study show that in 2009/2010, children in the poorest households were less likely to transition into secondary school. Only 52.1% in the poorest 40% of households made the transition compared to 57.8% in the middle 40% and 60.8% in the top 20% (Kassahun et al., forthcoming). Overall, the transition rate for pupils residing in the urban slums was 58.6% compared to 87.5% for pupils living elsewhere in Nairobi. Furthermore, 24.5% of girls aged 12-19 were out of school compared to 18.8% of boys in the same age group in the same locations.

The study focused on the informal settlements because APHRC research shows that between 2005 and 2010, the proportion of pupils attending nongovernment primary schools there increased from below 45% to over 60%. To a large extent (59%), teachers in nongovernment schools are untrained and leave the job at the first opportunity for better pay, compromising the quality and quantity of instruction. Unfortunately, students in the informal settlements' government schools are not better off. An APHRC study shows that while government schoolteachers are older and more experienced, their students score lower on standardized English and math tests than those taught by the younger, less experienced teachers in nongovernment schools (Ngware et al., 2013).

Moreover, research shows that adolescents who live in the Nairobi slums initiate sexual activity about 3 years earlier than their peers elsewhere, which interferes with their schooling (Kabiru et al., 2010). Therefore, we hypothesized that interaction with mentors who could impart knowledge of life skills would delay sexual initiation and ultimately improve retention in school. Further investigation of interventions to improve transition and learning outcomes for girls in informal urban settlements remains a priority.

1.11 Ethical considerations

The study involved human subjects, but no major harm was anticipated by virtue of participating in the intervention. However, some life-skills sessions might evoke bad memories, and we referred participants who were affected to appropriate counselling and support services. So far, 2 girls from Korogocho and 179 parents from both sites have undergone counselling.

No harm was envisaged from the baseline survey as almost all questionnaire items addressed schooling history and household characteristics. All questionnaires had filters and skips that protected respondents from answering questions that did not apply to them. They could also choose not to answer any question, which minimized the possibility of negative psychological effects. Learning assessment tools were drawn from the pupils' ordinary curriculum. In sum, we anticipated no harm to the study population arising from the instruments.

A consent-seeking information sheet and informed consent form described the possible benefits, risks, and inconveniences. Informed consent was sought at two levels – first parents and guardians, then the individual adolescents. According to Kenyan law, the age of consent is 18 years and above. Parents/guardians of our younger participants provided written consent for

them, but the adolescent still had to indicate willingness to participate by assenting to the study. Older adolescents aged 18-19 years and emancipated minors provided individual written consent.

All individuals in the study were assigned unique identifiers generated by a computer program. All data were stored in an SQL database on the APHRC server with access limited to the database manager. The manager excluded individual names and residence locations when releasing data to analysts; where such information was needed for analysis, an anonymous identifier was generated, making it impossible for analysts to link data to individual respondents. For the qualitative data, individual names did not appear on notes or reports, and pseudonyms were used for informants in the FGDs. Information given by the girls was not disclosed even to their parents or guardians. Participants in the FGDs were requested to respect the privacy of others by not discussing what was said with nonparticipants. Access to data was strictly limited to the project team. The transcribed qualitative data were password-protected, and the tapes were erased immediately after transcription. Results were aggregated or summarized and did not include names of individuals or household members.

Data collectors were trained to ensure that ethical conduct was clearly understood and implemented. The training included focused sessions and exercises on the meaning and process of informed consent, the importance of protecting the privacy of subjects, and maintaining the confidentiality of the information obtained from them.

1.12 Urgency

Studies show that implementation of the FPE policy has been marred by questions about educational quality. For example, Ngware et al. (2010) found that the student mean score on a standardized math test was less than 50%, and some sixth grade teachers scored as low as 17% on a teacher math knowledge test. Oketch et al. (2010; 2012) observed that in two Nairobi slums, many parents perceive that the quality of education in public schools is poor, and most prefer to send their children to fee-charging private informal schools. Thus, under the current policy framework, the Ministry of Education (MoE) may not achieve its objective of providing FPE to all children.

Secondary education plays a critical role in the development agenda by enhancing young people's capacity to participate in the global economy and acquire civic skills and establishing social cohesion among communities (Schurmann, 2009). Research shows that secondary

education for girls benefits the whole society (Rihani, 2006; UNESCO, 2012). For instance, women with higher levels of education have a lower fertility rate, so their families are smaller, healthier, and their economic status is stronger (Hervish & Jacobs, 2011). In terms of economic growth, a 1% increase in the proportion of women enrolled in secondary school is estimated to generate 0.3% growth in annual per-capita income (Dollar & Gatti, 1999). Moreover, secondary education boosts a girl's future earnings by 10-20% (Chicago Council on Global Affairs, 2011).

As more children complete primary education, demand for secondary education increases worldwide, but participation rates are much lower, especially among the poor in SSA (Lewin, 2009). In Kenya, many girls among the urban poor do not transition to secondary schools and miss out on the opportunities that secondary education offers. They face many challenges. First, most attend low-cost, low-quality, informal/non-state primary schools; second, most teachers in these schools are relatively less qualified and less experienced than teachers in the formal/public schools. Third, girls from the poorest households lack parental support as most of their parents are less educated. Finally, they have less time to study and do homework because they must assist their families by performing domestic chores and income-generating activities after school. These girls have fewer opportunities to learn both in school and at home. We aimed to show that providing after-school instructional support increases their opportunity to learn, improves their learning achievement, and boosts their confidence and aspiration toward higher education, especially when synergy is built in the community in support of girls' education. This project tests whether the interventions work and will establish the proportion of girls in the informal settlements who will transition to secondary school because of the interventions. We expect added value as more girls transition to secondary school as a result of improved performance in the national examinations. For example, Ejakait et al. (2011) found that 69% of pupils from informal settlements scored on average below 250 on the KCPE examinations in 2005 and 2006. Ngware et al. (2008) found that the average score on the 2006 KCPE exams for students in Korogocho and Viwandani was 234, 38 points lower than the average score for Nairobi Province, which stood at 272. On the 2009 and 2010 KCPE exams, pupils in the informal settlements scored on average 21 points below average mark of 250 (Musyoka et al., in press).

This report summarizes baseline findings. Chapter 2 presents evidence for the intervention and describes the model. Chapter 3 describes the socio-economic characteristics of the sampled households, the schooling pattern of the girls included in the survey, their characteristics, and any differences in the baseline characteristics of the three study groups (T1, T2, C). Chapter 4

focuses on the baseline mathematics and literacy achievement of the grade 6, 7 and 8 pupils. Chapter 5 describes the pupils' behavior and life skills. Finally, chapter 6 highlights parental and community perceptions about girls' education, with a special focus on understanding their role and the challenges that affect girls' education in the two urban informal settlements where the intervention is being implemented.

Chapter 2. The Intervention

2.1 Evidence for the intervention

In India, Banerjee et al. (2004) found that engaging young women from an urban community to directly provide after-school support improved low-performing students' learning. Test scores of children whose schools were part of the program improved by 0.14 standard deviations in year 1 and 0.28 in year 2. In rural Ethiopia, the Berhane Hewan Project targeted both unmarried and married adolescents aged 10-19 years. The girls were provided community mentors, economic incentives to remain in school, and information on reproductive health. The ever-married decreased by 8%; none of the 10 to 14 year olds had married, and they remained in school (Erulkar & Muthengi, 2009). Thus, community intervention can prolong schooling for adolescent girls. In Kenya, Duflo, Dupas, and Kremer (2011) evaluated a program that hired extra teachers with the same qualifications as regular teachers on a one-year contract at a quarter of the regular salary and found that contract teachers were more likely to be teaching than the regular teachers. In Bangladesh, a stipend program increased girls' enrolment at the secondary level by between 43% to five-fold, reducing the gender gap in access; in some areas, girls outnumbered boys in secondary school (Mahmud, 2003).

2.2 Description of the Model

The model used in this study is three-pronged: after-school learning support and mentoring for girls; a subsidized primary to secondary school transition; and parent and community leader sensitization on girls' education.

2.2.1 *After-school learning/homework support and mentoring*

The aim of this combined intervention was to increase girls' opportunities to learn and therefore enhance their transition to secondary school. It is designed to investigate whether girls' performance significantly improves if they receive after-school learning support in English and math and mentoring after normal school hours. It takes two approaches. First, it increases the girls' learning time by providing after-school support with studying and homework; second, it provides community-based positive role models. The homework support is provided in two one-hour sessions a week by female volunteers from the community who have completed secondary education and scored a mean grade of C+ or above in their Form Four examinations. This component also provides life-skills training every two weeks for the first six weeks and every four weeks thereafter for the duration of the intervention (2013-2015). The life-skills training addresses self-awareness, body changes during puberty, drug use, and sexuality among other

concerns. The volunteers attended a training-the-trainers short course on life skills and how to provide after-school support.

2.2.2 Primary-to-secondary transition subsidy

School fees for Form 1 entrants are usually higher than those for continuing students, mainly because of one-time nontuition and nonboarding charges payable to the school, including caution money (a security deposit); library, development, and registration fees; and the cost of the school uniform and other personal effects. The intervention will provide conditional financial support to girls from poor households who obtain a mean score of 250 or above in the KCPE at the end of the primary school cycle. It will subsidize the cost of joining the first secondary school grade at the equivalent of USD 113. We will support 150 girls who join Form 1 each year; by the third year of the project, we will have supported 525 girls, 450 from the treatment groups and 75 from the control group. To help them to continue in secondary school, the project will refer and/or link these girls to existing scholarships and bursary systems at the district and county levels.

2.2.3 The parental and community intervention

This component of the intervention targets community leaders/gatekeepers and the parents of girls aged 12-19 years in the two informal urban settlements to provide support for girls at-risk of not completing primary education or transitioning to secondary school. The parents and community leaders—elders, local opinion leaders, local religious leaders, local school committee leaders, chiefs and assistant chiefs, among others—are exposed to this intervention. It sensitizes parents on the kind of social and educational support they should provide girls, including, but not limited to, minimizing the amount of time girls are involved in household chores, assisting with study and school homework, releasing the girls to attend the after-school support sessions, cooperating with the volunteers and mentors to help the girls and with teachers to track the girls' performance in school, and attending sensitization sessions with the girls.

2.3 The theory of change

Our theory of change holds that addressing low educational participation among poor and marginalized girls in informal urban settlements requires a comprehensive awareness and understanding of social and economic drivers. The interventions will improve learning and the quality of education by providing after-school support, enhancing educational aspirations, and increasing parent and community support for girls' education. Change will be demonstrated by more girls completing primary and transitioning to secondary school and improved test scores.

Behavioral change will be demonstrated by the delay of sexual initiation and increased retention in school.

2.4 Implementers and partnerships

The project is implemented by APHRC in partnership with Miss-Korogocho Kenya and U-Tena. Collaborators include the Ministry of Education, Nairobi City Council, community leaders, parents/guardians, and community-based organizations (CBOs). The CBOs are in charge of day-to-day operations and supervision of the implementation processes.

Chapter 3. Characteristics of Respondents

This chapter describes the socio-economic characteristics of the sampled households, the schooling pattern of the girls included in the survey, and certain other characteristics. It examines whether baseline characteristics differ among the study groups—T1, T2, and the comparison.

3.1 Household characteristics

Table 0.1 shows the distribution of participating households by study site and study group. In Korogocho, households were distributed fairly evenly among the groups, while in Viwandani, 46% of the households are in zone (treatment) 2. The household distribution also reflects the distribution of the girls from target households within the sites; on average, 1.11 girls per household.

Table 0.1: Distribution of households by study site and treatment type

	Korogocho		**Viwandani**	
Study group	Number of Households	%	Number of Households	%
T1	206	30.3	116	25.6
T2	238	35.0	210	46.4
Control	237	34.8	127	28.0

Treatment 1 includes after-school support, mentoring, and parental sensitization. Treatment 2 includes after-school support and mentorship only. The scholarship awards to cover indirect costs of joining secondary grade 1 cut across both treatment groups and the control.

Table 0.2 shows some basic background characteristics by study group. Across study groups, with no significant differences, 60% of household heads were men, but in terms of the household heads' education level, differences between the groups were significant. Overall, more than half had primary education and close to one-third had attained secondary education. In the control group, 17% of household heads had no education compared to 5.9% and 10.5% for treatment groups 1 and 2, respectively.

Household wealth differed significantly across treatment groups. The index used here was calculated based on household assets (e.g., ownership of a car, bicycle, motorbike, radio, television, phone, sewing machine, sofa etc.) and amenities, which included the main materials of the walls, roof, and floor, toilet type, main cooking material, and tenure of the dwelling unit. Using Principal Component Analysis (PCA), a household wealth score was calculated for all households in the two study sites. Thereafter, the score was categorized into three quantiles, poorest (33%), middle poor (33%), and least poor (33%). Using the household identifier, the wealth index data were merged with our study data. Table 0.2 shows that in treatment group 1, 55.6% of households ranked as poorest compared to 37.8% and 43.7% of households in treatment group 2 and the control. The significant difference in the distribution of wealth may be attributed to zoning since households with similar characteristics are likely to cluster in the same zone.

Table 0.2: Distribution of household-head characteristics by study group

Characteristics		Treatment type			Chi square P value
		Treat 1	Treat 2	Control	
Gender	Female	40.1	38.8	40.9	0.829
	Male	59.9	61.2	59.1	
Education	No education	5.9	10.5	17.0	0.001
	Primary	57.8	55.6	60.4	
	Secondary	34.8	32.8	20.6	
	Higher	1.2	0.7	0.6	
	Unknown	0.3	0.5	1.4	
Wealth	Poorest	55.6	37.8	43.7	0.001
	Middle	23.6	24.2	34.6	
	Least poor	20.8	38.0	21.7	
Mean age		41.0	42.3	42.9	F=0.1045
Mean household size		5.1	5.3	5.5	F=0.0221

The mean age of household heads was 42 years. The mean household size varied among study groups, with the control having an average of 5.5 people per household, and T1 and T2 averaging 5.1 and 5.3 persons per household, respectively.

3.2 Girls' characteristics

In total, 1270 girls were identified and interviewed. Figure 0.1 shows their distribution by treatment group. The largest was Viwandani T2. In Korogocho, two-thirds were in the treatment zones; in Viwandani, over 70%, which is expected since there are two independent treatments.

Figure 0.1: Distribution of sample girls

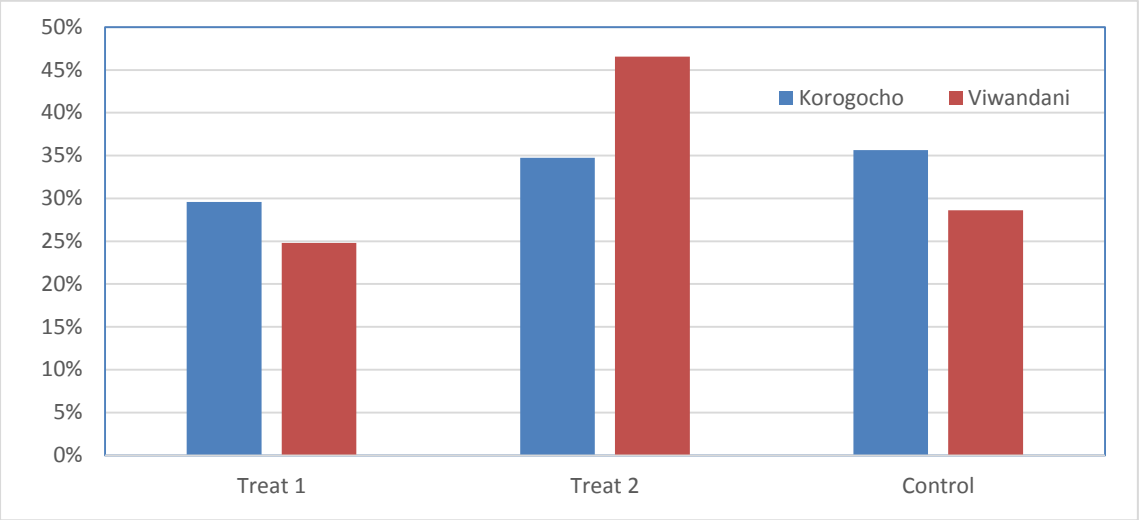


Table 0.3 shows some background characteristics of the girls. Overall, 36.5%, 32.4%, and 31.1% were in grades 6, 7, and 8, respectively. In grade 6, 39.8% of girls were in T2 and 33.5% in the control. In grade 7, T2 had the fewest girls at 29.0% compared with 32.1% and 36.8% in T1 and the control, respectively. In grade 8, girls were more or less equally distributed among the treatment groups. The girls' mean age was 13.7 years and did not differ significantly among study groups. In terms of wealth, 45% of the girls were from the poorest households in the communities of study; T1 had the highest proportion of girls ranked in the poorest quantile.

Table 0.3: Girls' background characteristics by treatment type

		Study group		
		Treat 1	Treat 2	Control
Grade	6	35.23	39.8	33.5
	7	32.1	29.0	36.8
	8	32.67	31.2	29.7
Mean age		13.5	13.7	13.8
Wealth index	Poorest	57.1	37.8	43.8
	Middle	23.01	24.4	35.4
	Least poor	19.89	37.8	20.8

3.3 Girls' schooling

3.3.1 Type of school

A recent APHRC study shows that a high proportion of pupils are enrolled in non-state, low-cost primary schools located in the slums. In Korogocho and Viwandani, the proportion of pupils enrolled in the non-state, low-cost schools in 2012 was estimated at 63% (Ngware et al., 2013). This enrollment pattern is attributed to parents' perception of the quality of education offered by non-state schools (Oketch, Mutisya, Ngware, & Ezeh, 2010). Therefore, establishing any significant differences in enrolment patterns by school type in the three study groups was important.

Figure 0.2: Proportion of girls attending government schools by study site and group

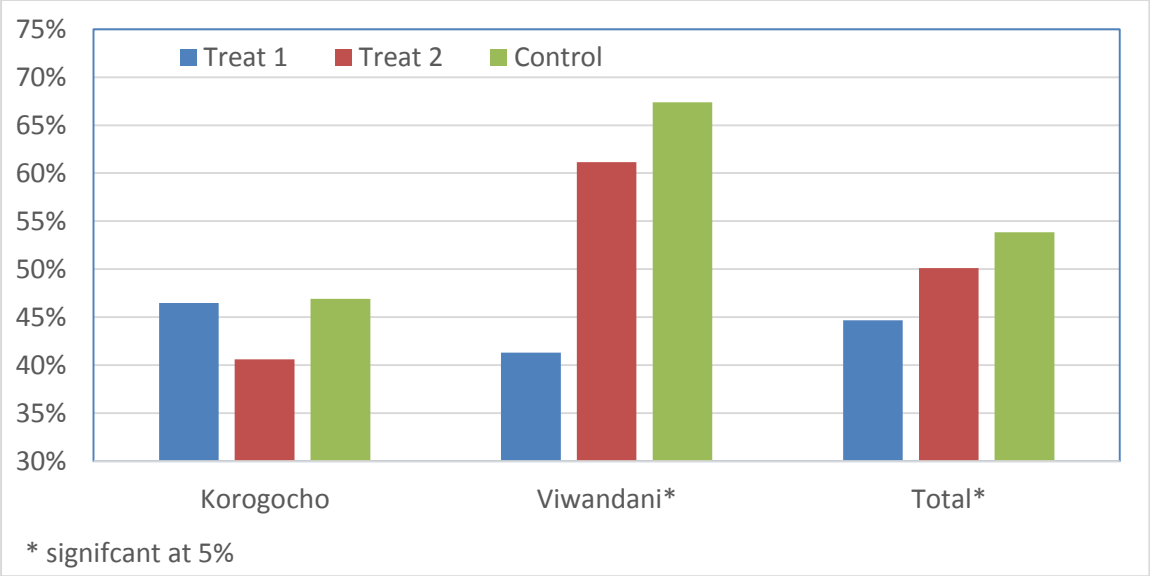


Figure 0.2 stratifies the proportion of girls enrolled in government schools in each of the study sites by study group. Overall, 49.8% were enrolled in government schools, with significant differences in the proportion enrolled in government schools between study groups in Viwandani. There, nearly two in every three girls in T2 and the control were enrolled in government schools, but note that of the site's two government primary schools, one lies in the T2 area and the other in the control area. In Korogocho, 55.4% of the girls were enrolled in government public schools with no significant difference among study groups. Previous APHRC studies show that children from the poorest households are more likely to enroll in government schools because of the reduced cost. Since the study targeted girls from the poorest households, that most were enrolled in government schools is no surprise.

3.3.2 Repetition

Grade repetition was measured by asking girls whether they had ever repeated a grade. Those who reported yes were asked the specific grades that they repeated (Table 0.4). In calculating the rates of repetition, we took pains to ensure that only those who could have repeated were included in the numerator. For instance, since at the time of data collection G6 girls have not completed G6, they are not at risk of repeating grades 6, 7, or 8. Overall, one in every three girls had repeated at least one grade with no significant difference among study groups. Grade repetition was highest in grades 4, 5, 6, and 7. On average, G4 recorded the highest repetition at

23%, followed by G6 at 21%. G3 pupils in T2 and the control recorded the highest grade repetition, which differed statistically from those in T1. Similarly, in G6, grade repetition was highest among T1 pupils. The early grades and G8 recorded the lowest repetition rates.

Table 0.4: Girls' repetition by grade and treatment type

Grade Repetition		Treatment type			Chi square P-values
		% Treat 1	% Treat 2	% Control	
Repeated any grade	No	65.7	64.7	65.9	0.916
	Yes	34.3	35.4	34.1	
Grade Repeated	1	11.8	5.7	9.2	0.177
	2	10.1	9.7	16.2	0.160
	3	10.1	27.4	19.0	0.006
	4	24.4	22.9	23.2	0.954
	5	22.7	20.0	16.2	0.409
	6	29.4	16.6	20.4	0.029
	7	21.7	23.1	14.3	0.240
	8	9.1	9.2	12.5	0.817

Note: Grade 6 pupils not exposed to repetition in grades 7 and 8; similarly grade 7 not exposed to repetition at grade 8; grade 8 exposed to repetition in all grades

We explored the reasons for repetition (Table 0.5). They varied but did not differ significantly by study group. The most prevalent reason was poor performance (53%); promotion to the next grade depends largely on how well the pupil performs. Other reasons cited for repetition included lack of school fees (14%) and transfers to other school (15%). Repetition is mainly recommended by the teacher, school management, or parents. Note that repetition is prohibited by Kenyan educational policy.

Table 0.5: Reasons for repeating by treatment type

Reason	Study group			
	Treat 1	Treat 2	Control	Overall
Lack of school fees	13.45	13.87	14.29	13.89
Illness	9.24	6.36	11.43	8.8
Household work	0.84	0	0	0.23
Poor performance	48.74	56.07	52.14	52.78
Transferred to another school	15.97	16.76	12.14	15.05
Parent or child willing to repeat	0.84	1.73	2.86	1.85
Too young	2.52	2.31	2.14	2.31
School didn't have level/grade	0.84	0	1.43	0.69
Others: death of parent, lack of birth certificate	7.56	2.89	3.57	4.4

3.3.3 Attendance

The Consortium for Research on Educational Access, Transitions and Equity (CREATE) framework on educational access identifies zones of exclusion. Zone 3 focuses on "children who enter primary schooling and are enrolled but are 'at risk' of dropping out before completion, occasioned by irregular attendance, low achievement, and silent exclusion from worthwhile learning" (Oketch & Somerset, 2010). Research shows that attendance is closely linked to educational achievement. In this study, we collected information on attendance by asking the girls whether they were absent from school in the last complete school week. Those who were absent were asked the number of days they missed school and the main reason.

Figure 0.3 shows the proportion of girls by study group who reported missing school at least one day in the last school week prior to the date of interview. The interviews took place when schools were in session, so data reported here are mainly for the week preceding the interview. The rate of absenteeism is 11% and differed significantly by study group. The control recorded the highest rate of absenteeism at 15%.

Figure 0.3: Proportion of girls absent from school in the last school week

When attendance results are stratified by study site, Korogocho shows insignificant differences between the study groups, while Viwandani shows a significant and high rate of absenteeism (23%) among control girls compared to treatment girls. The number of days absent ranged from 1 to a complete week (5 days), with 75% being absent for 3 days or less. Thus, one quarter of the absent girls missed at least 4 school days.

The main reason for absenteeism was sickness (65%) and was more cited among the control and T2 girls. Lack of school fees was another common reason, and as noted earlier, a common reason for repetition, perhaps as a result of prolonged absenteeism, and perhaps affecting the considerable proportion of pupils who were enrolled in non-state schools that charge minimal school fees.

Table 0.6: Reasons for missing at least one school day by treatment type

Reason for absenteeism	Treat 1	Treat 2	Control	Total
Sickness/illness/invalid/disabled	59.3	63.6	67.7	64.7
School fees problem	14.8	25	12.9	17.3
Teacher strike	7.4	0.0	8.1	5.3
Others: death, household work, suspension from school	18.5	11.4	11.3	12.8

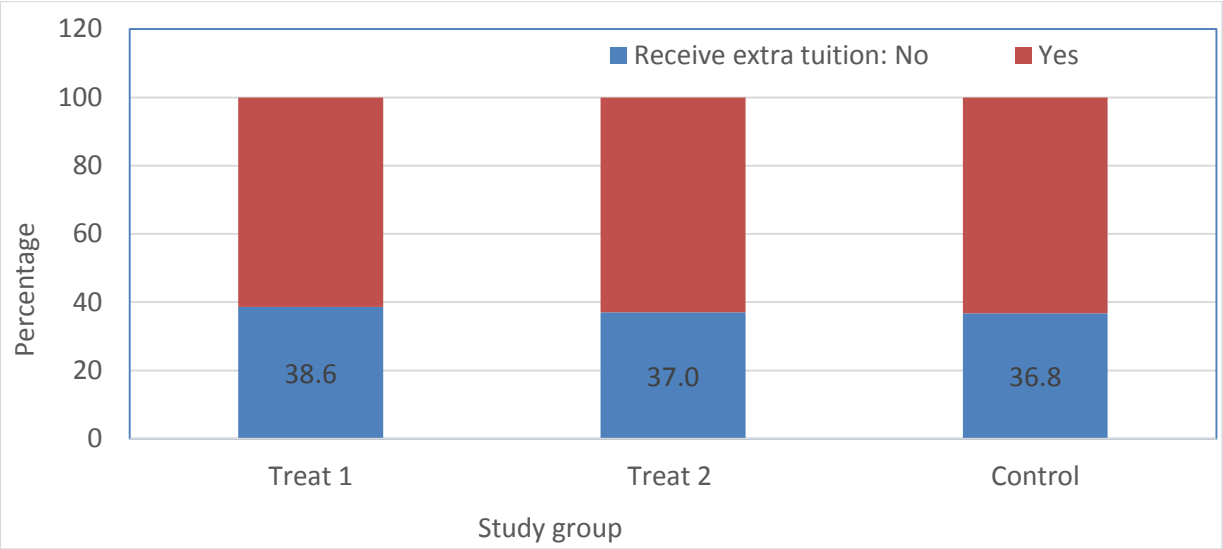
3.3.4 Mode of after-school support

One of the key study objectives is to establish the impact of an after-school support program, a community-based intervention using mentors. To achieve this goal, we must be aware of any other after-school support or extra tuition within the communities and/or schools that targets the girls in our study. We collected information on extra tuition and the modalities in which it operates (Table 0.7,

Figure 0.4). Overall, 63% of the girls reported receiving extra tuition, normally outside school hours. Anecdotal evidence suggests that this tuition is conducted by teachers of a particular subject and reflects the usual learning during school hours. It differs hugely from the after-school support program, which uses trained mentors from the community to support girls in their homework and areas where they are weak and combines girls from different schools at a central venue. Nonetheless, the proportion of girls reporting extra tuition is high and can pose a threat to the impact of the after-school support. While a strategy will be developed to deal with this imbalance, the proportion of girls receiving extra tuition does not differ significantly by treatment type, minimizing its effect on the intervention.

The current extra tuition takes place most commonly in the schools (over 95%). Other venues included churches and, to a lesser extent, places organized in the neighborhood. Nongovernmental organization (NGO) and even church assistance both accounted for less than 1% of the total. The place of provision did not differ by treatment type.

Figure 0.4: Proportion of girls receiving extra tuition by treatment type



Further, respondents were asked how often the tuition is offered. Among those receiving extra tuition, close to half attend three days or less a week, and the other half, four days or more. More of the girls in T1 received tuition for 3 days or less than girls in T2 and the control, but the difference was not statistically significant. For those receiving extra tuition, 95% paid for it, but the specific percentage varied significantly by study group. Among girls in T1, 98.1% paid for extra tuition as compared to 92% of girls in the control group.

The study collected information on the frequency of payment for the extra tuition. Results show that payment is usually monthly or weekly, accounting for over 60%. Some girls paid daily and some by the term. Frequency of payment differs significantly among study groups; 51% of girls in T1 pay weekly as compared to 37% and 32% of girls in T2 and control, respectively.

Table 0.7: Characteristics of extra tuition received by girls by treatment type

Extra Tuition		Study group			Chi sq P value
		Treat 1	Treat 2	Control	
Place	In school	94.8	98.4	96.6	0.050
	Provided by an NGO	0.5	0.0	0.0	
	Church	0.9	0.3	0.0	
	Others: Organized: neighbors	3.8	1.3	3.4	
Days	Three days or less	50.7	46.6	40.7	0.085
	Four days or more	49.3	53.4	59.3	
Payment	No	1.9	3.5	8.4	0.000
	Yes	98.1	96.5	91.6	
Period of payment	Per term	12.0	11.3	9.1	0.000
	Monthly	18.2	25.3	39.8	
	Weekly	50.7	37.3	32.0	
	Daily	18.7	25.7	19.1	
	Other	0.5	0.3	0.0	

For a deeper understanding of the usefulness of the extra tuition, we asked open-ended questions about respondents' perceptions of its benefits. Almost all (99%) reported that the tuition was beneficial in terms of the girl's improved performance; increased opportunity to learn, improving syllabus coverage; and better understanding of what was taught that day. Other benefits revolved around keeping the girls occupied and using their free time constructively. The same reasons were echoed by those who were not receiving tuition at the time of interview but were willing to. The following are some extracts on the reported benefits of the extra tuition:

"Helps the learner understand better what was taught earlier in the class"

"Helps finish syllabus on time for early revision"

"The girl has improved her performance"

3.4 Parental involvement in girls' schooling

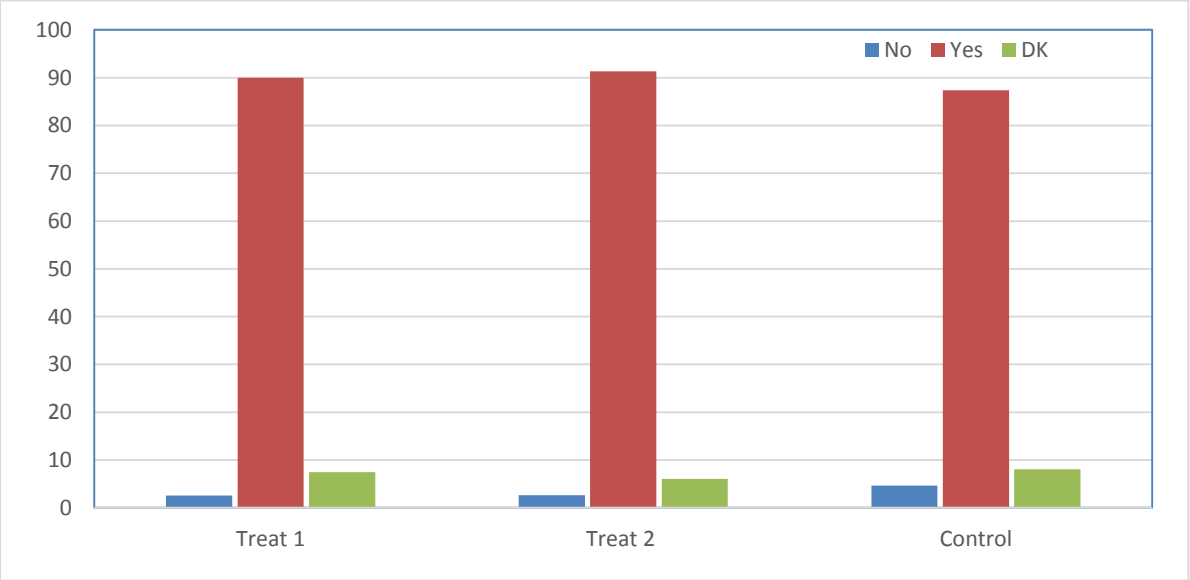
This subsection presents results from the parental involvement questionnaire; specifically, on homework support for girls, average cost of schooling, support to schools where the girl is enrolled, and parents' knowledge of the whereabouts of the girls' daily activities.

3.4.1 Homework support at home

Overall, 90% of the parents or guardians (PG) interviewed reported that their girls usually bring homework from school (Figure 0.5). Treatment 1 had the highest proportion with homework, but

differences were not statistically significant. The results also show that 7% of PG are not aware whether their girls have homework or not; another 3% reported that the girls did not have homework.

Figure 0.5: Proportion of girls reported to be given homework from school



The PG who reported their girls receiving homework also responded to questions on the number of days they have homework, the different types of homework on a typical school day, and support to carry out the homework from any household member (Table 0.8). Two in every three girls were reported to have daily homework (5 days or more). The number of homework days differed among the three groups, with 71% of girls in T1 receiving at least 5 days of homework compared to 67% in T2 and 66% in the control. The homework was of different types or in different subjects, which differed significantly by study group. Most girls (78%) in T1 receive at least 2 types of homework as compared to 89% and 87% of girls in T2 and the control, respectively.

Table 0.8: Modalities of homework by study group

Homework characteristics		Study group			Chi sq. P value
		Treat 1	Treat 2	Control	
Comes home with homework	No	2.6	2.6	4.6	0.275
	Yes	90.0	91.3	87.4	
	DK	7.4	6.1	8.0	
Homework days	1	2.9	1.6	1.1	0.012
	2	2.5	8.2	6.1	
	3	13.0	14.9	18.7	
	4	11.1	8.2	8.1	
	5 or more	70.5	67.2	66.0	
Homework Types	1	21.0	10.6	12.8	0.010
	2	44.1	42.8	45.1	
	3	34.9	46.3	42.1	
	Missing	0.0	0.2	0.0	
Complete homework	Always	84.4	80.5	80.2	0.357
	Usually	14.9	17.5	17.0	
	Sometimes	0.6	1.3	2.2	
	Never	0.0	0.0	0.3	
	Missing	0.0	0.7	0.3	
Supported in doing Homework	Always	4.8	5.9	2.9	0.001
	Usually	20.1	8.4	8.3	
	Sometimes	25.9	32.1	33.2	
	Never	48.9	52.9	55.3	
	Missing	0.3	0.7	0.3	

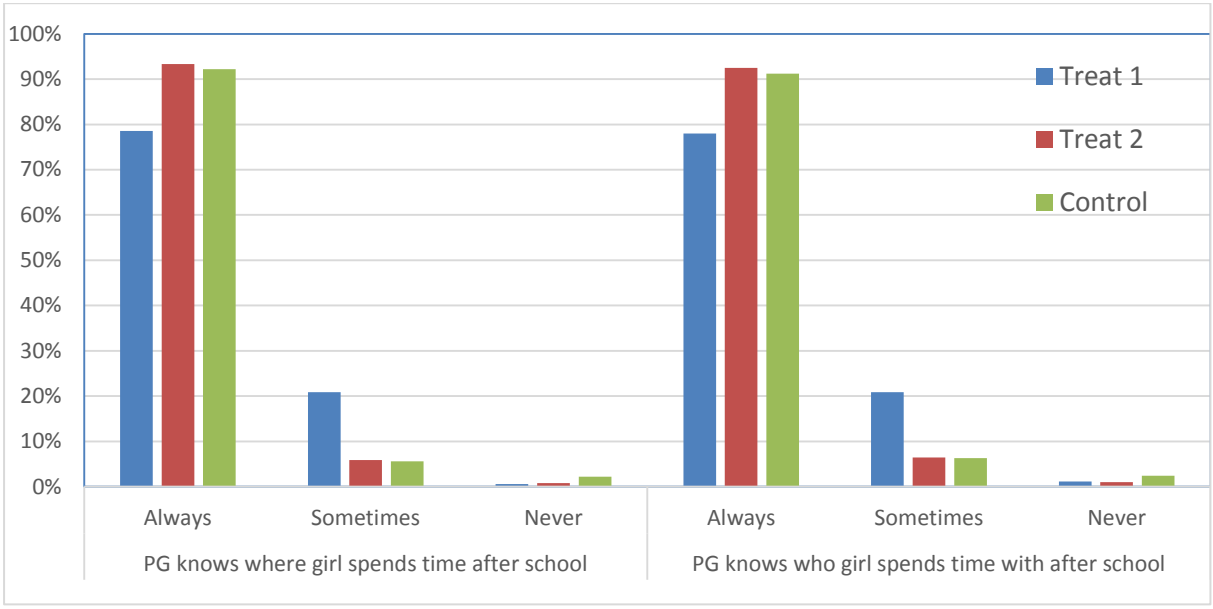
Table 0.8 also shows whether the girl completes her homework, with or without the support of any household member. About three in every four girls always complete their homework, with another 15% doing so most of the time (usually). Very few girls *sometimes* or *never* complete their homework. Significant differences in homework support for the girls who complete their homework are seen between study groups. Overall, one in every two girls is not helped in completing her homework by a household member. This proportion differed; in the control, 55% of the girls were not helped with their homework, or 6 and 3 percentage points more than T1 and T2, respectively. Homework support is high among T1 girls (25% always or usually supported) as compared to 14% and 11% of T2 and control group girls.

3.4.2 Other forms of parental involvement

Figure 0.6 shows significant differences in PG knowledge of how the girl spends her time after school and with whom by study group. Overall, close to 90% of PG are aware of what their girls

do after school and with whom. About 1% have no idea of the whereabouts of their girl after school.

Figure 0.6: PG knowledge of how and with whom the girl spends time after school



To assess PG involvement with the school their girls attend, a number of our survey items collected information on the type of support they have offered to the schools as well as their school visits (Table 0.9). In terms of school support, we asked PG whether they had visited the school their girls attend in the last 12 months to offer either monetary, material, labor, or any other assistance. The results paint a grim picture; more than 90% reported that they had not offered support.

Table 0.9: Household school support and parental involvement

Type of support offered to school in the Last 12 months		Study group			Chi
		Treat 1	Treat 2	Control	
Monetary	No	85.1	92.7	89.8	0.002
	Yes	14.9	7.3	10.2	
Materials	No	97.1	95.7	96.8	0.499
	Yes	2.9	4.3	3.2	
Labor	No	99.7	99.0	99.0	0.447
	Yes	0.3	1.0	1.0	
Other support	No	99.7	99.8	99.8	0.97
	Yes	0.3	0.2	0.2	
Visited school for the following					
School celebration	No	47.7	60.3	64.5	0.001
	Yes	52.3	39.7	35.3	
Meet head teacher	No	3.4	4.7	3.4	0.64
	Yes	96.3	95.3	96.4	
Sort out money issues	No	32.0	49.8	19.5	0.001
	Yes	68.0	50.2	80.3	
Discuss girls discipline	No	72.9	92.1	68.4	0.001
	Yes	27.1	7.7	31.4	

We also collected information on whether parents visited the school where their girl was enrolled in the last 12 months for school celebrations; to meet the head teacher or subject teachers to talk about the girl's academic progress or discipline; or even to sort out problems with tuition or fees. The results show:

- Most parents visited their girl's schools to discuss her progress and/or sort out money issues.
- Most PG (95%) visited the school to meet with the head teacher or another teacher to discuss the girl's performance. No significant difference by study group was observed.
- Over half of PG (52%) in treatment 1 reported visiting the school for celebrations compared to 40% and 35% of treatment 2 and control PG, respectively. These differences are statistically significant.
- One third of PG in the control school, one quarter in treatment 1, but only 8% in treatment 2 visited the schools to discuss a problem related to their girls' discipline. These differences are significant.

Chapter 4. Pupil Achievement in Mathematics and Literacy

This chapter focuses on the baseline mathematics and literacy achievement of the grade 6, 7, and 8 pupils in the study. Results were derived from English literacy and mathematics tests based on a careful analysis of the official primary school curriculum in Kenya. For each subject, the same set of items was used to assess grade 6, 7, and 8 pupils. The numbers of items in the original mathematics and literacy tests were 45 and 66, respectively.

Test data from all three grades were analyzed concurrently using Rasch methods. First, the psychometric characteristics of items in both tests were examined, and any that did not conform to the requirements of Rasch measurement were deleted. One item was deleted from the mathematics test and three from the literacy test. Second, both tests were subjected to differential item functioning (DIF) analyses to examine site bias. No items in the mathematics test showed serious DIF problems. However, four items in the literacy test were deleted from the analysis. The reliability (Cronbach's alpha) of the final tests was within the acceptable range (0.88 and 0.93 for mathematics and literacy test, respectively).

The test scores for each subject were then transformed so that all the pupils from Standard 6 to 8 at both study sites were placed on two common scales (one for each subject), each with a mean of 400 and a standard deviation of 100. Finally, for each test, the item parameters were anchored in order to estimate pupil scores in the various content and cognitive domains. Thus, valid comparisons in pupil achievement can be made across grade levels, between the two study sites, and across content and cognitive domains. The tables converting raw score to Rasch score for the mathematics and literacy scales can be found in Appendix 4.1

4.1 Mean pupil achievement by survey site

Table 4.1 shows the mean test scores for Standard 6 to 8 pupils by survey site, and Table 4.2 for mathematics and literacy, together with the standard errors (SE) associated with the mean scores. A single asterisk (*) and two asterisks (**) are used to flag the differences that are significant at the 5% and 1% levels, respectively.

For mathematics, the results in Table 4.1 show that the difference between Korogocho and Viwandani pupils was significant (at the 5% level) for Standard 6 but not for 7 and 8. Overall, the performance in mathematics at these two sites did not differ greatly.

For literacy, the results in Table 4.2 show that, overall, pupils in Korogocho greatly outperformed pupils in Viwandani. The difference between their performance was significant for Standard 6 (5%), strongly significant for Standard 7 (1% level), and insignificant for Standard 8.

Figure 0.1 shows the mean scores for mathematics and literacy across grade levels for the two study sites. For mathematics, pupil performance at the two sites show small differences, while for literacy, differences were substantial, especially at the Standard 7 level. In addition and as expected, pupil achievement in both subjects improved as they moved up the grade levels, indicating increased mastery of mathematics and literacy skills.

Table 4.1: Mean scores for mathematics by survey site

Grade	**All Data**		**Korogocho**		**Viwandani**		**Mean Difference**
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	347.5	3.7	354.5	5.1	338.4	5.1	16.1*
Standard 7	388.1	5.2	397.4	6.8	377.2	8.0	20.2
Standard 8	471.5	7.4	467.8	9.1	475.3	11.8	-7.5
Overall	**400.0**	**3.7**	**402.4**	**4.6**	**397.2**	**6.0**	**5.2**

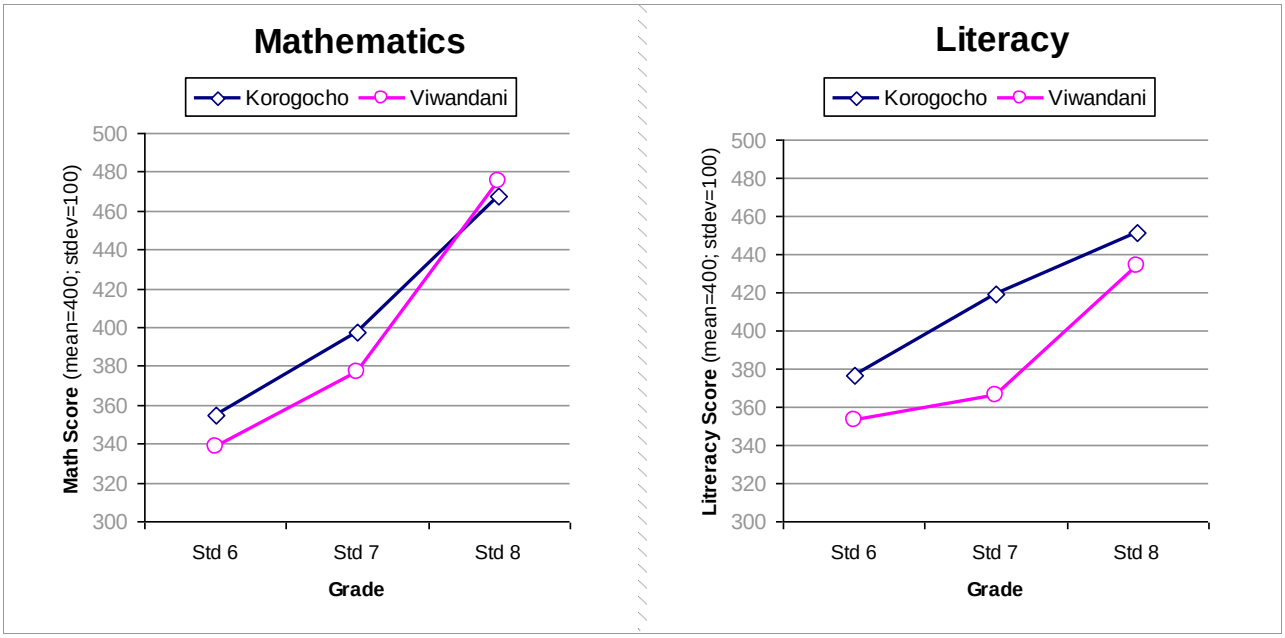
Notes: * Significant at 5%; ** Significant at 1%

Table 4.2: Mean scores for literacy by survey site

Grade	**All Data**		**Korogocho**		**Viwandani**		**Mean Difference**
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	366.6	5.8	376.8	7.7	353.0	8.8	23.8*
Standard 7	395.9	5.8	419.4	6.6	366.2	9.3	53.2**
Standard 8	442.7	6.4	451.1	7.6	434.0	10.5	17.1
Overall	**400.0**	**3.7**	**412.7**	**4.5**	**384.6**	**5.8**	**28.1****

Notes: * Significant at 5%; ** Significant at 1%

Figure 0.1: Mean scores for mathematics and literacy across grades by survey sites



4.2 Mean pupil achievement by treatment and control group

The mean achievement scores by survey site and type of intervention are shown in Table 4.3 and Table 4.4 for mathematics and literacy, respectively, together with the differences between the mean scores of the pupils across intervention types.

For the combined data set as well as the Korogocho data set, the mean scores in Table 4.3 indicate that mathematics performance of pupils in the two treatments (T_1 and T_2) and control (C_o) group were roughly the same. At the Standard 7 level, some differences were recorded between pupils in T_1 and T_2 in the combined data and between pupils in T_1 and the C_o group in the Korogocho data, but they were weak at a 5% significance level. In the Viwandani data set, some 5% significant differences in mathematics achievement were recorded between pupils in T_1 and T_2 at the Standard 7 and 8 levels and between pupils in T_2 and the C_o group at the Standard 7 level.

For the combined and Viwandani literacy data sets, the results in Table 4.4 indicate that Standard 6 pupils in T_1 outperformed their counterparts in both T_2 and the C_o group, and at the Standard 7 level, pupils in T_2 significantly outperformed pupils in the C_o group. In the Korogocho data set, the treatments and control groups did not differ significantly in their literacy performance.

4.3 Pupil mean scores by content and cognitive domains

The mathematics and literacy data were further analyzed according to the content domains (curriculum or "skill" areas) tested as well as the cognitive domains or mental processes involved in responding correctly to an item.

Items in the final mathematics test involved six main content domain categories—numbers and operations, measurement, geometry, algebra, tables, and graphs—and four cognitive domain categories—knowledge, comprehension, application, and analysis (Table 4.5). Most of the items addressed knowledge, comprehension, and application of numbers and operations.

For literacy, the main skills tested were reading, writing, speaking, and listening. For reading, pupils were expected to read out a passage and answer questions related to it. For writing, they were required to write a short, coherent composition on a given topic using correct spelling, punctuation, and capitalization. For speaking, they were expected to supply the words necessary to complete sentences read out to them by the examiners. Finally, pupils were required to listen to a short passage read out to them twice and then to write down the story using correct spelling and punctuation. In terms of cognitive domains, the literacy items were not mutually exclusive and could fall into more than one.

Table 4.3: Mean scores for mathematics by treatment and survey site

a) For combined (Korogocho & Viwandani) data

Grade	**Treatment 1**		**Treatment 2**		**Control**		**Mean Difference**		
	Mean (T_1)	SE	Mean (T_2)	SE	Mean (C_o)	SE	T_1-T_2	T_1-C_o	T_2-C_o
Standard 6	347.2	6.5	344.2	5.4	353.1	7.5	3.0	-5.9	-8.9
Standard 7	371.4	7.7	399.7	9.1	392.8	10.0	-28.3*	-21.4	6.9
Standard 8	453.4	12.2	483.8	11.8	472.4	14.3	-30.4	-19.0	11.4
Overall	**389.9**	**6.0**	**403.6**	**6.1**	**404.8**	**7.0**	**-13.7**	**-14.9**	**-1.2**

b) For Korogocho data

Grade	Treatment 1		Treatment 2		Control		Mean Difference		
	Mean (T_1)	SE	Mean (T_2)	SE	Mean (C_o)	SE	T_1-T_2	T_1-C_o	T_2-C_o
Standard 6	358.9	7.4	348.0	8.4	359.0	10.8	10.9	-0.1	-11.0
Standard 7	381.9	6.5	395.7	17.3	418.5	13.4	-13.8	-36.6*	-22.8
Standard 8	466.4	14.9	463.5	15.6	473.9	17.2	2.9	-7.5	-10.4
Overall	**398.2**	**6.6**	**395.1**	**8.5**	**414.9**	**8.9**	**3.1**	**-16.7**	**-19.8**

c) For Viwandani data

Grade	Treatment 1		Treatment 2		Control		Mean Difference		
	Mean (T_1)	SE	Mean (T_2)	SE	Mean (C_o)	SE	T_1-T_2	T_1-C_o	T_2-C_o
Standard 6	322.0	11.5	340.5	7.0	345.1	9.9	-18.5	-23.1	-4.6
Standard 7	346.5	20.4	402.0	10.4	360.2	13.2	-55.5*	-13.7	41.8*
Standard 8	435.3	20.4	499.7	17.0	470.6	23.7	-64.4*	-35.3	29.1
Overall	**373.9**	**12.2**	**410.5**	**8.5**	**392.1**	**11.1**	**-36.6***	**-18.2**	**18.4**

Notes: * Significant at 5%; ** Significant at 1%

Table 4.4: Mean scores for literacy by treatment and survey site

a) For combined (Korogocho & Viwandani) data

Grade	Treatment 1		Treatment 2		Control		Mean Difference		
	Mean (T_1)	SE	Mean (T_2)	SE	Mean (C_o)	SE	T_1-T_2	T_1-C_o	T_2-C_o
Standard 6	394.5	10.0	361.9	8.5	348.4	11.9	32.6*	46.1**	13.5
Standard 7	398.7	9.7	400.1	9.8	388.9	10.5	-1.4	9.8	11.1
Standard 8	441.7	12.7	451.6	10.2	432.3	10.9	-9.9	9.4	19.3
Overall	**411.0**	**6.4**	**400.1**	**5.8**	**389.5**	**6.8**	**10.9**	**21.5***	**10.6**

b) For Korogocho data

Grade	Treatment 1		Treatment 2		Control		Mean Difference		
	Mean (T_1)	SE	Mean (T_2)	SE	Mean (C_o)	SE	T_1-T_2	T_1-C_o	T_2-C_o
Standard 6	384.9	11.2	375.3	12.7	370.1	16.2	9.6	14.8	5.2
Standard 7	416.3	10.4	409.0	14.0	430.3	10.8	7.3	-14.0	-21.3
Standard 8	455.1	14.5	457.7	12.2	440.7	12.9	-2.6	14.4	17.0
Overall	**416.6**	**7.2**	**407.4**	**8.2**	**413.8**	**8.1**	**9.2**	**2.8**	**-6.4**

c) For Viwandani data

Grade	Treatment 1		Treatment 2		Control		Mean Difference		
	Mean (T_1)	SE	Mean (T_2)	SE	Mean (C_o)	SE	T_1-T_2	T_1-C_o	T_2-C_o
Standard 6	415.4	20.1	348.4	11.0	319.1	16.4	67.0**	96.3**	29.3
Standard 7	354.1	19.3	394.5	13.4	331.7	15.6	-40.4	22.4	62.8**
Standard 8	423.2	22.6	447.2	15.3	421.5	18.6	-24.0	1.7	25.7
Overall	**400.0**	**12.7**	**394.1**	**8.2**	**356.9**	**10.7**	**5.9**	**43.1***	**37.2***

Notes: * Significant at 5%; ** Significant at 1%

Table 4.5: Distribution of mathematics test items by content and cognitive domains

Content Domain	Cognitive Domain				Total
	Knowledge	Comprehension	Application	Analysis	
Numbers and operations	4	9	6	1	**20**
Measurements	3	6	5	1	**15**
Geometry	2	1	1	0	**4**
Algebra	0	1	1	1	**3**
Tables	0	0	0	1	**1**
Graphs	0	1	0	0	**1**
Total	**9**	**18**	**13**	**4**	**44**

4.3.1 Content domains

Table 4.6 and Table 4.7 present analyses of students' grasp of the content domains for mathematics and literacy, respectively. Data for four mathematics content domains (geometry, algebra, tables, and graphs) were analyzed together (referred to as "space and data") because items in each of these domains were too few for meaningful separate analyses.

The following were observed in the mathematics content domains:

- Performance in each content domain was roughly the same as performance on the overall mathematics test.
- As expected, just as for the overall mathematics test, pupil performance in each content domain improved with higher grade level.
- No significant differences were observed between performance in the number and operations and measurement domains at the two sites. However, for the space and data domain, the pupils in Korogocho greatly outperformed their counterparts in Viwandani, especially at the Standard 6 and 7 levels.

The following were observed in the literacy content domains:

- Performance in reading, writing and listening paralleled overall performance on the literacy test. However, performance in speaking was significantly lower than reading and writing and significantly lower than overall performance on the literacy test.

- As expected, pupil performance in each literacy content domain improved with higher grade level.
- Pupils in Korogocho outperformed pupils in Viwandani in all literacy content domains, especially in Standard 7 (in all domains) and Standard 6 (in the writing domain).

Figure 0.2 shows the overall mean scores for mathematics and literacy content domains; Figure 4.3 shows these scores by grade level. The former makes clear that the performance in mathematics content domains did not differ from overall performance in mathematics. Apart from performance in speaking, which was significantly lower than overall literacy performance, performances in all the other literacy content domains were roughly the same as in literacy overall.

For both subjects, Figure 0.3 shows that mastery in all content domains increased with grade level. For mathematics, pupil performance across content domains differed little, especially in Standard 7. However, across the literacy content domains, differences were considerable, and their magnitude tended to increase with grade level. In general, pupil performance in reading tended to increase at a faster rate than in other domains with grade level. Compared to the other literacy domains, improvement in listening skills was less obvious.

Table 4.6: Mean scores for mathematics content domains by survey sites

a) Number and operations domain

Grade	**All Data**		**Korogocho**		**Viwandani**		**Mean Difference**
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	337.6	5.1	342.5	7.2	331.2	7.1	11.3
Standard 7	390.5	6.5	395.4	8.2	384.7	10.4	10.7
Standard 8	478.0	8.1	474.8	10.5	481.3	12.6	-6.5
Overall	**399.3**	**4.4**	**399.3**	**5.6**	**399.2**	**6.8**	**0.1**

b) Measurement domain

Grade	**All Data**	**Korogocho**	**Viwandani**	**Mean Difference**

	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	360.3	4.6	365.5	6.1	353.4	6.9	12.1
Standard 7	389.7	5.5	397.3	7.2	380.9	8.4	16.4
Standard 8	463.3	7.4	455.3	9.2	471.6	11.6	-16.3
Overall	**402.5**	**3.7**	**402.7**	**4.7**	**402.2**	**6.0**	**0.5**

c) Space and data domain[#]

Grade	**All Data**		**Korogocho**		**Viwandani**		**Mean Difference**
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	351.9	5.5	365.5	7.2	334.1	8.2	31.3**
Standard 7	383.2	6.7	403.1	8.2	359.9	10.4	43.2**
Standard 8	463.1	7.4	471.2	8.7	454.7	12.1	16.6
Overall	**397.3**	**4.1**	**409.4**	**5.1**	**383.2**	**6.6**	**26.2****

Notes: * Significant at 5%; ** Significant at 1%; [#]Includes geometry, algebra, tables and graphs.

Table 4.7: Mean scores for literacy content domains by survey sites

a) Reading domain

Grade	**All Data**		**Korogocho**		**Viwandani**		**Mean Difference**
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	356.1	6.6	357.6	9.0	354.1	9.6	3.5
Standard 7	397.4	6.6	414.8	8.3	375.4	10.3	39.4**
Standard 8	451.0	7.4	468.4	8.9	432.7	11.7	35.7*
Overall	399.3	4.2	409.0	5.5	387.5	6.3	21.5*

b) Writing domain

Grade	All Data		Korogocho		Viwandani		Mean Difference
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	378.5	7.4	412.6	8.2	333.2	12.2	79.4**
Standard 7	395.2	6.6	432.5	6.8	348.1	10.8	84.4**
Standard 8	433.4	7.4	425.3	9.2	441.9	11.7	-16.6
Overall	401.1	4.2	422.9	4.7	374.8	7.2	48.1**

c) Speaking domain

Grade	All Data		Korogocho		Viwandani		Mean Difference
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	368.2	7.0	374.4	9.0	359.9	11.0	14.5
Standard 7	375.4	6.8	399.1	8.2	345.4	10.8	53.7**
Standard 8	394.1	7.1	396.5	9.8	391.6	10.2	4.9
Overall	378.7	4.0	389.1	5.2	366.1	6.2	23.0**

d) Listening domain

Grade	All Data		Korogocho		Viwandani		Mean Difference
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	372.5	6.8	380.6	9.1	361.6	10.3	19.0
Standard 7	384.6	6.9	405.8	9.0	357.8	10.0	48.0**
Standard 8	427.6	6.8	435.9	8.7	418.9	10.6	17.0
Overall	393.7	4.0	405.2	5.3	379.8	6.1	25.4**

Notes: * Significant at 5%; ** Significant at 1%.

Figure 0.2: Mean scores for mathematics and literacy content domains

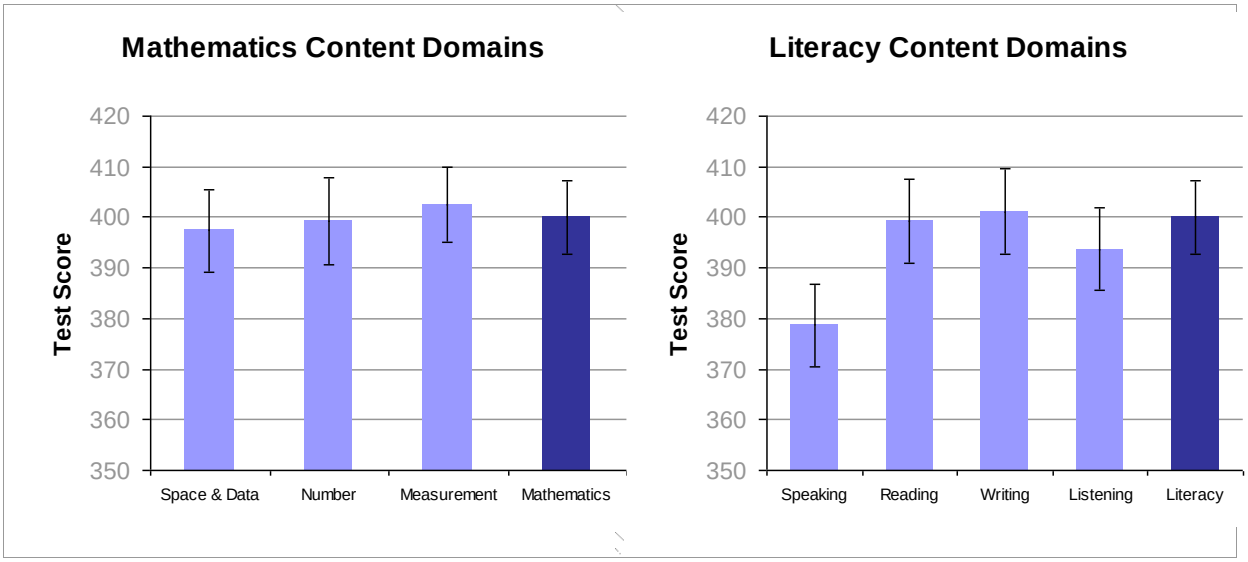
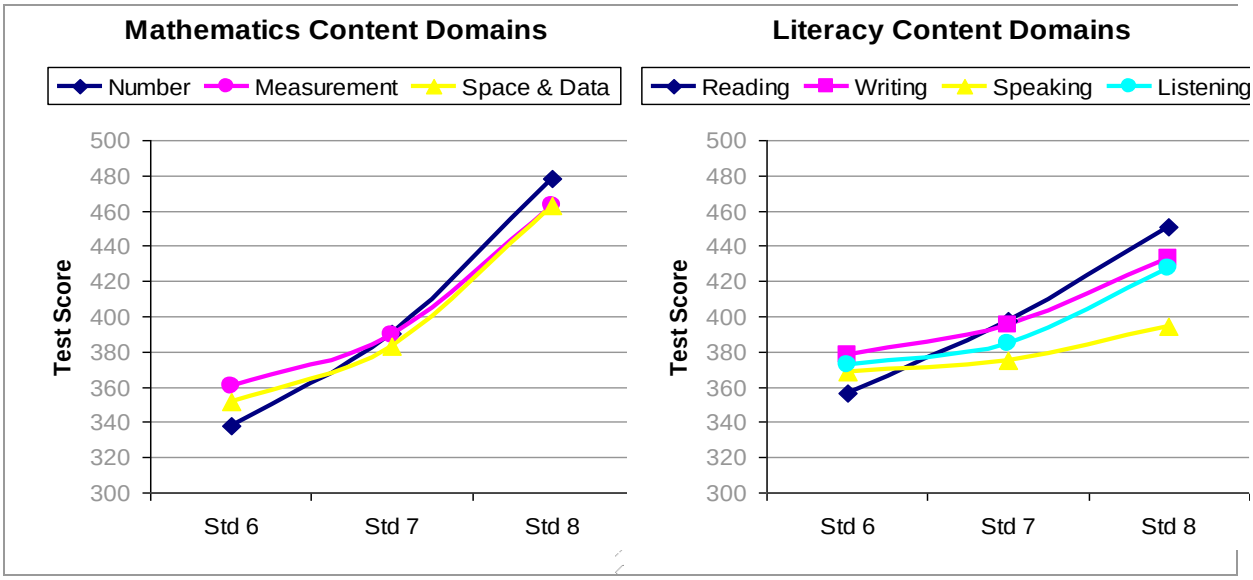


Figure 0.3: Mean scores for mathematics and literacy content domains across grades



4.3.2 Cognitive domains

Table 4.8 shows the results of our analyses of mathematics cognitive domains. The corresponding analyses for literacy are not included because the literacy items could address more than one cognitive domain.

The following were observed in the mathematics cognitive domains:

- Performance in each was roughly the same as on the overall mathematics test.

- Although performance did not differ significantly across cognitive domains, it generally improved with the complexity of the cognitive process involved (see Figure 0.4).
- Just like in the overall mathematics test score, pupil performance in each cognitive domains increased moving up the grades (see the second panel of Figure 0.4, first panel).
- Overall, performance at the two sites did not differ significantly. However, the Standard 7 level in Korogocho was significantly better in two cognitive domains, knowledge and analysis.

Table 4.8: Mean scores for mathematics cognitive domains by survey sites

a) Knowledge domain

Grade	**All Data**		**Korogocho**		**Viwandani**		**Mean Difference**
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	349.5	6.2	358.1	8.0	338.2	9.6	19.9
Standard 7	389.2	6.4	405.0	8.1	370.5	9.9	34.5**
Standard 8	448.5	7.0	446.6	9.0	450.6	10.8	-4.0
Overall	**393.8**	**4.0**	**399.8**	**5.1**	**386.6**	**6.4**	13.2

b) Comprehension domain

Grade	**All Data**		**Korogocho**		**Viwandani**		**Mean Difference**
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	341.1	4.9	347.7	6.7	332.3	7.0	15.4
Standard 7	389.1	5.8	396.1	7.5	380.8	9.0	15.3
Standard 8	473.6	7.2	471.4	8.7	475.8	11.6	-4.4
Overall	**398.7**	**4.0**	**400.5**	**5.1**	**396.5**	**6.3**	4.0

c) Application domain

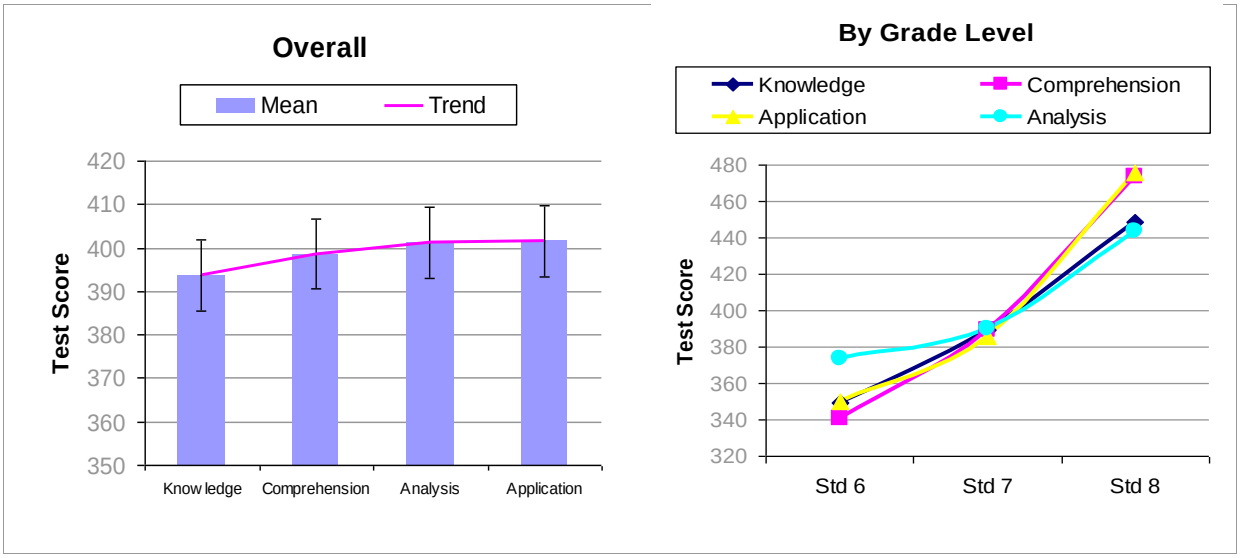
Grade	All Data		Korogocho		Viwandani		Mean Difference
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	350.4	4.3	355.9	6.1	343.1	5.9	12.8
Standard 7	385.9	6.2	392.1	7.9	378.6	9.7	13.5
Standard 8	475.6	8.3	467.8	10.7	483.7	12.7	-15.9
Overall	**401.6**	**4.1**	**401.2**	**5.2**	**402.1**	**6.5**	-0.9

d) Analysis domain

Grade	All Data		Korogocho		Viwandani		Mean Difference
	Mean	SE	Mean (K)	SE	Mean (V)	SE	K-V
Standard 6	373.3	6.5	381.3	8.5	362.8	10.0	18.5
Standard 7	390.3	6.5	402.2	9.1	376.2	9.1	26.0*
Standard 8	443.6	7.6	447.1	9.5	439.9	12.0	7.2
Overall	**401.1**	**4.1**	**407.8**	**5.4**	**393.2**	**6.3**	14.6

Notes: * Significant at 5%; ** Significant at 1%.

Figure 0.4: Mean scores for mathematics cognitive domains


Overall
Mean
Trend
Test Score
420
410
400
390
380
370
360
350
Know ledge
Comprehension
Analysis
Application
By Grade Level
Knowledge
Comprehension
Application
Analysis
Test Score
480
460
440
420
400
380
360
340
320
Std 6
Std 7
Std 8

Chapter 5. Pupil behavior and life-skills

5.1 Demographics

The girls' sample was disaggregated by grade, treatment status, and age. The grades consisted of Standard 6, 7, and 8, while treatment status consisted of assignment to treatment groups 1 or 2 or the control group. Ages were banded into five categories, from less than 12 years to 15 and above. These categories will be used to investigate whether there is any statistically significant difference among them. For analysis purposes, treatment group refers to treatments 1 and 2.

Table 0.9: Distribution of the sample by treatment status and age

Grade	**Treatment status**		**Age in years**				
N=1257	Treatment (1&2)	Control	Under 12	12	13	14	15+
Total	846	411	172	278	327	241	239
Grade 6	320	136	152	149	86	36	33
Grade 7	258	152	18	107	147	80	58
Grade 8	268	123	2*	22	94	125	148

5.2 Goals and aspirations

Educational goals and future aspirations were captured using 11 attributes. Table 0.10 presents the girls' perceptions about educational attainment and future well-being. Most (at least 85%) rated themselves *high* on most of the attributes. Three-quarters rated *pursuing education to university level* high; thus, one in every 4 perceive her chances of attaining university education as 50% or lower. Another two-thirds of the girls rated *getting pregnant in future* as a high likelihood, but they may have been referring to life after school, not during school.

Further analysis shows a statistically significant (α=0.05) difference between the treatment and control groups in future aspirations to finish primary school; treatment participants have higher aspirations than those in the control. Future aspirations for secondary schooling and beyond differed significantly with age. Overall, based on these ratings, the sampled girls have a very positive mental image of their future.

Table 0.10: Future aspirations

	High	About 50-50	Low	Significance tests	
				Groups (t-test)	Age (F-ratio)
a. You will finish primary school?	97%	2%	0%	*.045***	*.737*
b. You will join secondary school?	94%	6%	0%	*.191*	*.007***
c. You will finish secondary school?	89%	10%	0%	*.790*	*.005***
d. You will go to university?	76%	23%	1%	*.204*	*.000***
e. You will have a job that pays well?	85%	15%	0%	*.535*	*.018***
f. You will be able to own your own home?	92%	7%	0%	*.095**	*.559*
g. You will have a job that you enjoy doing?	88%	12%	0%	*.610*	*.185*
h. You will have a happy family life?	91%	9%	1%	*.353*	*.343*
i. You will stay in good health most of the time?	88%	11%	1%	*.964*	*.185*
j. You will be able to move to a better area?	89%	7%	4%	*.126*	*.063**
k. You will be respected in your community?	92%	8%	0%	*.841*	*.903*
l. You will get pregnant or make someone pregnant?	65%	23%	12%	*.023***	*.056**

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.3 Self-confidence

To determine their self-confidence, we asked the girls to rate how good they felt about themselves using a Likert- type scale ranging from 1 (strongly agree) to 5 (strongly disagree). In the treatment and the control, 93% and 97%, respectively, *strongly agreed* that they felt good about themselves, with another 6% and 3% of the respective groups simply agreeing. The same trend is almost replicated within the age categories, with at least 91% of girls within each strongly agreeing. Further analysis indicates a statistically significant (α=0.05) difference between the treatment and the control groups on how good they felt about themselves; the treatment group felt better than the control, but no statistically significant difference was observed across the age categories.

The girls were also asked whether they encourage their friends to feel good about themselves. The ratings ranged from 1 (always) to 4 (never). Their responses were evenly distributed, with 42% and 49% of treatment and control participants indicating *always*. A third of the treatment and a quarter of the control groups indicated that they sometimes encourage their friends. Almost one in every five girls in both groups rarely encourages peers. The treatment and control groups show no statistically significant difference, but one was observed (α=0.05) for older girls, who encouraged their peers more than younger girls. From these observations, most of the girls do not always encourage one another, although the older girls are more likely to do so.

Encouragement was further investigated by asking the girls to rate four activities (see Table 0.11) using a Likert-type scale with similar anchors. Slightly over one-third of them either always or sometimes talk positively about their friends. A considerably higher proportion never discussed their physical changes (18%) or benefits of safe sex (35%) with friends, possibly indicating low self-confidence in matters of puberty and safe sex.

Table 0.11: Ratings on encouragement activities

Attributes	**A**	**S**	**R**	**N**	**Significance tests**	
					Groups (t-test)	Age (F-ratio)
a. Talk positively about your friends?	37%	35%	23%	5%	*.294*	*.078**
b. Discuss their physical changes during puberty with your friends?	15%	35%	33%	18%	*.040***	*.000***
c. Discuss benefits of safe sex with your friends?	12%	24%	28%	35%	*.120*	*.000***
d. Discuss the importance of personal hygiene with your friends?	36%	31%	23%	10%	*.134*	*.016***

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)
Key: A =Always; S = Sometimes; R = Rarely; N = Never

Statistically significant differences emerged between the treatment and control groups on discussing physical changes during puberty and across the age groups for almost all the items in Table 0.11 (α=0.05). Responses to questions about encouragement show that while many

girls talk positively about friends and personal hygiene always or sometimes, they are much less likely to discuss puberty and safe sex.

5.4 Girls' schooling and social behavior

5.4.1 Girls' social behavior

All the girls in the control group and 99% in the treatment group stay in their respective sites and with their parents/guardians. Their social behavior was assessed using 9 attributes (Table 0.12) and a Likert-type scale with three anchors of 1 (never know) to 3 (usually know) and a *not applicable* option. Despite the fact that almost all the girls lived with their PG, 1 in every 10 PG never knows how and where their girls spend their free time, evenings, or the entire weekend. For girls who had money, a third of their parents never know how they spend it.

Table 0.12: Parental monitoring

	NK	SK	UK	NA	Significance tests	
					Groups (t-test)	Age (F-ratio)
a. Where you spend time in on week day evenings	11%	10%	79%	0%	*.000***	*.594*
b. Who you spend time with on week day evenings	11%	11%	78%	0%	*.000***	*.246*
c. Where you spend time on weekends	11%	11%	78%	0%	*.000***	*.419*
d. Who you spend time with on the weekends)	12%	14%	74%	0%	*.000***	*.256*
e. What you do during your free time	17%	23%	60%	0%	*.004***	*.293*
f. How you spend your money (if you have any)	34%	20%	43%	4%	*.279*	*.089**
g. What TV programs, videos, or films you watch	21%	22%	55%	2%	*.610*	*.509*
h. Types of books or print media you read	25%	26%	49%	0%	*.003***	*.148*
i. Who your greatest friend is	30%	13%	57%	0%	*.954*	*.449*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)
Key: NK= Never Know; SK=Sometimes Know; UK=Usually Know; NA=Not Applicable

Table 0.12 shows a strong statistically significant (α=0.05) difference between the treatment and control groups on six parental monitoring items. Broadly, these items deal with the parents' knowledge of their girls' whereabouts in the evening. No statistically significant (α=0.05) difference was found across age brackets.

From these observations, very small proportions of the girls' parents/guardians are monitoring their whereabouts, time use, and how they spend their money, even when they live together. This laxity may allow the girls to indulge in vices that expose them to social, health, and physical risks.

5.4.2 Girls' schooling interests

The girls' interest in school was also evaluated using a Likert-type scale with anchors of 1 (strongly agree) to 5 (strongly disagree) where attributes delved into their school attitudes and perceptions. Nearly all girls generally agreed to interest in school, as Table 0.13 shows.

Table 0.13: Interest in schooling

						Significance tests	
	SA	**SMA**	**ND-NA**	**SMD**	**SD**	Groups (t-test)	Age (F ratio)
a. In general, I like school a lot	98%	2%	0%	0%	0%	*.023***	*.272*
b. I get along well with my teachers	91%	5%	1%	1%	3%	*.093**	*.042***
c. I try my best in school	97%	3%	0%	0%	0%	*.000***	*.089**
d. Doing well in school is important for my future	98%	2%	0%	0%	0%	*.215*	*.337*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)
Key: SA=strongly agree; SMA= somewhat agree; ND-NA=neither disagree nor agree; SMD=somewhat disagree; SD = strongly disagree

We found a statistically significant (at α=0.05) difference between the girls in the treatment and the control group in response to *liking schooling* and *working hard*. Similarly, two items related to *getting along with teachers* and *maintaining a friendly atmosphere in school* showed a statistically significant (α=0.05 and α=0.1 respectively) difference across ages. Few girls do not get along well with their teachers (5%).

5.5 School friendliness and substance use

Information on friendliness and substance use was solicited through Likert-type scale responses, with anchors from 1 (strongly agree) to 5 (strongly disagree). The survey items addressed the perception of discipline in the school, teachers' ethical behavior, and drug and substance use. At least 3 in every 5 girls strongly disagreed that the school maintained student discipline. In terms of teachers' ethical behavior and characteristics, more than 60% of the girls strongly agreed that teachers uphold their integrity as professionals in their field. Barely a third of the girls strongly agreed that the teachers are not cognizant of the girls' participation in household chores and responsibilities.

While only a small (12 in every 100) proportion of girls strongly agreed to using drugs and substances, the negative social, cognitive, health, and physical effects are serious enough to cause community concern. It will be interesting to see whether the intervention will bring the proportion down. Note that incidence of drug and substance use clearly differ between the treatment and the control group; the Difference in Differences (DID) technique will address this imbalance when we compute the impact. Further analysis shows a very strong, statistically significant (α=0.05) difference between the treatment and control groups on five items and another across age brackets on four items (see Table 0.13).

Table 0.14: School friendliness and substance use

	SA	SMA	ND-NA	SMD	SD	Significance tests: Groups (t-test)	Significance tests: Age (F ratio)
a. You can do almost anything at my school without being punished	9%	4%	3%	16%	69%	*.510*	*.006***
b. Fighting between students is a big problem in my school	20%	5%	6%	18%	51%	*.126*	*.020***
c. The teachers at my school will spend extra time to help pupils/ students do their best	72%	13%	7%	4%	3%	*.000***	*.003***
d. In my school, most children respect the teachers and staff	60%	19%	6%	5%	9%	*.471*	*.181*
e. My teachers don't understand that I have a lot of responsibilities at home	29%	7%	17%	11%	35%	*.000***	*.474*
f. I worry about getting harassed by my fellow pupils at school	4%	3%	3%	15%	74%	*.005***	*.650*
g. I worry about getting harassed by teachers at my school	3%	3%	3%	12%	79%	*.000***	*.371*
h. Drinking and drug use are a problem at my school	12%	3%	11%	11%	62%	*.592*	*.032***
i. Most students at my school don't care about learning or getting good marks	7%	8%	9%	13%	63%	*.425*	*.312*
j. Teachers in my school try to have sex with pupils and sometimes do have sex with them	2%	2%	6%	9%	82%	*.000***	*.096**

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

Key: SA=strongly agree; SMA= somewhat agree; ND-NA=neither disagree nor agree; SMD=somewhat disagree; SD = strongly disagree

5.6 Peer influence and behavior

5.6.1 Peer influence

Peer influence and behavior were evaluated using a Likert-type scale with both positive and negative attributes (see Table 0.15). One in every five girls is influenced positively, although less than 5% indicated that all their friends practice attributes perceived as positive. About half of the girls' peers attend spiritual gatherings.

Table 0.15: Peer influence

	How many of your friends do the following?							
	None	Some	Most	All	DK	NA	**Significance tests**	
							Groups (t-test)	Age (F-ratio)
a. Get good marks in school†	0%	62%	34%	3%	0%	0%	*.054**	*.769*
b. Participate in sports or other school activities †	9%	66%	23%	1%	0%	0%	*.005***	*.070**
c. Get into trouble at school (e.g. disciplinary action, get into fights) Π	30%	65%	4%	0%	1%	0%	*.667*	*.346*
a. Drink alcohol Π	95%	3%	0%	0%	2%	0%	*.010***	*.256*
b. Run away from home Π	86%	12%	0%	0%	2%	0%	*.000***	*.556*
c. Get into trouble with the police Π	95%	2%	1%	0%	2%	0%	*.003***	*.407*
d. Have sexual intercourse Π	76%	9%	1%	0%	14%	0%	*.143*	*.001***
e. Attend church/mosque†	6%	23%	50%	19%	1%	0%	*.285*	*.005***
f. Use drugs like bhang, khat, glue Π	89%	5%	1%	0%	6%	0%	*.198*	*.654*
g. Want to go to secondary school/university or college†	6%	14%	34%	40%	5%	0%	*.002***	*.449*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)
† Attributes considered positive by the community
Π Attributes considered negative by the community

Further analysis shows a statistically significant (α=0.05) difference between the treatment and control groups on two positive and three negative attributes and a statistically significant (α=0.05) difference across ages on the attributes related to sexual activity and religiosity. From these observations, less than 5% of the girls are negatively influenced by peers' indulging in such activities as unsafe sex, alcohol and drug consumption, trouble in school and even with the police.

5.6.2 Aggressive behavior

Aggressive behaviors were assessed by how often they occurred. They ranged from life threatening/total disrespect for human life to indecent exposure (see Table 0.16). Except for *taking a peer's item without consent*, almost all the girls indicated that they never engaged in aggressive behaviors, although almost 2 in every 10 would start a fight with peers. None of these girls carried a knife or another weapon for protection, which may infer that they feel secure in attending school. In the same context, none of the girls reported carrying or using drugs and alcohol, which contradicts the information they provided about their friends' drug and substance use.

Despite the moral decadence of the larger community, most of the girls do not seem to be involved in any aggressive behavior, and no statistical difference was found between the treatment and control groups or across age groups. The girls may not have felt free to open up and reveal their true status on aggressive behaviors as they care about their social image.

Table 0.16: Aggressive behavior

	Never	Once	2 or 3 times	4 or 5 times	6 or more times	Refused	Significance test	
							Group (t-test)	Age (F ratio)
a. You stayed away from home for at least one night without your parent's permission	97%	3%	0%	0%	0%	0%	*.260*	*.247*
b. You started a fight with your peers	77%	11%	10%	1%	2%	0%	*.929*	*.217*
c. You took or tried to take something that belonged to someone else without their knowledge	85%	6%	1%	1%	6%	0%	*.455*	*.163*
d. You carried a knife, gun, or other weapon to protect or defend yourself	100%	0%	0%	0%	0%	0%	*.308*	*.372*
e. You hit or threatened to hit an adult	99%	0%	0%	0%	0%	0%	*.332*	*.287*
f. You delivered or sold drugs (e.g. *bang*, *khat*, glue)	100%	0%	0%	0%	0%	0%	*.293*	*.331*
g. You delivered or sold any alcohol (e.g. beer *chang'aa*, *busaa*, etc.)	99%	0%	0%	0%	0%	0%	*.223*	*.312*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.6.3 Substance use

Within the community, using addictive and life-threatening substances, such as drugs, herbs, alcohol, snuff, and cigarettes, is common practice. The sampled girls were asked whether they used these substances and whether they sought any help to quit.

Table 0.17: Number of girls who used substances

	Treatment status (Groups)			Age in years					
	Treatment	Control	*t-test*	<12	12	13	14	≥15	*F ratio*
Pills	1	0	*.318*	0	0	0	0	1	*.372*
Bhang	0	1	*.318*	0	0	0	0	1	*.372*
Miraa	1	2	*.311*	0	0	1	1	1	*.777*
Glue	0	0	-	0	0	0	0	0	-
Alcohol	0	0	*.157*	0	0	0	0	0	-
Cigarettes	2	0	*.318*	0	1	0	0	1	*.577*
None	842	408	-	172	277	326	240	235	-

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

In a paltry 7 instances across the board, girls reported indulging in drug and substance use, and all of them have since quit. These results should be treated with caution, however, as the girls may not have felt free to respond to items that could incriminate them.

5.7 Sexual activity

5.7.1 Sexual experience

We asked respondents their opinion about the consequences of engaging in sex before marriage. Almost all saw them as negative (Table 0.18). Their responses about friendship and relationships were mixed; depending on the item, as many girls were positive as negative.

Within the treatment groups, perceptions of sexual experience did not differ significantly, but they did across age groups. From these observations, the girls are quite conversant with the consequences that may befall them if they stray from the norm.

Table 0.18: Responses on consequences of having sex before marriage

	Yes	No	No response	Significance test	
				Group (t-test)	Age (F- *ratio*)
a. I can get pregnant	98%	1%	1%	*.257*	*.036***
b. I can be infected with HIV/AIDs	98%	2%	1%	*.406*	*.017***
c. I can be infected with other STI	93%	6%	1%	*.387*	*.014***
d. I can drop out of school	86%	13%	1%	*.443*	*.019***
e. I will become popular with my girlfriends	55%	44%	1%	*.466*	*.030***
f. I will be liked by my boyfriend	26%	73%	1%	*.216*	*.027***
g. I will be shunned by family	61%	38%	1%	*.432*	*.016***
h. I will be shunned by my girlfriends	71%	29%	1%	*.351*	*.015***
i. I will be shunned by my boyfriends	65%	34%	1%	*.242*	*.024***

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

The girls were also asked whether they had experienced activities that might prompt them to have sex. From their responses, most of them had not (Table 0.19). Further analysis revealed a strong, statistically significant difference between the treatment and the control groups and across the age groups on kissing and fondling.

Table 0.19: Experiences with sex-related activities

	Yes	No	No response	Significance test	
				Group (t-test)	Age (F- *ratio*)
Kissing	3%	97%	0%	*.003***	*.000***
Fondling	2%	98%	0%	*.008***	*.000***
Foreplay	1%	99%	0%	*.373*	*.432*
Heavy petting	1%	99%	0%	*.350*	*.174*

** Significant at alpha=0.05 (two tailed)

Table 0.20 shows the mean age at first exposure for those girls with some experience; primarily, it occurred at the onset of puberty, and the 13-year-olds seem to be experiencing sex-related activities more than girls of other ages. This difference was statistically significant. The mean age of girls in the treatment group who had experienced sex-related

activities was slightly lower than that of the girls in the control group, but apart from kissing, the difference was not statistically significant.

Table 0.20: Mean age at first experience with sex-related activity

		Treatment status (Group)			Age in years				
	Sample	**Treatment**	**Control**	*Sig*	12yrs	13yrs	14yrs	15yrs	*Sig*
Kissing	43	13.2	14.8	*.022***	12.5	11.7	12.1	14.7	*.030***
Fondling	20	14.1	16.0	*.194*	.	12.0	13.4	14.9	*.003***
Foreplay	13	14.3	16.0	*.256*	.	12.0	13.7	15.1	*.026***
Heavy petting	9	15.2	16.0	*.538*	.	.	14.0	15.5	*.246*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

We also observed that 3 in every 10 girls had experienced a sex-related activity within 30 days of data collection.

Table 0.21: Experiences with sex-related activities

				Significance test	
	Yes	**No**	**No response**	Group (t-test)	Age (F- *ratio*)
Kissing	33%	58%	9%	*.039***	*.019***
Fondling	35%	55%	10%	*.733*	*.001***
Foreplay	31%	54%	15%	*.676*	*.009***
Heavy petting	22%	56%	22%	*.614*	*.000***

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

The girls were asked whether they had ever had sexual intercourse. As shown in

Figure 0.5, less than 2% for both the treatment and control groups answered yes. A similar pattern was observed across the age groups. The difference between the treatment and control groups (α=0.05) is statistically significant, but no difference appears across age groups.

Figure 0.5: Responses on experience with sex intercourse

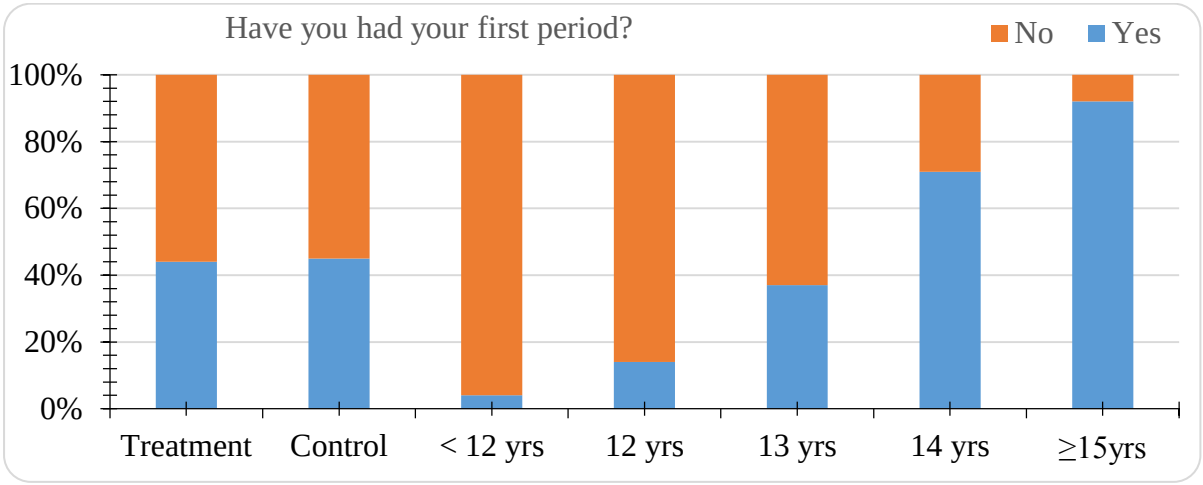
For the girls who had sexual intercourse, 20 and 4 were from the treatment and control groups, respectively. Seven in every 10 in the treatment and the four in the control did it willingly; the rest were forced against their will. Furthermore, while all the girls aged 12 or above did it willingly, only 1 in every 2 girls younger than 12 had sex without duress. The differences between treatment groups and age groups were not significant. More than three quarters of girls who had sexual intercourse for the first time had intent and consented. The five girls forced into it for the first time were from the treatment group and 14 years old. The culprits were either male friends or "someone they do not know"; friends and strangers are luring girls to engage in sex without their consent. For the girls who had sexual intercourse without their consent more than once, the "boyfriend" was the main culprit.

5.7.2 Experience with menses

The proportion of girls who had experienced menstruation was the same across treatment and control groups (

Figure 0.6), but ranged from 4% for those younger than 12 to 92% for those over 15.

Figure 0.6: Proportions of girls having first period



No statistically significant difference was observed between the treatment and control groups. Slightly fewer than half of the girls in the treatment and control groups have reached puberty. This proportion is expected to increase over the three years of the project.

The complications and discomfort experienced with the first menses are evident, but the types and proportions differed between groups and across ages. The most frequent complaint was abdominal pains, experienced by three quarters of the girls across groups and ages, with no statistically significant difference.

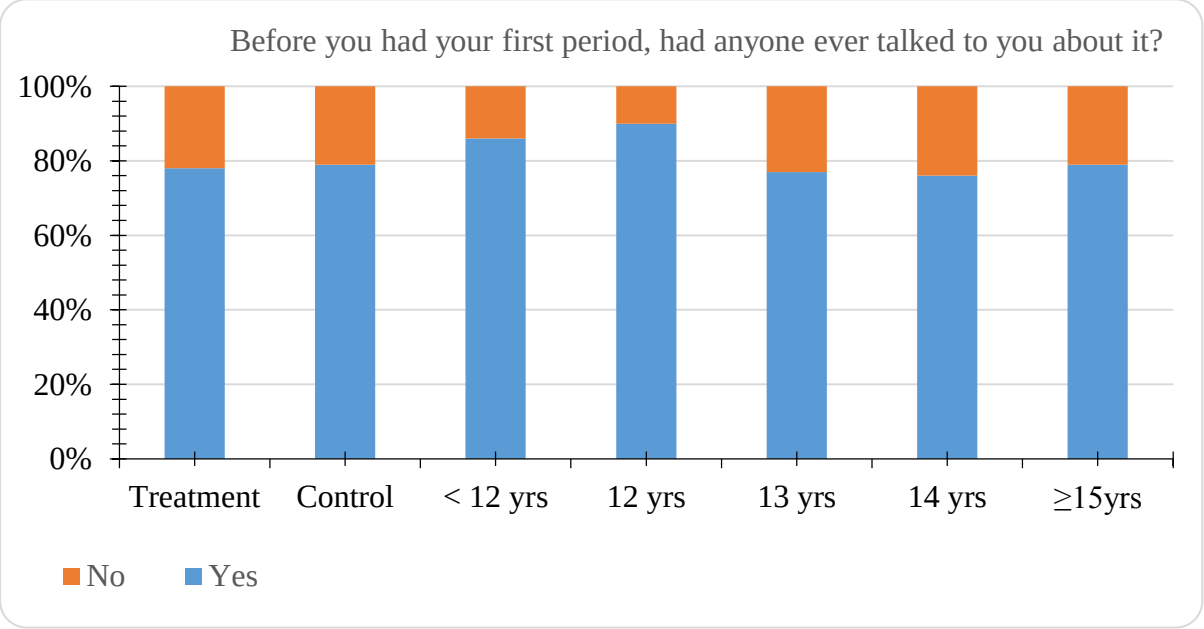
Table 0.22: Experience with menses

	Group	**Age categories**

	Treatment	Control	<12yrs	12yrs	13yrs	14yrs	≥15yrs
a. I was surprised	46%	50%	43%	54%	50%	47%	45%
b. I was shocked	36%	48%	57%	41%	44%	38%	38%
c. I was confused	46%	42%	29%	51%	56%	44%	39%
d. I had pains (abdominal and stomach)	76%	74%	86%	76%	76%	75%	74%
e. I had cramps	52%	50%	43%	49%	48%	49%	55%

Quite a large proportion of the girls who had their first menses experienced the expected challenges and discomfort associated with progression to puberty. Prior information is of great help, and more than three quarters in the treatment and control groups and across the age groups had it.

Figure 0.7: Responses on prior information before first menstrual experience



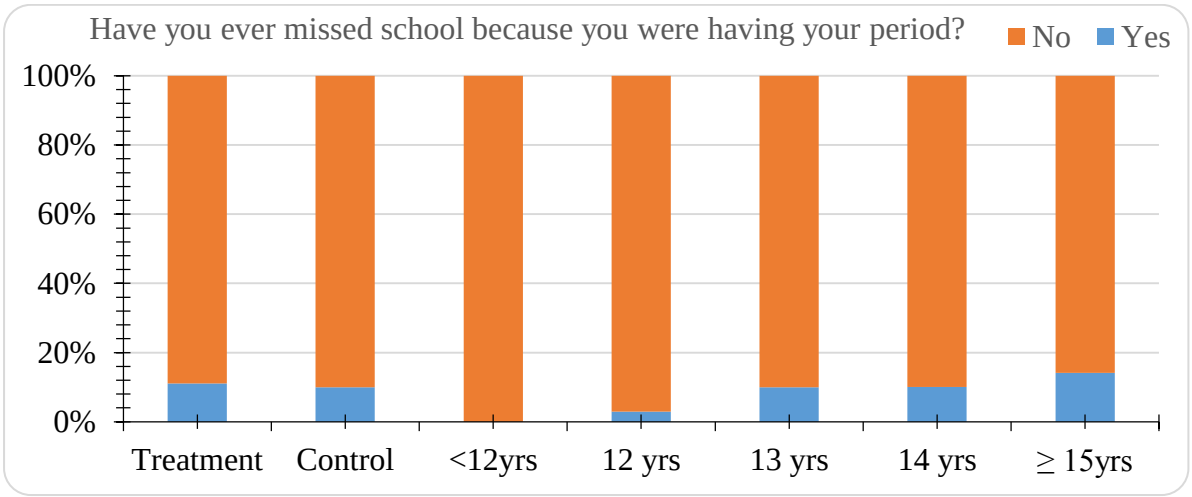
Girls with prior information in the treatment, control, and age groups all cited teachers as the overall best source. Their parents were the second-best source for the treatment (42%) and the control (27%) group; this difference was not significant, but there was a statistically significant difference across the age groups. Information is power, and the girls should have access to useful information to tackle the challenges of puberty. Many parents may not be providing menstrual management information to their teenage girls.

Table 0.23: Sources of information about menses

	Treat	Control	<12yrs	12yrs	13yrs	14yrs	≥15yrs
Teacher/Counselor	34%	46%	50%	39%	51%	38%	31%
Parent	42%	27%	33%	42%	29%	37%	41%
Other unrelated, non-HH member	10%	14%	0%	6%	6%	14%	13%
Sibling	5%	3%	0%	8%	4%	3%	5%
Other related, non-HH member	2%	3%	0%	0%	2%	3%	3%
Other household member	2%	1%	0%	3%	4%	1%	2%
Student	1%	3%	0%	0%	1%	3%	2%
Child	1%	1%	0%	3%	2%	1%	1%
Unrelated neighbor	1%	1%	0%	0%	0%	1%	2%
p-value	.102				**.038***		

The mean ages at first menses were recorded as 12.77 and 12.93 for the treatment and control groups, respectively. Across the age groups, the mean age varied from 11.57 for 12 and below to 13.23 among the senior girls. Girls are maturing early and need a lot more useful information about puberty. At least 10% in the treatment and control groups had missed school because of menses, without any statistically significant difference between them.

Figure 0.8: Proportion of girls who missed school due to menses.



Among the many reasons for absenteeism given by girls experiencing menses for the first time, the most frequent were pains and lack of sanitary pads. In the control group, two-thirds cited *unexpected periods* and half, *fear/shame*. However, none of the reasons differed significantly across age groups.

Table 0.24: Menses-related reasons for school absenteeism

	Treat	**Contr ol**	***p-value***	**≤12y r**	**12yr s**	**13yr s**	**14yr s**	**≥15y r**	***p-value***
Subsamples			*sig*						
	43	**18**		**0**	**1**	**12**	**17**	**31**	*sig*
a. Pains (abdominal and stomach)	81%	72%	*.433*	0%	100 %	83%	88%	71%	*.502*
b. Lack of sanitary pads	70%	61%	*.519*	0%	100 %	67%	76%	61%	*.666*
c. Unexpected periods	47%	67%	*.156*	0%	0%	58%	47%	55%	*.446*
d. Fear/shame	26%	50%	*.066**	0%	100 %	42%	29%	29%	*.432*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

Although we can deduce the main reason for absenteeism during menses from Table 0.24, the girls were asked to provide their own main reason. From Table 0.25, abdominal or stomach pain was the main reason across all the groups, followed by lack of sanitary pads.

Table 0.25: The main reason for missing school during menses

	Treatme nt	**Control**	**< 12yrs**	**12yrs**	**13yrs**	**14yrs**	**≥15yrs**
Subsamples			**0**				
	43	**18**		**1**	**12**	**17**	**31**
a. Pains (abdominal and stomach)	35%	39%	0%	100%	33%	41%	32%
b. Lack of sanitary pads	33%	28%	0%	0%	33%	29%	32%
c. Unexpected periods	19%	17%	0%	0%	17%	29%	13%
d. Fear/shame	12%	17%	0%	0%	17%	0%	19%

When girls transition to puberty, they require information to understand the myriad changes in their bodies and to avoid risk. Parents remain the principal source on proper behavior. Almost 7 in every 10 girls in the treatment and control groups sought vital information from their parents (Table 0.26). The proportions seeking information from other sources are evenly distributed across the ages. A significant difference emerges between the treatment groups, but not across the age groups.

Table 0.26: The preferred person when discussing puberty and sexuality

	Treatment	Control	<12yrs	12yrs	13yrs	14yrs	≥15yrs
Parent	69%	64%	79%	67%	68%	67%	59%
Sibling	8%	11%	8%	9%	8%	10%	9%
Teacher/Counselor	7%	12%	5%	9%	8%	10%	12%
Other unrelated, non-HH member	6%	4%	3%	4%	6%	5%	8%
Student	4%	5%	1%	6%	5%	4%	5%
Other household member	3%	1%	3%	2%	2%	1%	3%
Other related, non-HH member	1%	3%	2%	2%	2%	2%	3%
Unrelated neighbor	1%	0%	0%	1%	1%	1%	2%
Related neighbor	0%	0%	1%	0%	0%	0%	0%
P-value	*0.000****				*.371*		

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

Opinions about the right age at which to discuss sexuality with their parents were evenly distributed among the control, treatment, and age groups. Notably, almost 8 in every 10 girls would prefer the discussion to start early—younger than 14. No significant difference was observed.

Table 0.27: Best age for parents to discuss sexuality with girls

	Treatment	Control	<12yrs	12yrs	13yrs	14yrs	≥15yrs
Before 12 years	39%	36%	57%	30%	31%	42%	40%
12 to 14 years	47%	48%	43%	60%	52%	46%	43%
15 to 17 years	9%	12%	0%	0%	11%	9%	12%
18 and above	2%	2%	0%	5%	0%	2%	3%
P-value		*.945*			*.102*		

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.7.3 Sexual exploitation

Girl's sexual exploitation was evaluated using eight items rated from 1 (strongly agree) to 5 (strongly disagree); 9 in every 10 girls strongly agreed to most of them (Table 0.28), with no significant difference among the groups. Quite a large proportion of the girls behave responsibly and are quite cautious of the company they keep.

Table 0.28: Protection against sexual exploitation

						Significance test	
	SA	**SMA**	**ND-NA**	**SMD**	**SD**	Group (t-test)	Age (F-*ratio*)
a. Avoid secluded areas	93%	4%	0%	0%	0%	*.717*	*.157*
b. Avoid being alone with an older man	90%	4%	1%	1%	1%	*.694*	*.156*
c. Only keep the right company	88%	7%	2%	0%	0%	*.748*	*.156*
d. Stay occupied with safe and healthy activities	87%	8%	3%	0%	0%	*.724*	*.153*
e. Set boundaries in relationships	91%	4%	1%	0%	0%	*.729*	*.154*
f. Say no to alcohol and drugs	93%	3%	1%	0%	0%	*.713*	*.155*
g. Never accept gifts or money in return for "sexual favors"	94%	3%	0%	0%	0%	*.723*	*.163*
h. Report suspicious behavior to a responsible adult	83%	4%	3%	1%	7%	*.626*	*.250*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

Key: SA=strongly agree; SMA= somewhat agree; ND-NA=neither disagree nor agree; SMD=somewhat disagree; SD = strongly disagree

5.8 Sources of information

5.8.1 About sexuality

Broadly, information on various subjects is relayed through human, electronic, and print media. Almost 4 in every 10 girls and as many as half in the treatment and control groups cited teachers as their main source of information on sexuality, and this trend was consistent across the age groups (Table 0.29). The electronic media claim the second and thirds slot, and peers/friends the fourth. Parents ranked fifth. There is a statistically significant (α=0.05) difference between the treatment and control groups but none across the age groups. Overall, teachers are playing a leading role in informing the girls about sexuality.

Table 0.29: Main source of information on sexuality

	Treatment	**Control**	**<12yrs**	**12yrs**	**13yrs**	**14yrs**	**≥15yrs**
Teachers	37%	51%	37%	44%	48%	38%	38%
Television	23%	15%	27%	21%	19%	20%	17%
Radio	14%	14%	16%	15%	11%	15%	14%
Friends	13%	4%	8%	11%	6%	13%	12%
Parents	6%	7%	8%	5%	7%	5%	8%
Seminars	4%	7%	1%	2%	6%	6%	7%
Others	1%	2%	1%	1%	1%	2%	3%
None	1%	0%	1%	1%	1%	1%	1%
Newspapers	0%	0%	1%	0%	0%	0%	0%
P-value		*.018***				*.139*	

** Significant at alpha=0.05 (two tailed);* Significant at alpha=0.1 (two tailed)

5.8.2 About drug and substance use

Drug and substance abuse is a vice encroaching on the community at large, and the girls have not been spared. Information on side-effects is a necessary precursor for drug-free girls, and teachers remain the main source for 4 out of 10 girls. The pattern was the same for all groups (Table 0.30). The teachers have outdone the print and electronic media in sensitizing their pupils to the dangers of drug and substance abuse.

Table 0.30: Main source of information on drug abuse

	Treatment	Control	<12yrs	12yrs	13yrs	14yrs	≥15yrs
Teachers	44%	53%	37%	48%	53%	45%	45%
Television	21%	25%	31%	21%	17%	22%	24%
Radio	14%	6%	8%	11%	12%	12%	12%
Parents	8%	7%	13%	8%	6%	8%	6%
Friends	8%	4%	6%	8%	6%	6%	6%
Seminars	3%	3%	1%	3%	2%	5%	5%
Newspapers	1%	2%	2%	1%	2%	1%	1%
Others	0%	1%	0%	0%	1%	1%	1%
None	0%	0%	1%	0%	1%	0%	0%
P-value		*.091***			*.145*		

** Significant at alpha=0.05 (two tailed);* Significant at alpha=0.1 (two tailed)

5.8.3 About smoking

Smoking can be common among schoolgirls due to the influence of peers. The literature demonstrates the connection of habitual smoking to lung, throat, and colon cancer, heart diseases, abortion, and infertility among other calamities. The associated withdrawal requires professional intervention. Therefore, information is of paramount importance to prevent these consequences. About half of the girls obtain it from their teachers and barely a third from electronic media. There is a strong, statistically significant (α=0.05) difference between the treatment and control groups and a similar trend across age groups.

Table 0.31: Main source of information on smoking

	Treatment	Control	<12yrs	12yrs	13yrs	14yrs	≥15yrs
Teachers	44%	55%	43%	51%	50%	46%	46%
Television	18%	15%	20%	14%	16%	18%	18%
Radio	14%	8%	13%	13%	11%	13%	10%
Friends	9%	11%	8%	9%	11%	8%	10%
Parents	9%	5%	10%	8%	6%	6%	8%
Seminars	3%	3%	1%	2%	3%	5%	3%
Newspapers	2%	1%	3%	2%	2%	1%	1%
None	1%	1%	2%	1%	1%	0%	2%
Others	0%	1%	0%	0%	1%	2%	1%
P-value		*.000***			*.262*		

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.8.4 About alcohol

In Kenya, the minimum age for alcohol consumption is 18, so most of the pupils in this survey would not be expected to consume. Nonetheless, they should be informed about the effects of drinking. A third of the girls in the overall sample were informed by electronic sources, while 40% in the treatment and 52% in the control group were primarily informed by their teachers. The difference between the treatment and the control is statistically significant (α=0.05) and source of information on alcohol differed significantly across the age groups.

In sum, teachers seem to be the girls' main source of information on sexuality, drugs, and alcohol.

Table 0.32: Main source of information on alcohol

	Treatment	**Control**	**<12yrs**	**12yrs**	**13yrs**	**14yrs**	***≥15yrs***
Teachers	40%	52%	34%	48%	49%	40%	43%
Television	20%	16%	24%	20%	14%	17%	19%
Radio	15%	11%	13%	13%	12%	17%	13%
Parents	10%	7%	14%	8%	9%	6%	11%
Friends	9%	8%	9%	7%	11%	10%	8%
Seminars	3%	3%	1%	2%	2%	6%	3%
Others	1%	1%	1%	0%	1%	2%	1%
None	1%	0%	2%	1%	0%	1%	1%
Newspapers	1%	1%	2%	0%	2%	1%	0%
P-value	*.003***				*.035***		

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.9 Knowledge about HIV/AIDS and other STIs

5.9.1 Myths about contracting HIV/AIDS

HIV/AIDS is a national pandemic according to a Kenyan government declaration, and many concerted efforts and mechanisms are used to sensitize the general public on contraction, transmission, and management of infected and affected persons. In this survey, all the girls are aware of this pandemic, irrespective of their site. We wanted to investigate their factual knowledge about transmission. We found that over 8 in every 10 girls have the correct *opinion on getting HIV/AIDS through various means*, although the difference in knowledge between the treatment and control was statistically significant (α=0.05). Across the age groups, differences were statistically significant (α=0.05) for almost all the knowledge points. The girls are quite aware of HIV/AIDS and know the various ways it can be contracted.

Table 0.33: Girls' opinions on HIV/AIDS transmission

	Yes	No	No response	Significance test: Group (t-test)	Significance test: Age (F-*ratio*)
a. Holding hands with someone?	2%	98%	0%	*.083**	*.028***
b. Sharing needles used to inject (shoot up) drugs?	91%	9%	0%	*.853*	*.382*
c. Being bitten by mosquitoes or other insects?	14%	85%	1%	*.029***	*.006***
d. Using public toilets?	8%	90%	2%	*.041***	*.024***
e. Having sexual intercourse without a condom (rubber)?	96%	3%	1%	*.869*	*.042***
f. Being in the same class with a student who has HIV/AIDs infection?	2%	98%	0%	*.687*	*.022***

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.9.2 Facts about contracting HIV/AIDS

Almost 8 in every 10 girls are quite aware of the principal way the scourge is contracted. Surprisingly, a paltry 1 in every 10 knows *there is no cure for the same pandemic*. However, the treatment and control groups showed a strong statistical difference on the facts as did the age groups (α=0.05). The girls should be given more facts about the contracting, managing, and curing HIV/AIDS.

Table 0.34: Knowledge about HIV/AIDS

	Yes	No	No response	Significance test: Group (t-test)	Significance test: Age (F-*ratio*)
a. Can you tell if people are infected with the AIDS virus (HIV) just by looking at them?	11%	84%	5%	*.001***	*.465*
b. Can a person who has the AIDS virus (HIV) infect someone else during sexual intercourse?	87%	13%	0%	*.001***	*.127*
c. Can a pregnant woman who has the AIDS virus (HIV) infect her unborn baby with the virus?	71%	26%	4%	*.735*	*.092**
d. Is there a cure for HIV/AIDS?	10%	89%	1%	*.456*	*.006***

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.9.3 Preventive measures

In all the information about this scourge, preventive measures are described. They draw on personal etiquette and character. We found that 9 in every 10 girls are quite aware of ways to avoid contracting HIV/AIDS. This knowledge is evenly spread between treatment groups and across age groups, but unlike the age groups, the difference in knowledge between girls in the treatment and control was statistically significant (α=0.05).

Table 0.35: Preventive measures against contracting HIV/AIDS

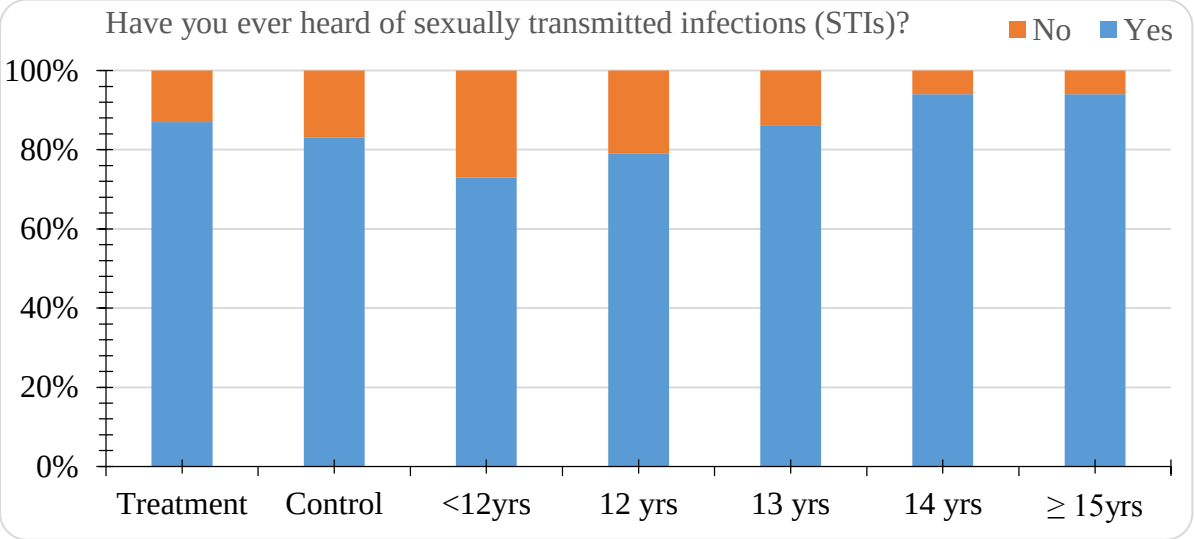
	Yes	**No**	**No response**	**Significance test**	
				Group (t-test)	Age (F-*ratio*)
a. By not having sexual intercourse (being abstinent)?	98%	1%	0%	*.351*	*.302*
b. By using condoms (rubbers) during sexual intercourse?	89%	4%	6%	*.000***	*.130*
c. By avoiding sharing injections or needles?	95%	5%	1%	*.097**	*.553*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.9.4 Myths about contracting STIs

Sexually transmitted infections (STIs) occur when practicing unsafe sex. Unlike the deadly HIV/AIDS scourge, they can be cured and/or managed, and knowing about them is of paramount importance for the girls. Based on our research, 8 in every 10 girls in the treatment and control groups have this knowledge. Across the age groups, 73% are aware of STIs, with a statistically significant (α=0.05) difference among them and between the treatment and control groups. Knowledge about infections transmitted through sex-related activities should be relayed to protect all the girls.

Figure 5.1: Responses on whether the girls' have ever heard of sexually transmitted infections



Myths surrounding STIs may depend on cultural diversity, but our respondents are quite knowledgeable about them; over 60% of the girls have the correct opinion about the myths, with a statistically significant (α=0.05) difference between the treatment and control groups and across the age groups. Not as many girls know about all the myths surrounding STIs.

Table 0.36: Girls' opinions on contracting STIs

	Yes	No	No response	Significance test: Group (t-test)	Significance test: Age (F-*ratio*)
a. Holding hands with someone?	1%	98%	1%	*.629*	*.534*
b. Sharing needles used to inject (shoot up) drugs?	62%	36%	2%	*.000***	*.019***
c. Being bitten by mosquitoes or other insects?	13%	85%	2%	*.001***	*.014***
d. Using public toilets?	28%	67%	5%	*.000***	*.070**
e. Having sexual intercourse without a condom (rubber)?	96%	4%	0%	*.594*	*.981*
f. Being in the same class with a student who has an STI?	1%	98%	1%	*.286*	*.685*

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.9.5 Facts about contracting STIs

Facts about STIs have been documented, but our sample showed lapses, especially about the possibility of cure. For example, 1 in every 10 girls think she can tell when a person has an STI. Knowledge of the facts about STIs differed significantly (α=0.05) between the treatment and the control groups.

Table 0.37: Knowledge about STIs

	Yes	No	No response	Significance test	
				Group (t-test)	Age (F-*ratio*)
a. Can you tell if people are infected with STIs just by looking at them?	9%	84%	8%	*.000***	*.621*
b. Can a person who has the STI's infect someone else during sexual intercourse?	86%	13%	2%	*.367*	*.274*
c. Can a pregnant woman who has an STI infect her unborn baby with the virus?	50%	35%	15%	*.000***	*.240*
d. Is there a cure for STI?	54%	30%	16%	*.003***	*.000***

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.9.6 Preventive measures

From the available information about STIs, 9 in every 10 girls are quite aware of the preventive measures. However, knowledge about using condoms during intercourse differed significantly (α=0.05) between the treatment and control groups and across the age groups. Paradoxically the girls seem to know more about preventing than contracting STIs,

Table 0.38: Preventive measures against contracting STIs

	Yes	No	No response	Significance test	
				Group (t-test)	Age (F- *ratio*)
a. By not having sexual intercourse (being abstinent)?	99%	1%	0%	*.520*	*.471*
b. By using condoms (rubbers) during sexual intercourse?	89%	5%	6%	*.000***	*.029***
c. By avoiding sharing injections or needles?	88%	9%	3%	*.791*	*.023***

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

5.10 Dispelling myths about puberty, sex, and HIV/AIDS

Many myths and beliefs surround sexual behavior and consequent infections. In this study, close to 7 in every 10 girls are well versed in these myths with any significant difference between the treatment and the control group. However, across the age groups, the difference in knowledge strongly differed.

Table 0.39: Dispelling myths about puberty, sex, and HIV/AIDS

				Significance test	
	Yes	**No**	**Don't know**	Group (t-test)	Age (F-*ratio*)
a. Can a girl get pregnant the very first time she has sexual intercourse?	82%	8%	10%	*.972*	*0.000***
b. Can a girl get pregnant if she has sex standing up?	67%	10%	23%	*.906*	*0.000***
c. Can a girl get pregnant if she washes herself thoroughly immediately after sex?	67%	10%	23%	*.510*	*0.000***

** Significant at alpha=0.05 (two tailed); * Significant at alpha=0.1 (two tailed)

Chapter 6. Parental and Community Gatekeeper Perceptions of Girls' Education

This section highlights parental and community perceptions of their role in girls' education and the challenges that affect girls' education in the two informal urban settlements where an intervention is being implemented. Perceptions were sought in focus group discussions (FGDs) that targeted parents of girls in grades 6, 7, and 8 in both Korogocho and Viwandani, while community gatekeepers' perceptions were sought in in-depth interviews with a chief and elders in each of these sites. First, we highlight community gatekeepers' perceptions of their roles in keeping girls in school, the role of the community in keeping girls in school, the challenges that hinder girls from attending school, and how the community has responded to them. We also document parents' perceptions of their role in their daughters' education and ways to encourage parental and community support of girls' education.

6. 1 Parent and community perceptions

6.1.1 Role of parents in children's education

The consensus holds that parents play a significant role in their children's education (Fan & Chen, 2001; Miedel & Reynolds, 1999). Parental involvement establishes the context for school attendance. According to Hill and Taylor (2004), parental involvement may consist of communication with teachers and other school personnel; volunteering time at school; offering their children assistance with academic activities at home; and attending school events, parent–teacher conferences, and parent–teacher association meetings. Research shows that when parents are more involved with their children's' learning, the child's school performance benefits. This positive impact extends beyond primary into secondary schools (Feinstein & Symons, 1999) and leads to superior cognitive competency, improved academic achievement, improved school attendance, improved skills in problem solving, few behavioral problems in school, and more school enjoyment (Melhuish et al., 2001).

6.1.2 Place of social capital in community involvement

Parents as community members bond due to the relationship dynamics created and sustained by their interactions with the institutions around them; in this case, the schools their daughters attend. This "social glue" enables individuals to develop interdependence and to control the elements affecting their lives, including resources. The interaction between communities is enhanced by the presence of social capital. Putnam (2000) argues that social capital exists not only between individuals but can be extended to communities, thereby

forming larger social networks, and facilitating the exchange of services. He posits that social capital "greases the wheels that allow communities to advance smoothly; where people are trusting and trustworthy, where they are subject to repeated interactions with fellow citizens, everyday business and social transactions are less costly" (p. 288). He notes that parental involvement in schools is enhanced when parents, have very closely knit connections through the school PTA and school meetings.

6.1.3 Perceptions of community gatekeepers' roles in keeping girls in school

The community gatekeepers in this study were the chiefs of both Korogocho and Viwandani and their respective elders, who assist them in running the two sites' activities. They were all of the opinion that their roles as community gatekeepers were three-fold: *to ensure that children and particularly girls are taken to school by their parents*; *to follow-up, either with the parents or the girls, to enforce school attendance*; and *to use their public platform during barazas to sensitize the parents to the modalities they can adopt to ensure that their daughters are in school*.

6.1.4 Ensuring that girls go to school

The chiefs, who administer the two sites, were very passionate about schooling the children, particularly girls, in both Korogocho and Viwandani. They explicitly said their role was to ensure that girls went to school and, to this end, held parents accountable. The Senior Chief in Korogocho explained his role as an administrator in ensuring that girls in Korogocho attend school:

> …all children of school-going age should be in school, so we *monitor and ensure* [emphasis added] that all the parents take their children to school. Generally, I am passionate…ensure all children of school-going age are in school, as we are keen to implement Vision 2030 and the Millennium Development Goals by 2015. And one of the MDGs is that everyone in the world, including Korogocho, should have basic education. That is why we are keen that everyone should go to school…

Moreover, the administrators strongly felt that parents are responsible for educating their daughters. Therefore, they summoned parents whose daughters were not attending school, usually according to one or several of the elders who worked side-by-side with them. The

report would be forwarded to the chief when the parents defied the elders' advice to ensure that their daughters were in school or failed to fulfill their responsibilities to their daughters by ensuring that they attended school. An elder in Korogocho explained his role in this way:

> …So as a village elder, it is up to you to find a way that the mother can carry out her role since this child isn't in the care of the older children but in her care … Another role that we carry out is to report some of these parents to…the chief because she has failed to fulfill her responsibilities.

In some circumstances, the parents and particularly mothers are not keen on school attendance; they prefer the girls to be engaged in money-making ventures like selling groundnuts in the nearby bars. A Viwandani elder explains that in such cases, the elders may summon the parents and advise them against the practice of child labor. In the event that this reprimand does not work, the elders forward the case to the chief. A Viwandani elder said:

> …if I find them not going to school, and they explain that they have been asked by their mothers to sell in bars, I summon their parents and warn their parents against it. And some stop doing it. Some are so rude to you, and thus I am forced to forward this to the chief.

Once the elders forward the cases, the chiefs in both sites will also summon the parents to find out why their children, particularly their daughters, are not attending school. This sequence of events that starts with the village elders and ends at the chief's office shows the concern about and the value attached to education at the lower levels of governance. The Viwandani chief remarked:

> When we realize that a girl is idle, we summon her parents and ask them why their children are not in school. Most of them say that they are not financially able to support their education. We have summoned about four parents concerning this issue…

Note that in both sites, the community gatekeepers were very specific on the ways to keep girls in school. They used various mechanisms both to motivate girls to continue and to enforce compliance from the parents. For instance, in Korogocho, community gatekeepers,

led by the chief, worked hand-in-hand with neighborhood organizations to provide sanitary towels for girls so they could continue to attend school. The chief said: "…*my role as a chief in keeping them in school includes ensuring the girls have sanitary towels, which are mandatory…"* In addition, through the chief, community members have tried to stop parents from marrying off their daughters at an early age. The Korogocho chief summarizes aptly: "…*we have fought day and night to ensure there are no marriages for girls who are in school before they complete their learning*…" This tactic is part of a comprehensive attempt to minimize early marriages.

In Viwandani, in addition to summoning the parents to explain why their daughters are not in school, the chief focused on helping pupils, particularly girls, who are not able to secure a paying job to receive the training that will enable them to find employment after completing their schooling. For this chief, his role goes beyond ensuring that girls are in school to providing financial assistance to those who have completed school to enable them to gain skills for employment. He said:

> …my responsibilities as the chief in regard to the girls' education are encouraging their access to education. We do not want to discriminate between the girls and the boys. I will ensure that girls also go to school. If there are those who are not able to gain income after studying up to a certain level, we try to help them join colleges so as to get skills such as hairdressing…

The chief wrote recommendation letters for some girls to access training in employable skills. He envisages his role going beyond primary school to ensure that girls can gain access to centers where they can get the requisite skills to earn income should they not proceed to high school and college.

> …For example, in the last two weeks, we have taken over fifty of them to Mukuru Skills Center at St. Elizabeth. They are first asked to come to me for a letter, and I write them these letters, so they are able to join this training facility so that we do not let the girls be idle. Because when they are left idle, they are exposed to temptations…

6.1.5 Following-up with parents

Community gatekeepers also emphasized the need for constant follow up to ensure that parents were performing their roles and girls were attending school. The village elders look out for girls who are not attending school and follow up to establish why. A village elder in Korogocho said, "My responsibility is to follow up [to see] if the girl child is actually going to school, and if she isn't going to school what are the reasons . . ." The village elders in Viwandani agreed. Follow-up took the form of household visits to ask the parents why their daughters were not going to school. A Korogocho elder tells them, "Maybe it is you the parent and I have seen your child does not go to school; I will visit your place and ask you why your child has not gone to school…"

6.1.6 Community barazas

Community gatekeepers talk to the girls either at the PTA meetings that are held in the various schools or through their parents, who attend community meetings, or *barazas*, convened by the chief. In these *barazas*, the gatekeepers sensitize parents to the dangers that can befall girls in the slum if they do not guide them and keep them in school. The chief of Korogocho described their roles as educators of girls and their parents:

> We have heard cases of young girls having sex in Korogocho as young as 9 years, and now we have tried to talk to them in *barazas*, through their parents. I attend all the PTA meetings that schools hold annually, and we tell the parents…we do all this to ensure all girls remain in school… All in all, I talk to parents so that this child that I consider vulnerable is given the same chances or opportunities as a boy… When we see such signs, we immediately start counseling since it is part of my role. I counsel parents and their children on issues related to family or personal life. That is why I told you that there is so much we are doing with these girls once we see signs that she may drop out of school.

The Viwandani chief explained that sensitization also involved talking to the parents about the benefits education brings to the girls. He highlights the stories of women who have achieved success in Kenyan society in hopes that the parents will take the necessary steps to encourage their daughters to work hard in school so that they can also become successful professionals and politicians. He described the process:

> We encourage the parents, especially during our *barazas*, to talk and advise their children that they should not drop out of school because school is important and it might make them turn out like Martha Karua or Honorable (Charity) Ngilu… When their children become mothers, they will be able to raise up their children efficiently.

6.2 Role of the community in keeping girls in school

The parents who participated in the FGDs both in Korogocho and Viwandani believe that the community has a vital role in girls' education, especially the communities around the school. One very important theme across the treatment zones and in the control zone is a community united to educate girls. It fits well with the body of evidence linking school, family, and community in one of the most accepted western policy initiatives (Epstein & Sheldon, 2002). Research suggests that parents in adjacent communities can get involved with schools in six ways to create effective programs that benefit pupils: parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community.

6.2.1 Uniting to educate girls

Parental narratives point to the importance of their unity and collaboration in ensuring that girls attend school. They proposed a multipronged approach in which parents, community, and teachers would forge a close working relationship with their children. The general community would keep a close watch for any signs of misbehavior and report to the parents; the church would give direction on the Christian values that should guide the girls' conduct; and teachers would work with the rest of the team. In the FGD, a father of a girl in the control group in Viwandani said, "the parents should be close to the child; the community should be on the look-out and report the girl to parents if she misbehaves; the religious groups should give direction, if she is a Christian, to go to church, if a Muslim, to the mosque; the teacher should educate and also work together with the rest."

The parents in the control group in Korogocho also felt that when communities are united, no girls will be loitering around, not going to school. In a women's FGD in the Korogocho control EAs, a mother said, "We should be united as a community and ensure there are no children loitering aimlessly in the village. We should work together and push them to attend school."

Parents also perceive that the role of the community should involve internal collaboration, communication, and knowledge of the child's peers and the benefits of education. Parents believe that children belong to the community as much as to the individual household. Their role in the household—to communicate with their daughters constantly and to give them advice—does not diminish community responsibility. Collaboration is the only way that both parents and communities will realize the benefit of educating their girls. A mother whose daughter was in treatment 2 in Korogocho told her focus group:

> …It is the responsibility of the community to help raise the children, not only your own children but even your neighbors'. I saw a child sent home for lack of books and to cover her books. I knew her mother was single and decided to help. I bought the girl books and covered the others, and she went to school. Even today, that girl greets me when she sees me….we shouldn't be afraid to tell the parents but to tell them and even talk to the girls themselves on how to change her behavior…I talked to her, and she said that her mother has never talked to her, and she thanked me and said she was happy. You tell her the truth, and one day she will come and thank you.

6.2.2 Community, private, and public partnership

Parental narratives pointed to a partnership among the community of parents around the school, nongovernmental organizations, and the government. It results from the realization that structural problems that go beyond the parents hinder girls from achieving their life goals. The parents believe that the government and the private sector should come together to champion girls' education. If well managed, this partnership can motivate girls to go beyond primary school. In a men's FGD in Korogocho, a father of a girl in treatment 1 said:

> This problem will be solved by three people. The first is the parent, to advise the child and make sure that she lives a good life. Second, the NGOs in Korogocho— there are so many—they should help us so that the children can get the education they need. We do not have polytechnics, and even the ones who have cleared Form 4…do not have a place to go, yet we blame the children. And third, the government should bring us good teachers in the

> slums and also build schools…our children can be better citizens in the future….in order to bridge the gap between the rich and the poor.

These parents raised a number of other fundamental concerns that stem from communities around the schools that are not involved in the education of their daughters. First, institutions that will promote transitions at various levels must be in place; for instance, from Form 4 to the polytechnics. The lack of such institutions explains the laxity among children at lower levels. The parents caution against blaming the children when there are no systems to motivate their upward mobility. In addition, the government should provide adequate schools in the slums with adequate teachers.

The parents' sentiments are echoed by the chief who is a government representative in Korogocho. He recognizes the importance of creating a partnership among the key community stakeholders to bring about meaningful learning among girls. He calls upon parents, schools, and churches to unite, blending the theme of a community united for girls' education with the role of the church. In his opinion, the church is important, in part, as one of the private partners who have started schools in Korogocho.

> In trying to achieve this, we have put some measures down, including partnering with other stakeholders. We are calling it a public/private partnership with the stakeholders… [whom] we are calling 'actors in education' in Korogocho, including the parents, school, and churches since they have started some private schools. We have 28 private schools in Korogocho, and we have two public primary schools—Daniel Komboni and Ngunyumu Primary Schools—[which] have about 4000 children, and the other children are in private schools. Unfortunately, we don't have a public secondary school, but we do have a number of private secondary schools…

The community elders in Viwandani acknowledged that private school owners are education stakeholders and key to the advancement of education in general and girls in particular. For this reason, they invite the stakeholders, including private school owners, to attend the *barazas,* so they can be informed on the importance of keeping children in school and educating them, girls in particular. An elder in Viwandani explained:

> Sometimes, we also invite private school owners. In every *baraza*, we invite one or two school representatives, such as the school teachers, who come and get informed. The village residents also attend. Sometimes I am very stern, and I issue warnings where I declare that if I find a child not being taken to school, they are going to face serious consequences. So they also get informed on the importance of education...

6.2.3 The church community

Parental narratives also pointed to the role of the church community around the schools in ensuring that girls attend school. Parents who were either of the Christian or Islamic faith stressed the role of the church or mosque their daughters attend in shaping their behavior and thereby ensuring that they do not stop attending school. Moreover, by attending church or mosque, the girls will participate in other activities that promote the development of their talents, learning outside the formal classroom setting. A mother of a girl in treatment 1 in Viwandani said:

> Every child has talent; be it singing or preaching, and as they attend church services, they are taught how to put their talents to work. In that manner, they are kept busy singing in church, and so she escapes bad influence in the society. They join youth groups where they are taught and will not be influenced by worldly behaviors. And if they are young, they join Sunday school and are taught.

In the group of Viwandani parents representing treatment 2, perceptions hinged on the effect of the Islamic faith on the girls' character. They believe that once girls internalize good behavior, school attendance and retention will follow. One father said:

> You know, we Muslims encourage each other on how to bring up our girls, and we even correct each other when our children are doing wrong…There are some who do not encourage them, and that is why we are having these problems. If you do not teach a child early, she will not grow up well…. In the mosques, there is *madras*, and the sheikh teaches them about behavior and what the Quran says. In case your child's behavior is bad, the sheikh will tell you, and you will know how to correct your child.

6.3 Challenges to girls' school attendance

From the narratives of their parents, girls experience numerous challenges in attempting to complete the primary cycle of schooling. Among the key challenges identified were inadequate parental monitoring; poverty, summed up by participants as "we believed in our minds that we are poor"; structural deficiencies in the slums; peer pressure and puberty; poor parental role models; and domestic chores.

6.3.1 Inadequate parental monitoring

The conceptualization of parenting practices includes monitoring, which encompasses attention, tracking, and structuring children's' contexts; managing behavior, which includes problem- solving, negotiation, and limit-setting; and social cognitions, which includes instruction and modeling of values, motivations, goals, and norms. The foundation is the quality of the parent/child relationship, which revolves around trust (Dishion & McMahon, 1998; Borawski, Levers-Landis, Lovergreen, & Trapl, 2003). Research links parenting practices to adolescent health risk behavior, such as sexual activity or substance use (DiClemente & Wingood, 2001; Seyfried & Chung 2009; Spera, 2005).

We interpret parental and community gatekeeper perceptions of parental efforts to ensure girls complete the primary cycle of schooling as *monitoring*, which includes the amount of attention they give to their daughters, the tracking mechanisms they use to keep their daughters in check, and their ability to structure contexts for their daughters. Challenges were discussed more explicitly in Korogocho than in Viwandani. Community gatekeepers were most explicit about challenges emanating from the parents, while parents were more explicit about the challenges emanating from the girls, especially puberty and peer pressure, which impair adolescent girls' ability to seek and internalize the advice of both parents and teachers.

The narratives of both community gatekeepers and parents show that girls in Korogocho experience deep-rooted challenges in attempting to complete primary school. The community gatekeepers in Korogocho explained that by the nature of their daily economic activities, parents are away from their homes for extended periods of time. This absence impairs their ability to effectively monitor their children's school attendance and the work covered in school. An elder explained:

> Most parents leave early in the morning to look for food for the children to eat, so they are unable to monitor whether the child went to school and arrived on time or didn't go at the right time… Does the child attend school regularly or not? … There are parents who leave at 5 A.M. in the morning and come back at 8 P.M. or 9 P.M. This parent is unable to check the child's school books, so monitoring is very poor, especially for the girl child, even boys, so it is just in both boys and girls in general.

In some instances, lack of parental monitoring arose from the living arrangements in informal urban settlements. Parents were forced to rent separate houses for their adolescent children, making monitoring what they are doing during the day and, worse, at night impossible. A Korogocho elder summed it up: "For instance, where I live is in a one-room house, and my child, who is in class six or seven—I will rent a house for [him/her] some distance away from me. So they go there, and I cannot know what transpires between where I live and where they are…"

6.3.2 Poverty

Poverty was one challenge that cut across the narratives of parents and community gatekeepers. Overall, poverty inhibited the ability of the parents to fulfill their obligations to their daughters. Girls' needs for food, lighting, uniforms, school fees, and oil for the skin were often unmet. A Korogocho elder said:

> When I am unable to buy…she can't attend school. There is oil for applying; you know, maintaining a girl is very expensive. Even oil that she applies when going to school, the day she has none, she is effected, thinking she cannot go to school as her skin is dry, and for such a day, that girl will not attend school. So these are some of the things that poverty causes. The other problem is food…in their home they slept hungry, having not eaten anything, and in the morning, even a cup of tea wasn't there. That child may try and go to school, but she may be dull in class that day …the teacher who doesn't know or understand the situation, she may keep picking on her or criticize her, and eventually she will be discouraged and not attend school.

The community gatekeepers in Viwandani accepted that poverty inhibits parents' efforts to keep girls in school but felt that some parents do not encourage their daughters to attend school because of their limited understanding of the importance of educating girls. An elder explained:

> Poverty is the main reason why girls are not able to complete school. This is because some of the parents are not able to provide for the children….Some of them just lack understanding. Other parents do not see the importance of educating a girl child.

This insight raises an interesting question: Is poverty to blame when children, particularly girls, do not attend school, or is it used as a mask for the real reason, which lies in the parents not attaching importance to the education of girls?

"***We believed in our minds we are poor***"

Poverty is not manifest only in the lack of basic necessities. As one of the Korogocho elders said, "*We believe… we are poor,"* summing up the acceptance of their plight. The internalization of an identity, *poor*, discourages the villagers from engaging in activities, economic or otherwise, that would change their circumstances and those of their daughters. An elder described the perception of poverty in the slums of Korogocho:

> We have gotten relief and relied on it, and so poverty came into our community and even to our children and we believed…we are poor. So parents begun to sell alcohol and became commercial sex workers, and I have girl children, now …will they emulate me? Most likely they will copy me, and they will not learn. I leave her with old men instructing her to sell alcohol to them, and she will pick after my behavior. All because we believed in our hearts that we are poor, and so what we should try to remove is that belief…So you find with such issues the child doesn't learn…

6.3.3 Poverty and negative behavior change

The parental narratives in Viwandani also alluded to the effect of poverty on school children, particularly girls, in the slums. They perceive poverty as one reason children lose focus on school and instead go out in search of money, stolen or otherwise. A father of a girl in

treatment 2 said, “Poverty is the main cause—that is why the children get spoilt, and they bring money to their parents, and they cannot say no, maybe they have stolen from someone else…”

6.3.4 Poverty and early sexual initiation

The village elders explained the vicious cycle of poverty. It drives girls out of school to become mothers at an early age. When they are out of school, they become idle, and because of idleness and inadequate sources of income, they ultimately engage in sex, which can lead to pregnancy and disease. With this cycle, the chances that these children will follow their mothers’ trajectory are high. A Viwandani elder said:

> The young mothers are so many in this community, and I told you that it is because they drop out of school, and many of them do not become young mothers out of choice. Mostly it is because of poverty, when they are chased out of school, they are idle, and there is no other source of income so they start engaging in sex…

Early sexual initiation may also be explained by such structural deficiencies as the inadequate housing characteristic of the slum setting. The community gatekeepers feel strongly that the conditions to which girls are exposed while living in small, squeezed-together houses make them vulnerable to early sex. The chief of Korogocho says:

> . . . we have parents who share 10×10 square feet, and at night parents are having sex, and the girls are sleeping on the chairs in the same room partitioned by a curtain. So you can image what slightly grown-up girls who understand what their parents are doing go through. So when the government finishes this project, the house will be partitioned permanently so that girls don’t hear what the parents are doing. So the behavior of children having sex at a very tender age is because of the poor housing facility.

6.3.5 Poor parental role models

> ….many of them start being involved with men at an early age. What contributes to this is, as I have said, when the mother comes to live in the slum

> with her children. The house measures ten by ten. The child is aged seventeen, and the mother comes home with her male friend. The children sleep on the floor while the mother is on the bed with her friend. Don't you think this exposes the child to such behavior, yet she is only aged sixteen or seventeen?

This statement by a village elder in Viwandani sums up the significance of a mother's actions in either building or destroying her daughter. His question exposes the link between the structural deficiencies in the slum, the family process, maternal behavior, and the possible outcome for an adolescent girl who is supposed to be attending school.

Research suggests that parents are the perceived role models for their adolescent girls (Metzer et al., 1994; Kotchnick, Shaffer, Forehand, & Miller, 2001). Social learning theory emphasizes the role of modeling in acquiring and maintaining certain behavior (Bandura, 1977). Thus, parental modeling of sexual behavior is important for adolescents. A study among ethnic minority families showed an association between risky maternal behavior and risky adolescent behavior, but it was mediated by maternal attitudes and communication about sex (Kotchnick, Dossey, Miller, & Forehand, 1999). Evidence suggests that when mothers give birth at an early age, their adolescent daughters are likely to give birth (Hardy et al., 1998), creating a trans-generational pattern in age at first birth (Hardy et al., 1998). Compared with infants born to adults, those born to adolescents are at elevated risk for premature birth and low birth weight.

The community gatekeepers in the two sites agreed that the parents of the girls in the study were not good role models. Mothers' behavior was singled out as exposing girls to early sex and multiple sexual partners, sometimes raising the girls' doubts about their paternity, and sparking a tendency to copy it. A Viwandani elder spoke about the negative effect of bad parental role models:

> There are girls you will find in class 4 or 5…The mother has got more than one husband. So there is a couch in the house where the girl is studying, yet there is a man on the other side of the room smoking or sleeping. The girl gets really affected. These are some of the problems that exist. How will such a girl not get involved with a man, as she is used to seeing her mother sleeping on the bed with different men, as she just sleeps on the floor. This girl does

> not even know whom to call Daddy. So, at times, parents also contribute in corrupting the children.

Moreover, parents felt that some of them engage in sex when the children are watching due to the constraints of their living arrangements. Their consensus was that the children will try to emulate what the parents are doing. A father of a girl in the Viwandani control condition said:

> Again, here in Nairobi, the houses we live in are very small. There are men who aren't good, they have girls in the same room and have sex while the children see it. You start having sex earlier, and the children are in the same room and haven't even fallen asleep. The children will also want to try and imitate the parents.

When parents are not good role models, *the corruption of children* is not limited to adverse sexual behavior; it extends to brewing and drinking alcohol. For instance, when parents brew and drink alcohol in the presence of young children, both boys and girls are likely to emulate them. A Korogocho elder summarized:

> Another problem is that children start drinking alcohol at a very young age…in the home where they brew the alcohol, the girl is told to help by selling the alcohol, and the boy is told the same. In that way, they learn how to drink. So they drink alcohol, and yet they haven't reached the legal age allowed for drinking alcohol. And they become addicts….

For some of the parents, the *corruption of children* resulted from single-parent households. They perceived that when the parent goes out in search of money, the girls follow to do likewise. They assumed a single parent's inability to monitor the children effectively while scrambling for resources to sustain the household. The father of a girl in treatment 1 in Korogocho said, "Also, a child needs the parents' love, and when they have single parents, it is hard. This is because when the mothers go to look for money, their girls follow them to go and look for money too."

6.3.6 Peer Pressure

According to Rose and Rudolf (2006), while boys experience peer stress in the form of explicit verbal or physical victimization, girls are exposed to friendship stress, not taking into account conflict with their best friend, as self-reported by girls. Boys generally experience less stress than girls, and this difference intensifies in adulthood. Peer interactions among girls can have intense ramifications if the stress increases to the extent that they are not able to cope with both their social networks and the pressures of school.

Community gatekeepers' narratives underscore this effect. They perceived the effect of peers on school attendance and onset of criminal activities, sex, and prostitution. They believed that girls whose parents are not keen on school attendance may influence other girls in the neighborhood to stop attending school altogether. A Korogocho elder said:

> …And also peer pressure. You find that your child is going to school, but the neighbor's doesn't attend school…the neighbor's child encourages your own not to go to school, telling her to go somewhere else. So peer pressure contributes a lot…

Moreover, peers in the neighborhood can lead other children to criminal activities, such as thuggery. Girls may strike up close relations with boys who are already part of the criminal gangs in the community. With time, they may become the leaders, luring unsuspecting friends to the criminal gangs. A Korogocho elder lamented:

> …Yes, since they associate with the boys…who do the planning. At times they even bring boys from town to come and steal from people here in the community. The girl brings two boys and calls her colleagues claiming that I have customers. [All laugh] The customer comes and is mugged here, and the girl is beaten a few slaps to make it look real, and a deal is sealed….

In Viwandani, the gatekeepers related the effect of peers on early sexual debut, which can lead to prostitution. An elder observed, "…you know that when the girls reach a certain stage, they get a boyfriend and tell their fellow girls who might not already know… the dangers of early sex. They might influence each other…." In addition, those girls who have already engaged in sex lure and teach other girls in the community not only to enter into sexual

relations but to perfect them as an everyday tool of trade. They rent houses in the community and lure girls to come and entertain men. In the views of the community gatekeepers, the girls who are most easily lured are orphans and those from single-parent households. A Viwandani elder explained:

> ….I have gone to areas where they used to live, summoned or chased away the owner of the house, but I hear they left here and went to Kingston. We went to Kingston, but we don't know where they are. They had tried to influence other girls into prostitution…how to groom themselves. They especially tried to influence girls from single-parent families, orphans, and others. So they lure them into houses, telling them to come and keep them company in the house at night before inviting boys over and engaging in these activities. Girls as young as seventeen to eighteen years…

Concurrent with the concern expressed by community gatekeepers, parents also felt that their daughters' friends and peers may jeopardize their daughters' attempt to complete primary school. Peers can influence girls negatively, and the outcome can be early pregnancy, which means the end of school for the girl. The mother of a treatment 2 girl in Korogocho said:

> In my view, girls face a lot of challenges when learning in this Korogocho school. Mine really wanted to learn, but she got friends who disturbed and misled her, teaching her bad habits until she got pregnant. I wish you could help me get her another school so that she may continue with her studies…

The parents in Viwandani had a similar opinion: that peers can jeopardize their daughters' chances of completing school, particularly when the friends and peers are not attending school. The mother of a treatment 1 girl in Viwandani noted:

> Girls in this community are influenced badly, especially by the girls who aren't attending school. If they become friends…she wants to go out with her friends…. Even these girls who go to the streets, it is not that the parents don't talk to them, but it is their peers' influence. So as a parent, what you do is pray for them...

6.3.7 Onset of puberty

The onset of puberty is a very critical developmental stage for girls, a biological, social, and psychological transformation. Mendle and Turkheimer (2007) posit that with physical maturity, adolescents are compelled to navigate varying social norms and expectations, necessitating that they confront and reorganize their identity and self-perception. Girls who experience early maturity find it difficult to adjust, experiencing negative sequelae (Ge, Conger, & Elder, 1996). After the onset of puberty, girls' overall health is determined, in part, by their reproductive health and boys' as well, particularly in the context of escalating HIV/AIDS infection. Here, we look at the changes that girls undergo at the onset of puberty and how they become challenges to school attendance.

Parental narratives show that when some adolescent girls undergo biological changes, their attitude toward their parents changes. They can be outright rude and feel that their parents are in direct conflict with whatever they would rather spend their time on. A father of a treatment 1 girl in Korogocho said:

> The main challenge is when the girls start developing breasts. They start becoming rude to the parents; they see that they are grown because the boys start following them. Also, the issue of health is a challenge because when they get to 13 years they can now become pregnant…

For some parents, the onset of puberty begins at a specific age. Suddenly, they are not able to keep pace with what their daughter does, and eventually the girl succumbs to peer pressure, which may lead to early pregnancy. A Korogocho mother of a girl in treatment 2 put it this way:

> The child goes to school well, but it reaches a certain age where things change…As a parent, you can't be with the girl all the time. Like this mother has said, the girl herself wants to learn, but it reaches a point where they are cheated by boys and are impregnated. As a parent, you lose faith and no longer want to educate that girl…

Parents in Viwandani agreed that at the age of puberty, people's perception of girl's changes; many think she is a grown-up, presumably because of the physical changes. A mother of a

treatment 1 girl in Viwandani said, "…if the girl is of age, others look at her as a grown-up woman, but you as a parent know she is still a child. Men look at her as a woman, so a mother has to check when the girl left school and arrived home after how long."

6.3.8. Domestic chores

When girls try to combine school with household chores and looking after younger siblings, they spend more time than boys in activities that are not related to school (Coclough, Rose, & Tembon, nd), and their school attendance is affected. Community gatekeepers pointed out this challenge, while parents were very silent about it. The chief in Korogocho explained the girls' involvement in domestic work and what he sees as its effect on their education:

> …I had said that girls in Korogocho are vulnerable and what I mean is when they are home from school in the evening, they have to *wash clothes, clean the house, they cook,* do homework, *fetch water*, *fetch firewood* for those who use it, *they go to purchase paraffin, they go to Korogocho open market to buy vegetables* [emphasis added]. So you can imagine a girl leaving school at five and doing all that, including homework, before sleeping….

An elder in Viwandani concurred. He believes that domestic chores do not leave the girls the time they need to attend to their schooling activities. He explained:

> Yes, the girls are normally given a lot of work when they come from school. They have kitchen work, house chores, washing of clothes, looking after the young ones and ensuring they have eaten. …And this is a very big challenge that highly affects the girl's performance in school.

6.4 Parents' perception of their role in their daughters' education

Parents and guardians are part of the girls' cultural context. The way a girl is treated at home by her parents, guardians, and siblings influences the amount of time she puts into her school work. Parents described their involvement with their daughters in four main ways: following up to assure they went to school; ensuring that they completed homework; paying school fees; and visiting teachers to establish how they were performing.

6.4.1 Following up

Parents explained that it was their responsibility to make sure that their daughters attended school, returned home in good time, and completed their school work. Following up with the girls to establish whether they attended school and completed work assigned by the teachers was mainly evident in Korogocho and the treatment enumeration areas. Korogocho mothers of girls in treatment 2 said:

> R10: …one is to follow up on this child, if she reached school on time. Even if I didn't go to school myself, I check if she did the teachers' work or not, and why she didn't do the work, and I get an explanation from her….

> R5: My role is ensuring that she goes to school; I know the time she is expected to reach school. In the evening, I know when school closes, if it is at 5:30 P.M., and she reaches home at 7:30, I must ask where she was. I check her homework and help her where she is stuck…

6.4.2. Ensuring they complete homework

Parents also ensured that their daughters completed all the work they carried home. Some parents also checked the school books, perhaps to ensure that their daughters actually attended school. A mother of a girl in a treatment 2 in Korogocho explained: "I follow up what she does in school, her homework, and school work. If she is sent home, I ensure that she doesn't stay at home…" This sentiment was shared by the female FGD in the control zone in Korogocho.

> R11: Yes, you check that she has done her homework and check her school books...

> R6: When she arrives at home in the evening, the first question I ask her is if she has been given homework, and I remind her to do her homework.

6.4.3 Paying school fees

Most parents believed that one of their key responsibilities was to pay school fees to keep their daughters in school. They realized that if the levies were not paid, the girls could not be kept in school. This narrative was common narrative among treatment and control zones,

particularly in Korogocho. A father of a girl in treatment 1 said, "For me, it is just to make sure that I pay for them school fees because when they are 13 years and above, they do not hear our advice…" This opinion was shared by a mother in the treatment 2 zone: "Again, I try to ensure that her fee is paid in time so that she doesn't lose out on her studies…" A mother in the control zone summed up her feeling of obligation, "It is to try and pay the school fees to the best of your ability."

6.4.5 Interacting with teachers

Parents believe that part of their role is to interact with teachers and establish how their daughters are performing in school. Some felt that interacting with teachers was one way to ensure their daughters actually reach school. A mother in the Korogocho treatment 2 zone said:

> …I communicate with the teacher. I have her phone number and check when my girl reached school….I check what she does and where she goes during the weekend and what she has gone to do… And also be close to the teacher as she will tell me her progress….

The parents in the control zone seemed to concur that communicating with the teacher is important, either to solve any problems that arise or as a routine daily measure to ensure their daughters covered the assigned work. One mother said:

> If there is any issue, I go and talk to the teacher, and I see where the problem is and solve it…Communicate with the teacher daily through the diary, where I sign in the evening after seeing her homework done, and the teacher will also sign…

Some parents interact with the teachers face-to-face to establish their daughters' progress. They feel this practice keeps both the teachers and the girls in check. The teacher will know that the parent is concerned about the daughter's progress, and the girl will know that both the parent and the teacher are keen on what she is doing at school. A father in the Viwandani treatment zone 2 explained:

> As a good parent, you should take time and go to school and, sit with the teacher and talk about your child with her teacher to find out how she behaves while in class and in school. Again, by visiting the school regularly, the girl knows that my mum comes to school often, and if I make a mistake at home it will be reported to the teacher…if the teacher is strict, the child will be disciplined…Discipline begins at home all the way to the school…if the child is disciplined at home she will do the same in school…

6.5 Ways to encourage parental and community support for girls' education

The parents put forward suggestions about how to encourage parental and community support for girls' education. Some were already in the pipeline, and the parents were involved in them. Their outstanding suggestions were harnessing community social capital and holding periodic meetings for parents to discuss the challenges that girls experience.

6.5.1. Harnessing community social capital

Many parents believe that children are raised better with the support of the whole community than by individual parents. Stronger community would enable parents to support each other and particularly single parents who have to fend for their children alone. The parents agreed that if responsibility for children's upbringing were collective, then the absence of a parent would not be an excuse for a daughter to misbehave. In such a case, other parents in the neighborhood would take charge. A father of a girl in treatment 1 in Korogocho explained:

> You know, in the past, the child belonged to the community and not one person. So if I see a child making a mistake, I should be allowed to punish that child and then take them to the parent…

The men in Viwandani who represented the control zone had similar sentiments. They felt that raising a child should be a concerted effort, and parents should be open to each other and not suspicious of those willing to correct children in the neighborhood when they make mistakes. One explained:

> …I want to agree with this man. Today, responsibility for raising your children is yours alone, not like in the past, where you see a girl misbehaving, and you report to her parents; or the boy is misbehaving, and you pinch him.

> If you report the issue to the parents they look at you suspiciously. The community should work together to raise the children.

6.5.2 Periodic meetings of parents to discuss challenges affecting girls

In addition to the community coming together to keep girls focused on school, parents also believe they should hold regular meetings to discuss the challenges affecting their daughters. They feel that such discussions would allow them, particularly mothers, to brainstorm about solutions to the common problems their daughters face. Fathers in the Korogocho treatment 1 zone said:

> …If we can come up with a group, and meet like once in a month, then we discuss the challenges that we are facing…It will help…I think we need to sit as members of this community and discuss our children…

These sentiments were shared by parents representing treatment 2 in Korogocho. They felt that they should also interact more with teachers, who are the custodians of their daughters for a longer period of time in any given school day. A mother explained:

> We should sit…talk to mothers with girl children. We should discuss the issues and see how to solve these issues and look for one answer…We should talk to our teachers since they stay with the children the whole day and know them well…

Finally, parents realized that the solutions would come not only from them. Rather, their daughters had a role to play in their own lives. The parents wanted the girls to attend the proposed periodic meetings so they could discuss the consequences of the girls' actions with them. A mother of a girl in treatment 2 in Korogocho said, "The girls should also be brought together and be taught the effects of their actions…"

Chapter 7. Conclusions and way forward

The broad objective of the *Improving Learning Outcomes and Transition to Secondary School Project* is to help girls who live in the informal urban settlements to achieve academic success. In addition, we want to demonstrate how an educational intervention with parental and community support can address unequal access to secondary education. Specifically, at the end of 3 years, the project has the following objectives for the implementation and the impact evaluation. The intervention seeks to answer two questions: Does after-school learning support lead to improved learning outcomes; and how does increased awareness among parents and community leaders about the challenges to girls' education lead to increased support and improved learning outcomes? The evaluation component of the study seeks to generate evidence on whether and how the proposed model works to improve literacy and numeracy among girls in grades 6, 7, and 8; and to determine any critical difference in learning outcomes between the two models: after-school support and after-school support plus parental awareness. The baseline study established benchmarks for the respective questions so that data can be compared to them in subsequent years of the intervention. The following conclusions are drawn from the findings that emerged from the pilot study, with suggestions for the way forward for the implementation process.

Household and girls' characteristics: The baseline results show that half of the girls were enrolled in government primary schools and most came from households whose head had a primary level of education. Further, 45% of the girls were from households ranked in the poorest 33% of the study sites. Therefore, the results are consistent with earlier findings that showed the poorest households in the informal settlements enroll their children in government schools. Significant differences in the proportion of girls enrolled in government schools by study group were observed in Viwandani: 67% of the control group, 41% of the treatment 1 group, and 61% of treatment 2. This pattern may be explained by the fact that the only 2 government schools in Viwandani are in the treatment 1 and control zones.

Girls' absenteeism was high among the control (15.1%) as compared to 8.1% and 9.5% in treatments 1 and 2, respectively. The main reasons were sickness and lack of school fees. The differential rate between the control and treatment groups could have an impact on the program since it affects the opportunity to learn and school achievement.

Close to two thirds (63%) of the girls were receiving extra tuition, mainly in the schools where they were enrolled. Anecdotal evidence suggests that its structure normally mirrors normal learning during schooling hours and is usually conducted by the subject teachers. The after-school support program is different. It uses trained mentors from the community, supports girls in their homework and areas where they feel weak, and combines girls from different schools at a central venue. Nonetheless, the proportion of girls who reported receiving extra tuition is high and can pose a threat to the impact of the after-school support. While an analytical strategy will be employed to deal with this imbalance, the proportion of girls receiving extra tuition did not differ significantly by study group, which minimizes its effect on the intervention. Note that the impact of the after-school support and life-skills intervention package would be hugely affected if girls choose to attend the extra tuition provided by their schools instead.

Parental support of the girls and schools was mixed. While more than 90% of the girls were reported to bring schoolwork home, 49%, 53%, and 55% of treatment 1, treatment 2, and control girls, respectively, reported having no homework support from anyone in the household. Further, most parents visited their daughters' schools, not to provide monetary, material, or labor support or even to discuss the performance and discipline of the girl, but to meet the school head, attend celebrations, and resolve money issues. The high base rate of nonsupport of homework provides an opportunity to determine the intervention's impact on supporting parents and sensitizing them to support their girls and to become involved in their schooling.

The baseline data show some imbalances between study groups on a number of household and girl characteristics, including, but not limited to, the education level of the household head, the household wealth index, the proportion of girls enrolled in government schools in Viwandani, absenteeism, and homework support. One obvious need for baseline data is to document these imbalances and to see, when assessing the final impact of the intervention, whether they have been controlled.

Pupil behavior and life skills. The baseline data show that the girls have high aspirations for an education beyond primary school, and these aspirations are supported by their self-confidence and positive sense of identity. Most of the girls felt good about themselves. To keep and raise their aspirations, peer and parent/guardian encouragement should be enhanced. However, our data also showed that most girls did not always encourage each other, although the older girls were better about it. What emerged was that talking positively about friends and personal hygiene, but not puberty and safe sex, was always or sometimes practiced by a high proportion of girls.

Parents should monitor how the girls spend their time during weekdays and weekends whether school is in session or not. On monitoring their social behavior, a high proportion of parents/guardians do monitor their girls' whereabouts, use of time, and how they spend their money. This high parental monitoring discourages girls from indulging in vices that expose them to social, health, and physical risks and perhaps explains why only about 10% of girls reported having friends who are involved in drug and substance use. This finding is reinforced by the low levels of negative peer influence, which was observed in less than 5% of the girls. However, the 10% who use drugs and risky substances is a large enough proportion to concern the community.

From self-report, we observed that three in every ten girls had experienced a sex-related activity in the four weeks immediately prior to data collection. Almost all (98%) indicated that they had not practiced sexual intercourse. For the remaining 24 girls (2%) who had sexual intercourse at an average age of 14 years, only five girls were forced by either friends or strangers, one refused to answer as the rest consented. Most of the girls who engaged in sex were 14 years and older, although a few were younger. Since the mean age at first menstruation was slightly below 13 years, the girls who engage in sex risk getting pregnant in addition to contracting STIs.

Menstruation was associated with school attendance; specific reasons for absence were pains and lack of sanitary pads. Teachers and parents, in that order, are the main sources of prior information on menses. We found that the girls are quite aware of the various ways of contracting the HIV/AIDS scourge and preventive measures. Moving forward, the critical

life-skills component of the intervention must be strengthened to provide information to protect the girls from sexual predators and to increase their knowledge about STIs.

Achievement in math and literacy. This baseline study shows a small but statistically insignificant difference in the mathematics performance of pupils at the two sites. However, the difference in literacy performance of pupils at the two sites was notable. Pupils in Korogocho outperformed pupils in Viwandani overall. While differences in literacy performance were very small and insignificant between the two treatment groups and between treatment 2 and the control, performance between treatment 1 and the control was statistically significant at the 5% significance level. Thus, when evaluating the impact of the interventions on learning outcomes across the two sites, we must adjust for the observed baseline differences in pupil literacy performance between them. Similar adjustments will also be necessary for the observed baseline variations in pupil performance in content and cognitive domains. Statistical modeling can be employed to implement the adjustments.

Parental perceptions. Parent and community gatekeeper perceptions yielded a very interesting link between community and the education of girls. One of the outstanding findings is the theme of a community united to educate girls, which infers the need for a certain level of community social capital. Schools cannot do their job without the support of the other stakeholders, key among them community members. Parents and community elders were keen to provide solutions that they thought would enable them to deal with the challenges affecting girls' education. Parents proposed a multipronged approach bringing the three key institutions around the girls to the center of their education: the school and its teachers; the girls' households, and the communities around the schools. Both parents and community stakeholders thought that a communication model—"community-communication-knowledge"—would help. It would encourage a knowledge flow; the whole community would be aware of girls' peers, and, at any given time, a community member would be able to offer guidance to a girl to help her to reap the benefits of education.

Parental narratives also showed that poverty inhibited their ability to fulfill their obligations to their daughters. Girls' needs for food, lighting, uniforms, school fees, and oil for their skin were often unmet, making it difficult for them to attend school and jeopardizing their education. The perception among the people in Korogocho that they are poor seems to have contributed to their ambivalent attitudes toward their daughters' education. The

internalization of this belief discouraged them from engaging in activities, economic or otherwise, that would change their own and their daughters' circumstances. Parental counseling sessions should focus on the negative identity that the slum environment has bestowed, so the people living in Korogocho can develop a positive view of themselves and their daughters' future.

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Appendix 1 : Score equivalence tables: Raw score to Rasch score

Mathematics
(#Items = 44; Maximum Score = 44)

Number Correct	Raw Score (%)	Rasch Score
0	0.0	-63.7
1	2.3	26.2
2	4.5	90.1
3	6.8	133.6
4	9.1	167.9
5	11.4	196.6
6	13.6	219.7
7	15.9	241.0
8	18.2	259.6
9	20.5	276.2
10	22.7	291.1
11	25.0	305.9
12	27.3	318.8
13	29.5	331.8
14	31.8	343.9
15	34.1	355.0
16	36.4	367.0
17	38.6	377.2
18	40.9	388.3
19	43.2	398.5
20	45.5	408.7
21	47.7	418.9
22	**50.0**	**429.1**
23	52.3	439.3
24	54.5	448.5
25	56.8	458.7
26	59.1	468.9
27	61.4	479.1
28	63.6	489.3
29	65.9	500.4
30	68.2	510.6
31	70.5	521.7
32	72.7	533.7
33	75.0	545.8
34	77.3	558.7
35	79.5	571.7
36	81.8	586.5
37	84.1	602.3
38	86.4	618.9
39	88.6	638.4
40	90.9	661.5
41	93.2	688.4
42	95.5	723.6
43	97.7	774.5
44	**100.0**	**848.6**

Literacy
(#Items = 66; Maximum Score = 74)

Number Correct	Raw Score (%)	Rasch Score
0	0.0	-98.9
1	1.4	-25.7
2	2.7	23.9
3	4.1	57.4
4	5.4	82.7
5	6.8	104.4
6	8.1	122.4
7	9.5	138.7
8	10.8	153.2
9	12.2	165.8
10	13.5	178.5
11	14.9	189.3
12	16.2	200.1
13	17.6	210.1
14	18.9	219.1
15	20.3	228.2
16	21.6	237.2
17	23.0	245.3
18	24.3	253.5
19	25.7	260.7
20	27.0	268.8
21	28.4	276.0
22	29.7	283.3
23	31.1	290.5
24	32.4	296.8
25	33.8	304.1
26	35.1	310.4
27	36.5	316.7
28	37.8	323.0
29	39.2	330.3
30	40.5	336.6
31	41.9	342.9
32	43.2	348.3
33	44.6	354.7
34	45.9	361.0
35	47.3	367.3
36	48.6	373.6
37	**50.0**	**379.0**
38	51.4	385.4
39	52.7	391.7
40	54.1	398.0
41	55.4	404.3
42	56.8	409.8
43	58.1	416.1
44	59.5	422.4
45	60.8	428.7
46	62.2	435.1
47	63.5	442.3
48	64.9	448.6
49	66.2	454.9
50	67.6	462.2
51	68.9	468.5
52	70.3	475.7
53	71.6	483.0
54	73.0	490.2
55	74.3	498.3
56	75.7	506.5
57	77.0	514.6

58	78.4	522.7
59	79.7	531.7
60	81.1	540.8
61	82.4	550.7
62	83.8	560.7
63	85.1	571.5
64	86.5	583.3
65	87.8	596.8
66	89.2	610.4
67	90.5	625.7
68	91.9	642.9
69	93.2	662.8
70	94.6	686.3
71	95.9	715.2
72	97.3	752.2
73	98.6	806.4
74	**100.0**	**884.1**