

Making “The Girl Effect” Real:  
Evaluating Strategies to Help Girls  
Complete Primary School and Continue  
onto Secondary School

*A Case Study of the Women’s Institute for Secondary Education and Research (WISER) program in the Nyanza Province of Southwestern Kenya*

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*Abstract: Increasing girls’ education in low-income communities is proven to be one of the most effective ways to alleviate global poverty, yet millions of girls around the world still struggle to complete a basic primary school education. Through evaluation of the Women’s Institute for Secondary Education and Research (WISER), an NGO that works in the rural village of Muhuru Bay in southwestern Kenya, this study sheds light on best strategies and methods to help girls complete primary school and continue onto secondary school. Secondary school scholarships are shown to be especially useful in decreasing the high costs associated with girls’ education, decreasing negative cultural attitudes, and encouraging girls from poor households to pursue academic studies. Yet, despite these gains, many girls still lack full parental support and are often unable to pay primary school fees. Pay-for-performance teaching incentives and free exam preparation lessons are also notable successes of the WISER program. The main conclusion of the study, however, is that any girls’ education initiative should be holistic in its approach and should take into account all the broader challenges facing girls. These include issues such as menstruation, sexual violence, hunger, and classroom discrimination. A number of recommendations are provided at the end of the study for how the WISER program could expound upon its success, with the hope that these insights will also be valuable to local leaders, development practitioners, and policymakers interested in using education as a tool to uplift girls in communities similar to Muhuru Bay.*

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## **I: RESEARCH BACKGROUND**

### **Introduction**

“To educate a girl is to educate a nation” (Personal Interview, July 2011). These words, from a 13-year-old boy in rural Kenya, capture the significance and potential of educating girls in low and middle-income countries. The notion that the education of girls can uplift entire communities has become one of the most promising solutions to alleviating global poverty. Development literature consistently shows that making improvements in girls’ education benefits society as a whole. Girls with more advanced education are able to earn higher wages, which then increases economic growth and improves farming productivity (Herz & Sperling, 2004, 3). Improved education of girls has also been shown to decrease family size, reduce infant mortality, decrease HIV/AIDS infection rates, and increase women’s participation in larger civil society (Herz & Sperling, 2004, 3-6). Numerous internationally recognized organizations support these claims including the World Bank, the World Health Organization, and the United Nations Children's Fund (UNICEF). The Nike Foundation has termed this phenomenon “The Girl Effect,” alluding to the ripple effects that improvements in girls’ education has for the larger society (The Girl Effect, 2011).

Yet, despite these known benefits, over 60 million girls worldwide are still not in school (Lewis & Lockheed, 2006). Of the girls who are enrolled in school, only a small portion complete primary school, and an even smaller percentage enroll in secondary school. This paper aims to deepen understanding on how local leaders and policymakers in low-income countries can assist girls in poor and rural areas in competing primary school and enrolling in secondary school, in light of the documented benefits of doing so.

The primary purpose of this research paper is to evaluate the effectiveness of the Women’s Institute for Secondary Education and Research (WISER), an NGO that has been tackling the complexities of improving girls’ education in the Kenyan village of Muhuru Bay since 2007. Through in-depth analysis of the WISER intervention, it becomes evident that providing girls with full tuition scholarships to secondary schools and with additional, free exam preparation courses have been effective ways to improve education outcomes of girls in this community. Yet, the benefits of scholarships and additional learning time are still limited because these strategies do not address many of the hardships that girls face in their broader environment. These challenges include menstruation, sexual harassment, hunger, poverty, and lack of parental support. As a result, the study urges local leaders and development practitioners to take a holistic approach to addressing barriers to girls’ education, for the benefit of both the girls themselves and the communities they live in.

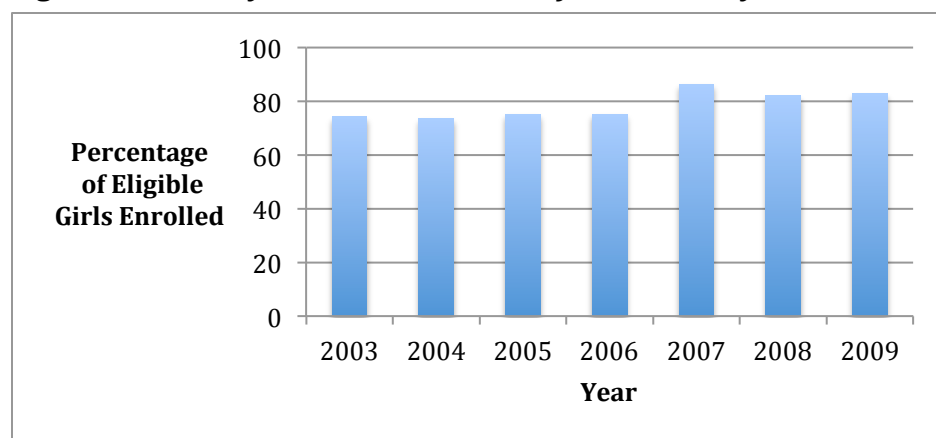
### **Girls’ Education in Kenya, the Nyanza Province, and Muhuru Bay**

Although disparities in girls’ education exist worldwide, the WISER program operates in a region of alarming inequality. Globally, 78% of the 60 million out-of-school girls are from South Asia and Africa (Lewis & Lockheed, 2006). Within East Africa, Kenya is often referred to as an economic powerhouse because it has the highest per capita income and the largest economy by gross domestic product (GDP) in the region (The Heritage Foundation, 2013). Yet, despite its relative economic success, 1 million children in Kenya

remain out of school, the ninth highest out of any country in the world (Education for All Global Monitoring Report, 2012). Out-of-school children are defined as the number of primary-school-age children not enrolled in any type of formal schooling. In 2009, 486,219 Kenyan primary school girls were categorized as out of school (Trading Economics, 2010).

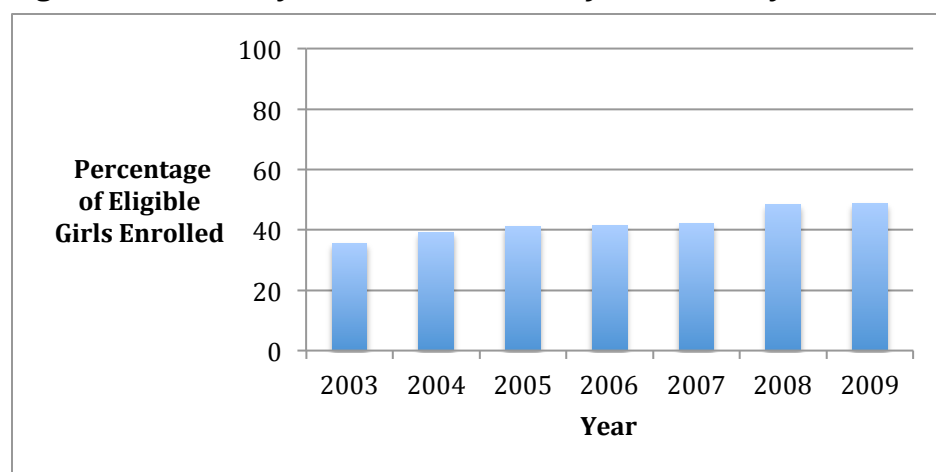
Although there is an upward trend of primary school enrollment in Kenya, secondary school enrollment remains low [Refer to Figures 1 & 2]. Historically, there were even more children out of primary school until 2003, when Former President Mwai Kibaki declared that the government would provide Free Primary Education (FPE). As a result, enrollment increased by over 1 million pupils, but lack of space in schools and insufficient government resources were unable to accommodate the increased demand (Lacey, 2003). Since 2003, the enrollment of girls at the primary school level has increased, but is still not close to 100% yet. A 2009 World Bank Report shows that 83.25% of girls are enrolled in primary school, but only 48.45% of eligible girls are enrolled in secondary schools (Trading Economics, 2010). This is concerning, as only half of primary school girls continue onto the next level of education.

**Figure 1: Primary School Enrollment of Girls in Kenya, 2003-2009**



Source: 2009 World Bank Indicators

**Figure 2: Secondary School Enrollment of Girls in Kenya, 2003-2009**



Source: 2009 World Bank Indicators

National education statistics portray high gender equality in Kenyan education, but these figures do not account for differences within geographic regions. The national enrollment percentages of boys and girls at both the primary and secondary education levels are almost identical, with a 95.36% ratio of girls to boys enrolled (Trading Economics, 2010). These numbers are misleading, however, due to gross inequality between regions of Kenya. Large gender gaps emerge in areas such as the Nyanza Province, where the WISER program works. Nationally, 16% of females in Kenya have a secondary school education, but in the Nairobi region the figure is as high as 43%, and in the Nyanza region as low as 12.5% (Shabaya & Konadu-Agyemang, 2004).

The most marginalized children tend to be poor girls who live in rural areas. Lewis & Lockheed emphasized this point when they explained, "While most of the population shows a convergence in school enrollment, completion, and achievement, children from ethnically and socially separated groups, children in rural areas, and children from poor families have not benefitted equally from the changes sweeping the globe" (Lewis & Lockheed, 2006, 75). The indirect costs of primary and secondary school education are out of reach for many parents in rural areas, making it difficult for them to send their children to school (Education for All Global Monitoring Report, 2012). Poor families also typically have to wait longer to send their children to school; 99% of children from rich households begin formal schooling before the age of 14, but only 66% of children from poor households are able to (Mulongo, 2012).

The United Nations classifies Nyanza as one of the poorest parts of Kenya, and girls in this region face grave disparities. Due to political isolation, Nyanza has not participated in the economic development other regions have experienced, and 63% of its population still lives on less than \$1 per day (Center for Strategic and International Studies, 2009). Nyanza has the highest HIV prevalence rate in Kenya at 14%, as well as some of the highest rates of malaria infection and infant mortality (WISER Website, 2013). Furthermore, in the Lake Victoria region, it is common for women and girls to have sex with fishermen in order to obtain food, fish to sell, or money to buy medicine and school fees. This gender-specific spiral of educational deprivation and disease burden has led to the strong gender disparity in HIV infection rates in Kenya. The ripple effects of having sick, poor, uneducated women can be enormous. There is shown to be a strong relationship between HIV prevalence and girls' education, as girls are usually the first to be removed from school when a family member becomes ill with AIDS or dies (Barnett & Whiteside, 2002). Conversely, uneducated girls are more likely to contract HIV; girls with less than seven years of schooling are more likely to be married by age 18, and early marriage is directly linked to an increased risk of HIV infection (The Millennium Project, 2004).

This study was conducted in Muhuru Bay, a division of the Nyanza Province, which has some of the lowest rates of girls' education in the country. Of the 25,000 inhabitants in Muhuru Bay, most belong to the Luo or Suba tribe, both of which have strict gender roles. Women carry domestic responsibilities and often contribute to household income, but men control all property and resources (Francis, 1995). Polygyny and wife inheritance are traditions of the Luo tribe that may also limit women's sexual power and further increase HIV rates (Luginaah, Elkins, Maticka-Tyndale, Landry, & Mathui, 2005). Few students in Muhuru Bay are able to pursue education beyond the primary level, as most do not have qualifying scores or the funds necessary for secondary school (Puffer, Watt, Sikkema, Ogwang-Odhiambo & Broverman, 2011). Prior to the WISER intervention, only 5% of girls

in Muhuru Bay enrolled in secondary school (WISER Website, 2013). Girls often do not complete primary school due to lack of support, forced marriages, and early pregnancies. Those who do pursue further education are negatively impacted by low community expectations, and tend to perform at academic levels vastly inferior to their male peers (WISER Website, 2013).

### **The WISER Intervention**

Within this context, the Women's Institute for Secondary Education and Research (WISER) was co-founded by Rose Odihambo, a native of Muhuru Bay, and members of Duke University in order to improve the economic, health, and educational outcomes for girls in Muhuru Bay (WISER Website, 2013). While the centerpiece of WISER is its 7-acre boarding school for secondary school-level girls, the institute has several complementary initiatives to serve the broader community. In 2009, WISER officials and head teachers of local primary schools created a primary school intervention to address a problem that was anticipated by WISER officials—Muhuru Bay area would not have enough qualified female candidates to enter the WISER secondary school when it opened in 2010. Most girls in Muhuru Bay did not achieve the 250-point score on the Kenya Certificate of Primary Education (KCPE) exam required to pursue secondary school. In order to have enough girls in the community qualify to be admitted to WISER, it was necessary to increase the academic rigor of the community's primary schools.

WISER supports and encourages primary school girls in Muhuru Bay to continue onto secondary school by providing the following:

- 30 full scholarships to attend the WISER secondary school given to top-performing primary school girls
- A state-of-the-art all-girls boarding secondary school located in Muhuru Bay
- Limited provision of sanitary pads to 8<sup>th</sup> grade girls in the community
- Remedial revision courses in preparation for the KCPE exam totaling 7 additional hours each week for all 8<sup>th</sup> grade students
- An incentivized pay-for-performance program for 8<sup>th</sup> grade teachers who teach the KCPE preparation lessons, with a baseline salary of \$1/hour
- Teacher professional development seminars based on primary school teachers' self-identified professional needs
- Streamlined benchmark assessments based on mock KCPE exams given in each of the three terms of the school year
- Events including awards ceremonies and community focus groups to bring together all stakeholders (principals, teachers, students, and parents) in addressing the issue and importance of girls' education

### **Research Questions**

Since the WISER primary school intervention in 2009, no research has been done to assess the effectiveness of the program and its approach. This study aims to analyze the extent to which WISER's strategies are helping girls to perform better in primary school, and raises the following two questions:

1. To what extent, if any, has there been an improvement in primary school education outcomes for girls in Muhuru Bay?

- a. Is there a significant change in primary school completion rates, KCPE exam scores, and passing rates of girls in the WISER intervention as compared to girls in a control group?
2. In which ways has the WISER program reduced barriers to primary school education for girls in Muhuru Bay? What obstacles do primary school girls in this community continue to face despite the existence of the intervention?

### **Barriers for Primary School Girls, Research Hypotheses**

In order to determine the strengths and weaknesses of the WISER intervention, we must first identify the major barriers that primary school girls in Muhuru Bay are likely to face given existing literature on girls' education. Although the individual barriers are numerous, this paper focuses on three broad categories of challenges: (A) high costs of educating girls, (B) low quality of teaching, and (C) broader issues of adolescence, sexual violence, pregnancy, and classroom discrimination. Based on this information, we hypothesize the extent to which the WISER intervention may or may not be able to address these barriers within Muhuru Bay.

#### **(A) High Actual and Perceived Costs of Educating Girls**

Although a primary school education is technically free for Kenyan children, the direct and indirect costs still remain too high for poor families. Authors of a study investigating premarital sex and pregnancy in Kenyan primary schools were surprised to find that pregnancy was not a central cause for dropout; the biggest issue was girls' inability to pay school fees (Mensch, Clark, Lloyd & Erulkar, 2001). Although government primary schools became "free" in 2003, almost all continue to charge fees for assistant teachers, school facilities, electricity, etc. Furthermore, parents still bear the cost of paying for learning materials, transportation, and uniforms (King & Hill, 1993, 26). As a result, many poor families cannot pay for education, even at the primary school level. Despite FPE only 60% of children from low-income households reach Standard 8, as compared to over 75% of children from middle class or rich households (Mulongo, 2012).

The opportunity cost of sending a girl to school is also higher for poor families. The need for child labor is the main reason parents do not send children to school (Lewis & Lockheed, 2006). When families have limited resources and are forced to choose between male and female children, parents are likely to invest less in their daughters. In households with many sons, girls are often not sent to school (Buchmann, 2000). When mothers need to work outside the home, which is common in areas of high poverty and high HIV prevalence, girls usually stay home to complete household tasks (Shabaya & Konadu-Agyemang, 2004). In many African countries, daughters follow traditional gender norms and do more chores at home than sons. This includes tasks such as fetching water, gathering wood, and caring for siblings, all of which require a significant amount of time. As such, the cost of schooling girls is even higher, because families must absorb these responsibilities or pay for additional labor if they send their daughters to school.

Furthermore, parents in poor, rural communities such as Muhuru Bay are more likely to hold negative attitudes towards the education of girls. Adults may be uneducated themselves, which decreases their demand for education (Lewis & Lockheed, 2006). Some parents in Guinea believed that daughters were inherently not as intelligent as sons; thus, sending them to school was seen as a waste of time and money (Colclough, Rose & Tembon,



2000). Instead, parents give priority to girls' future roles as mothers and wives, which hinders their success in formal education (Shabaya & Konadu-Agyemang, 2004). Parents in Guinea and Ethiopia expressed concern that education could make their daughters less "fit to marry" if they became too old to find a husband after school or were no longer desirable to men. They felt that daughters should instead stay home and learn to perform housework, clean the home, and do other tasks that would be expected of them after marriage (Colclough et al., 2000). Child marriage is common in Kenya; nationally 25% of girls are married before the age of 18, and the percentage is even higher in Nyanza (Ochieng & Erulkar, 2008).

Literature suggests that scholarship programs are generally effective in addressing the high actual and perceived costs of girls' education. Herz and Sperling (2004) find stipends and scholarships to be one of the most effective ways to cover the direct and indirect costs of education and to compensate for the opportunity cost of sending a girl to school. A 2008 World Bank study evaluating the Japan Fund for Poverty Reduction (JFPR), a scholarship program for primary school girls in Cambodia, found a 30% increase in enrollment and attendance for female scholarship recipients (Filmer & Schady, 2008). The results also showed that the JFPR program had the largest impact for the most disadvantaged girls. Another study analyzing the effects of a merit scholarship program for adolescent girls in a rural part of Kenya's Western Province established that girls on scholarship made significantly higher gains in academic examination scores (Kremer, Miguel, Thornton & Ozier, 2004). Kremer et al. also found that the program had positive externalities for boys' testing outcomes. In light of these successes, scholarship programs have become an increasingly popular strategy to help girls overcome education barriers, but more evaluative research is still needed in this area.

*Hypothesis 1: WISER secondary school scholarships will help reduce the high costs associated with educating girls, encourage girls to stay in primary school, and make parents more supportive of girls' education in Muhuru Bay.*

## **(B) Low Motivation and Poor Performance from Teachers**

Kenyan teachers have few incentives to perform well, and quality of teaching tends to be worst in rural and poverty-stricken areas such as Muhuru Bay. When attendance was observed, teachers in Kenya were absent from school about 20% of the time, and absent from a particular lesson 45% of the time (Glewwe, Ilias & Kremer, 2010). Thus, although students are in school for much longer, they only have contact with teachers for approximately five hours per day (Abagi & Odipo, 1997). Teachers are largely absent because they have little motivation to excel in their profession (Glewwe et al., 2010). The Kenyan salary system for teachers is heavily based on education and experience, with little opportunity to be promoted or compensated based on performance (Glewwe et al., 2010). Strong teacher unions make it near impossible for the government to fire teachers who are not doing well. Instead, bad teachers are typically transferred to less desirable postings (Glewwe et al., 2010), which is problematic for remote villages such as Muhuru Bay.

Prior research on teacher incentive programs in the developing world is limited, but a few notable studies exist. Muralidharan and Sundararaman (2011) conducted a statewide assessment of teacher bonus programs in Andhra Pradesh, India and found that, after two years, schools with bonus incentives for teachers had higher quality of teaching and higher

test scores. Glewwe et al. (2010) analyzed a teacher incentive program in Kenya, structured similarly to WISER's, and showed that students in the program scored higher on exams linked to teacher incentives. A review of school-effectiveness literature conducted by Lloyd et al. concluded that three main elements contribute to positive outcomes on standardized tests for children in Kenya: (1) the amount of time spent in the classroom (2) material inputs such as books, desks, and libraries and (3) effective teachers (Lloyd et al., 2000). The WISER intervention attempts to increase time spent in the classroom and effectiveness of teachers by instituting pay-for-performance KCPE preparation lessons for all Standard 8 students in Muhuru Bay.

*Hypothesis 2: The WISER-funded lessons will be of higher quality than normal lessons in primary school, due to the pay-for-performance incentives given to teachers. Girls will also report having more time to study as a result of the lessons.*

### **(C) Broader Issues of Adolescence, Gender Violence, Pregnancy, and Classroom Discrimination**

Primary school girls face significant stressors in their broader environment including menstruation, gender violence, pregnancy, and classroom discrimination. Girls from poor households often lack proper attire and sanitary pads for menstruation. According to Saidia Dada Network Kenya, a non-governmental organization, 3 million girls in Kenya cannot access sanitary pads (Njenga, 2012). Many studies have documented the lack of access to sanitary pads as a major cause of school dropout for adolescent girls. The Forum for African Women Educationalists (FAWE) found that girls might not come to school during menstruation, especially if there is a lack of clean, usable private toilets (Herz & Sperling, 2004). A number of programs exist in poor communities around the world to provide girls with free sanitary pads in order to encourage higher school attendance. In 2011, the Kenyan finance minister allocated \$4 million from the national budget to provide sanitary pads for schoolgirls (Njenga, 2012), but these resources did not reach Muhuru Bay. WISER sporadically provides primary school girls with sanitary pads based on availability, but no systematic mechanism is currently in place.

There is significant evidence of high levels of sexual harassment and abuse of primary school girls, both within schools and outside them. When examining teacher abuse in Zimbabwean schools, Shumba (2001) found it was not rare for abuse of pupils to be perpetrated by teachers themselves. The study found most perpetrators were males who engaged in activities such as sexual intercourse, fondling breasts and buttocks, kissing, hugging, rape and attempted rape, and showing pupils pornographic materials (Shumba, 2001). Investigations in Kenya revealed that girls are unable to report these unwanted incidences due to fear of the consequences (Mathangani, 2001). These findings question the safety of girls in schools. Outside of school, young girls in communities like Muhuru Bay often have sexual relations with "sugar daddies." This term refers to adult males who have sexual relationships with students in exchange for money, gifts, and other tempting offers. These adults prey on the vulnerability of young schoolgirls, and can quickly end their education by impregnating them (Shabaya & Konadu-Agyemang, 2004). All things being equal, females from poor households are most likely to become victim to sugar daddies, since they desperately need money (Leach & Machakanja, 2001).

Sexual violence is also linked to the high incidence of pregnancy among primary school girls in Kenya. Recent news articles show that teenage pregnancy in Kenya is on the rise, with nearly 30% of teenagers having a child before the age of 19 (Kenya Forum, 2012). In addition to widespread poverty, lack of access to education opportunities, sex education, and information regarding contraceptives predispose Kenyan teenagers to early pregnancy (Were, 2007). It is important to give girls practical information about sex and family planning, since they may not be able to access this critical information elsewhere (Lloyd et al., 2000). As explained by Lloyd et al. in their study of Kenyan female dropouts, "Girls pass through puberty and become adolescents during primary school years. They become particularly vulnerable at that point within the school system, because of widely held negative attitudes about adolescent girls. A supportive learning environment for girls could make a critical difference in subsequent school retention" (Lloyd et al., 2000, 114).

Within classrooms, girls also continue to be discriminated against. Studies show that Kenyan teachers have lower expectations for adolescent girls and may perpetuate gender stereotypes rather than encouraging girls to pursue education (Lloyd et al., 2000, 182). Interviews with male and female students revealed that girls spend more time than boys doing non-academic tasks during the school day such as cleaning classrooms and bathrooms, fetching water for the school, and performing tasks for teachers (Colclough et al., 2000). Rural schools also tend to have more male teachers, making it difficult for girls to receive the proper care and attention they need. In a study of rural schools in Ethiopia and Guinea, researchers found that some schools had no female teachers, while others were largely imbalanced in favor of males (Colclough et al., 2000). This imbalance was partially attributed to working conditions, as female teachers preferred to be posted in urban schools more readily accessible by public transport, located near markets, and easier to relocate to (Colclough et al., 2000). Lloyd et al. also found that girls were more likely to drop out of schools where teachers give more support to boys and lessen the importance of harder subjects like math for girls. The WISER intervention, however, does not specifically target the issue of gender discrimination in classrooms.

*Hypothesis 3: Girls will continue to struggle with menstruation, sexual violence, pregnancy, and classroom discrimination since WISER does little to address these issues directly except by distributing a limited supply of sanitary pads to primary school girls.*

## **II: DATA ANALYSIS**

### **Methodology**

A mixed methods study of quantitative and qualitative measures was used to analyze the effectiveness of the WISER program in helping girls complete their primary school education. The main research instruments were 100 in-depth interviews with primary school girls and teachers, as well as a total of 3,887 student examination scores from the Kenya Certificate of Primary Education (KCPE) examination for years 2006-2011.

Exam scores from the 14 Muhuru Bay primary schools in which the WISER intervention takes place were collected and recorded. Between 2006-2011, the number of students in the intervention schools taking the KCPE exam in any given year ranged from 325 to 396. However, in two instances schools had lost their examination scores for a

particular year, and data could not be recovered because it was not electronically stored. Five of the intervention schools opened after 2006, but their student population comprised almost entirely of students previously attending other intervention schools within Muhuru Bay. Analysis for this particular study focuses only on a sub-set of the data, exam scores of girls. There are between 119 and 177 girls attempting the KCPE exam in any given year from the intervention schools.

As the WISER program already includes all the primary schools in the Muhuru Bay division, neither random selection nor assignment of schools to the treatment was possible in order to do a randomized control trial. Instead, ten control schools were selected from two neighboring school divisions—Karungu and Nyatike. Control schools were selected using convenience sampling, based on their proximity to Muhuru Bay and their willingness to participate in the study. Most schools were unwilling or unable to share their data when approached, and therefore only ten schools are included in the control group. The control group has a smaller sample size; with between 241 and 361 students attempting the KCPE exam in any given year. Again, some schools were missing exam scores for particular years—two schools did not have data for 2006, and another did not have data for 2007. There were between 31 and 118 girls attempting the KCPE exam during these years. It is unusual to only have 31 girls taking the exam, but this occurred in 2006 when two schools in the control were missing their data.

In general, comparing test scores from two similar school divisions is a good means of measuring the effectiveness of the program. This study's analysis creates line graphs that compare results over three years of the WISER intervention (2009, 2010, and 2011), as well as the three preceding years before the intervention existed (2006, 2007, and 2008). However, since the control schools selected from the school division were not matched for demographics and performance, it was difficult to ensure that they were equivalent at baseline. The control group happened to contain higher performing schools and was more successful at baseline. For example, in 2006, the baseline mean KCPE for control schools was 264, and only 220 for Muhuru. The passing rate for girls was 44.3% in control schools, and only 17.9% in Muhuru Bay.

To broaden understanding of the WISER program's effectiveness, this study includes information gathered from 100 in-depth interviews. During the summer of 2011, the principal researcher conducted over 200 individual interviews with key stakeholders in Muhuru Bay, including 8<sup>th</sup> grade girls, boys, and teachers at the 14 intervention schools. However, due to limitations of time and research scope, not all interviews are analyzed in this study. Seventy-five girl interviews and 25 teacher interviews were selected at random and transcribed for the purposes of this study. The number of interviews from each intervention school varies greatly due to a wide range of school sizes and differences in the availability of students during the research process. Within each school, the head teacher selected students at random to participate in the study.

All interviews were unstructured in order to allow for richer conversations. A basic interview guide was used, but was not followed strictly. Not all questions were asked of all interviewees, and questions were often asked out of order depending on the flow of conversation. Questions were intended to be open-ended and were formulated to get a general sense of the participant's opinions of the WISER intervention. Students were asked about the effectiveness of the WISER intervention, barriers to primary school education, and general questions about their schooling [Refer to Appendix A]. Teachers were asked

about their opinions of the WISER program, suggestions for improvement, and perspectives on girl child education in Muhuru Bay [Refer to Appendix B]. All interviews were conducted in English, without the use of a translator. This was done intentionally, with the hope that participants would feel free to speak with full anonymity. Members of the research team transcribed interviews manually. The length of interviews varied greatly depending on the interviewee's responsiveness, level of English understanding, and comfort with the research process. Some interviews were only five minutes long, while others were one to two hours in length. The average interview time was twenty minutes.

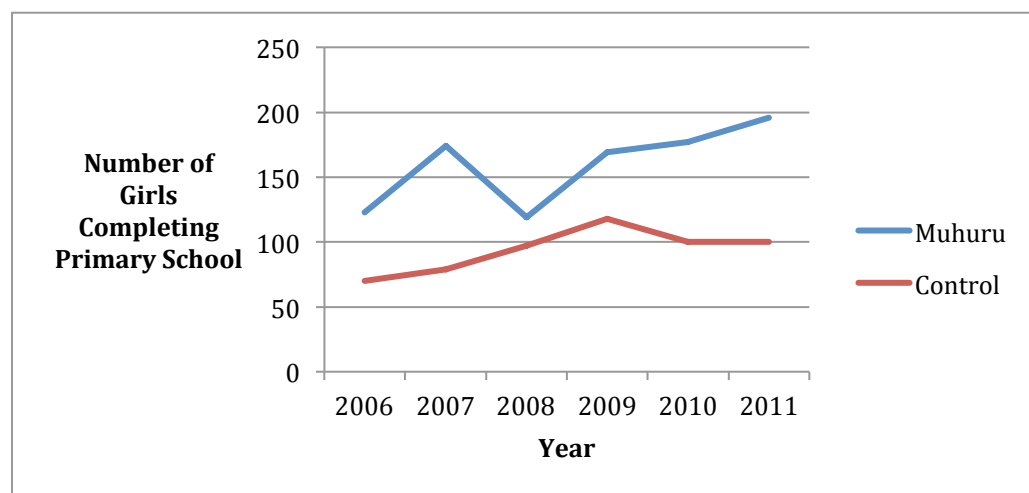
After 100 interviews were selected and transcribed for the study, the principal researcher read through each transcript twice and identified a preliminary set of key themes and topics. In order to improve consistency and objectivity of the study, interview coding was discussed and approved by a second reader. A coding scheme for girls' interviews was developed, and the 75 transcripts were coded to reflect these themes. A similar, but modified, set of codes was developed for the 25 teacher transcripts.

### Primary School Outcomes for Muhuru Bay

1. To what extent, if any, has there been improvements in primary school education outcomes for girls in Muhuru Bay?

The first research question seeks to analyze educational outcomes in Muhuru Bay to see if there have been improvements since the implementation of the WISER program. The following data suggests that the WISER intervention may have contributed to educational improvements in Muhuru Bay, but it is impossible to establish any causality between the intervention and the observed changes.

**Figure 3: Number of Girls Completing Primary School, Muhuru vs. Control**



In 2008, the year prior to the intervention, 119 girls completed primary school in Muhuru Bay. Figure 3 shows that in 2011, after three years of the intervention, there was an increase to 192 girls completing primary school. This 62% increase suggests that more girls are enrolling in and completing primary school in the intervention group. No similar

increase is observed in the control schools. However, these changes could also be attributed to fluctuations in population size.

**Figure 4: Number of Girls Passing the KCPE, Muhuru vs. Control**

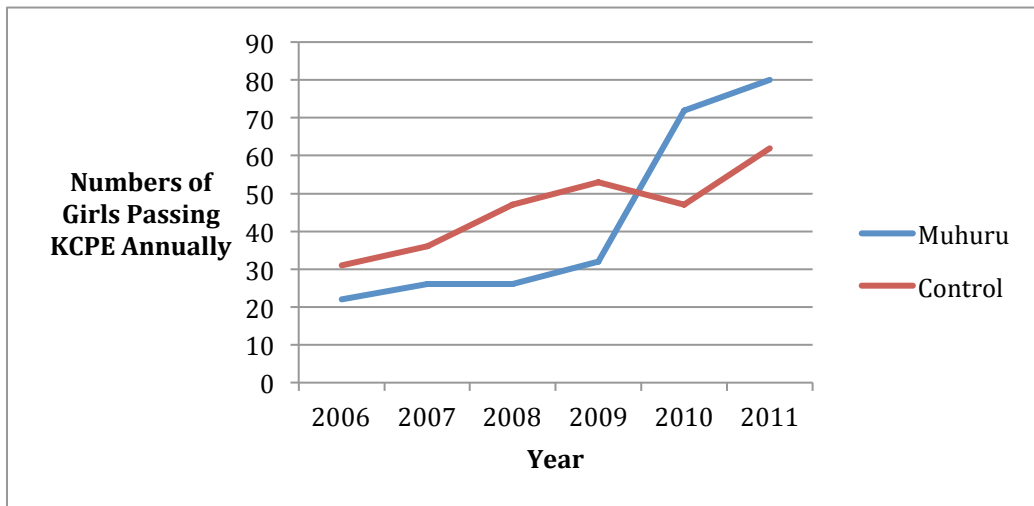
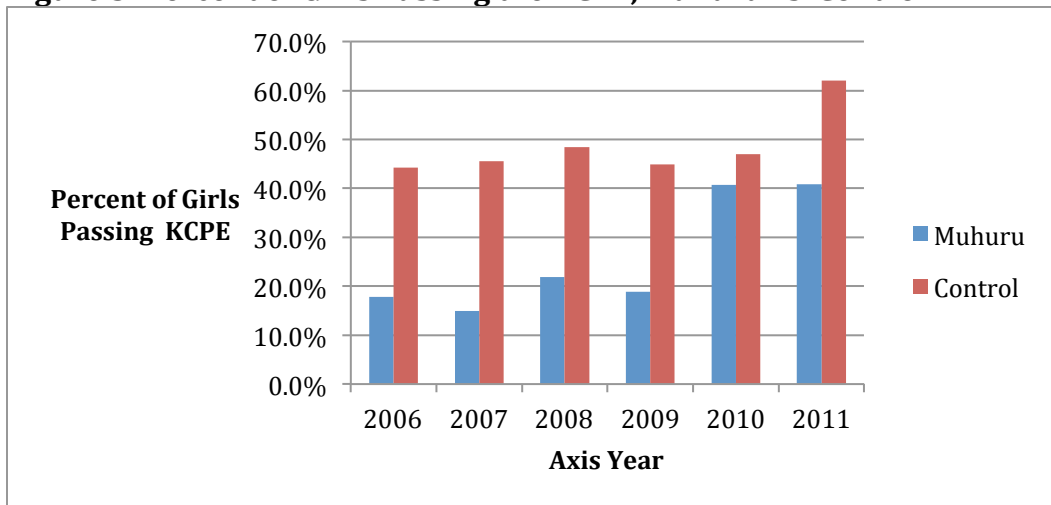


Figure 4 shows that from 2006 to 2008, fewer than 30 girls in Muhuru Bay passed the KCPE. Between 2009, the start of WISER intervention, and 2011, the number of girls passing rose from 32 to 80, or an increase of 150%. In comparison, the rate of girls passing in control schools only rose by 20% during the same period.

**Figure 5: Percent of Girls Passing the KCPE, Muhuru vs. Control**

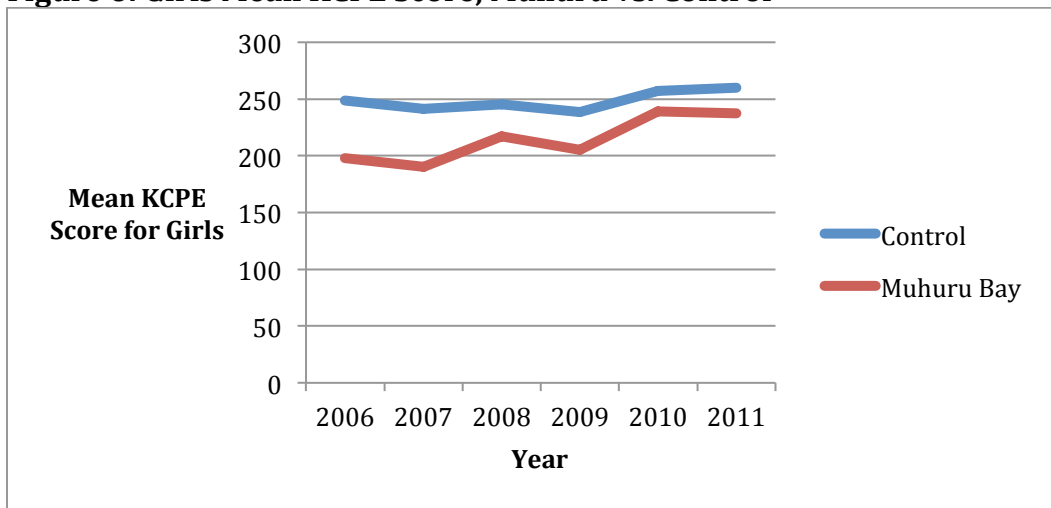


Since more girls in Muhuru Bay were completing primary school, it is not surprising that more girls also passed the KCPE exam. However, if we analyze the percentage of girls passing in Figure 5 we find that the percentage of girls passing doubled after the implementation of WISER remedial lessons from 18% to 41%. The passing rate for boys in Muhuru is 44%, thus girls have now become as competitive as boys in Muhuru Bay. During

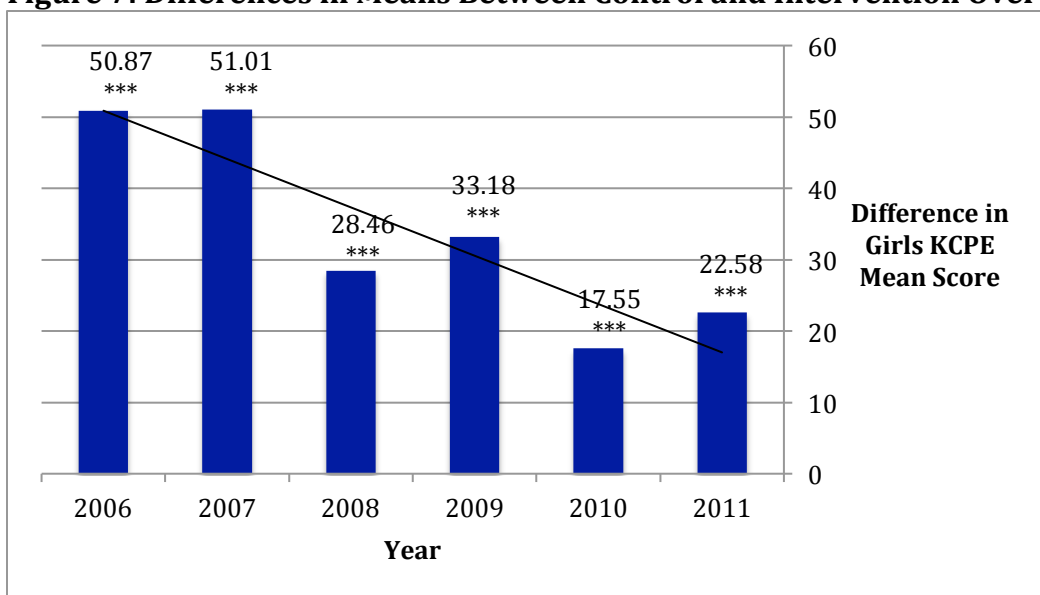
this period, there was no change in the percent of girls passing the KCPE in control schools, although they had higher passing rates to begin with.

In 2011, however, there was no growth in Muhuru schools. It is possible that this could be explained by the fact that more and more girls are attempting the KCPE exam, even if they are not ready. For example, in 2010, the second year after the intervention began, 174 girls attempted the KCPE, and 71 passed. In 2011, the third year after intervention, 196 girls attempted the KCPE, and a higher number passed. Thus, the percentage may not have increased in 2011 because it is possible that WISER 'flooded the system' and encouraged girls to take the KCPE even if they are not prepared or competitive to do so. There is also an unusually high growth in the percentage of girls passing the KCPE in 2011 in the control schools, the same year that WISER experienced no growth. It is hard to know why the control schools may have experienced this growth, as we have no additional information on the control schools.

**Figure 6: Girls Mean KCPE Score, Muhuru vs. Control**



**Figure 7: Differences in Means Between Control and Intervention Over Time**



There is also an increase in the mean KCPE scores for girls in the intervention group in Figure 6. The lowest passing exam score for the KCPE is 250 (out of 500) points. While the mean score for girls in Muhuru Bay is still failing, it has risen from 198 to 237. However, since the standard deviation of scores is relatively high in both samples, a t-test was done to determine whether these changes were significant. Figure 7 shows that differences were statistically significant in all years, and that the gap in achievement between intervention and control schools has been closing at a significant rate. In year 2006, the average girls KCPE score in the control group was 50.87 points higher than the average girls KCPE score in Muhuru Bay. The difference in 2011 was only 22.58 points, which was over a 50% reduction in achievement gap.

Again, the above data only provides speculative evidence for the impact of the WISER intervention in Muhuru Bay, as causality cannot be established through this data.

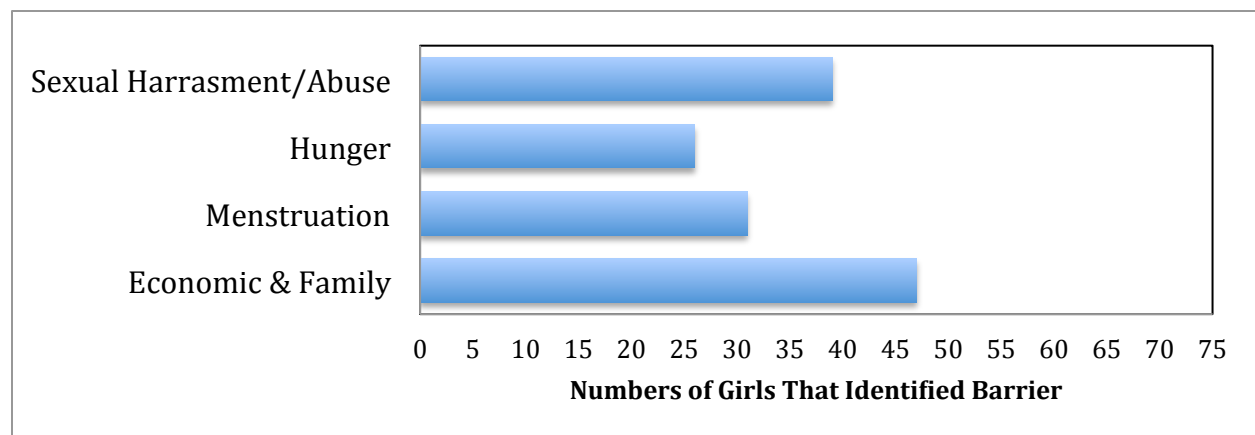
### Barriers for Primary School Girls, Research Findings

2. In which ways has the WISER program reduced barriers to primary school education for girls in Muhuru Bay? What obstacles do primary school girls in this community continue to face despite the existence of the intervention?

The second research question aims to understand how the WISER intervention overcomes major barriers to girls' education and in what ways it is still lacking. Although quantitative data suggests that primary school outcomes are improving, the in-depth interviews reveal more insightful information regarding barriers in education.

All girls interviewed were asked to identify the biggest challenges they face in completing their primary school education. The participants were not prompted to give any specific answers, but common answers emerged between interviews. The four most common issues self-identified by the girls were: (1) economic resources and family, (2) menstruation, (3) hunger and hunger-induced fatigue, and (4) sexual harassment and pregnancy—illustrated in Figure 8.

**Figure 8: Girls' Self-Identified Barriers to Primary School Completion**





## **(A) High Actual and Perceived Costs of Girls Education**

*Finding 1: The provision of 30 full scholarships to the WISER secondary school has decreased the cost of educating girls in the region and begun to change negative attitudes towards girls' education*

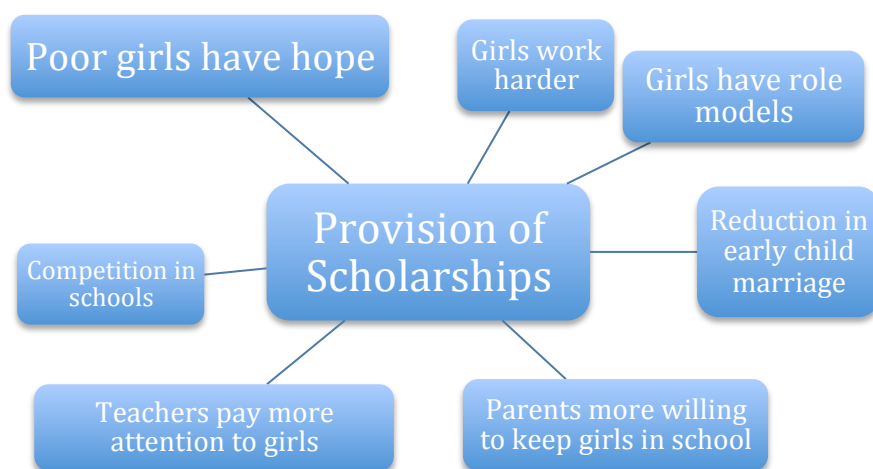
The 30 annual scholarships to the WISER secondary school appear to be the most effective component of the intervention; interviews suggest that they decrease the cost of educating girls and show members of the community that a different future is possible for their girls. Although most girls being interviewed were not asked directly about the scholarships, it became apparent that they were motivated by a desire to be selected for the opportunity. Almost 1 in every 2 girls expressed their desire for the WISER scholarship as a reason they are still in school, and 30 explicitly mentioned that it was their biggest motivator for doing well in primary school. Girls made comments such as, "I am improving my studies to go to WISER" or "we are really struggling to get admitted to WISER." The words of an elder male teacher who has lived in Muhuru Bay for many years and has a daughter of his own, capture the full impact of scholarships: "Within Muhuru now, every girl works very hard to join WISER and that is the major dream for every girl."

Just the existence of scholarships was found to be encouraging for poor girls. Although only 30 scholarships are available annually, the existence of the program gave all girls a reason to work hard in the classroom and provided them hope of continuing onto secondary school. Without the scholarship, girls said there would have been no other possibility of them continuing onto secondary school due to limited financial resources. Lavender, a 14-year-old girl, explained the grave importance of being chosen for the scholarship: "If I don't go to WISER, then that means I won't go to secondary school...my chance for learning is over. I just stay home and they will tell me to get married." This suggests that girls like Lavender may have already dropped out or given up in of school if the scholarships did not exist. Rather than dropping out, a number of poor girls said they plan to repeat Standard 8 and try again for the scholarship if they are not selected. One 12-year-old girl stated, "I hope I get the scholarship in WISER. If I do not, then I will repeat [8<sup>th</sup> grade] because I know my mom is poor and she cannot afford to pay for me." The scholarships give hope for further education, especially to those girls those whose families would be too poor to educate them otherwise. Caroline, the only female 8<sup>th</sup> grade student at Ibencho Primary School, happily stated, "If you pass, you cannot be married or staying at home. You just go to secondary school."

The existence of the WISER secondary school itself also plays a role in encouraging girls to pursue higher education, rather than dropping out. Because the WISER school is located within the community and is in close proximity to the primary schools, girls now have role models of older girls who are pursuing higher education. Ms. Mary, a Kiswahili teacher and one of very few female 8<sup>th</sup> grade teachers in Muhuru Bay, explained, "Before there aren't many girls who have gone to school, so they don't see role models. These days, they are finally seeing some role models and they are trying to come up." She added, "We used to have very few girls reaching class 8, most of them got married in class 6 or 7. Now we have almost 30 girls in class 8, when the year before we had only 8 girls. This is because of the scholarship program." Seven other teachers mentioned a decrease in rates of early child marriage as a result of the scholarship program.

The scholarships also begin to address the negative attitudes that surround girls' education in Muhuru Bay. Four girls said that the program has changed their parents' perceptions on their education. One 14-year-old girl who lives only with her father said, "It [WISER] sponsors girls freely, so then my father will not have to pay fees, so he is more willing." One of primary school teachers echoed this sentiment: "The parents now see education as more positive, they are giving support to girls now—parents are now willing to let the child be in school for more time than before." More than twenty of the teachers who were interviewed noted that the percentage of girls dropping out of primary school in Muhuru Bay has noticeably decreased, and they attributed this change to the WISER scholarship. Teachers have also begun to pay more attention to their female students, because there is now recognition and increased opportunity for high performing girls. The program has placed much more importance on girl child education throughout the community, and seems to have changed cultural attitudes as a result.

**Figure 9: Provision of Scholarships Shown to Have Many Positive Effects**



*A graphic representation of the multiplicative effects of providing scholarships to girls in Muhuru Bay—distilled from 100 in-depth interviews with the community.*

**Finding 2: Despite the benefits of scholarships, the majority of primary school girls still continue to suffer from structural barriers of poverty and lack full support from parents**

Despite the fact that the scholarships lower the cost of educating girls in this region and encourage secondary school enrollment, it still is not enough to get all girls through primary school. Sixty four percent of girls still reported economic of family struggles during their primary school education. More than half of the girls expressed being concerned about their guardians' inability to pay their primary school fees. Not only does this confirm that "free" primary education does not exist in reality, but it also shows that school fees continue to be a major barrier to girls completing their primary school education. Numerous children reported being sent home when they were unable to pay school fees, a policy that results in students losing more valuable education time in the classroom.

Additionally, many girls felt that they did not have enough time to study when they were at home. Although some parents became more supportive of girls' education due to the scholarships, interviews revealed that parents do not typically give their full support to girls in the home environment. It was not rare for girls to say: "I have to cook at home and I

do not have enough time to study” or because of the “work at home, cutting firewood, watch babies of my sister, there is not enough time to study.” A few said that when they go home at lunchtime, they are asked to cook for their families so they might not return for the second half of the day. This again illustrates that although the WISER intervention has begun to lower the cost of educating girls, parents may still value their daughters’ contributions to the home more than their educational studies. Eight girls also mentioned that a lack of light or kerosene in the house made it difficult for them to study at home. Many girls seemed to prefer holding “preps,” optional study hours at the school with teacher or adult supervision available. This suggests that girls may want to study more at home, but may not have the proper learning environment to do so.

### **(B) Low Motivation and Poor Performance of Teachers**

*Finding 3: The incentivized remedial courses are shown to be beneficial in increasing teacher attendance, raising quality of instruction, and providing girls with extra time to learn [Refer to Figure 10]*

**Figure 10: WISER Pay-for-Performance Lessons Better than Normal Classroom Lessons**



*A graphic representation of the major benefits reported in the WISER lessons as compared to the normal lessons.*

By providing teachers additional monetary compensation based on student exam scores, the WISER intervention raises the quality of classroom instruction during its KCPE preparation lessons. Nineteen percent of the interviewed girls noticed a difference in the teaching quality during the remedial lessons as compared to their normal lessons. One girl at the Shining Star Primary School remarked, “They are teaching very well in the WISER lesson, with different books, and they put more energy.” Another girl at Senye Primary indicated that her teachers prepare notes and lesson plans for the WISER lessons, but do not do so for the regular class hours. The increase in teacher quality seemed to vary based on the individual teacher. One girl noted that, “Only some teachers are teaching better in WISER lessons than normal lessons. They explain more.” The financial incentives may motivate some teachers to work harder, but are probably not effective for all teachers. Twenty teachers reported feeling better in the program because their hard work was being recognized and rewarded. One teacher explained, “If someone pays you after doing a good job and you get something small [money], then you feel very appreciated. It is helpful to get that money from WISER.”

Twenty percent of girls said that teacher attendance increased during the WISER-funded lessons. The WISER program monitors teachers at random to ensure that teachers are coming to teach the lessons they are being paid for; this makes teachers more likely to come. One girl explained that, in the “WISER lesson, no teacher will be missing, they are all coming on time. That is the main reason why the lessons are different.” In the normal school day, many of the girls said that their teachers were missing unexpectedly. For example, if a teacher is sick, she just cancels the lesson that she is scheduled to teach. With the WISER lessons, however, since the teachers are being monitored, evaluated, and paid extra for their work, they are required to find a substitute or to make-up the lesson at another time in order to receive compensation. One 13-year-old girl remarked, “If the teacher is absent from a WISER lesson, then somebody else takes over.” This never happens during the normal school day.

Another benefit of the WISER intervention is that it provides guaranteed extra time for girls to study, which they often would not have if they were at home instead. Each WISER lesson in the primary schools is one hour long, compared to the 35-minute lessons the students typically have. Each school had 7 hours of WISER lessons per week at the time of the study. One out of every four girls said they had more time to study because of the program. Nine girls felt that the extended length of the lessons was beneficial in that it gave teachers more time to explain material from the curriculum—“We get free [time] to talk with our teachers and solve the problems we have.” In some instances, creating this structured study time has avoided the difficulties for girls to study at home. Lavender, from Winjo Primary School explained, “Without WISER, we used to go home very early, and it is not good to stay home all the time. We now spend most of our time in school and we cover a lot more [material] because of it.” Girls specifically said they were able to learn things they would not have been taught otherwise, and sixteen girls indicated that they felt more prepared for their KCPE exams as a result of the intervention.

### **(C) Broader Issues of Adolescence, Gender Violence, Pregnancy, and Classroom Discrimination**

*Finding 4: Most girls identified issues of adolescence— especially menstruation—and high levels of sexual harassment/abuse as major factors that impede academic performance*

It was surprising that more than 40 percent of girls discussed menstruation during the interview, although there was no direct question about this issue. Although WISER attempts to provide primary school girls with sanitary pads, their resources seem to be greatly limited; more than half of the girls mentioned sanitary pads and underwear as one of their biggest unmet needs in primary school. A third of these girls talked specifically about their inability to ask adults, especially males, for sanitary pads largely due to fear, shyness, and cultural stigma. A 14-year-old girl who lives with her uncle as her primary guardian said, “When I am in my period, sometimes I am not coming for school because I don’t have pads. I fear to ask him [my uncle] because he is a man.”

The problems of menstruation went further, making some girls unable to concentrate in school or fearful of being publicly shamed and humiliated. One 15-year-old girl explained, “You come to school during period, but you don’t concentrate. You are afraid that it may come out on your skirt or people may see it because of lack of pads. You can ask permission to go home if it comes on your skirt, but by that time pupils are really laughing

about what happened.” School continues to be a stressful environment for girls who are experiencing menstruation, and many wished that they had more opportunities to discuss their reproductive health concerns with peers or older females. The interviews also revealed that girls hold misconceptions about sexual health, as girls frequently asked the researcher a variety of questions about menstruation, pregnancy, and health. For example, some girls asked whether or not they could get pregnant during their periods. Others believed that if you used two condoms at once, you could not get pregnant.

A lack of access to sanitary pads was linked to a number of health concerns and risky behaviors as shown in Figure 11, including engaging in premarital sex and increasing risk of pregnancy. Some girls said that in the absence of pads, they used cloths, old rags, or other items to protect themselves. Yet, twelve girls also explicitly said that it is not rare for girls to engage in sex for money in order to purchase sanitary pads to properly deal with menstruation—“There are girls getting money from men, and then afterwards you will pay with your body... afterwards they are getting pregnant or disease. The money is mostly for pads.” One girl said she herself had engaged in sex twice for this purpose, until she talked with her parents and they realized the importance of sanitary pads and began to purchase them for her.

**Figure 11: A Lack of Access to Sanitary Pads Can Lead to Many More Problems**



*A graphic illustrating the multiple negative effects that can result when primary school girls lack of access to sanitary pads—distilled from 75 interviews with 8<sup>th</sup> grade girls.*

Additionally, over 50% of girls reported that they, or their peers, were lured or harassed by males during primary school. Generally, these girls were directly approached and asked to have sexual relationships, either in school or in the larger community. Despite their young age, girls were being coerced into sex: “Some [men] have already come to me asking me to be their lover. I already told a certain one that I do not want; I want to finish my school. If I do not abstain, then I can get problems.” Another girl added that often these sexual encounters were forced, “There are some men who are forcing girls to be pregnant. The boy tells you to pay a visit and you may be in a bad stage of menstruation, but he will

still force you and persuade you. Then you will do sex, and then you will get a sickness. The boys are making the girls get in trouble.”

Premarital sex in exchange for money was commonly discussed in interviews. Seven girls mentioned being followed or harassed at the lake, on the road, or by their homes—“When I am outside school, some men follow and want to have sex. I tell them to leave me. I do not want to get pregnant.” Even more girls expressed fear of “men at the lake,” referring mostly to fisherman who work on Lake Victoria and are known to use their income from fish to lure girls and women into sexual relationships. The interviews also confirmed that “sugar daddies” are prevalent in Muhuru Bay, as it is common for young girls to exchange sex for money. Some girls admitted to doing this themselves, while others said they frequently saw peers turning to boys or men in order to obtain different necessities including pens, sanitary pads, etc. Most girls demonstrated a deep awareness of the dangers of the sex for money trade: “There are girls getting money from men, and then afterwards you will pay with your body. Afterwards, they [the girls] are getting pregnant or disease.” Yet, five said they were still tempted by the benefits, despite knowing the dangers: “It is a bit difficult. Maybe you have a friend, he is really admiring you and giving you things...I will go to a boy to get money sometimes.” On average, teachers estimated that half or more of their female students have engaged in premarital sex in exchange for money.

There was mixed response regarding the impact of WISER on the rate of pregnancy for primary school girls in Muhuru Bay. Six teachers noted a visible reduction in pregnancy after the implementation of WISER. For example, Ms. Mary said, “in the past years early pregnancy was rampant, but now it is reducing, most of them do not get pregnant, maybe only one percent.” Other teachers noted that girls used to quit school altogether when they got pregnant, but now it has become more common for girls to return to school after giving birth. The Area Education Officer of Muhuru Bay, a middle aged man who had held his government position for three years, explained this as one of the major improvements in Muhuru Bay, largely due to WISER: “Pregnant girls used to not continue with school, but two years ago we started encouraging them to return. We have moved a very big step because you see girls who are mothers coming back to school, and now it is allowed for pregnant girls to come to school.” These findings suggest that WISER has helped to reduce primary school pregnancy, but many girls still identified pregnancy as a barrier. Some girls also said that abortions were becoming an increasingly popular way to deal with unwanted pregnancies.

*Finding 5: Classroom discrimination was not discussed extensively in interviews, but some girls expressed lack of comfort with or fear of male teachers*

Seven of the girls expressed being fearful of male teachers, or having a strong preference to share problems with female teachers. One 14-year-old girl at Obolo Primary School expressed discomfort with male teachers, explaining, “When you are walking and they see you, you know, you can just feel that teacher is seeing you.” The interviewee was suggesting that some male teachers may treat their female students differently, or may act inappropriately towards them in class. Two girls reported having been sexually harassed by their teachers, but the vast majority said they felt safe in school.

Lack of an adequate number of female teachers in schools also fed into issues surrounding menstruation. Some adolescent girls did not feel comfortable approaching their male teachers about these menstruation and other health issues. One of the WISER

schools, St. Sos Primary School, had no female teachers at the time of the study, and all girls interviewed from this school noted this as being problematic. Cynthia, one girl at St. Sos said, "I want some female teachers because male teachers can't understand monthly periods...it is difficult, you fear telling male teachers about your period." One of her classmates at the same school expressed, "We have all male teachers, and I fear them because sometimes I cannot ask them information...because I fear them. They are males and I am female, I think sometimes they laugh at me."

*Finding 6: Hunger was an unanticipated, but very significant, barrier in the broader environment that affected girls' performance in primary schools*

Thirty-five percent of girls identified hunger and hunger-induced fatigue as one of the biggest challenges to their education, because lack of food made it difficult for them to learn properly. During lunchtime, many students go home to eat and there is generally a one to two hour break in the school day. Many girls said that they did not eat a full meal during this time, and would sometimes walk up to thirty minutes or an hour to their home to find nothing to eat. Lavender said, "We stay until lunch time without food, go home for lunch and find that there is nothing to eat. We are very weak and we feel very bad." Often, the girls just drink tea or return back to school with nothing. Others remained at school during lunchtime, because it is too far for them to return to their homes during the break period. A few girls said that, at times, the hunger could even keep them from coming to school--"If you wake up in the morning and you are so weak, you have no strength to come to school. That is one of the problems I am seeing at home— lack of food."

Lack of food has direct implications for a child's ability to concentrate in class and learn new material. The girls explained that when they were hungry, they could not focus, stay awake, or understand what the teacher was saying. Lavender said that she would sometimes go up to two days without eating a full meal, and found it difficult to pay attention in class as a result: "The thing the teacher is teaching, I will not get it because my mind is very far. I am just missing food and thinking of nice food at the time."

### **Limitations**

Limitations arise both from the qualitative and quantitative components of this research study. In regards to KCPE score analysis, the control group was not ideal because it was not equivalent at baseline. Control schools were higher performing than intervention schools, which made it harder to compare the groups in a meaningful way. Additionally, no information was gathered about the demographics of the control schools. Within the intervention group, differences in performance between the 14 schools were not analyzed due to highly variability of school size and frequent movement of students between schools in Muhuru Bay. Furthermore, missing exam data affected sample sizes in particular years, and may have affected the results. The analysis also did not control for possible changes in population in either Muhuru Bay or the control districts.

In regards to the qualitative analysis, a number of factors may have affected the results. Each interview varied greatly depending on the individual participant. Some felt comfortable answering all the questions, while others had difficulty understanding English or were generally shy. Since questions were pen-ended and there was very little prompting, it is likely that the percentages in this study are underreported. For instance, many more girls may have felt hungry in school, but may have forgotten to mention this as

a barrier during their interviews. Furthermore, the study asked girls about many sensitive topics. Some girls may have felt uncomfortable discussing private issues such as their sexual history, family background, or safety in school. Some interviews also suggested biases of social desirability, in which girls may have reported false information in the hopes to make a certain impression or gain personal benefit. For instance, many girls asked the interviewer for school sponsorship or financial assistance during the interview, suggesting that their responses could have been influenced by ulterior motives. Students may have also felt pressured to only report good things about the WISER intervention, for fear of seeming rude or being punished for complaining. Some questions may have also been written in a directing manner, which could have affected responses.

Like all studies, the content of the interviews was also subject to biases in the environment at the time of the study. For example, reports of hunger may have been especially high during this time because research was conducted during a period of national famine in Kenya. Lastly, parents were not interviewed for this study, but their inclusion would add a valuable perspective to these issues.

### **III: IMPLICATIONS**

#### **Discussion & Recommendations**

The findings from this study have a number of potential implications for development practitioners and policymakers interested in effective strategies to improve girls' education levels. Although these findings cannot be fully generalized to other communities due to biases in sampling and differences in context and culture, there are a number of key insights that may be useful for those working in communities that have similarities to Muhuru Bay.

First, the findings of the study lend further evidence to the use of scholarships as a means to promote higher education of girls in poor, rural communities. Interviews revealed that much of WISER's success is dependent on the 30 annual scholarships they provide for secondary school education. This supports the claims by Herz and Sperling (2004) that providing scholarships helps decrease the high costs associated with educating girls. Furthermore, this study shows that scholarships can be especially useful in motivating girls from poor households, as was the case with the evaluation of JFPR scholarships in Cambodia (Filmer & Schady, 2008). In the case of WISER, scholarships were also a step towards changing negative cultural attitudes towards girls' education.

Interviews with girls also demonstrated, however, that only giving scholarships at the secondary school level is not enough. Girls in primary school already face major economic barriers, such as regular inability of their parents to pay school fees. With greater funding, the WISER program could potentially increase its success by providing smaller scholarships or stipends to academically talented girls while they are still in primary school. This would help high-performing girls mitigate the economic barriers they face at home, and decrease the amount of school time they miss for not paying school fees. The high number of girls that reported school fees as a barrier to their success in primary school is alarming, especially in light of Kenya's existing Free Primary Education (FPE) program. These findings may be useful in showing Kenyan policymakers that the FPE



program is not successful in all parts of Kenya, such as Muhuru Bay, where fees are still a major barrier for girls in primary school.

WISER could also address the high costs of education by implementing a school-based feeding program at the intervention schools. A surprising finding was the high percent of girls suffering from hunger and hunger-induced fatigue in Muhuru Bay. Many development studies advocate for the implementation of school-based feeding programs as a way to promote education while decreasing levels of malnutrition. An evaluative study of a feeding program in Kenya found that schools providing students with free breakfast before classes had a 30% higher increase in attendance as compared to schools that did not provide free breakfast (Vermeersch, 2002). A World Food Program report shows that a feeding program which includes a free take-home ration for girls can push girls even further in favor of education; enrollment increased by almost 50% in some program sites (Herz & Sperling, 2004). Such a program is likely to garner strong support from parents, and greatly benefit girls who currently do not have enough to eat.

Second, this study suggests that providing teachers with pay-for-performance incentives to teach test preparation courses is a good means to improve teacher performance. Although no data exists to show that scores went up in Muhuru Bay as a direct result of the teaching incentives in WISER lessons, the qualitative data supports the notion that teachers try harder and show up more when they are given additional monetary compensation for their work. Furthermore, because teachers are monitored in WISER's program, they are more likely to attend lessons in order to be compensated. However, these benefits are also limited because they only occur in the 7 hours of additional WISER-paid lessons. There may be other ways to improve teaching quality in the normal school day as well. The free lessons that WISER provides to 8<sup>th</sup> grade students also gave girls more opportunity to spend time in school rather than at home, where they may have been asked to do household chores instead of studying.

Many of the research findings highlight current weaknesses or gaps in the WISER intervention. Although WISER aims to provide primary school girls with sanitary pads for menstruation, interviews revealed that the program is not doing enough. Lack of sanitary pads was linked with many risky behaviors, including having sex in exchange for money to purchase sanitary pads. These findings confirm the urgent need to find ways to ensure that primary school girls are able to access sanitary napkins whenever they need them. WISER should immediately find a more systematic way to consistently distribute sanitary pads. Studies evaluating free sanitary pad programs for schoolgirls are minimal, but an analysis of India's government program to provide girls in rural areas with free sanitary pads offers important insights. Authors concluded that the provision of sanitary pads should have the following components in order to be effective: a menstrual hygiene promotion curriculum in schools taught by female teachers, the distribution of sanitary pads by trusted and approachable women from the community, and social empowerment of adolescents to make informed sexual and reproductive health choices (Garg, Goyal & Gupta, 2011). A more comprehensive strategy of sanitary pad distribution would be beneficial for girls in Muhuru Bay.

There is also a need to give girls access to better information regarding sex, reproductive health, and family planning. Interviews showed that girls had many misconceptions or misinformation in these areas, making them more susceptible to early pregnancy and dropout (Lloyd et al., 2000). Girls may benefit from more open

opportunities to discuss their health concerns with health experts, and with one another. A Kenyan NGO implemented girls' clubs on the primary school level and found these to be an effective way in giving girls important health information and teaching them new skills (Thomas, 2002). Primary school girls in Muhuru Bay could adopt a similar program.

Classroom discrimination was not a focus of this study, but girls revealed general discomfort when they had few or no female teachers at their schools. Literature shows that having female teachers in schools is important; an increase in the number of female teachers in a school can raise expectations for female students' independence and success (Huggins & Randell, 2007). Although recruitment of female teachers is outside the scope of WISER, the organization could support community or province-wide initiatives to recruit and retain better teachers. WISER could also use its professional development seminars to further address the issue of classroom discrimination. Girls are shown to benefit more from school if teaching methods are altered to make classes more relevant to them and to make girls feel more included (Huggins & Randell, 2007).

Sexual harassment and abuse targeting primary school girls was pervasive in Muhuru Bay, but this issue requires further research. Most girls reported feeling safe in school, and generally being harassed and abused by men in the larger community outside of schools. This suggests the need for a community-wide approach to changing values and norms around the treatment of young primary school girls. Finding effective programs that do this is outside the scope of this research paper, but WISER could help mitigate the number of girls who engage in sex in order to obtain money. This would require WISER and primary schools to provide girls with all their basic necessities in order to decrease the chance that they will fall prey to sugar 'daddies.' Items that girls would need includes, but is not limited to, sanitary pads, uniforms, pencils, pens, books, food, and deodorant.

Lastly, the research findings reveal the need to more deeply involve parents in initiatives regarding girls' education. Although WISER currently has some community events involving parents, this is a great opportunity to do more. Many barriers impeding girls' performance in school stemmed from the home, and parents are ultimately responsible for many key decisions that could help or hurt their daughters. For instance, girls currently feel unsupported at home, as they are expected to do household chores rather than to study. Since a majority of parents in Muhuru Bay are uneducated or even illiterate, WISER could enact programs to better demonstrate these parents the value of education. Many girls also expressed fear of talking to guardians about menstruation and other health issues, largely due to fear and cultural taboos. Therefore, parents, especially fathers and male guardians, need to be made more aware of sexual health issues that commonly face adolescent girls and the dangers of not helping girls properly cope with these issues. In general, WISER could expand its success by bolstering parent involvement and support in future initiatives.

## **Conclusions**

Overall, the study found the WISER intervention to be successful in improving performance of primary school girls in a number of key areas, but also to be limited in its ability to address some of the major barriers facing girls in their broader environment. Organizations interested in girls' education can adapt WISER's strengths and learn from its weaknesses, if they feel that the community they work in holds similarities to Muhuru Bay.

In conclusion, this study urges practitioners in this field to take a holistic approach in the strategies they employ. Not only is there a need to improve the quality of instruction in schools, but we must also tackle the big problems that girls face outside of the classroom. Without addressing issues of hunger, menstruation, sexual abuse, and structural poverty, interventions are likely to only have limited success. Interventions that are able to address multiple, or all, of these barriers will likely be more effective in helping girls complete primary school and continue onto secondary school. The recommendations provided at the end of the study serve as guidance not only for how WISER but also how other girls' education interventions can improve their scope and success.

Although the "Girl Effect" is a promising solution to alleviating global poverty, its potential will never be realized until more is done to help girls who are struggling just to finish primary school. As this study shows, primary school girls face a long list of challenges—they fight to study for their KCPE exams, while also dealing with poverty, menstruation, hunger, gender violence, and a multitude of other issues. Ignoring any of these issues can lead to a spiral of negative consequences, and can seriously hinder a girl's ability to pursue education. Therefore, girls will require extensive support, both in the classroom and at home, in order to reach their full academic potential. Ideally, initiatives in this field will take into account the recommendations posed in this paper and will find innovative ways to provide girls with scholarships, take-home food rations, more equitable learning opportunities, sanitary pads, and sexual health education, among a list of things discussed in this study.

Millennium Development Goal 3 hoped to eliminate gender disparity in primary and secondary education at all levels by 2015. Although it will be impossible to reach this goal by 2015, improving interventions in the area of girls' education based on some of these lessons may help to make this target more of a reality in the near future. The key findings that emerge from the research shed light on strategies to best help girls in southwestern Kenya complete basic primary school in a position to continue onto secondary school. These insights provide a unique and practical understanding of what works and what does not work in overcoming barriers to improving girls' education in poor, rural communities in low-income countries.

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### **APPENDIX A: Unstructured Interview Guide, Student**

- What do you like about your school? What do you not like?
- What is your favorite subject in school?
- How long have you attended WISER tutoring sessions?
- What do you like about the WISER lessons?
- What do you not like about the WISER lessons?
- Is the WISER lesson any different from your normal lessons in school?
- Has participating in WISER lessons changed you?
- Do you feel safe in the WISER lessons? What about outside of the lessons?
- Has WISER's scholarship increased your motivation to achieve on the KCPE?
- What suggestions do you have to improve the WISER program?
- What barriers continue to exist for you in primary school?
- What are some reasons that would make it difficult for you to attend secondary school and or university?
- Is there anything you wish that your teachers did differently?
- Do you like the time that the WISER lessons are held? Is it difficult for you to concentrate during the lessons? Do you wish that they were longer?

### **APPENDIX B: Unstructured Interview Guide, Teacher**

- Why did you decide to teach lessons for WISER?
- How do you feel about the cash incentive for WISER tutoring?
- What are some difficulties you face in teaching the WISER lessons?
- Do you think the lessons have helped your students? How?
- What strategies do you use to teach your WISER lessons? Are these the same as the ones you use during the regular school day?
- Do you like the times that your lessons are held?
- Do you think it is difficult for students to concentrate?
- Do you think lessons should be longer/shorter?
- How do you feel about the WISER program in general?
- How has the WISER program impacted Muhuru Bay?
- What suggestions do you have for improving the WISER program?