Determinants of Secondary School Attrition and Related Health Factors among Female Youth in Rural Kenya

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Global Health Undergraduate Thesis for Distinction
Duke University
Durham, North Carolina
April 22, 2016

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Acknowledgement

First and foremost, I would like to thank my thesis advisor and mentor Dr. Sherryl Broverman for her support, feedback, and guidance throughout this process. Without her involvement in my development as a student, researcher, and person, I would not have found the community partnership with WISER that made this project possible. While this may have been the most complicated project I’ve ever undertaken, I’m glad that I was able to do so with a faculty mentor that has been with me since the beginning.

Of course, I owe profound gratitude to Dr. Eric Green and Dr. David Malone, both of whom have sacrificed their time to review and improve this thesis. Dr. Green’s dedication to his field and expertise in crafting an impressive deliverable pushes me to raise my standards whenever possible, and I am better as a result. Dr. Malone’s passion and curiosity is instrumental to my understanding of faculty support, and I so appreciate his interest in this work.

This project began nearly one year ago in Muhuru Bay, Kenya with a four-person research team made up of Benson Ojwang, John Omondi, Samson Ochieng, and myself. Without the assistance of these research partners and translators, the volume of data we were able to obtain would never have been possible. This team taught me how to have fun with fieldwork, and their dedication to persevering through complications is a huge source of inspiration for me.

Additionally, without the generosity of Dorcas Oyugi and the staff at WISER, I would never have had a place to call home while conducting this research, and I thank them with the hopes that I will be visiting again soon. I also would be remiss not to mention those that laid the groundwork for the inspiration of this research, such as Dr. Eve Puffer, whose work has been instrumental in my understanding of Muhuru Bay, and Ishan Thakore, whose guidance was essential to my original pursuit of the grants that enabled this project. On that note, I am hugely thankful for The Bains Family and their contribution to global health research, and the Deans Summer Research Fellowship that paid for my travel and housing during data collection.

In regards to data collection, I am especially indebted to the principals of the Muhuru Bay secondary schools that gave up their time to assist in the collection of the attrition data for this project: Mary Odingo, Samuel Gard, Daniel Maganda, George Bunde, Vitalis Dibogo, and Dennis Nyawara.

Finally, and most importantly, I want to thank all of the participants in this study for their openness, their kindness, and their willingness to confront difficult topics in the hopes of a better future. I hope, more than anything, that I can help this project develop into something worthy of that trust and that this thesis will not die after its defense. My global health education at Duke has taught me to value the application of work to the bettering of communities, and this is no exception. So, to those that lent their voices to the pages that follow, thank you so much for your time and your energy.
Abstract

This paper investigates the determinants of secondary school attrition and related health factors among female students in rural Kenya. To explore the relationship between attrition determinants and negative health outcomes, a mixed-methods approach was taken to collect both qualitative and quantitative data. Semi-structured interviews were conducted with 35 female youth that had terminated their enrollment in a Muhuru Bay secondary school between 2011 and 2015. Using grounded theory and thematic analysis, dominant themes were identified pertaining to determinants of attrition and implications for attrition-related health outcomes. Participants reported three primary causes of attrition: adolescent pregnancy (65.7% n=23), poverty and school fees (45.7% n=16) and early marriage (5.7% n=2). Health-related themes emerged in three major themes: in-school factors, out-of-school factors, and new-situation factors. Emergent health-related subthemes vary per temporal category and include forming relationships for favors, pride from enrollment status, intimate partner violence in early marriage, familial violence in response to situation changes, and abortion in response to early pregnancy. Numerical attrition data collected for the graduating classes of 2014 and 2015 in Muhuru Bay revealed no significant difference between male and female rates of attrition in the community. This may suggest that the burden of poverty in Muhuru Bay is so elevated that confounding factors of attrition, such as gender, are masked. Further research is necessary to determine health factors of male attrition and potential points of intervention for both male and female students.
Introduction

Despite improvements in recent years, female education remains a global area of concern as girls are still largely out of school compared to their male counterparts (Hawley 2007). A 10-year review of global development strategies suggested that while female education has been at the forefront of the development agenda, myriad boundaries still exist to providing global education, empowerment, and well-being to female youth (Unterhalter and North 2011). Girls face challenges in education that are specific to their sex, and these challenges often have implications for their overall well-being (Nawani 2012).

The World Economic Forum has tied female education to improved health outcomes across 140 countries (Schwab et al. 2015). One study found that education opportunities may result in negative health outcomes not only for female youth but for their children and their families (Temin et al. 2010). Furthermore, the same study suggested that female educational attrition was closely related with elevated intimate partner violence, elevated risk of adolescent pregnancy, and even higher risk of developing chronic diseases (Temin et al. 2010). A final large-scale review suggests that understanding female school attrition may develop strategies that can address intimate partner violence, early pregnancies, and mental well-being (Herz and Sperling 2004).

This study aims to examine the factors that influence secondary school attrition and related health factors among female youth in rural Kenya. In doing this, it is paramount that all factors are explored, with a focus on determinants of attrition that also have direct implications for youth health outcomes. Due to the prevalence of
attrition and the subsequent poor health outcomes it is essential to understand the social ecosystem in which education and health operate in Muhuru Bay, and Migori County, Kenya. This contextualization is included herein and may provide further information as to how these determinants of attrition emerge and how directly they influence barriers to well-being.

**Girls Education in Migori County, Kenya**

Migori County, one of 47 new counties in Kenya as of 2013, was, until recently, located within the Nyanza province of western Kenya. In the former Nyanza province, female secondary school students consistently face a higher risk of dropping out than their male classmates. In a survey conducted on secondary education opportunities for young women throughout Kenya, Nyanza ranked 33\textsuperscript{rd} out of 42 districts in terms of female student retention (Chege et. al. 2006). Additionally, in all secondary schools surveyed, the proportionate attrition between each successive year of schooling is greater for girls than boys, and only slightly more than half of female secondary school entrants proceed to the final grade (Chege 2006). In 2013, the educational administration department at the University of Nairobi cited that the District Education Office in Migori County had reported boys outnumbering girls at every level of secondary education, Form 1-4, throughout Migori County (Ouma 2013). By the age of 17, 44% of female students in Kenya have left school permanently, compared to 24% of male students (Kenya DHS 2008). In Migori County, 14.4% of men and 14.2% of women have some secondary school experience. However, only 6.7% of women in the county have completed a secondary school education, compared to 12.9% of men, indicating the gap between male and female likelihood of attrition (Kenya DHS 2014).
More generally, a number of multi-site comparative studies have shown girls to be significantly more likely to leave secondary school earlier than boys, and that female secondary school attrition has remained relatively consistent in recent years (Biddlecom 2008, Lewin 2009, Lewin et al 2011).

The causes of female secondary attrition vary by region, and have been highly disputed. This may be due, in part, to regional specificities in the causes of female student dropout rates. However, while there is little consensus on a universal cause of attrition, the majority of research surrounding female attrition in rural sub-Saharan Africa suggests that nearly all determinants are strongly linked to gender or sex (Abuya 2014, Karabo and Natal 2013, Ouma 2013). A number of studies have determined early pregnancy as the primary cause of elevated attrition rates, although others have challenged the prevalence of this cause (reviewed by Mensch 2001). Similarly, the role of early marriage in secondary school attrition has been disputed. Early marriage has certainly been tied to early sexual activity, and therefore, early pregnancy, but there is evidence both for and against the notion that marriage itself is the cause of secondary attrition (Sang 2013, Ikamari 2005). A comprehensive study across rural regions of four sub-Saharan countries concluded that girls appear more vulnerable to leaving school once they engage in sex, regardless of their marital plans or status (Biddlecom et al. 2008). In rural settings similar to Migori County, sex stereotypes, gender discrimination, lack of mentorship, and parental education values have all been indicated as factors elevating the risk of female secondary attrition (Abukari 2013). There is also strong evidence to suggest that school fees, the cost of educational supplies, and other poverty-related factors may determine the likelihood that a female student does not
finish, or attend, secondary school (UNESCO 2011). A study in rural Western Kenya indicated that lack of resources, sexual relationships with boyfriends, and menstrual care problems all related directly to school absences or permanent dropout (Oruko 2015). These factors were compounded with girls’ vulnerability to pregnancy, poverty, and an inequitable school environment to lead to female secondary school attrition.

**Poverty and School Fees in Kenya**

Poverty has long been considered a crucial component of the determinants of well-being including education attainment. Currently, little data has been published to describe the poverty situation in Muhuru Bay, although there is information representative of Migori County. It should be noted, however, that there are several large towns (Rongo, Migori, and Kehancha) that may skew this data and mask the challenges present in Muhuru Bay related to poverty, income inequity, and access to secondary education.

According to the World Bank and the Kenyan Integrated Household Budget Survey, 46.7% of Migori County lives below the poverty line, and thus, earns less than around $1.90 per day (2011). Only 4.7% of all roads in the county are paved, and 45% of roads are considered to be “less than fair for travel” (World Bank 2011). Approximately 5% of the households in the county can access electricity either by a generator or by proximity to government infrastructure. In Migori County, 68% of all residents have completed primary school education and around 10% of residents have completed a secondary school education. In Muhuru Bay, these values are likely significantly lower than the county averages. The town, around Lake Victoria, is
dominated by the local fishing industry, and a lack of other diversified economic opportunities contributes to high levels of poverty (Puffer et al. 2012).

In Kenya secondary education is subsidized, but not paid for, by the government and this places a burden on poor rural populations to put children or family members through school. Kenya’s official guidelines for secondary school attendance estimated the average yearly cost for a day school be placed at KES 43,275 per year before government subsidization, or approximately $430 USD (Kaimenyi 2015). Placed in parallel with the poverty line in Kenya, this cost is equivalent to over 9 months wages per child per year to attain a secondary education. In Muhuru Bay, where both the average income and proportion of the population with a secondary school degree are significantly lower than the county average, the financial strain may be deemed too great to be feasible. If a child is sent to school without the necessary fees, it is common practice to punish the student, send them home with a warning, or actively bar them from returning. In a school system that regularly uses corporal punishment, personal observation has revealed that this usually means students will brave canings and beatings for the chance to sit in a lesson with their classmates for a short period of time.

There is often a significant gap in Muhuru Bay between funds allocated to boys’ education and funds allocated to girls’ education within a family. In many families, the belief that educating a girl is a waste of time continues to persist and the lack of financial investment made on behalf of the girl child remains a barrier to success for many female students (Oruko et al. 2015). In fact, there are some instances in which the practice of funding boys’ education first is not only culturally reinforced, but
religiously reinforced through beliefs about Christian creationism and Adam preceding Eve; ergo, men’s resources must precede women’s (Abuya 2014). In many instances, refusing to financially support girls leads to a negative feedback loop in which girls are not supported with enough resources such as books, sanitary pads, or writing utensils, and so they begin to slip in their academic performance, thereby falsely confirming the notion that girls cannot perform well in school and that funding girls’ education is a waste of resources.

**Early Marriage**

It is currently unknown if, and to what degree, early marriage is responsible for leading young women into terminating their secondary school enrollment. At the county level, the median age at marriage for women is the lowest in all of Kenya in Migori County, at 17.1 years of age. This is true for men in Migori County as well, although the median age is considerably higher at 22.2 years of age at first marriage (Kenya DHS 2014). This can be interpreted to say that, on average, early marriage, as defined by the stage of adolescence between age 15 and age 20, is a uniquely female phenomenon in Migori County. It is also important to note that the community in which this study takes place is predominantly of the Luo tribe, which allows for multiple wives (Puffer et al 2012). That is to say that early marriage may be a lure that causes young women to leave school, but even upon leaving, whether or not a relationship is or remains monogamous is uncertain.

It should be noted that marriage is closely linked to sexual activity, and early marriage is linked to prolong periods of childbearing possibilities, resulting in early first pregnancy. In fact, women who initiate sexual activity before the age of 20 years are
significantly more likely to enter marriage early than those who do not start sexual activity until they are 20 years old. Furthermore, the probability of early first marriage (occurring in adolescence, age 15-19) is 40% higher in the former Nyanza province than it is in Nairobi (Ikamari 2005).

Ikamari (2005) also conducted a study to determine the relationship between educational attrition and early marriage in Siaya County, Kenya, and it was concluded that secondary school enrollment may delay the date of first marriage by 2.4 years. Some studies clearly define marriage as a documented cause for female secondary school attrition throughout Sub-Saharan Africa while also highlighting the potential for regional specificity regarding the value of marriage and its lure to end school (Lloyd and Mensch 2008). Some research suggests that school dropout may be attributed to early marriage due to the promise of improved socioeconomic standing through bride price (Kakuru 2008). It may also be that girls have become pregnant, and so choose marriage as their primary public cause of attrition to protect the family honor and integrity (Nyakubega, 2010). Whatever the cause, the finality of marriage is a powerful determinant of attrition, as once a female student has entered marriage, it is unlikely that the marriage would be undone in order to complete her education and unlikely that her husband would allow her to abandon household duties and attend school (Parkes and Heslop 2013).

**Domestic and Intimate Partner Violence**

One potential side-effect of early marriage is an earlier possibility for domestic or intimate partner violence from a spouse. More than half of rural Kenyan women experience intimate partner violence in their lifetime, which has serious consequences
for both physical and mental well-being (Hatcher et al. 2013). The impetus for this violence varies considerably by region and by partner, but common “triggers” of IPV in rural Kenya include perceived sexual infidelity and refusal to adhere to gender norms (Hatcher et al 2013). In a comprehensive study across six countries in sub-Saharan Africa, it was determined that women in low-income households in Kenya are more likely to experience spousal violence than those from non-poor households; a result that was not consistent across all six countries analyzed (Bamiwuye and Odimegwu 2014). This suggests that the risk of IPV is already elevated in Muhuru Bay and in Migori County, which are both categorized as low-income regions.

IPV is of particular concern for female youth that have dropped out of school because of their age range’s elevated risk, as nearly half of all domestic violence in rural Kenya, including physical, sexual, and emotional violence, occurs among women aged 15 to 29 (Abuya et al 2012). Abuya’s 2012 study also indicates that women with secondary and/or college education experience were 26% less likely to experience intimate partner violence, meaning that school dropouts are, again, particularly disadvantaged. It may also be possible that school dropouts are at risk for domestic violence due being increasingly home-bound. As household responsibilities keep former students in close proximity to either a spouse or potentially violent family member more frequently than they would be while in school, the number of opportunities for domestic violence to occur may be elevated.

The health consequences of intimate partner violence - whether it is physical, sexual, or emotional in nature - include depression, traumatic stress disorders, physical injury, chronic pain, gastrointestinal complications, psychosomatic symptoms, anxiety
and elevated risk of sexually transmitted infections (Campbell 2002). Other studies in Kisumu County have detected signs of suicidal thoughts among domestic violence victims, particularly when the domestic violence is coupled with other stressors such as chronic illness or traumatic context (Zunner et al 2015). It is the combination of socially-rooted injustice, such as the prevalence of gender-based violence in Kenya (Hatcher et al. 2013), and disturbing health outcomes that make domestic violence and IPV crucial determinants of interest in this research.

**Mental Health Impact of School Attrition**

An often overlooked aspect of well-being, mental health relates strongly to the phenomenon of secondary school attrition. As students lose time at school, they may also lose social circles, optimism, and future employment prospects. A qualitative study conducted in a rural region of Uganda comparable to Migori County revealed that “early school leavers” expressed such strong disappointment at being out of school that they would only speak about their experiences in the third person. The study also linked secondary school attrition to feelings of failure, low self-image, heightened reckless behavior, and semblances of trauma (Tukundane et al 2014).

An additional study by Abuya (2014) showed that remaining out of school in rural Kenya actually re-enforced gender norms and expectations related to women’s role in the home, and significantly lowered sentiments of self-worth. Furthermore, some of the sentiments expressed about gender norms and household expectations were determined to be religiously and family-based (Abuya 2014). These mental health factors offer considerable challenges to re-enrolling girls in secondary school post-attrition. If a new household-based role has been accepted, and trauma, doubt, low
hope and self-image are all present, it may be unlikely that a girl would choose to return to school even if that opportunity were made possible. What is clear is that there are gaps in the literature regarding female youth mental health outcomes related to attrition in rural East Africa and within Kenya that must be addressed.

**Adolescent Pregnancy and Maternal Health Risks**

One factor that is both a potential cause of attrition and a related health determinant is early debut of unprotected sexual activity that can lead to pregnancy. Migori County is home to Kenya’s lowest median age at first sexual intercourse for women at 15.5 years old (Kenya DHS 2014). It is worth noting that while this is true for women, the median age at first sexual intercourse for men, 17 years of age, is not even in the ten lowest median ages in the country (Kenya DHS 2014). This suggests that the risks presented from early sexual activity disproportionately affect women, even when those risks are not pregnancy-related. Furthermore, 23.8% of men aged 15-49 report having paid for sex at some point in Migori County, which is the third highest prevalence of this behavior in Kenya (Kenya DHS 2014). This would suggest that youth sexual activity occurring at age 15, or potentially younger, may stem from financial need rather than fully autonomous choice.

For the purpose of this study, data regarding youth sexual activity is relevant due to its connections to early pregnancy and childbirth. The Kenya DHS survey from 2014 shows that throughout Kenya, the adolescent birth rate is high, at around 97 births per 1,000 girls aged 15-19. In Migori County, the likelihood of adolescent pregnancy is 2.5 times the country’s average. Approximately one-in-four women or 250 per 1000 (!) in Migori County aged 15-19 have had at least one child. The most recently measured
median age at first birth for women in Migori County is 17.7 years, the youngest of all Kenyan counties (Kenya DHS 2014). This age is also firmly within the range in which female students are enrolled in secondary school. Studies in rural areas comparable to Migori County have indicated that a low age of first pregnancy may be a matter of witnessing role model behaviors, as young women with siblings that have had adolescent pregnancies are more likely to have an early pregnancy themselves (Dip-Sidibe 2005). This would partially explain Migori County and the former Nyanza province’s elevated rates of adolescent pregnancy, although other factors such as community-based perceptions of gender, access to contraception, and adolescent sexual risk likely play a role in determining rates of adolescent pregnancy as well (Ahlberg et al 2001).

The danger of adolescent pregnancy is multifaceted, but is rooted in the elevated possibility of pregnancy complications that put the mother at risk of health crises. Adolescent pregnancy has consistently been linked to birth complications and lasting negative health conditions post-birth (Lerberghe 2008). In fact, complications during pregnancy and childbirth are the second leading cause of death for 15-19 year old women globally (WHO 2014). According the WHO’s 2008 World Health Report, adolescents under the age of 16 face four times the maternal death risk compared to women over the age of 20 (Lerberghe 2008). Furthermore, adolescent pregnancy has been implicated in elevated disease risk for both mother and child, and girls in school that are, or have been, pregnant are twice as likely to report being in poor health than their peers (Youri 1993).
Pregnancy in girls under the age of 19 is associated with elevated risk of placenta previa, or the obstruction of the cervix by the placenta, preeclampsia, and dangerous instances of anemia. These complications can lead to trouble breathing, dizziness and vision changes, and in the case of placenta previa, uncontrolled vaginal bleeding (Vorvick and Storck 2011). It should be noted that these health risks associated with early pregnancy may be compounded in their association. For example, due to placenta previa causing uncontrolled bleeding, the condition may make the mother anemic, although she is already at an elevated risk for anemia due to her age and pregnancy status. For this reason, it is crucial to monitor the health risks associated with early pregnancy, although this may not be possible in areas with limited access to healthcare facilities. The risk of health complications is even higher without the provision of antenatal care during an early pregnancy, and in Migori County, only 4.5% of women aged 15-49 received antenatal treatment from a doctor during their last pregnancy (Kenya DHS 2014).

During birth, adolescent deliveries are significantly more likely to result in a perineal tear, and as a result, are considerably more likely to require an emergency episiotomy (Fouelifack et al 2013, Ezegwui et al 2012). Episiotomies are generally considered fairly routine procedures during pregnancy, especially for young women with smaller birth canals requiring a larger opening for a safe birth. However, some research suggests that the use of routine episiotomies offers no maternal benefit, and in fact, can lead to worse outcomes than natural birth such as elevated risk for infection, pain during sexual activity, and heightened risk for pelvic floor defects (Hartmann et al 2005).

**Abortion in Kenya**
In order to comprehensively understand all possible health outcomes resulting from female secondary school attrition, it is necessary to examine abortion as a factor for consideration related to early pregnancy. Every year, approximately 3 million women globally aged 15 to 19 undergo unsafe or unmonitored abortions (WHO 2014). It is estimated that in developing regions of the world, over two-thirds of all unsafe abortions occur among women aged 15-30, and 14% under the age of 20. Over 40% of all unsafe abortions among adolescents occur in Sub-Saharan Africa, where approximately 1 in 4 unsafe abortions can be attributed to women between the age of 15 and 20 (Shah 2004). In Kenya, abortion is illegal and as such, national surveys such as the Kenyan DHS do not report rates of abortion nationwide. It was not until recently that a cross-sectional study was able to estimate the incidence of induced abortion in Kenya. According to this study, Kenya has an estimated abortion rate of 48 per 1,000 women aged 15-49 and approximately 464,000 induced abortions occurred in Kenya in 2012. Furthermore, approximately 120,000 women choosing to pursue an abortion also sought care in health facilities for complications related to induced abortions (Mohamed et al 2015). Complications resulting from unsafe, or secretive, abortion range vastly across the globe and span from vaginal lacerations and intrauterine blood clots to hemorrhaging and maternal death (Olukoya 2001). While studies have determined unsafe second trimester abortions in Kenya to be a source of serious health complications and hospitalization, there is considerable need for morbidity data related to unsafe abortions in East Africa (Singh 2006). Similarly, due to the illegality of abortion, mortality data has largely only been obtained through self-reported cases and hospitalizations. However, one cross-sectional study conducted by the Kenyan Ministry
of Health and the African Population and Health Research Center estimates maternal mortality for abortion-related complications to be 266 deaths per 100,000 abortions in Kenya (Izugbara et. al, 2013).

It is important to note that the decision to pursue an abortion is not an easy one for young pregnant women in Kenya, and the role of family and peer influence is crucial to understanding the decision-making process related to abortion. A 2015 study on the influence of social networks on deciding to undergo an unsafe abortion was conducted in Siaya County, adjacent to Migori. This study revealed that 95% of women (n=320) consulted their social networks as part of the decision to undergo a secretive or unsafe abortion. Furthermore, it was revealed that the man responsible for the pregnancy was both the most consulted social figure, and the most influential advisor in the final decision-making process (Osur et al 2015). While Siaya is a comparable county to Migori, 92% of the advice recorded in this study encouraged the woman to complete an abortion. This percentage of pro-abortion advice is likely considerably higher than expected outcomes in Muhuru, where religiosity has been associated with coping in stressful situations and with sexual decision-making, potentially limiting the plausibility of abortion as a solution to early unwanted pregnancy (Puffer et al 2012).

**Methods**

**Setting**

Muhuru Bay is located in Migori County (formerly the Nyanza Province) in Western Kenya along the coast of Lake Victoria. The town is near the Tanzanian border and is home to roughly 25,000 people, most of whom belong to either the Luo or Suba
ethnic group. Approximately 15% of adults in Migori County are HIV positive, a rate nearly three times the national average of 5.6%. This rate is even higher among women, who face a 15.7% HIV prevalence (Kilonzo 2014). Muhuru Bay also faces considerable gender inequity, poverty, and a lack of educational resources. According to the 2014 National Economic Survey, 49.6% of Migori County earns less than 1,500 Kenyan shillings per month, averaging to about $0.57 USD per day (KNBS 2014, Abdulai 2011). These average earnings are both lower around the lake region of Muhuru Bay and significantly lower for women than for men.

Participants

This study collected qualitative interview data and basic demographic information from female youth in Migori County. In order to qualify for the study, female youth needed to 1) have terminated enrollment in one of seven Muhuru Bay secondary schools between 2011 and 2015, 2) not have re-enrolled in a secondary school after terminating enrollment and 3) be accessible geographically for an in-person interview. Initially, 113 potential participants were contacted for interviews. 42 of these participants were not selected for participation due to geographic or communication barriers that made a face to face interview impossible. These barriers included participants’ lack of cell phones, family relocation to regions more than 200km from Muhuru Bay, and 13 individual cases of familial refusal to allow contact with the female student. Of the
remaining 71 female youth, 35 girls who dropped out and had not re-enrolled in a secondary school by the time this study was conducted were chosen for interviews.

![Study population flow chart](image)

Figure 1 – Study population flow chart

Additionally, demographic data was collected from 36 female youth that had terminated enrollment in Muhuru Bay at one point, but had later re-enrolled in a secondary school either within or outside of Muhuru Bay (See Figure One). All potential participants contacted were between the ages of 15-24 years old and all participants that completed an interview were between the ages of 17-22 years old. To protect the identity of the participants, interview transcriptions were randomized and assigned numerical labels, resulting in transcriptions being labeled as “FY_##” or, Female Youth ##. Female youth not selected for participation in a semi-structured interview were excluded.
To compile a list of potential participants, visits were made to each of Muhuru Bay’s seven secondary schools to collect student enrollment registers recorded between 2011 and 2015. Each year’s class roster was compared to the subsequent year’s class roster, and any inconsistencies were noted. In the case of inconsistencies with female students, these names and contacts were recorded as potential participants. In the event that an accurate class enrollment register was not available, sports rosters, school fee accounting books, and field trip rosters were used as supplementary materials. In order to locate and recruit participants, three local research assistants served as guides and translators for the duration of the study. Potential participants were visited at home, where interviews were either conducted or scheduled upon first contact.

Procedure

The data for this research were collected as a part of a mixed-methods study that included both qualitative semi-structured interviews and quantitative demographic and enrollment data.

After obtaining permission and assent, interviews were conducted using a semi-structured guide that included broad questions and probing statements related to marriage, pregnancy, educational values, perceptions of hope, and reasoning for secondary school attrition. Interviews were based on both community-level and individual-level interpretations and included questions such as: “Was there anything that could have kept you in school?”, “What good and bad things can come from being married?”, “What were your thoughts when you became pregnant?”, and “What stops girls in Muhuru from finishing secondary school?” (See Appendix X) It should be noted
that all interviews were designed to be semi-structured and so, while major themes are consistent across all interviews conducted, the phrasing and inclusion of each question varies from interview to interview. Interviews lasted approximately 30-45 minutes, were audio recorded, and were translated into Dholuo when necessary before being transcribed in English. Translators were recruited for the project that had contributed to previous Duke Global Health Institute-affiliated research studies in Muhuru Bay. Because of this, trainings for translators consisted primarily of basic reviews of procedures for semi-structured interviews. Interviewees were compensated for their time with 2 kilograms of sugar.

Enrollment and attrition data were also obtained for numerical analysis. There are eight secondary schools in Muhuru Bay: Senye, Winjo, Nyankondo, Kumoni, Rabwao, Obolo, Shining Star, and WISER. At the time of data collection, Shining Star was in its first year of operation, and so was excluded from this study. Similarly, Obolo Secondary had not yet graduated a class of students from Form 1 to Form 4, and so was excluded from the study. WISER, a community development NGO and all-girls boarding school, was also excluded due to its role as an educational intervention in the community. Of the five schools chosen for analysis, all are mixed-gender secondary schools, and all feature a day school model, with Rabwao as the sole exception, as its students are split between the day school and boarding models. Enrollment and attrition data were obtained in meetings with each of the head principals of the five chosen Muhuru Bay secondary schools. Data was collected for a total of 910 students enrolled between 2011 and 2015. Attrition numbers were compiled by cross-referencing class rosters and fee registers with current class attendance. Demographic data was
collected for all interview participants and included age, marital status, parental status, years of secondary school completed, and self-defined primary reason for attrition. For non-interview participants, information about current location and initial reasoning for terminating enrollment was collected.

**Analytical Approach**

Qualitative interview data were analyzed using grounded theory and thematic analysis. Dominant themes were identified pertaining to educational experiences and corresponding health outcomes. For initial analysis, themes were sorted temporally to track health factors during three distinct periods: In-School experiences, Outside of School experiences, and New Situation (such as marriage or motherhood) experiences. Within these temporal categories, five subthemes were analyzed for this study: disease factors, relationship formation, domestic conflict, mental health factors, and maternal and child health factors. Two additional categories, determinants of attrition and social/environmental perceptions, were coded separately from this temporal analysis. Analyzed subthemes of these categories included perceptions of Muhuru Bay, role model relations, educational value, and home life. Subthemes related to attrition were early pregnancy, marriage, and school fees/poverty.

Quantitative data were analyzed for basic proportion statistics regarding causes of attrition and prevalence of early marriage and pregnancy among dropouts. Additionally, enrollment data was used to track attrition by sex and by secondary school for the graduating class of 2014 and 2015. Additional calculations were made to determine population averages including average number of years before dropout,
average number of pre-natal clinic visits for mothers, and average number of months since last school enrollment.

Results

Qualitative Data and Analysis

Major Theme: Health Factors While In School

While all participants in semi-structured interviews had left school and not returned at the time of the study, interview questions prompted responses that referenced in-school experiences. Participants either referenced their own personal experiences with being in school, or spoke more generally about the relationships between school and well-being in the community. Therefore, it became possible to determine emergent subthemes related to in-school health factors. Emergent subthemes for in-school health factors include Forming Relationships for Favors, Fear of Infectious Disease, Paternal Conflict and Violence, Pride from Enrollment Status, Shame and Stigma Post-Situation Change, and Education-based Optimism and Hope.

Subtheme: Forming Relationships for Favors

Over half (54.3% n =19) of all interviewees referenced the practice of forming relationships for transactional favors or monetary benefits. Unpublished data from Puffer indicates that 50% of sexually active girls 10-16 years old are engaged in transactional sex. The prevalence of transactional relationships is likely elevated along the lake region due to the local fishing trade and a well-documented fish for sex culture (Lubega et. al, 2015, Béné and Merten 2008, Kwena et. al, 2012). For many students in school, living in poverty and living without basic necessities is a constant fact of life. For them,
the lure of money is powerful, and as money is associated with relationships, female youth often trade sex for supplies or money while in school, regardless of their preference for this type of relationship, as seen below:

“Maybe sometimes, you don’t have money, or you don’t have someone to help you. So you can get in love with someone if you hope maybe this person will help me, this person will buy me clothes. So many girls fall in love because of that.” (FY_07)

“Here in Muhuru, I dislike it, but I live in it. I dislike because here, they are saying that there is a lot of money. But me, if I see somebody come to me, “be my girlfriend, and I can do this and this to you”, I agree because sometimes I have some problems. So now, money is taking us in wrong ways.” (FY_19)

However, as female youth access these relationships, their risk of early pregnancy is elevated: a fact that is widely recognized by students. In fact, for many students, unwanted pregnancy while in-school appears to be a phenomenon nearly equated with the formation of a transactional relationship while enrolled. That is, students that engage in transactional relationships are spoken of as if pregnancy is nearly inevitable as a result of the relationship. Participants referenced this process and its commonality as follows:

“Sometimes, you may be lured by boys because they have money, and you will likely conceive.” (FY_12)

“The biggest problem with girls in Muhuru, even with the one is maybe younger than me, have a boyfriend. So they can go to the lake, they go for fishing, they
get money, they come, so the girls will go for money. So girls really like the friendship, and they don’t only have one friend, they have many. So they go for one here, and then one here, and then they will be pregnant. They will conceive” (FY_25)

As early pregnancy is connected to relationships, so are potential negative health outcomes associated with early, unplanned and unwanted conception. However, it is important to note that at the root of the formation of these relationships which may lead to reproductive health risks is a pervasive poverty that prevents female youth from acquiring the resources they need to live and study. Furthermore, interview responses suggest that it is not just poverty serving as a driving force for relationship formation, but significant peer pressure:

“I could have got somebody to advise me and tell me to go to school and work hard…. But because I had friends, other girls, who were talking about positives of boyfriends, so they were just telling me that having a boyfriend is a good thing. That is why I got involved and why I conceived.” (FY_01)

Being in-school makes this peer pressure particularly powerful as girls are regularly surrounded by their peers and easily influenced by the tendency to form these relationships that result in positive monetary outcomes. For this reason, relationship formation for favors is a female youth health determinant and possible determinant of attrition that is at its most influential in currently enrolled youth.

**Subtheme: Fear of Infectious Disease, Including HIV/AIDS**
Approximately 17% (n=6) of interviews indicated a fear of contracting an infectious disease while enrolled in school, with particular focus on the prevalence of HIV/AIDS in the community. Many youth expressed fear associated being infection as a result of engaging in relationships and sexual activity, as seen here:

“There are so many diseases, and somebody you may like, maybe they admire you, and you go with them, and they may be infected” (FY_22)

“Here in Muhuru, there are no jobs. Because there is HIV and AIDS. And then, I can go from school and go with you, and you will get disease. But I just get it. But that… that is the badness of it.” (FY_32)

Participants made a clear connection between the ease of forming relationships while in secondary school and the risk of contracting an infectious disease (“I can go from school and go with you…”). Interestingly, while participants noted that sexually transmitted infections, including HIV, are prevalent in the community, and that there is elevated risk in engaging in sexual partnerships, no references were made to modes of disease prevention such as condom usage. This may suggest a pseudo-inevitability of sexual relationships in Muhuru Bay in that these types of transactional relationships and their associated risks have reached a level of prevalence that they appear seemingly unavoidable to currently enrolled female students.

It should be noted that not all instances of infectious disease were spoken of as stemming from a consensual relationship. One participant in particular was adamant that her fear of contracting an infectious disease came from a fear of forced sex, saying:
“People in Muhuru, they have AIDS. There are a lot of cases of raping, so many.

I am afraid. I am afraid of AIDS.” (FY_18)

In this instance, infectious disease as a health factor is compounded with physical safety as sexual assault is implicated in daily walks to and from school (Ruto 2009, Sinclair et. al, 2013). Additionally, the effects of this perceived possibility are not only physical, as considerable mental and emotional stress and anxiety are likely connected to the threat of sexual abuse faced by female secondary school students.

**Subtheme: Paternal Conflict and Violence**

The risk of interpersonal violence both in domestic settings and in intimate partner situations is an often overlooked factor in determining overall well-being of female youth. As I will explain later, the risk of domestic violence in response to an unwanted pregnancy is high for young women in Muhuru Bay. However, participants also indicated that conflict, especially between female youth and their paternal figure, is a present concern for students currently enrolled in school. Particularly, it was expressed that not only is father-daughter conflict a threatening cause of distress, it is sometimes a factor in a girl’s decision to depart from school:

“Sometimes, there is conflict between the girl and the father… when there is conflict now, the girl will say I am tired of conflict and she will run away…so she will have left school” (FY_14)

“I decided to leave because of the way my father was feeling, he was not happy with me. When he saw me talking to people, he thought maybe I was a prostitute, so I decided to quit…. My father never took it normal, he was talking very badly
against me. The reason I left is because of the way my father was talking.”

(FY_09)

Both of these quotes highlight a decision to leave home and subsequently end school enrollment in order to avoid paternal conflict. In these situations, the threat of conflict appears to be entirely verbal. However, it is likely that physical violence accompanies harmful or critical speech directed at female youth. In one instance, we see a father “talking very badly” about his daughter after associating speaking with other youth as a sign of prostitution. The daughter’s resulting perception of this as conflict-causing suggests that it is common for fathers to communicate information regarding sexual activity in a threatening manner, which may lead to further conflict. This phenomenon provides insight into perceptions of female youth sexual activity in and around Muhuru.

In some instances, expressed verbal threats and their possible physical correspondents not only cause girls to leave school, but for them to seek out alternative living options, predominantly through early marriage, as seen below:

“I would go with my friends that are girls to go and walk, stroll around, and my father saw this was very bad for him, so he would talk very badly, and even tell the neighbor that I was just moving around and I did not like that, so I decided to get out of that home” (FY_30)

“My father was very cruel, so I was satisfied of that, and it was not good. I was thinking if I can find a place to stay in peace that would be very good, so I decided to get married” (FY_30)
In this sense, paternal conflict is not simply a health determinant related to the presence of stress, anxiety, and physical harm in female youth. It is also an impetus for early marriage, and thus, for early pregnancy, which elevates risk for pregnancy or birthing complications. These factors are also closely related to secondary school attrition throughout the region. However, the relationship between paternal conflict and female school dropouts was not referenced in the semi-structured interviews as a primary cause for female secondary school attrition in Muhuru Bay.

**Subtheme: Pride from Enrollment Status**

A key factor in determining the factors of mental well-being for female youth may be expressed levels of self-esteem. In the case of the interviews conducted for this study, self-esteem was partially assessed through explicitly asking about “pride” in order to determine if a participant felt confident in their current role and status. Approximately 30% (n = 11) of participants, being currently enrolled in school was worth mentioning as a cause of pride. Particularly, students expressed that pride often stems from being enrolled in secondary school and recognizing the benefits that secondary school accords that were once impossible in primary school. For instance:

“Secondary school is different from primary school. In primary school, you do not put on socks. But in secondary school, you are very smart, you are always dressed well.” (FY_13)

“In secondary...where I was in primary (that was in Nyankondo), you saw those people in secondary, they were neat, they were beautiful. So, I was proud if--I want to be like those.” (FY_32)
The notion that pride is closely connected to appearance and that higher educational opportunities correspond with an opportunity to “dress well” is a common one. From personal experience, I can attest that, in Muhuru Bay, appearance and dress are often connected with power and status, and thus, students wearing cleaner and more revered uniforms may experience a boost in self-esteem and pride connected to their enrollment status as a secondary students. This also means, subsequently, that female youth unable to pay for a school uniform due to family poverty or unemployment may see reduced rates of pride and self-esteem, which could also be a driving force for transactional sex.

Another commonly expressed source of pride for in-school female youth is the co-enrollment, or simultaneous education, of peers. Being physically present with like-minded individuals and students was repeatedly referenced as a source of pride, as seen here:

“I was proud, because I was with fellow pupils, and I would discuss things with them” (FY_21)

“I was happy with people. We could stay together and we were close to each other.” (FY_27)

This source of well-being and possible mental health factor, pride due to association with enrolled peers, stands in sharp contrast to the experience of youth that have already terminated enrollment. For female youth currently in-school, peers offer an opportunity to garner pride by association with other young scholars and an opportunity to discuss difficult topics. Furthermore, through group study and co-enrollment, it is
possible that social groups and close peer relationships could lead to an overall increase in youth well-being.

**Subtheme: Shame and Stigma Post-Situation Change**

While shame and stigma logically play a large role in a number of health determinants following attrition due to unwanted pregnancy or illness, it should be noted that stigma plays a role in the well-being of female youth while they are still enrolled in school as well. When a student encounters a situation change, such as an early pregnancy, qualitative data collected here suggests that the student is not likely to drop out immediately. Alternatively, many pregnant students attempt to stay in school as long as possible, thus remaining in the “in-school” temporal range for health determinants, before leaving to give birth. During this time when pregnancy has become apparent and the student has not left, stigma and a sense of shame play a considerable role in determining the well-being of that student. 1 in 4 interviewees with at least one pregnancy expressed concern about stigma or shame related to being in school while in the early stages of a pregnancy. One participant was considerably vocal, outlining her battle against stigma in the classroom:

“I think the only thing that really drove me from school was the stigma. Because, okay, when I was in school, the school would close in April, and I was three months, but you couldn’t tell. All I could think of was that, it’s like, okay, I’ll come back to school…but if I come back to school, you know what other people say about you? It really won’t let you focus. Like girl students will be like, “ah she was so clever, but now she did this, and she has left and ah!” The things they will say
about you really make it so you can’t focus, I was not going to do any better. So I said let me go, keep myself cool, come back and start over.” (FY_24)

In the case of this participant, the presence of stigma is blatantly apparent, and she references needing time to “keep (her)self cool” before coming back to school. It is likely that stigma places a considerable mental and emotional burden on female youth that are in-school while in the early stages of pregnancy. Fortuitously, inference is unnecessary, as the same participant made the direct tie between her experience with stigma and her own psychological health:

“My grandpa, when I left, he even talked to the principal, gave the principal my number… but I told him, I am not ready for that. Psychologically, I can’t focus now. I need time.” (FY_24)

While some participants did directly reference “stigma,” it was much more common for female youth to talk about feelings of alienation and disgrace in terms of “shame.” As with stigma, “shame” is most commonly associated with early pregnancy, and implies a peer-imposed or self-imposed sense of failure or wrongdoing on the part of the student. A number of participants not only reference experiences with shame in regard to early pregnancy, they list the shame as an equally important factor in determining their attrition:

“I was afraid to be in school and be pregnant. I was ashamed. I was just ashamed. People were making comments. I felt I could continue, but because of the shame, I decided to drop” (FY_06)
“It was so shameful to me. Boys or classmates would talk very badly for me, and some teachers will talk very badly against me. I felt those things were really not good, so I decided to leave school” (FY_28)

“If you conceive, it would be so shameful for you to go back to school, so you just decide to stay away from school” (FY_30)

In these instances, shame is both a phenomenon that occurs in the classroom/within the school and a phenomenon felt individually that may prevent the student from ever returning to school at all (as with FY_30). It is worth noting that these data suggest that shame regarding conception and early pregnancy while in school stems from a number of sources including peers, particularly male classmates, and teachers as well. In order to limit the amount of mental and emotional burden placed on female youth while in school, it may be necessary to address teacher-based messages of shame and stigma that add to the students’ stresses and fear.

**Subtheme: Education-based Optimism and Hope**

In addition to understanding the in-school determinants of health that may lead to reduced well-being among female youth, it is essential to explore the determinants that may lead to increases in overall health as well. One such theme was revealed in the notion of secondary school as a source of hope and optimism for the future. Like with self-esteem and pride (see: Pride from Enrollment Status), optimism and hope for the future are being used as tools to explore signs of positivity and mental well-being. In total, the theme of secondary school as a source of optimism while in-school was strong, and over 28% of all interviews mentioned secondary school as their first source
of hope. One explanation for this might be the connection between secondary school education and promises of future success. Participants often referenced secondary school as a pathway by which they could acquire higher education, a desirable job, and a good future, which is defined variably by participant. This is evident in the following data:

“A lot of people liked secondary school. From secondary people, you can continue going up, you can go on to colleges, and after colleges you can find a work you can enjoy.” (FY_08)

“I was also happy to know my talent, what I’ll be doing in future. So for me, I was just asking my teachers, because I was excited in sciences, and I was telling them what I want from my future” (FY_19)

This data is particularly interesting because of its focus on happiness and desirable work. The most prevalent response to questions about the future in this study normally resulted in references to providing for a family, or for yourself, so that you might be financially stable. However, when asked about what is enjoyable about school, participants responded again with plans for the future, but this time, with hopes aligning with their personal wishes. This may suggest that education is certainly tied to job stability and the capability of providing basic necessities, but that the mental and emotional benefits stemming from hope in education come from the possibility of exploring opportunities for happiness in work.

Overall, it is essential to understand secondary school as a site and a process that is deeply tied to ideas of hope and future prospects. To understand health
determinants for girls in the in-school stage of education, particularly those relevant to mental and emotional well-being, it is necessary to recognize the importance of secondary school as an often practical and hopeful site for the optimism of female youth.

**Major Theme: Determinants of Female Secondary School Attrition**

Possible health determinants have been explored through emerging themes rooted in in-school experiences to establish a baseline experience for female youth in secondary school in Muhuru Bay. However, the predominant focus of this research is to explore reported causes of secondary attrition and the corresponding health factors that relate to these reported causes. For the group of 35 female youth from which qualitative data were collected, all participants have terminated their secondary school enrollment. The average amount of time spent in school before dropout was 1.48 years. Of all participants, 97.2% dropped out of school before Form 3.

Before exploring emergent themes highlighting health determinants associated with the post-attrition temporal period, the predominant expressed causes of attrition within this cohort will be analyzed. The three predominant determinants that emerged in the data are early pregnancy, poverty and school fees, and marriage. Of all participants, 65.7% (n = 23) listed unwanted pregnancy as a primary cause for their attrition, 45.7% (n = 16) listed poverty and school fees as a primary cause, and 5.7% (n = 2) listed marriage as a primary cause. Some participants listed two primary reasons for their dropout, and so these percentages overlap slightly. (See Figure Two)
Prior to this research, it was unknown whether girls in Muhuru were likely to leave school due to fees and subsequently become married and pregnant or that they were likely to leave school due to a pregnancy that occurred while the student was still enrolled. The data revealed here suggest that the primary cause among female youth that have dropped out of Muhuru Bay secondary schools in the last five years is early unwanted pregnancy, and that, while lacking school fees is clearly a large determinant of attrition as well, and can lead to pregnancy through transactional sex, marriage has little relative impact on rates of attrition. This is not to say that early marriages are uncommon - on the contrary. A number of girls that leave school early due to pregnancy or school fees may marry shortly after leaving school. However, it is not the marriage itself, chosen or arranged, that leads girls to terminate their enrollment in a secondary school.

While basic observational data was collected regarding the prevalence of each cause of attrition, qualitative data was also obtained to explain the manifestations of
these attrition determinants in Muhuru Bay. To better understand what may lead a girl to go from “in-school” to a new situation, whether that be pregnancy, parenthood, marriage, or simply out-of-school, the qualitative responses have analyzed below.

**Subtheme: Early Pregnancy**

“What makes many girls leave from school is pregnancy. You can get a girl child with 2 children at home without finishing school, she is now in trouble” (FY_02)

The dominant emergent cause of attrition for the female youth participants of this study was early unwanted pregnancy. As previously discussed, early pregnancy is a complex situation that has implications for youth educational, social, and health outcomes. It’s prevalence in this study is concerning, although not entirely unexpected. When asked about barriers that girls face in Muhuru Bay, 74.3% (n=26) of participants referenced early pregnancy as a major reason girls would not finish secondary school, whether or not they themselves had ever been pregnant. One explanation for this perception may be the prevalence of transactional sexual relationships that develop while girls are still enrolled (See: Forming Relationships for Favors). A number of girls indicated that the regularity with which these relationships are formed is directly tied to the prevalence of early unwanted pregnancy resulting in attrition:

“Sometimes, along the lake region there are fishermen, so when they come from fishing, they get a lot of money, and so they start talking to these young girls when they are very young, and so they can deliver money, and then girls get pregnant” (FY_09)
“It (pregnancy) is so common. Sometimes somebody is doing it, and there is a girl with a friend, and you see them, and you want to try. And when you are trying, you conceive.” (FY_22)

The quotes above illustrate both the power of financial need and peer influence in determining whether or not a girl is at risk of early pregnancy due to participation in a transactional relationship. More importantly, both of these responses were among those given as answers to a question prompting explanations for female attrition in Muhuru. Therefore, the relationships referenced are seen by participants as not only being linked to pregnancy, but as being linked to attrition through unwanted conception.

However, the process of early pregnancy leading to attrition is more complicated than conception leading to immediate dropout. One common complication of early pregnancy leading to attrition is the inability of a female student to find adequate supervision and care for her child. A number of participants lived in single-parent households, and even when this was not the case, parents were often described as being too busy to take care of the child, should the girl attempt to return to school:

“By then, my child was very young, and I could not leave the child alone. My mother was busy there at custom...My child was very young, and no one could care for the child” (FY_01)

This challenge becomes an issue of attrition rather than an issue of re-enrollment the longer the girl remains out of school, and begins to develop the sentiment that she is now too far behind to return to school (See Health Factors While Out of School: Emergence of Harmful Peer Comparisons). The issue of childcare is a clear point of
potential intervention that will be discussed later, as the presence of options for childcare could drastically change the possibility that a female student would return to school after giving birth. However, there are health concerns with separating newborn children from their mothers too soon after birth. Without skin-to-skin contact and consistent breastfeeding, the child’s health may suffer, further complicating any situation in which a girl aims to leave her newborn with busy family members to return to school (UNICEF Kenya 2013). Some participants recognized this concern outright, as we see in the following instance:

“I gave birth on Saturday, and I was back in school on Friday. But my father has told me not to go back until I breastfeed this kid” (FY_08)

In this case, the father was adamant throughout the entire interview process that he would not let his daughter return to school. A first interpretation could be that he decided that she should not be given a second chance at an education after “spoiling” her chance due to an early pregnancy. Further conversation with the subject revealed, however, that he was simply so concerned about his newborn grandchild receiving sufficient breastfeeding that he would regularly get into conflict with his daughter, who wanted to leave the child at home with him to return to school.

An additional problem leading to attrition post-pregnancy is the withholding of resources due to a perceived “spoiled” education. Multiple participants expressed instances in which a distant family member or external sponsor had agreed to financially support them through secondary school. However, this financial support was removed the instant these benefactors became aware of the pregnancy:
“Those people who were paying for me the school fee, they react badly first. When they heard I was pregnant, they stop paying the fee. They told me to move out from there.” (FY_23)

This phenomenon is closely tied to notions of failure and spoiled educational processes for young women in Muhuru. With limited financial resources spread thinly across families throughout the region, benefactors may perceive pregnancy as a sign that their investment in a girl’s education has proven to be a failure. In this instance, the resulting attrition is as much a result of the early pregnancy as it is a result of the sudden absence of school fees. Furthermore, this phenomenon of removing financial support due to pregnancy occurs not only with individuals and within families, but with school-based and athletics-based sponsorships as well, as seen in the following case:

“I conceived just last year. I was at Winjo, and I got a sponsorship to another school. When I went to register, I was taken measurement, and I was found to be pregnant. My scholarship was cancelled” (FY_11)

For this girl, the promise of an athletic sponsorship allowed her to change schools and become a full-time boarding school student: something her mother had wanted for years. However, upon arrival, a physical was conducted to determine her eligibility for athletic participation. The physical revealed an unplanned pregnancy, and the sponsorship was cancelled. Furthermore, the student’s previous school, Winjo, refused to re-accept her for the current academic year, leaving this female youth participant with an unplanned birth and no options for quick return to secondary school. To counteract this, and to prevent future stories like it, it may be necessary to do further
research with regard to the removal of resources in response to early pregnancy both in the case of individuals and in the case of special sponsorships and scholarships.

**Subtheme: Marriage**

While only 5.7% of participants listed marriage as a primary cause of their attrition, 51.4% (n=18) of all interviewees referenced marriage as a significant factor in keeping girls out of school. The data suggest that while marriage is rarely the reason behind a girl dropping out of school in Muhuru Bay, it could be one of the complexities that may keep her away from school once she has dropped out. Participants indicated that once a girl is married, the likelihood that she will be free to return to school plummets. This may be due to the husband’s refusal to assist with school fees, a sense of duty to the home and husband’s family, or a socially-conditioned belief that married women do not belong in secondary school settings. Whatever the impetus behind the barrier that exists between marriage and education, it is clear from the qualitative data collected that marriage is a life event with a sense of finality to it regarding education. That is, once a girl is married, she is likely to never consider finishing secondary education as a feasible option again. Or, as one respondent put it:

> “Once I got married here, my education disappeared in my mind. I don’t think about education now. I cannot.” (FY_09)

While marriage on its own was not a predominant factor in attrition, it is undeniably woven into the two largest causes of attrition: lack of school fees and early unwanted pregnancy. In instances where attrition was due to lack of school fees, multiple participants referenced marriage as a last-resort approach to acquiring the
necessary financial help. If a girl that has been kept out of school because her parents cannot afford school fees were to be married, she would then, theoretically have access to her husband’s financial assistance. We can see this logic outlined in the following quotes:

“You can get a parent telling the daughter, what I’m doing I’ll not be able to get that fee. So you don’t mind, I am not ready to do that, just go and get somebody who will be willing to help you- just somebody that can go and marry you” (FY_07)

“I was going home for fee, always sent home for fee, so I stayed at home for one year, still there is no fee. So I decided to get married instead of staying at home and asking for fee” (FY_13)

While the data shows that it is fairly common for marriage to be suggested as a solution for lacking school fees, there is conflicting evidence in play. Study participants indicated both that getting married is a common and effective approach to acquiring necessary school fees and that marriage is a dead-end for all educational opportunities. This creates a theoretical scenario in which a girl gets married to acquire school fees only to be told she doesn’t belong in secondary school any longer because of her marital status.

Further complicating perceptions of marriage as they relate to attrition is the idea of marriage’s inevitability. A number of participants expressed that marriage post-attrition is a basic part of life following schooling, and that marriage at a young age is simply engaging with a major life event earlier than intended. For some, this is
comforting, and thinking of marriage as an inevitable life event may be a fairly advanced coping mechanism for entering marriage earlier than planned. For others, the sense of marriage’s inevitability symbolizes a lack of agency post-attrition and, as seen in the following quote, may result in hopeless or negative thoughts regarding life after dropping out.

“There is no good thing from marriage, it is only that it is just from a long time ago, you have to get married. I have to just get married. It is just a path, you must pass through it. It is something that is in nature. You are born like that, you are born, you find the father and the mother, they get married. So I also get married” (FY_30)

While, clearly, marriage remains the least referenced primary cause of attrition among study participants, it is certain that marriage plays a complex role in determining secondary school attrition and the permanency of enrollment termination. That is to say that interest in early marriage is likely incapable of determining whether a student will drop out or maintain enrollment. However, it may be possible to say that a female student that has already left school is considerably more likely than her in-school peers to be married at a young age.

**Subtheme: School Fees and Poverty**

In a community with extreme poverty, it is logical that the absence of school fees would largely impact the probability of a girl finishing her secondary education, which is not paid for by the Kenyan government. Data collected revealed a large number of instances in which a participant had dropped out of school due to fees. However, unlike
marriage and early pregnancy, these incidences of attrition were described as being due solely to a lack of fees with little to no confounding barriers. This can be seen in the following samples:

“If my mother can have money, then she can pay, but even now, I am just resting. If I can just have school fee, I can go back now” (FY_02)

“Leaving school is so common in Muhuru because of the fees- many people just don’t have them” (FY_04)

The painful simplicity of attrition due to poverty is expected. Whereas pregnancy and marriage both establish new social ties and responsibility that may keep the student from re-enrolling, a lack of school fees causes the student to adopt a homebound lifestyle in which the predominant responsibilities are those already assigned after returning home from class. The question then follows; if no other major shifts have occurred in the life of the student, why did attrition occur due to fees?

Participant responses suggest that the cause of attrition due to fees is often connected to a shift in the lives of that student’s extended family. Data collected suggests that it is not uncommon for a student’s school fees to be paid for by the girl’s extended family. During the interview process, 6 of the 16 respondents that referenced school fees as their primary cause of attrition indicated that their financial support was determined entirely by their parents. In the remaining cases, school fee availability was determined by an uncle, an older sibling, or even neighbors in some cases. Below are three cases of fee provision being halted due to the actions of an extended family member beyond the mother and father of the student in question:
“I was trying to talk to this my uncle for the fee, but I am seeing he is not ready, because he also has some siblings that are in secondary schools” (FY_07)

“My mother, being one person, could not educate all of these children. She could not pay the fee to all of them and provide food to all of them. Then my stepfather stopped paying fees- he also had a boy going to secondary” (FY_10)

“There were two people that were paying for me. But when one died, I could not get school fee, because my uncle was also having some children he needed to take to school. That is why he stopped” (FY_17)

From these quotes we see that, in many cases, it is not a major change in the student’s life that leads to attrition to due to lack of fees, but a major change in the life of the extended family fee-provider. In most cases, the data suggest that this major change is simply linked to financial instability or changing employment situations. However, in some cases, such as the one outlined by FY_17, disease and death play a role in the process of attrition due to fees. Unfortunately, this opens the possibility of a negative outcome loop in which a providing family member dies, causing the student to leave school or enter into transactional relationships, which elevates her risk for life-threatening infections and poor mental health conditions. These, in turn, affect the former student’s ability to provide for herself and her family in the future.

In all of these instances, we see the common theme of the need to prioritize immediate family when resources are scarce. When there are limited school fees available, the fees are re-allocated to the provider’s children or closest siblings, and this is especially true when those immediate relatives are male. It is likely that the decision-making
process involved in choosing how to prioritize available school fees is a biologically based one. As we see in the case of FY_10, a stepfather with limited funds stops paying for his children by marriage in exchange for continuing to pay fees for his biological children. It is difficult to know whether this phenomenon varies by gender; for example, would the stepfather have made the same decision had his biological child been female and his stepchild been male? While the data collected here do not specifically support the notion that gender preference is, on average, a stronger determinant than biological relation for fee provision preference, it may be fair to speculate, based on past research, that gender plays a role in the allocation of fees.

**Major Theme: Health Factors While Out of School**

For female students that have left school, but not yet married or entered parenthood, the most common cause of attrition is a lack of school fees. In this case, former students spend a considerable amount of time in their homes, completing chores and fulfilling roles that would normally be assigned to them after returning home from a day’s classes. Because of this static lifestyle that is not physically sedentary (manual labor is an essential part of daily chores) but appears as non-progressive, a number of students express feeling stuck in their current position. Perhaps it is for this reason that all of the most prevalent themes that emerged for Out of School Health Determinants are related to mental and emotional well-being. These emergent themes for out-of-school health factors include Pride from Enrollment Status, Post-Attrition Optimism and Hope, and the Emergence of Harmful Peer Comparisons.

**Subtheme: Pride from Enrollment Status**
This theme also emerged from the in-school health determinants data, although in this context, we see the sentiments reversed. When generalizing out to the larger community, participants referenced school enrollment as being a source of pride, and an opportunity to be seen as mature (See Health Factors while in School: Pride from Enrollment Status). However, when questions of feelings of pride were placed in a more personal context (i.e. what are you proud of in your life?), participants related school enrollment to pain and the absence of pride entirely:

“Nothing I’m doing right now can make me proud” (FY_04)

“There is nothing that can make me proud. Only school can make me have pride” (FY_17)

“Since school got complicated, there is no proud now. Now, I am in a bad life” (FY_21)

This absence of pride due to being out of school was so prevalent, in fact, that only one of the participants that was out of school, but not yet in a “new situation” expressed having any pride at all in her current life. This may be linked to the notion that education is a key to having a “good life,” or one in which a girl is financially stable and can provide for her family. Therefore, when education becomes an impossibility, so does the opportunity for a “good life,” causing nearly all participants to view their current situation as unworthy of pride.

**Subtheme: Post-Attrition Optimism and Hope**

Closely linked to notions of pride is the idea of optimism and hope for the future in a post-attrition context. Participants indicated a near-complete elimination of
optimistic sentiments, and many girls used phrases like “suffering,” “pain,” and “not hopeful” to express their outlook on the future. This was true for both descriptions about a girl’s own life and descriptions of others that have left school:

“Some of my friends that have left school, they are now suffering. They are crying ‘If I had finished my school, I could live life without doubt!’ but they did not finish, and they are now suffering… it is not hopeful” (FY_02)

Here we see, again, the link between a good life in the future and the notion of being stable. Closely tied to this idea of being stable is acquiring a good job, which was defined as both a job that provides for your family and a job that you wish to have. However, in terms of optimism for the future, participants referenced career aspirations as having ended when their enrollment ended. In short, when education comes to an end, so does the opportunity to choose any career you wish. This led a number of participants to indicate that their dreams and wishes were no longer possible, and that working in the job of their choice was an impossible option:

“I wanted to be a journalist, so I knew when I left it wasn’t going to happen”
(FY_03)

“I wanted to be a doctor or a teacher, because I really like these things… But I didn’t have school fees, so I didn’t…” (FY_04)

In addition to feeling as if career aspirations were now out of reach, girls interviewed also expressed a more generalized lack of optimism, often centered around the notion that their education had been wasted, or that their studies were for no
purpose. One girl embodies this sentiment extraordinarily well, saying that leaving school means she is unsure whether her educational “journey” was all “for naught”:

“I could reach somewhere, there would be more opportunity. But since I left, you see… I did not proceed. It is good to join, because then you know various things—that you did not journey for naught” (FY_26)

This type of defeated absence of hope may have drastic implications for the mental and emotional well-being of girls post-attrition. Combining lack of hope with a lack of pride, as previously mentioned, may serve as a speculative indicator for signs of depression, anxiety, or other harmful mental health challenges. Particularly concerning is the sentiment that the educational process had been for nothing. This may indicate that not only is the current situation for that girl painful, but her associations and recollections of what was once a pride-inducing facet of her life is now also a source of pain.

**Subtheme: Emergence of Harmful Peer Comparisons**

One theme that could not have emerged in the original “in-school” health factors assessment is the notion of harmful peer comparisons. When participants were asked about their current mental and emotional state, approximately 1/3 (31.7%) of girls spoke comparatively, referencing the well-being of students in school to emphasize their current struggles. These comparisons between being out of school and in school often included references to jobs, degrees, and even successful marriages:
“If they are in their school, some may get jobs, they can get work, but you… there is nothing you can do. You cannot have a certificate to earn a job, you are just there. Nothing.” (FY_02)

“To leave school is painful, because some of my agemates are still going to school up until now. I was trying to be dedicated to achieve my goal… to get a good life” (FY_13)

“There are others that have gone to school, they have finished secondary school, they have gone to college, they have finished college, they have gotten a job, they have gotten a husband who is learned, and then they come back to the village and… and they may look down on you” (FY_17)

The concerns related to harmful peer comparisons are multi-faceted. The comparisons made emphasize the notion that post-attrition girls are “stuck” (See Health Factors when Out of School) and that while others move on with their lives, those who have left school have no options to progress. Healthy notions of positive self-worth are jeopardized by this comparison as participants label themselves as “nothing” or “hopeless.” This toxic comparison is worsened still by the fear of being looked down upon. Some participants (like FY_17) expressed concern that peers that had finished school would see them at home and think of them as lesser or as failures. Again, this has repercussions for female students’ self-worth post-attrition, and along with assessments of pride, hope, and optimism, may serve as an indicator for the presence of mental health challenges such as depression.

**Major Theme: Health Factors While in a New Situation**
Now that health factors associated with being in-school, emergent causes of attrition, and health factors associated with being out-of-school have been discussed, we can consider the health factors associated with entering into a new situation post-attrition. As previously defined, “new situation” refers to instances in which a girl is no longer simply out of school, but has taken on a new role due to pregnancy, childbirth, or marriage. In these instances, new health factors that were previously unmentioned or negligible come to light, especially in instances of pregnancy and childbirth. This section is also of particular interest, as pregnancy was indicated as the most common primary cause of attrition within this cohort, and therefore, the health factors that follow also affect a large portion of the study’s participants. Emergent themes for new situation health factors include Familial Violence/Abandonment in Response to Situation Change, Intimate Partner Violence in Early Marriage, Abortion in Response to Early Pregnancy, Key Actors in Influencing Abortion Decisions, Early Pregnancy Complications, Self-Harm in Response to Situation Change, and Hope and Optimism Post-Situation Change.

**Subtheme: Familial Violence in Response to Situation Change**

From making a number of personal observations in Muhuru Bay, interpersonal violence appears to be an unfortunately common phenomenon. Teachers may hit students in class, parents may hit their children for disciplinary reasons, and there is certainly a considerable amount of intimate partner violence in both married and unmarried couples. In this study, 37% (n=10 of 27) of girls that had entered a new situation referred to violence they experienced in response to their new situation. Interviewees indicated that they were particularly at risk of violent backlash in response
to disclosing their early pregnancy status to their families. A number of participants expressed that their first reaction upon learning of their pregnancy was to fear violence from their immediate family. This can be seen in this response to the question “What were your first thoughts after finding out you were pregnant?”

“I was not happy, I thought that I would be beaten when my parents and brothers realized that I was pregnant. I thought my older brother would beat me.” (FY_01)

The degree of violence varied from story to story, as some participants said that their families would be angry with them or hate them, whereas others expressed serious concerns for their life:

“I really thought that my father would kill me” (FY_08)

It is important to note that in each of the 37% of interviewees that referenced familial violence, the cause of the violent action was male. No interviewees implicated violence from mother or sister figures, or any female relative. Most commonly, aggressive threats of violence were attributed either to the girl’s father or brothers. It is also of note that violence in response to early pregnancy appears to be equally targeted toward the girl and the boyfriend, or father of the child. In some instances, families become angry, but the physical threat of violence is reserved for the child’s father:

“(When I was pregnant) he (my brother) wanted to fight the father. It was painful to me…They were just mad because how could I get pregnant when I was going to school.” (FY_04)

The threat of physical violence has multiple impacts on girls’ health post-attrition. In addition to the obvious effects of physical violence on bodily well-being, the threats
and fear that accompany the familial violence also have implications for the girls’ mental and emotional health. From previously discussed data, we know that the number of threats to girls’ mental and emotional well-being is high, and in the case of familial violence, this is worsened by the accompaniment of possible physical harm.

In addition to physical attacks, girls also told stories about being forcefully removed from their homes by angry family members. In many cases, after revealing her pregnancy status to her family, a girl would be threatened with immediate and disgraceful removal from her household. This occurred most commonly due to a sense of betrayal, as families felt that their investment in a girl’s education had been spoiled, thereby justifying their rage and her removal from the house. From the data, this appears true no matter which family member the girl is living with:

“I was staying with my cousin, just next to here. When he heard that I was pregnant, he threw me out of the home” (FY_07)

“My parents didn’t want me to stay at home… they just tell me, you go away from here if you are pregnant” (FY_32)

In a community with limited resources, this rage and removal likely stems from an overwhelming frustration due to lost investment. This related factor is particularly devastating overall for girls’ health, as the possible combination of physical violence, mental fear and threats, and removal from the home may lead to situations in which a girl finds herself homeless, beaten, and alone. In these circumstances, the girl’s lack of safety and need of shelter must be considered as health factors tied to domestic violence. It may also be possible that removal from the home leads to a need for
financial resources, thereby increasing the probability that a girl enters into transactional relationships, thus elevating her risk for contracting infectious diseases, particularly HIV/AIDS.

**Subtheme: Intimate Partner Violence in Early Marriage**

In cases in which a girl has been married, whether it be due to an early pregnancy or not, participants expressed considerable fear regarding intimate partner violence. 80% (n=8 of 10) of girls that had married post-attrition mentioned that intimate partner violence was a negative consequence of being married and they felt their well-being jeopardize by conflict with their husband. For many of the girls, the threat of intimate partner violence was levied as an argument against marriage, and was often held up as a response to the question, “What good things might come from a marriage?” One such instance can be found below:

“Nothing good can come from marriage. People are having problems, sometimes you are being beaten, there are just no good things.” (FY_17)

It’s important to note that in this response, marital conflict is not described as a fight, but as a problem experienced in the passive voice. This participant explains that “sometimes you are being beaten,” indicating that intimate partner violence, her reason for saying that marriage is bad, is not an active process for young women in Muhuru, but rather something that happens to them. This result is to be expected considering the gender and power dynamics throughout Muhuru Bay, particularly in domestic relationships.
Within the emergent theme of intimate partner violence, a number of causes for this violence were elaborated upon in the interview data. For instance, one female youth explains here that marriage can lead to a change in how the husband views his wife:

“Sometimes you are married, and then after the husband looks at you as a lesser person” (FY_05)

It is difficult to determine how exactly this viewpoint of seeing an intimate partner as “lesser” comes about. One explanation is that it may be due to gendered expectations of domestic roles. Once a girl has dropped out of school, her status as a student has terminated, and so, is expected to fulfill certain traditionally female-centric domestic duties. This change in identity and situation may lead to a power imbalance between the husband and wife. Another possible explanation is that female youth fear being the uneducated half of a relationship. A number of participants expressed that the households that were most likely to suffer were ones in which both the husband and wife did not complete secondary school. However, in the event that a husband completed school, and the wife did not, it may be possible that the husband would harmfully view his wife as less educated, less intelligent, and less capable to contribute to the household. This perception of “lesser” or “greater” than has a direct impact on female youth’s self-esteem and confidence and is also a potential indicator for the presence of intimate partner violence.

However, the data suggest that intimate partner violence does not stem from power imbalances alone. Another common factor related to intimate partner violence is the presence of alcohol in the husband’s life. A number of girls (30% n=3 of 10) made
connections between “taking alcohol” and the probability of “being beaten.” As one participant explained:

“Your husband can beat you, even if you’ve not done something. Without telling them to do it, sometimes you are married with someone who is taking alcohol, without doing anything he will beat you. I hear so many stories about husbands hitting a wife” (FY_08)

While intimate partner violence, like familial and domestic violence, has obvious ties to health outcomes for young women that are both physical and mental in nature, this is an emergent theme that I believe requires additional exploration to fully understand. For instance, the quote listed above by (FY_08) explains that a husband may beat his wife even “without doing anything he will beat you.” The meaning here is clear, as alcohol-induced rage and violence rarely need advanced provocation, but it also raises the following question: Are there instances in which women believe violence in the house is acceptable or justified? In other words, if there is fear related to a husband who will beat his wife without her doing anything, is there acceptance of a man who will beat his wife when his wife acts in a certain way? This question, and others like it, are rooted deeply in the gender dynamics and personal lives and households of Muhuru Bay, and so this curiosity cannot be addressed without further research and data collection in Muhuru Bay and throughout Migori County.

Subtheme: Abortion in Response to Early Pregnancy

Abortion is perhaps the most taboo emergent theme to come out of the data collected for this study, due, in part, to its nationwide illegality. From personal
observations in Muhuru, the procedure appears to be considered to be dangerous and morally wrong, and thus is a highly secretive process. Despite this, 52% (n=14) of girls that had at least one pregnancy at the time of interview (n=27) mentioned abortion during data collection. Additionally, 57% (n=8 of 14) of that group expressed wanting to have an abortion themselves immediately following the news about their first pregnancy. While 57% of girls that mentioned abortion also mentioned wanting to have an abortion themselves, the vast majority of respondents did not complete the abortion that they wanted for various reasons. Among the predominant factors that prevented abortion from occurring is the association between abortions and death. As a number of participants reported:

“I thought of having an abortion, but most of those that did had died so I said no to it. But it was very painful because I had to leave school” (FY_05)

“He was planning that I abort, but I refused to do so. I refused because abortion may lead to death” (FY_15)

“A friend had a baby at 16, her mom told her to have an abortion and during the process, she died. It has happened to three girls now in Muhuru, who have all died because of abortion. They were all so young.” (FY_03)

There is extremely limited data on the mortality rate attributed to abortions in Muhuru Bay, and so it is difficult to confirm the claim that “most of those that did (attempt the procedure) had died.” However, this sentiment makes it clear that participants associated abortion with death, and that there are a number of stories circulating in the community regarding unsuccessful or unsafe abortions. This may
generate significant stigma surrounding clinics willing to perform abortions in addition to the legal ramifications, and prevent female youth even further from ever considering abortion as a viable option for their reproductive planning.

Yet, fear of death is not the only thing that may stop girls from having an abortion in response to an unwanted pregnancy. Some respondents expressed a concern that if they were to terminate a pregnancy, they may never be able to successfully have children. This sentiment was expressed by participants, male partners of the participants, family members, neighbors and more, indicating that it might be a fairly common idea throughout the community. Examples of this perception can be seen in the following cases:

“Sometimes, you abort, and then you may not have a child at all” (FY_15)

“He also tell me not to do abortion because sometimes that is the only baby you will have.” (FY_07)

“She told me that instead of doing abortion-that maybe will be my first child, and my only child. We can never know.” (FY_28)

This notion is interesting for a number of reasons. Firstly, it is unclear from the data whether the perceived future inability to have healthy children is related to the process of abortion in any way, or if there is simply a more generalized concern about pregnancy complications that may or may not happen in the future. Secondly, this indicates a desire to have children that is so strong that despite needing to leave secondary school, which we have already associated strongly with pride, future success, and hope, giving birth is deemed the welcome alternative to risking a life
without children. In one sense, participants that expressed this idea have “chosen” secondary attrition over the risk of not having biological children.

From the data attained in this study, it is difficult to extrapolate stories of personal experiences with abortion. Out of the 57% of girls that mentioned abortion and expressed wanting one personally, only one interviewee actually disclosed information about attempting an abortion. Her experience is detailed in the following excerpt:

“He advised me to do abortion so that my parents would not know what happened. I tried, I tried my very best, but we were defeated. That was God’s mercy. The baby would not come out…there were drugs that were given…I tried the first time, the baby did not come. I tried a second time, but the baby did not come. It was so painful emotionally” (FY_09)

In the only instance of attempted abortion documented in this study is unsuccessful. The participant expresses multiple attempts to complete the procedure, all of which failed, leading to significant emotional and mental duress. The female youth elects not to consult her parents on the decision, which is somewhat of an anomaly (See Key Actors in Influencing Abortion Decisions below) and may add to her stress and internal conflict. However, despite this painful experience, the female youth accredits God’s will with the failure of the abortion, and accepts the outcome, intending to birth her first child. It should be noted that this type of coping through religiosity is well-documented in Muhuru Bay (Puffer et. al. 2012), and is key to understanding individual responses to health determinants.

**Subtheme: Key Actors in Influencing Abortion Decisions**
As participants discussed abortion and its role in their lives immediately following the realization that they were pregnant, it became clear that a number of actors had significant influence over these female youth in deciding whether or not an abortion would take place. These actors can be broken into three primary emergent categories: the father of the child, peers, and parents (particularly the mother).

In the case of the father of the child, results were generally mixed in terms of the father’s preference with regard to abortion. In some instances, girls were encouraged by the father to carry out an abortion to hide a pregnancy or to keep both the girl and her child’s father in school. Yet, in others, men discouraged the abortion, as was the case in the following excerpt:

“I told him, remove for me this baby from my stomach. But he refused. He told me to be pregnant and so I just give birth” (FY_08)

The role of the father in determining whether or not an abortion takes place is further complicated by the potential involvement of the father’s extended family. In a number of cases, girls referenced asking not only their partner for advice, but the sisters and extended family of their partner. In many cases, these extended family members of the father of the child were considered as peers, or at the very least, of equal standing as peers. It should be noted that this situation is only possible if the father of the child’s family is not aggressively opposed or threatening any type of violence (See Familial Violence/Abandonment in Response to Situation Change). An excellent example of the overlap of peers and male partner can be seen in the following quote:
“I was confused. I did not tell anybody...only my close friends...(they) were advising me, some were telling me to do abortion, some were telling me not to do it. My best friend, she told me not to do abortion... I told him (the father), and some of his friends are telling him to tell me that I do abortion. But his sisters are saying let her not do abortion” (FY_07)

Interestingly, in almost every reference made to considering abortion, the father of the child is consulted first regarding the decision. However, this does not mean that the father of the child holds the most decision-making power related to undergoing an abortion. Based on the data accrued here, that decision-making power belongs primarily to the mother of the girl in question. In multiple instances, the father of the child was consulted first, but the mother had final say and could easily overrule the first advice given to the girl from her male partner. Two of these instances can be found below:

“When I conceived, I went to him and told him that I wanted to abort. He gave me money to do it, but when I came home, my mother refused” (FY_10)

“I thought immediately to abort and told him. But my mother refused the abortion” (FY_27)

The power of the mother in determining abortion decisions may stem from the idea that, as a woman, the mother possess the most knowledge and wisdom regarding child birth and reproductive health, and so her opinion is most greatly valued by the female youth. Additionally, it may be significant that the person with the most control over abortion-related decision making is a biologically close relative. It may be possible that spheres of influence in Muhuru with regard to reproductive health are organized in
terms of proximal family members. Understanding this organization may be key to helping reach female youth considering an abortion so that they may receive the information they need to make their decision and to access the services they desire in the safest manner possible. Because abortions are illegal in Kenya, a number of locations from which the service can be attained are potentially unsafe and staffed by workers that are unskilled in abortion procedures. This may explain why the abortion attempts from (FY_09) were unsuccessful (See: Abortion in Response to Early Pregnancy). Nonetheless, the power of the mother in this decision-making process has interesting implications for potential outreach to female youth considering abortion.

**Subtheme: Adolescent Pregnancy Complications**

Of female youth participants that had given birth to at least one child, 36% of respondents reported at least one instance of complications while pregnant or while giving birth. These complications varied in nature, and while a considerable number of the complications resulted in no major health changes, a few cases stand out as concerning stories of early birth.

During the study, the 27 participants with at least one pregnancy prior to data collection were asked about their pre-natal or antenatal care practices. On average, the 27 participants had 3.59 prenatal health visits before giving birth. Throughout the former Nyanza province, 47% of women have more than 4 prenatal visits, and an average of less than 4 may indicate a lack of necessary care (Pell et. al, 2013). Additionally, 81.5% of participants began prenatal visits in the 2nd term of pregnancy or later, meaning that little to no participants received care in the earliest stages of their pregnancy. This
mirrors the regional average, as only 15% of women in Migori County attend an antenatal visit in their first trimester of pregnancy (Pell et. al, 2013).

As previously mentioned, the nature of the birthing and pregnancy complications that emerged in this data varies from participant to participant. However, the prevalence of complications during birth, 36%, appears to be high enough that participants referenced a fear of dying while giving birth, and gratefulness from some that they were able to avoid major complications. One such reference can be found in this quote, in which a girl recounts her fear of dying due to ominous stories of birthing complications:

“I have heard many stories, people are dying, even there, some people are dead from birth, but me, I am happy because I come from there free of problems” (FY_19)

By far, the most common birthing complication expressed was a perineum cut or tear during pregnancy. Approximately 20% of participants that had given birth to at least one child reported needing a perineum cut during birth for the safety of the mother and child:

“There was a cut made when I was giving birth. The baby was too big, so they had to cut me to help” (FY_10)

While this procedure is relatively simple and low-risk, it was continuously noted by participants as a “problem” during birth. Furthermore, it is worth mentioning because of the connections between perineum cuts and adolescent pregnancy. Often, during adolescent pregnancy, a girl is at risk of tearing her perineum because of the size of the child and the relatively small hips of the mother- a side effect of birth at a young age.
The procedure itself, as stated, is mostly harm-free. However, any surgery necessary during birth may lead to infection, and studies in sub-Saharan Africa have revealed that as many as 1 in 5 perineum cuts result in infection even in a formalized hospital setting (Sule and Shittu 2003, Inyang-Etoh and Umoiyoho 2012). Furthermore, maintaining genital tract tissue integrity is particularly important for women that are pre-disposed to infections due to factors such as female genital cutting (FGC) and unsanitary menstrual products (Tharpe 2008, WHO 2006). Because of this, girls in Muhuru Bay may be at an elevated risk of infection following a perineum cut or tear during birth.

Another type of complication that raised concern for participants is anemia. A number of participants expressed having a normal birthing process outside of being concerned about blood loss, and the resulting iron deficiencies that accompany becoming anemic. One participant suffered a particularly difficult situation in which she had suffered significant blood loss and was also dealing with a dangerous position for her baby in the womb:

“I was out of blood, so I need an operation for transfusion. Then the baby was turned badly so they had to do surgery to take the baby” (FY_05)

This is a particularly dangerous birthing situation due to the nature of adolescent pregnancy and the potential, again, for size complications. In this case, the female youth in question is only 17 years of age, and thus, reasonably vulnerable to complications due to being undersized at the time of birth. This can lead to breech births, or, as in this situation, dangerous positioning of the baby within the womb (Van Lerberghe 2008, Were and Karanja 1994, Ezegwui et. al 2012).
One additional complication that emerged was an instance of placenta previa, a condition in which a birthing mother suffers uncontrolled vaginal bleeding (See: Introduction- Adolescent Pregnancy and Maternal Health Risks). Although this technical term is not used in the reference to this phenomenon by the participant, I believe that the symptoms described dictate a case of placenta previa:

“I take some three weeks, the blood started to come out again more and more, and I was taken back to the hospital, they tried to prevent it, and it got off. They told me the womb came down and landed on the side of my stomach” (FY_19)

Fortunately, for the majority of the participants in this study, no major complications were reported during birth. However, this does not alter the reality that 36% did report a complication, and while some of those complications are relatively mild (perineum cuts), others are particularly dangerous and could have drastic health implications for young mothers (placenta previa and dangerous positioning of the child in the womb). Because of this, the emergent theme of pregnancy and birthing complications is one of the most direct correlations between attrition and health outcomes in Muhuru Bay.

**Subtheme: Self-Harm in Response to New Situation**

In some intense cases, the threat to well-being caused by entering into a new situation post-attrition causes the individual to self-harm. While there were no references of physical self-injury included in the data, there were a number of references to wanting to escape life, and some references to suicide as a response to early pregnancy and marriage.
One girl explained that, in response to an early marriage, her fear of conflict and intimate partner violence had grown so greatly, that she “feel(s) like to die” when she and her husband fight:

“When we are quarreling, I feel like to die, I don’t feel normal, I don’t feel good”

(FY_03)

This is a particularly powerful excerpt as it references a sense of normality, and recognizes that feelings of wanting to die do not fall into that realm. In this case, it is difficult to assess whether the reference to death is deliberate, and literal. However, given other comments made by other participants, the presence of this literal reference would not be an outlier for this study.

Other responses that were coded for potential relation to self-harm involved less overt references to death, and more ideas resembling escape. A number of girls expressed desires to leave the life they are in, or to run away in response to their new situation, whether it be pregnancy or marriage. The inclusion of this material in self-harm as an emergent theme is primarily due to sentiments like the following:

“I felt like running out of this world to go into another world” (FY_08)

In this instance, the inclusion of the phrase “into another world” may refer to a suicidal inclination. The notion of not only escaping to a new place, but to a new world might simply be a hyperbole. Yet, simultaneously, in a community with high levels of religiosity like Muhuru Bay, there is a good chance that “another world” references something more meta-physical and tied to death. Yet not all references to self-harm,
and particularly suicidal thoughts, were as subtle. As one participant disclosed that immediately upon hearing of her pregnancy, suicide seemed like the best option:

“First (after finding out about pregnancy), I think another thing- I do suicide.”

(FY_32)

Whereas some health factors of attrition in this study, such as adolescent pregnancy complications, have very direct implications for female health in Muhuru Bay, others, such as pride from enrollment status may be less clear. However, there is perhaps no related health factor of attrition as clearly connected to health as self-harm and suicidal thoughts. If the primary aspiration of health-based programs and global health research is to identify and address the factors that limit and lower a person’s well-being, then the threat of death must be prioritized, particularly in the form it has taken in this data.

**Overall Coding Results and Case Studies**

In total, four temporal categories were identified and a total of 18 predominant subthemes emerged through qualitative analysis. These subthemes vary per conceptual and temporal category (In-School, Out of School, New Situation) and also include emergent themes of attrition. In this way, it was possible to sort themes both by their emergence in interview data and in their relation to the process of secondary school attrition. A visual representation of these themes and the coding categorization that led to their emergence can be seen in Figure 3 below.
To better understand the application of these themes to an individual participant’s experiences, a series of case study flow charts have been created to provide a snapshot view of select participants’ stories expressed through interviews. These flow charts articulate a participant’s explanation of their attrition and the resulting health factors stemming from said attrition. These charts are not meant to be comprehensive summaries of the data included in this study, but rather, may provide practical insight into the manifestation of the emergent themes on the ground in Muhuru Bay. The first of these case studies can be found below in Figure 4.
Girl Develops a relationship with a male "friend" while in Form 2

Aunt (primary caregiver) is concerned that the man is 14 years older; fears domestic violence/abuse

Aunt refuses to pay school fees until girl ends relationship

Girl drops out of school in term 2 of Form 2

Aunt has man arrested, demands her investment back - "My aunt arrest him... she say that she want him to pay that money back, the money that she gave to educate me"

Man uses all remaining funds to pay bail and repay the aunt

Girl is left with two promised sources of money (aunt/friend) that can no longer support her - "But the money that he was supposed to take me back to school... he use in the cell there"

Girl's level of hope plummets - "I'm worried I will never go to school... I knew that I had just been left like that"

Girl expresses alienation, enters early marriage - "I could not go anywhere... I realized I could not stay with my family, so I just go"

Girl now faces, at age 18, elevated risk for domestic violence and pregnancy complications

Figure 4- Case Study Flow Chart #1: FY_21
In this case study, the participant exhibits signs of being involved with a transactional relationship with a male partner while still enrolled in school (See: Forming Relationships for Favors). The participant’s primary financial support comes from her aunt, who removes support upon learning about this relationship (See: Poverty and School Fees). At this stage, the girl enters into the “Out of School” category, and begins to experience a number of themes that emerged from that categorization including Post Attrition Optimism and Hope ("I'm worried I will never go back to school….") and Pride from Enrollment Status. Soon after the incident described in the case study, the girl enters into marriage at age 18, and is categorized as being in a “New Situation.” The data in this study suggests that this new situation may correspond with elevated risk of intimate partner violence (See: Intimate partner violence in early marriage) and potential self harm (See: Self-harm in response to new situation). It is possible that the risk of self-harm for this participant would be elevated due to her earlier experiences with losing optimism and hope prior to marriage.

As previously stated, this is only one case out of the 35 interviews collected from participants in the study. Yet, even in this isolated case, it is possible to see traces of emergent health factors in all of the highlighted thematic categories (In-School, Out of School, and New Situation). Furthermore, this experience of intersecting factors of attrition and health is certainly not unique to one participant, as other case studies show an equal amount of coverage of study themes. A second case study can be observed below in Figure 5.
Conceived; left school while in Form 2

Parents cannot look after the child

Parents' annoyance elevates re: wasted fees

Parents begin to favor male children - "they are telling me those money they are using... they better use to take boys to school"

Girl considers Abortion - "First, I think I can go and do abortion, but no..."

Girl develops suicidal thoughts - "I guess I think another thing... I do suicide"

Girl considers running away from home - "Let me go away from this home... my parents, they didn't want me to stay at home"

Girl's level of self-esteem plummets

Girl begins harmful comparison practices - "They finished their school, they're working their jobs... but me, I'm just at home... just here. I'm just wondering..."

Girl has faced severe mental and reproductive health risks as a result of conception and attrition

Figure 5- Case Study Flow Chart #2: FY_32
This participant referenced adolescent pregnancy as the primary cause of her attrition and terminated her secondary school enrollment in Form 2. Immediately, the participant’s parents exhibit a degree of aggression due to feeling that they have lost a monetary investment due to the girl’s dropout (See: Familial violence in response to new situation). In response to the pregnancy, the participant considers abortion as an option (See: Abortion in response to early pregnancy), thereby elevating her risk of abortion-related negative health outcomes. She shortly decides against pursuing an abortion (See: Key actors in influencing abortion decision) and turns toward another harmful option: suicide (See: Self-harm in response to new situation). Eventually, this participant refuses both abortion and suicide, and instead begins to experience a variety of mental health-related challenges as a result of her attrition. Particularly, the girl references suffering due to comparing herself with friends that are currently able to finish school, when she cannot (See: Emergence of harmful peer comparisons).

This participant, by age 17, has already passed through five of the health factor subthemes outlined in this study. Not referenced in this flow chart is the episiotomy that was required during this participant’s birthing process, which would fall under yet another subtheme (See: Birthing complications). Like the previous case study, FY_21, the experience of this participant is not particularly unique. Rather, the experience of a variety of health challenges due to attrition is indicative of the results found in this study and a concerning example of the barriers to well-being that female youth face post-attrition.
Numerical Data and Analysis

The second portion of this study involved the collection of numerical attrition data from five secondary schools in Muhuru Bay across the last five years. This data was collected for all male and female students, and specifically tracks the graduating classes of 2014 and 2015 throughout their time in secondary school. However, the qualitative data was collected only from female students, and a number of female-specific causes of attrition and health factors emerged in the analysis. These female-specific data include information on abortion, early pregnancy, birthing complications, and the prevalence of intimate partner violence. Because of the impact of these female-specific factors of attrition and health, this study hypothesized that the numerical data for the classes of 2014 and 2015 would show that female students drop out at a higher rate than male students in Muhuru Bay secondary schools.

To begin testing this hypothesis, baseline data was collected for male and female student enrollment as of 2015. At the time of the study, the five Muhuru Bay secondary schools analyzed were, overall, 36.5% female and 63.5% male. Individual schools ranged from being 28.2% female to 50.3% female in terms of student representation. It should be noted that the only school with gender parity, Senye secondary at 50.3% female, is also the only school analyzed with a female headmaster. All other schools had male headmasters and showed a considerable dominance in male student representation compared to female student representation. Enrollment and attrition data was collected for 910 students across 76 individual form rosters that were enrolled in five schools between 2011 and 2015. In all of this data, only 4 individual class rosters
recorded a higher number of girls than boys. Two of these four instances occurred in 2015 at Senye secondary, which had established gender parity.

To measure and compare attrition for male and female secondary school students in Muhuru Bay, enrollment numbers were collected for the classes of 2014 and 2015, and each of those classes were tracked throughout their time in school. These classes have been labelled in accordance with their expected year of graduation. The graphs below show the rates of retention for male and female students in both graduating classes across their four years of schooling. It should be noted that data from Kumoni secondary school is only represented for the class of 2015, as Kumoni did not welcome its first form 1 students until 2012, making 2015 its first full graduating class. Each graph begins at 100% of the original class enrollment and tracks retention and thus, attrition is measured in terms of percent of original class enrollment remaining. Each graph has been fitted with a line of best fit to visualize rates of attrition for each gender. However, due to sudden and sharp drops in enrollment, a number of these lines of best fit are less telling than the data they represent.

The table that follows exhibits the raw enrollment and attrition data not in terms of percentages, but in terms of actual student enrollment. This table displays the disparity between the raw number of male and female students actually represented in each class, rather than comparing enrollment via percent remaining. The table also reinforces the trend seen in the graphs of drastic drop-offs in student enrollment during the later forms (F3 and F4) of a secondary school education.
Figure 6A: Winjo Secondary retention c/o 2014 and 2015

Figure 6B: Nyankondo Secondary retention c/o 2014 and 2015
Figure 6C: Rabwao Secondary retention c/o 2014 and 2015

Figure 6D: Senye Secondary retention c/o 2014 and 2015
Figure 6E: Kumoni Secondary retention c/o 2015
### Muhuru Bay Student Attrition Tables

#### Female Enrolled in 2011, for Completion in 2014

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th># Dropped out F1 (2011)</th>
<th>% of Original Class Lost</th>
<th># Dropped out F2 (2012)</th>
<th>% of Original Class Lost</th>
<th># Dropped out F3 (2013)</th>
<th>% of Original Class Lost</th>
<th>Total # of c/o 2014 Dropped out</th>
<th>% of C/o 2014 Dropped Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senge</td>
<td>4</td>
<td>22.22%</td>
<td>8</td>
<td>44.44%</td>
<td>6</td>
<td>33.33%</td>
<td>18</td>
<td>100%</td>
</tr>
<tr>
<td>Raboro</td>
<td>2</td>
<td>11.11%</td>
<td>3</td>
<td>16.67%</td>
<td>4</td>
<td>22.22%</td>
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<td>50.00%</td>
</tr>
<tr>
<td>Nyankondo</td>
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<td>0.00%</td>
<td>1</td>
<td>50.00%</td>
<td>1</td>
<td>50.00%</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Yinjo</td>
<td>8</td>
<td>44.44%</td>
<td>4</td>
<td>22.22%</td>
<td>3</td>
<td>15.67%</td>
<td>15</td>
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</tr>
<tr>
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<td>n/a</td>
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<td>n/a</td>
<td>n/a</td>
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</table>

#### Male Enrolled in 2011, for Completion in 2014

<table>
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<tr>
<th>SCHOOL</th>
<th># Dropped out F1 (2011)</th>
<th>% of Original Class Lost</th>
<th># Dropped out F2 (2012)</th>
<th>% of Original Class Lost</th>
<th># Dropped out F3 (2013)</th>
<th>% of Original Class Lost</th>
<th>Total # of c/o 2014 Dropped out</th>
<th>% of C/o 2014 Dropped Out</th>
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<td>2.86%</td>
<td>8</td>
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<td>16.67%</td>
<td>15</td>
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<td>50.00%</td>
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<tr>
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<td>50.00%</td>
<td>4</td>
<td>33.33%</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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</tr>
</tbody>
</table>

#### Female Enrolled in 2012, for Completion in 2015

<table>
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<tr>
<th>SCHOOL</th>
<th># Dropped out F1 (2011)</th>
<th>% of Original Class Lost</th>
<th># Dropped out F2 (2012)</th>
<th>% of Original Class Lost</th>
<th># Dropped out F3 (2013)</th>
<th>% of Original Class Lost</th>
<th>Total # of c/o 2014 Dropped out</th>
<th>% of C/o 2014 Dropped Out</th>
</tr>
</thead>
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<td>38.46%</td>
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<td>0.00%</td>
<td>5</td>
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</tr>
<tr>
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<td>15.00%</td>
<td>11</td>
<td>85.00%</td>
<td>1</td>
<td>5.00%</td>
<td>15</td>
<td>75.00%</td>
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<td>100%</td>
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<td>n/a</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Yinjo</td>
<td>3</td>
<td>100%</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>3</td>
<td>100%</td>
</tr>
<tr>
<td>Kamori</td>
<td>3</td>
<td>100%</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>3</td>
<td>100%</td>
</tr>
</tbody>
</table>

#### Male Enrolled in 2012, for Completion in 2015

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th># Dropped out F1 (2011)</th>
<th>% of Original Class Lost</th>
<th># Dropped out F2 (2012)</th>
<th>% of Original Class Lost</th>
<th># Dropped out F3 (2013)</th>
<th>% of Original Class Lost</th>
<th>Total # of c/o 2014 Dropped out</th>
<th>% of C/o 2014 Dropped Out</th>
</tr>
</thead>
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<td>14</td>
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<td>45.45%</td>
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<td>100%</td>
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<tr>
<td>Yinjo</td>
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<td>0.00%</td>
<td>3</td>
<td>23.07%</td>
<td>10</td>
<td>75.58%</td>
<td>13</td>
<td>100%</td>
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<td>Kamori</td>
<td>4</td>
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<td>35.71%</td>
<td>0</td>
<td>0.00%</td>
<td>9</td>
<td>64.23%</td>
</tr>
</tbody>
</table>

Figure 7: Full Muhuru Bay Attrition Data for c/o 2014 and 2015
By averaging the results included above, it is possible to compare general rates of attrition for female and male students throughout Muhuru Bay for both the class of 2014 and 2015 in order to assess the hypothesis that girls do, in fact, drop out at a higher rate than boys in this community.

| % of all Females lost to attrition (c/o 2014) | 78.57% |
| % of all Males lost to attrition (c/o 2014) | 71.88% |
| % of all Females lost to attrition (c/o 2015) | 68.29% |
| % of all Males lost to attrition (c/o 2015) | 82.14% |

Figure 8: Male-Female % Attrition for All of Muhuru Bay Secondary Schools

Whereas this study hypothesized that female students would drop out at a significantly higher rate than male students due to the extra burden placed on female youth via female-specific factors of attrition and health, the data reveals something else. For the graduating class of 2014, male and female students dropped out at comparable rates, experiencing a total loss of 71.88% and 78.57% of original students, respectively. Even more unexpected was the data for the class of 2015, in which male students dropped out at a noticeably higher rate than female students, with a total loss of 82.14% and 68.29%, respectively. While it has not been possible to track enough graduating classes to confirm whether or not the similarities in attrition rates are consistent across longer periods of time, such as decades, these numbers are considerably more similar than expected.

However, it is important to remember that despite the similarities in attrition rates, Muhuru Bay secondary schools are roughly 36% female and 64% male. Therefore, if male and female students drop out at roughly the same proportion, this does not mean
the same number of male and female students are leaving secondary school. In fact, by using the proportion of male/female secondary school representation as of 2015, it would be expected that approximately two times (1.74x) as many boys would drop out per each graduating class as compared to girls.

**Conclusions and Implications**

Overall, three major factors emerged in this study regarding causes of girls’ attrition: early pregnancy, early marriage, and poverty or lack of school fees. The most prevalent of these themes, pregnancy, carries important implications for the most common pathway or timeline that occurs when a girl drops out of school. According to the data collected here, it is more common for a girl to become pregnant while in school, and then, as a result, drop out than it is for a girl to drop out because of school fees and shortly afterwards become pregnant with her first child. This suggests that, in order to prevent attrition, potential interventions and programs may need to target discussions of sexual education and pregnancy prevention for girls currently enrolled in a secondary school. Particularly, there appears to be a need for increased discussions regarding contraception and a clear need for programs that may make methods of pregnancy prevention outside of abstinence more accessible.

Perhaps equally as important is the need for sustained support for female youth once pregnant in order to encourage a return to secondary school. The nature of this needed support is complex, as a number of female youth would require assistance with childcare, which can be difficult to provide. As previously discussed, a number of families, upon learning that a girl is pregnant, will abandon hope of that girl finishing school, stop financially supporting the girl, or in some cases, force the girl to leave the
home. A successful intervention aimed at providing support for young mothers so that they may return to school would need to focus on this phenomenon of abandonment. First steps toward the development of a program of this nature may require the creation of a large educational component in which families are educated on the benefits of secondary school education, particularly for women, and the effect it can have on female youth and their children. This theoretical component is meant purely to convince the family to reconsider placing sole responsibility for the care of the child on the female youth, so that avenues for returning to school may be discussed.

While returning girls post-attrition back to secondary school is clearly a goal that this study supports, it is important to note that without addressing confounding health factors, a return to school may be entirely impossible. This research unveiled a wide array of health factors at all stages of the secondary school education process, including post-attrition factors. After leaving school, girls faced a myriad of potential health problems depending on the cause of their attrition and their current situation. These problems include intimate partner violence, birthing complications, self-harm and suicidal thoughts, abortion, lowered self-esteem and optimism, and familial violence. Any attempt to address attrition without also addressing these health factors is unlikely to succeed and, in some cases, may prove harmful. For instance, a situation in which a girl has left school and is now married to a violent partner may only be intensified by an attempt to convince the husband to allow his wife to leave his home and return to school. The crucial lesson of this study is that there are health determinants closely linked to the causes and results of secondary school attrition for female youth, and ignoring these health determinants can lead to dangerous and harmful outcomes.
Therefore, it may be that the most successful possible designs for interventions addressing secondary school attrition among female youth focus not on returning the girls to school, but on first alleviating the potentially harmful health situations in which they live post-attrition. After all, if the goal of an intervention is to bring well-being to its participants, then well-being may need to be attained outside of school before a return to secondary education is possible.

The quantitative data collection portion of this study amassed numerical attrition data for the purpose of testing the hypothesis that female-specific factors of attrition and health would lead female students to drop out at a higher rate than their male counterparts. However, upon analysis, it was revealed that the rates of attrition in Muhuru Bay for the classes of 2014 and 2015 do not differ significantly between the sexes. These results are contradictory to the initial hypothesis, and may suggest that Muhuru Bay possess unique characteristics that lead it to break the trend of lopsided female attrition in Migori County and throughout East Africa. It may be possible that the burden of poverty and the threat of negative health determinants in Muhuru Bay is so greatly elevated that trends across gender become difficult to see in attrition. Personal observations in Muhuru Bay also support the possibility that boys have easier access into the local economy as fishermen than girls do, thereby driving them to leave school early to provide for themselves and their families.

Nevertheless, data collected here shows clearly that girls in Muhuru Bay have not dropped out significantly more than boys over the last five years, or two graduating classes. In fact, if anything, the numerical data may even suggest that the rate of male attrition is increasing. However, this does not mean the efforts focused on girls’
education are misguided or need to be re-evaluated. On the contrary, these results, coupled with observations made in Muhuru Bay, may in fact worsen the burden on young women attempting to finish secondary school.

Because Muhuru Bay secondary schools are approximately 36% female and 64% male overall, let us imagine a case study class of size 40. In this class, around 14 students would be expected to be female, and 26 would be expected to be male. If both of these groups suffer attrition at approximately 75%, near the average rate for both the class of 2014 and class of 2015, that would result in the loss of 11 female students and 20 male students. This leaves the graduating class with 3 female students and 6 male students. Herein lies the problem that combines this unexpected phenomenon of equal attrition with community perceptions of success and assistance. Were a question to be posed to the community asking who succeeds more often in school, personal experiences would suggest that the response would favor males. In this case study, the final graduating class would graduate twice as many boys as girls, thus justifying the notion that girls are, on average, not as talented or successful in school as their male counterparts. Simultaneously, if a question were to be posed asking who requires the most help from the community to finish secondary school, the response may, again, favor males. After all, in our case study, 20 boys dropped out, almost twice as many as the girls (only 11), thus justifying the idea that boys are at a more substantial risk for attrition.

These observations of community perspective have not been examined in-depth, and yet, indicate a potentially harmful paradigm for female students facing the myriad of attrition factors outlined in this study. If the community believes that boys are more
successful, and in need of more assistance, female students, who are already less represented, may find themselves erased from discussions of secondary education entirely. However, it is important to note that these attitudes that interpret the numerical data collected here are based on brief observation only, and further research is necessary to determine the prevalence and complexity of these potentially harmful sentiments.

With the numerical data revealing unexpected equal attrition rates between men and women, one possible next step for research would be to collect qualitative data for male students that have dropped out in the past five years, as was done for female students here. Through this, it may be possible to reveal how and why the rates of attrition for boys and girls are unexpectedly similar, and the data may reveal male-specific factors of attrition and health that result in equal attrition rates. Additionally, further research is necessary to determine whether health factors outlined in this study such as intimate partner violence and domestic abuse, which traditionally disproportionately affect women, also affect males post-attrition in Muhuru Bay.

As previously mentioned, the numerical data’s implications may have a negative effect on female youth in Muhuru Bay attempting to complete secondary school. However, this possibility stems from a supposition made about community norms and perspectives deeming young women as “less successful” or “in need of less help” than young men. Further research is necessary to confirm and truly understand these perspectives, particularly in the form of qualitative work, such as that conducted here for the study.
Additionally, it should be noted that of the 35 girls interviewed for qualitative information, only one of all girls contacted dropped out of school in Form 3 or later. The data indicates a clear barrier exists in year three that is stopping some young women from completing secondary school. This nearly aligns with the national average “school life expectancy” of just 9.4 total years, which corresponds to an expected dropout date of mid-term in Form 2 (UNICEF Kenya 2008). However, the reason as to why this barrier appears in the data and possible strategies for bypassing this challenge remain unknown. Additional data collection focusing on female youth that suffered attrition near this barrier may be needed to explain the apparent barrier to completing a secondary education.
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Appendix A
Semi-Structured Interview Questions and Descriptions

General Methodology

Interviews will be conducted using a “progression” methodology that aims to slowly lead into more difficult and critical topics/questions. While this progression is flexible, the structure is intended to be as follows:

1) Narrative story and fact
   a. Can you tell me a time when…
   b. When was the first time you…?
   c. Can you give me an example of…?
2) Opinions and thoughts
   a. What do you think about…?
   b. What were you thinking when…?
   c. Do you feel differently now?
3) Theorizing and reflection
   a. Why do you think that is?
   b. What about X makes you feel Y?
   c. Do you think others share your feelings?

Potential Questions to be used/adapted for Interviews and Data Collection

The following are considered to be guiding questions to be used during semi-structured interviews. While not all of the following will be answered during any single session, they are designed to keep semi-consistent responses and topics across discussions with different participants.

Regarding Educational Experiences

- Where did you attend primary school?
- Where did you attend secondary school?
- Did you enjoy your secondary school?
- What was your experience like?
- Do you think this experience is common in the community?
- What did you want from your education?
- Which form were you in when you left your secondary school?
- What caused you to leave the school?
Was there anything that would have kept you in school?
How did that make you feel?
Why do you think you felt that way?
How do you feel about it now?
Did your parents want you to stay in school?
Do you have any siblings in secondary school?
Did your parents attend secondary school?
Did they complete their secondary schooling?
What are you doing now?
Tell me more about your day to day schedule.
Do you have any friends that also did not complete secondary school?
Do you know what they are doing now?
Are you able to stay in contact with these friends?
Can you tell me a story about one of these friends that encourages you?
Can you tell me a story about one of these friends that worries you?

Regarding Reproductive Health and Marriage

What is your age?
Are you currently in a relationship?
Are you currently married?
How old were you when you were married?
What were you thinking and feeling when you were married?
What about marriage made you feel ….?
What good things can come from marriage?
What bad things can come from marriage?
Do you have siblings?
Are they married?
How old were your siblings when they were married?
How did it feel to hear that your siblings were being married?
Do you have any children? If yes, how many?
If no children, do you hope to have children? Soon?
How old were you when you first became pregnant?
What were your thoughts when you became pregnant?
What do you think your husband/boyfriend was thinking when you became pregnant?
How did your family react to the pregnancy?
Were there any problems with the birth?
What are your hopes for your child?
What advice would you give for your child during their schooling?
In addition to these more specific guiding questions, the semi-structured interviews are likely to include overarching discussions about age, philosophies of education, health, ideas of “what girls in Muhuru do” (gendered expectations), demographics, and family structure. It is also possible, although uncertain, that the conversation may turn toward WISER. While this may provide interesting perspectives, I hope to keep WISER out of most conversation in order to avoid complications with my host organization and the participants in the study.
Appendix B

Consent Scripts for Potential Participants

Oral Assent Script for Interview Participation

[I request waiver of the requirement to document written consent. It has been documented that written agreement may cause potential participants stress, and to avoid this, consent will be obtained orally. I will not be permanently documenting names of participants and any the risks of participation are relatively minimal. The content of the following informed consent script will be read to the interviewee. Participants will be given my name, my Kenyan phone number, contact information for my advisor, and contact information for the Duke University ORS office on a sheet of paper.]

My name is Zack Fowler, and I am a student at Duke University in the United States. I am here to learn more about secondary schools and education in Muhuru Bay, as well as to learn more about marriage and pregnancy. If you choose to participate in this interview, the information that you provide may help future secondary school students, the team that I work with at Duke, and me to better understand these things in Muhuru Bay.

If you decide to be a participant in this interview, I will ask you questions about your education, your feelings about entering and leaving secondary school, and your feelings and opinions about marriage and pregnancy. I may also ask questions about your personal experiences with marriage and pregnancy, as I hope to learn more about your story. I expect this interview to take about one hour, but it is okay if more or less time is necessary.

It is perfectly fine for you to choose not to participate, and you may ask me to stop the interview at any time after we have started. You will still receive the package of sugar, even if you ask to end early. You are also free to choose not to answer any single question I ask. There will be a recorder that is recording our conversation, but your name will not be included in the recording, and the recordings will be deleted as soon as the project is finished. I will not include your name or any personal information in any report of publication that results from this work. It is also important that you know that your choice whether or not to participate has no effect on your relationship with WISER in any way.

I do not expect any substantial risks or discomfort during the interview, but if you feel uncomfortable, please feel free to stop me or skip the question.
I have provided you with my cell phone number while I am in Kenya and my email address that will work even after I have returned to the United States. Please contact me if you have any questions!

Knowing all of this information, would you like to continue/begin the interview?

**Parental Oral Consent for Youth Participation**

[I request waiver of the requirement to document written consent. It has been documented that written agreement may cause potential participants stress, and to avoid this, consent will be obtained orally. It is also possible that parents of participants may be unable to read/write. I will not be permanently documenting names of participants and any the risks of participation are relatively minimal. The content of the following informed consent script will be read to parents/guardians of potential participants. If the parent/guardian requires a translation into Dholuo, translation will be provided as I read by my guide and driver, John Omondi. Participants and parents/guardians of participants will be given my name, my Kenyan phone number, contact information for my advisor, and contact information for the Duke University ORS office on a sheet of paper.]

My name is Zack Fowler, and I am a student at Duke University in the United States. I am here in Muhuru Bay studying the experience of female students in Muhuru Bay secondary schools, as well as studying experiences with marriage and pregnancy. For this particular study, I am hoping to talk to female students that have spent time in a secondary school, but left before graduating. If you choose to provide consent for your daughter to participate in this interview, the information that is provided may help future secondary school students, the team that I work with at Duke, and me to better understand education, marriage, pregnancy, and health in Muhuru Bay.

This study involves a single interview that should take about one hour. In this interview, I will ask your daughter questions about her education, her feelings about entering and leaving secondary school, and her feelings and opinions about marriage and pregnancy. I do not expect any substantial risks or discomfort during the interview, but if your daughter feels uncomfortable at any time, she will have the freedom to stop the conversation or skip a question. In exchange for this participation, your daughter will be given a package of soap as a token of appreciation.

It is perfectly fine for you to choose not to give permission to participate. Your family will still receive the package of sugar, even if your daughter asks to end the interview early. There will be a recorder that is recording our conversation, but your child’s name will not be included in the recording, and the recordings will be deleted as soon as the project is finished. I will not include your child’s name or any personal information in any report of publication that results from this work. It is also important
that you know that your choice whether or not to participate has no effect on your or your daughter's relationship with WISER in any way.

I have provided you with my cell phone number while I am in Kenya and my email address that will work even after I have returned to the United States. You may also contact my advisor in the US, my in-country contact, Dorcas Oyugi of WISER, and the ethics review board at Duke if you have any concerns. All of the contact information for these people have been included on the card that I have given you. Please contact me if you have any questions!

Having heard of all of this information, and acknowledging that you understand the study I am hoping to complete, are you willing to give permission for your child to participate in the interview?