

Grassroot Soccer

Final report for Total Health Programme (2018-2021)

Submitted by

**The impact of a sport-based comprehensive sexual and reproductive health education
programme (SKILLZ Health) on key adolescent health and well-being outcomes in
Zimbabwe and in Zambia**

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Executive summary

Background: This cohort study aimed to examine the impact of a sport-based comprehensive sexual and reproductive health education programme (SKILLZ Health) when paired with high-quality, youth-friendly services on key adolescent health and well-being outcomes. The study was conducted in peri-urban and urban sites in Zambia (Lusaka and Eastern Provinces) and urban and rural sites of Zimbabwe (Bulawayo, Matabeleland South and North). Before implementing the program, a baseline study was conducted to guide the development/refining of the intervention. Findings from the baseline study have been reported elsewhere. This report focused on understanding knowledge, attitudes, and beliefs of adolescent participants in relation to SRH - seeking and attitudes towards and uptake of key SRH services including condom use, contraceptives and HIV testing and treatment over a period of 3 years. Further, the cohort study enabled the comparison of key characteristics before and after the implementation of SKILLZ program.

Methods: This study was conducted in Zambia and Zimbabwe from December 2018 to December 2021. From each of the two countries two cohorts, school-based and health facility-based cohort were recruited and followed up. Baseline data collection commenced in December 2018, and endline data collection was completed in late 2021. A quantitative survey was administered to adolescent participants at baseline and endline, and qualitative data collection was conducted via key informant interviews, in-depth interviews, and focus group discussions with GRS staff, Coaches, health workers and teachers, and adolescent participants.

Results

Cohort retention

A total of 606 adolescents in Zambia (396 from the school-based cohort and 210 from the health facility cohort) and 540 from Zimbabwe (441 from the school-based cohort and 99 from the health facility-based cohort) were recruited and completed the baseline survey. Following participation in SKILLZ interventions, many of which were adapted due to the COVID-19 pandemic, a total of 327 participants in Zambia (205 from the school-based cohort and 122 from the health facility cohort) and 308 from Zimbabwe (264 from the school-based cohort and 44 from the health facility-based cohort) completed the endline survey.

Retention in the cohort from baseline to endline was lower than anticipated, with 52.0% of school-based participants in Zambia and 60.0% in Zimbabwe successfully followed up for endline data collection. Among the health facility-based cohort, 58.1% in Zambia and 47.3% were successfully followed up during the endline. Study team members made multiple visits to schools and facilities to follow-up with participants, attempted to contact them by phone where possible, and made every effort to track down as many participants as possible. Reasons for the lower than anticipated retention in the study include: adolescents transferring to different schools, moving to live with other family members, changing phone numbers/contact details in

the study period, as well as transferring to other health facilities. The disruptions caused by COVID-19 contributed to the high loss to follow-up, as did the dynamic nature of the study population.

Intervention participation

Of the group that completed both baseline and endline surveys, 106 adolescents in the Zambia school-based sample took part in at least two of the three SKILLZ interventions (SKILLZ Core, SKILLZ Boy or SKILLZ Girl, and SKILLZ Teen Clubs), compared to 170 in the Zimbabwe school-based sample. In the health facility-based sample in Zambia, 37 adolescents took part in both SKILLZ Plus and SKILLZ Plus Clubs, compared to 15 in Zimbabwe. This lower than expected participation in multiple SKILLZ interventions indicates that program effects may be understated compared to intended participation.

Summary of Key Findings:

- Adolescent participants demonstrated increased knowledge of HIV, pregnancy, and GBV support services at endline compared to baseline, and a statistically significant increase was seen in the Zimbabwe school-based cohort: 69.7% of participants reported knowledge of HIV support services at baseline, while at endline 84.5% of participants reported this knowledge ($p<.001$).
- Reported uptake of pregnancy and GBV support services increased at endline, but remained low (<15%), and changes were not statistically significant.
- Participants across all cohorts reported improved attitudes toward the friendliness of health staff (agreement with 'health staff at clinic are friendly'), with statistically significant changes observed in the Zambia (73.2% baseline vs 83.4% endline, $p=0.10$) and Zimbabwe school-based participants (55.3% baseline vs. 69.3% endline, $p=.004$)
- There was also improved perception of health staff's ability to preserve confidentiality (increased agreement with 'health staff will keep my confidentiality'), with significant change observed in the Zimbabwe school cohort: 56.1% baseline vs. 71.2% endline ($p=.008$)

Condom and family planning use among sexually active adolescents

- Reported sexual activity among participants increased at endline, but remained low overall.
- While at baseline none of the school-based sexually active participants in Zambia reported having used a condom during last sex, this proportion increased to 39.1% ($n=9/23$ sexually active participants) at endline. In Zimbabwe, this proportion increased from 33.3% ($n=3/9$) at baseline to 45.2% ($n=14/31$) at endline.
- Condom use at last sex in the Zambia health facility-based cohort increased from 46.7% at baseline ($n=14/30$) to 76.8% at endline ($n=43/56$), while in Zimbabwe condom use at last sex increased from 33.3% ($n=1/3$) to 57.1% ($n=4/7$).
- While very few sexually active adolescents in Zambia (15%; $n=2$) and Zimbabwe (0.0%) reported having used any form of family planning at baseline, the proportion of school-

based cohort who reported having used any form of family planning increased to 43.5% (n=10) in Zambia and 6.5% (n=2) in Zimbabwe.

Adolescent HIV testing, linkage to care and adherence to ART

- The proportion of adolescents who reported ever testing for HIV increased at endline (62.4% in Zambia, $p=.001$; 44.3% in Zimbabwe, $p<.001$) compared to baseline (33.2% in Zambia; 24.9% in Zimbabwe) representing significant change.
- At endline, among the 128 school-based adolescents who had tested in Zambia, 3.9% (n=5/128) self-reported being HIV positive, of which 60.0% (n=3/5) registered for ART and ever started ART. In Zimbabwe, six out of the 117 (5.2%) adolescents who ever tested for HIV self-reported being HIV positive, of which 50.0% (n=3/6) registered on ART.
- Among the health facility-based adolescents who participated in both the endline and baseline survey in Zambia (n=122), the proportion of adolescents who ever tested for HIV increased from 86.9% at baseline to 92.6% at endline. In Zimbabwe, 88.6% (n=39/44) of health facility-based adolescents self-reported ever tested for HIV at endline compared to 68.2% (n=30/44) at baseline.
- At the end of the follow-up period, the majority of health facility-based adolescents both in Zambia (89.7%) and Zimbabwe (89.4%) who self-reported being HIV positive were registered for ART.
- The proportion of health facility-based adolescents who reported that they adhered to HIV treatment increased from 50.0% at baseline to 97.4% at endline in Zimbabwe. In Zambia, a slight increase was seen from 95.2% to 97.8%.

Decision-making

- The proportion of the school-based adolescents in Zambia who reported that they can make decisions about their sexual health care increased from 50.5% (baseline) to 84.4% (endline) and 37.4% (baseline) to 80.3% (endline) in Zimbabwe, which was significant ($p=.05$). A similar increase was seen when adolescents were asked if they could say no to sex when pressured, with a significant result for the Zimbabwe cohort (54.9% baseline vs 84.5% endline, $p=.001$), and talk to their partner about HIV/STI testing (Zambia 64.4% baseline to 77.1% endline, Zimbabwe 54.9% baseline vs. 76.9% endline, $p<.001$).

Gender equitable attitudes & self-image

- The proportion of school-based adolescents who disagreed with the statement “It’s only the girls’ responsibility to avoid pregnancy” increased at endline compared to baseline in both Zambia (43.9% baseline to 77.1% endline) and Zimbabwe (43.2% baseline to 70.1% endline, $p=.003$), representing an improvement in gender-equitable attitudes.
- For the statement, “a successful marriage is more important to girls than completing school”, there was slight improvement from baseline to endline in Zambia, as most participants (over 83%) disagreed with this statement, representing a more gender-equitable belief that remained consistent over the course of the study.

- The proportion of school-based adolescents who reported that they know how to overcome challenges increased in both countries from baseline to endline, with a significant change observed in Zimbabwe (Zambia: baseline 62.0%, endline 69.3%; Zimbabwe baseline 49.6%, endline 71.2%, $p=.009$).

Factors shaping uptake of SRH services and information

The following factors positively shaped uptake of SRH information and services:

- Common SRHR challenges for adolescents reported in qualitative data included early marriage, low condom use, early unintended pregnancy, SGBV, and lack of communication about the topic between parents and children.
- Increased SRH knowledge and awareness of available HIV, pregnancy and GBV services
- Increased perceived friendliness and ability by health workers to maintain confidentiality.
- Coaches played a key role in disseminating SRH information and referring/ linking adolescents to services.
- Youth Health Assistants (Coaches with additional training) were able to provide contraceptive counselling and commodities directly to young people in the community.
- Participating in sports activities helped in building skills such as teamwork, promoted discipline among adolescents, provided an enabling environment for accessing SRH information and enabled adolescent to be physically fit.
- SKILLZ assisted adolescents in gaining access to SRH services and information using WhatsApp during the COVID period.
- Adolescent participants reported that SKILLZ increased their understanding and awareness of GBV and available response services. This was echoed by adult stakeholders who noted that SKILLZ helped participants understand their rights.

Recommendations:

- Promote more participation of health facilities in delivering health services in schools. Undertaking such activities is important as it would help reduce distances to services, and fears of accessing services in adult-dominated spaces.
- There is need for more youth-friendly services and increased sensitization through use of various media platforms like radio as well as engagement of community leaders, use of posters, and holding of sports galas aimed at providing HIV and SRH information and services.
- Increase sensitization among parents regarding the importance of adolescents accessing HIV services as this would enable parents to easily support or provide consent to children to access SRH services. This could be achieved through home visits and community dialogue meetings.
- Consider scaling up the use of media platforms such as radio, TV stations, and WhatsApp in providing SRH information during the COVID- 19.
- Provide SKILLZ identity cards, t-shirts, and caps to all those involved in outreach programs to facilitate easy identification when they conduct referrals and community visits.

- Provide permanent and confidential places for SKILLZ activities and services to facilitate visibility and accessibility to the venues.
- Condoms should be made more easily available to young people, by provision in more public places and through GRS Youth Health Assistants.
- Improve access to GBV services through promoting and conducting more community dialogues on the dangers of GBV and availability of GBV services.
- Adolescent respondents recommend more skills building in order for them to become more self-sufficient and improve their future prospects. Specific skills building requested included: making washable menstrual pads, undertaking farming activities such as chicken rearing, sewing, and hairdressing.

1.0 Background and purpose of the study

1.1 Background

Adolescence is a critical period of physical and psychosocial changes with exposure to sexual and reproductive health risk.¹ Many adolescents in low and middle-income countries (LMICs), including Zimbabwe and Zambia, experience poor sexual and reproductive health (SRH) outcomes which include unintended pregnancy, STIs, and HIV infection². About 16 million adolescent girls ages 15-19 give birth each year with 95% of these births occurring in developing countries. Teenage pregnancy increases health risks, complications of pregnancy and maternal mortality.³ The sub-Sahara region in Africa has the highest's rates of teenage pregnancy,⁴ and around 2.2 million sub-Saharan African adolescent girls experience unintended pregnancy annually (IPPF &

¹ WHO (2014) Health for the Worlds Adolescents. A second Change in the Second decade. World Health Organization. Geneva

² Gore F, Bloem P, Patton G, Ferguson J, Joseph V, Coffey C., Sawyer S., Colin Mathers (2011). Global burden of disease in young people aged 10-24 years: systematic analysis. The Lancet, 377(9783), 2093-2102

³ WHO (2011). Guideline on preventing early pregnancy and poor reproductive outcomes-among adolescents in developing countries. Geneva

⁴ WHO (2016) Atlas of African Health Statistics 2016. Health situation analysis of the African Region. African Health Observatory. World Health Organization. Regional Office of Africa.

<http://www.aho.afro.who.int/en/atlas/key-determinants/6.43-poverty-and-income-inequality>

GI 2010). Poverty, social norms and gender issues contribute to women being more likely to engage in high risk sexual practices like transactional sex or unprotected sex.⁵ Women and girls are most affected by HIV accounting for 60% of people living with HIV in the region and adolescent girls and young women aged 15-24 are eight times more likely to be infected than boys and young men the same age.⁵

Zambia and Zimbabwe are among the Sub-Saharan countries that continue to face several SRH challenges. In Zimbabwe, the fertility rate for women aged 15-19 years was reported at 115 births per 1000 women.⁶ Regarding pregnancy, 9% of adolescents aged 10-19 years had ever been pregnant, and of these 17% were aged 15-19 years and 0.2% were aged 10-14 years.⁷ As of 2015, the percentage of teenagers who had begun childbearing ranged from 10% in Harare to 31% in Mashonaland Central.⁸ The median age at marriage and first sexual intercourse among women aged 25-49 is 19.8 and 18.8 years respectively, indicating that women engage in sex before marriage.⁸ The maternal mortality ratio in Zimbabwe is 651 maternal deaths per 100,000 live, compared to 398/100,000 live births in Zambia.⁹ In Zimbabwe, modern contraceptive use among currently married women ranges from 57 percent in Manicaland to 71% in Mashonaland West and Bulawayo, whereas in Zambia, 89.4% of women aged 15-49 both married and unmarried had not used any contraceptives. The HIV prevalence among adults (15-49 years old) in Zambia is estimated at 12.4%, and young women (15-24 years old) are at increased risk of HIV infection with an HIV prevalence rate of 4.2% compared to 3.3% for young men ages 15-24.⁸ Zimbabwe has an HIV prevalence of 13.5%, with 1.3 million people living with HIV. Among young women, HIV prevalence increases with age, with 2.7% of women aged 15-17 living with HIV, increasing to 13.9% of women age 23-24. Among young men, HIV prevalence holds steady at around 2.5% until the age of 23-24 when it increases to 6%.¹⁰ Between 500 000 and 700 000 teenagers fall pregnant every year, with 20 percent of the pregnancies in this group due to early child marriages.¹¹

In LMICs, social norms and values can conflict with the reality of premarital sex and using contraceptives for many adolescents. In many cases, adolescents lack adequate information on contraceptives and STIs.^{9,14,15} These norms have contributed to high early aged unwanted pregnancy for young women in Zimbabwe and Zambia. Additional factors which increase unsafe risky sexual behavior are low gender equity, lack of access to condoms, and traditional gender

⁵ Wamoyi J, Mahana G, Mongi, A, Nysule N, Kapiga S., Changulucha J. (2014). A review of interventions addressing structural drivers of adolescents and reproductive health vulnerability in sub Saharan Africa: implications of sexual health programing. Reproductive Health. 11:88. Pubmed.

⁶Ministry of Health and Child Care (2016). Zimbabwe National Adolescent Fertility Study, Harare: MoHCC Technical Report authored by Dr. Naomi N. Wekwete, Prof. Simbarashe Rusakaniko and Mr. George Zimbizi (Consultants)

⁷Ministry of Health and Child Care (2016). Zimbabwe National Adolescent Fertility Study, Harare: MoHCC Technical Report authored by Dr. Naomi N. Wekwete, Prof. Simbarashe Rusakaniko and Mr. George Zimbizi (Consultants)

⁸ Ministry of Health and Child Care (2016). Zimbabwe National Adolescent Fertility Study, Harare: MoHCC

⁹ Zambia Demographic and Health Survey 2013-14. 2014, Central Statistical Office (CSO) [Zambia], Ministry of Health (MOH) [Zambia], and ICF International: Rockville, Maryland, USA

¹¹<https://news.pindula.co.zw/2017/03/14/zimbabwe-highest-teenage-pregnancy-rate-sub-saharan-africa-national-study/>

norms.^{12,13} Further, previous interventions in LMICs have increased conflicting messages about accurate information about condoms and sexual health. One area recommended for future research and interventions is the reduction of negative messages and stigmatization of condoms.¹⁴

In addition to the challenges discussed above, poor access to condoms and contraceptive together with the high rates of teenage pregnancies and child marriages are more likely to be exacerbated by the outbreak of the COVID pandemic. This is especially true for low- and middle-income countries (LMICs) where access to SRHR services is poor among adolescents and young people. According to UNFPA (2020), the COVID-19 pandemic is expected to disrupt the current efforts to reducing teenage pregnancies and ending child marriages, potentially resulting in 13 million additional child marriages in LMICs by 2030.¹⁵ Lessons from past epidemic outbreaks such as the Ebola show that adolescents are more affected by outbreaks. Some of the negative effects include disruptions in education, increases in sexual and gender-based violence, limited access to essential SRHR services, and forced marriages.¹⁶ It is therefore important to develop innovative approaches that could help to reach adolescents and young people with information and essential SRHR services during the COVID-19 pandemic and beyond.

Sports for development has emerged as a promising method to address SRH issues among adolescents. Sports have been used as a platform for development around the world.¹⁷ By engaging youth in a fun activity, organizations then in return provide health information and increase confidence in their daily lives.¹⁷ For young adolescent girls, sports can bring a collective experience in messages around social norms and gender issues along with building up self-confidence and increasing understanding of others.¹⁸ Research has found that female adolescents who participate in sports have higher levels of self-esteem compared to non-participants, and their increased self-esteem could lead to lower risks of unprotected or risky sex, and ultimately decrease of adolescent pregnancy rates.¹⁹ In LMICs, including Zimbabwe and Zambia, these interventions have assisted in enhancing learning and behavior change.²⁰ While concerns on how to adapt and implement sport-based sexual education during outbreaks such as the COVID-19 pandemic may arise, there is scarce documentation on the extent of the disruptions caused by COVID-19 and how

¹² Hallfors, D. J., Cho, H., Rusakaniko, S., Iritani, B., Mapfumo, J., & Halpern, C. (2011). Supporting adolescent orphan girls to stay in school as HIV risk prevention: evidence from a randomized controlled trial in Zimbabwe. *American journal of public health*, 101(6), 1082-1088.

¹³ Erulkar, A. S., Onoka, C. J., & Phiri, A. (2005). What is youth-friendly? Adolescents' preferences for reproductive health services in Kenya and Zimbabwe. *African journal of reproductive health*, 51-58.

¹⁴ Denno, D. M., Hoopes, A. J., & Chandra-Mouli, V. (2015). Effective strategies to provide adolescent sexual and reproductive health services and to increase demand and community support. *Journal of Adolescent Health*, 56(1), S22-S41.

¹⁵ United Nations Funds for Population Activities. Impact of the COVID-19 Pandemic on Family Planning and Ending Gender-based Violence, Female Genital Mutilation and Child Marriage. Available online: https://www.unfpa.org/sites/default/files/resource-pdf/COVID-19_impact_brief_for_UNFPA_24_April_2020_1.pdf (accessed on 23 February 2022).

¹⁶ Riley, T.; Sully, E.; Ahmed, Z.; Biddlecom, A. Estimates of the Potential Impact of the COVID-19 Pandemic on Sexual and Reproductive Health in Low- and Middle-Income Countries. *Int. Perspect. Sex. Reprod. Health* **2020**, *46*, 73–76.

¹⁷ Lindstrom, M., Ostergren P.O. (2000) socio economic differences in leisure time pa: the role of social participation and social capital in shaping health related behavior. *Social science and medicine*.

¹⁸ Patricia Struthers (2011) The use of sport by a Health Promoting School to address community conflict, *Sport in Society*, 14:9, 1251-1264, DOI: 10.1080/17430437.2011.614782

¹⁹ Dodge T., Jaccard J. (2002) Participation in Athletics and Female Sexual Risk Behavior: The evaluation of four causal structures. *Journal of Adolescent Research*, Vol. 17 No. 1. Sage Publications.

²⁰ Mwaanga, O. (2010). Sport for addressing HIV/AIDS: explaining our convictions. *Leisure Studies Association Newsletter*, 85: 61–67.

such disruptions can be addressed. Sports as a platform for behavior change in sexual health is assumed to also be a tool for empowerment for adolescent girls who have been disempowered due to deeply rooted social barriers. Although some studies have been conducted in high income countries on the impact of sports on sexual health, similar comprehensive studies are scarce in Sub-Saharan Africa, and more specifically in Zambia and Zimbabwe.²¹

While youth represent the largest segment of our population in history, they rarely have the opportunity to shape the health programs and services that impact their lives and health. Youth participatory action research (YPAR), is a research paradigm employed to give youth a voice: the model defines youth as assets rather than simply beneficiaries. Youth are trained to conduct systematic research to improve their lives, their communities, and the institutions intended to serve them. Rooted in social justice to support youth's unique energy and insight. Youth participatory action research uses the same principles as participatory action research (PAR). The PAR paradigm is rooted in social research where research "experts" control the production of and distribution of knowledge; this is often a shift from researcher to participant.²²

YPAR is increasingly used by public health practitioners who realize that resources are ineffectively allocated in promoting health promotion programs. A systematic review examines current literature on the topic: YPAR literature comprises predominantly studies from high income countries and are qualitative studies, with only two randomized trials.²³ The most common outcomes associated with participation in YPAR were those related to agency and leadership (75.0%), followed by academic or career (55.8%), social (36.5%), interpersonal (34.6%), and cognitive (23.1%) outcomes. This systematic review provides emerging evidence of the skills and competencies youth may develop through YPAR. YPAR develops young people's engagement in community issues so that they can be agents of change. It supports the following: 1) redefining who has the expertise to produce knowledge: not just professional adult researchers but young people who are living the issues they are studying, 2) provide skills in inquiry, evidence, and presentation in turn supporting young people's development as agents change 3) generate findings that provides insights into issues faced by young people that they themselves experience, and support them in solving the challenges or finding ways to address them.

1.2 Total Health programme

"Total Health" was a three-year programme (2018-2021), implemented by the non-profit organisation Grassroot Soccer and its collaborating partners in Zambia (Lusaka and Eastern Provinces) and Zimbabwe (Bulawayo, Matabeleland South and North Provinces). The programme

²¹ Hershov R, Gannett K, Merill J., Braunschweig E., Barkely C., Decelles J., Harrison A . (2015). using soccer to build confidence and increase HCT uptake among adolescent girls: a mixed methods study of an HIV prevention programme in South Africa. 2015. Sport Society. Vol 18. (8)

²² Ozer., EJ, Ritterman, ML, & Wanis, MG. "Participatory Action Research (PAR) in Middle School. Opportunities, Constrains, and Key Process" The American journal of Community Psychology. 2010. 46 (1-2): 156-166

²³ Anyon, Y., Bender, K., Kennedy, H., & Dechant, J. (2018). A systematic review of youth participatory action research (YPAR) in the United States: methodologies, youth outcomes, and future directions. Health Education & Behavior, 1090198118769357.

aimed to improve SRH and well-being outcomes for adolescents aged 10-14 in Zimbabwe and Zambia by building their ASSETS (through SKILLZ programming, develop and improve life skills, SRH knowledge, health-seeking behaviours, and other social and health assets of adolescents), promoting ACCESS to high impact health services (partnering with clinical service providers to increase access to healthcare services), and supporting and promoting their ADHERENCE (adherence to healthy lifestyle; repeat access to health services as well as adherence to medications as necessary) in order to sustain healthy behaviours and adhere to treatment/medication. In addition to sport-based comprehensive sexuality and life skills education, Total Health sought to improve uptake of and repeat access to targeted and high-impact SRH services including family planning, HIV testing and treatment and retention in care, STI testing, VMMC and HPV vaccination. Before implementing the programme, a baseline survey was conducted to develop project indicators that would guide the implementation process.

Summary of GRS Total Health Programme (Implementation activities)

This report focuses on the plans to evaluate the Total Health Program carried out by a separate team of implementing partners including GRS, Ministry of Education (MoE, Zambia) Ministry of Health (MoH, Zambia), Ministry of Primary and Secondary Education (MoPSE, Zimbabwe) and Ministry of Health and Child Care (MoHCC, Zimbabwe). Grassroot Soccer is a non-governmental organization that has been and will continue to contribute to the National Health Strategic Plans for both Zambia and Zimbabwe through the Adolescent Health Strategy by leveraging its MoUs with the respective ministries. Grassroot Soccer operates within the National HIV/TB response framework in each country. MoH, Zambia and Ministry of Health and Child Care, Zimbabwe continue to be the primary referral partners for all clinical services including access to treatment while continuing to use schools as a platform to engage in-school adolescents for its interventions and prolonged interaction through in-school adherence clubs (SKILLZ Clubs).

For this particular research, Grassroot Soccer led the implementation of the Total Health with evaluators responsible for research activities. The implementation of Total Health included the following inputs:

1. Identification of the schools (Lusaka) and health facilities (Chipata) in Zambia where GRS would conduct the GRS Total Health programme
2. Identification of the schools and health facilities in Bulawayo, Matabeleland North and South (Zimbabwe) where GRS would conduct the Total Health Programme
3. Identification of clinical partners who worked together with GRS Zambia and Zimbabwe to implement the GRS Total Health Programme
4. Orientation on and facilitation support for the Coaches who delivered the Total Health package alongside GRS.
5. Use of soccer as a platform to implement activities and sport metaphors in the SKILLZ Health programme that build young people's assets, create a safe space where mentorship and positive peer pressure encourages health seeking behaviours.

6. Actively generated demand for high impact SRH services and linked young people to health services
7. Strengthening health service providers' abilities to engage with young people in a non-judgmental, safe, and fun environment.
8. GRS Coaches implemented soccer-based educational interventions in school and actively linked adolescents to differentiated and high-quality health service providers through soccer-based SKILLZ Health Events
9. GRS Coaches also provided individual referrals, Coach-led clinical accompaniment and follow up in coordination with adolescents' care and treatment providers, and household caregivers.

All adolescents meeting the inclusion criteria and participating in the GRS Total Health Programme were eligible for recruitment in the cohort.

Effects of COVID-19 on the implementation of Total Health program

The onset of COVID-19 in December 2019 raised concerns and challenges for the implementation of the Total Health Program. Many countries including Zambia and Zimbabwe imposed restrictive measures such as lockdowns, social distancing, wearing of masks and hand washing as a way of mitigating the spread of the virus. In both Zambia and Zimbabwe, large gatherings were restricted. In addition, schools and other social platforms such as places of worship and recreational centres were closed during the peaks of the various waves of the COVID-19 experienced between December 2019 to December 2021. During COVID-driven school closures, in-person Total Health activities were suspended. Adjustments were made to implementation, described below. Although there were no explicit restrictions to accessing health services (including SRHR services) at the health facilities, the fear of contracting the virus coupled with in-country strategies to decongest health centres led to many adolescents diminishing their visits to the facility. The following section summarises how the Total Health Implementation team adjusted the program to ensure participants were reached with information and had access to SRHR services during the on-going COVID-19 pandemic.

Zambia - COVID-Related Adjustments made to the Total Health Program

The following adjustments were made to the Total Health program in Zambia:

- *Adapted the SKILLZ implementation for small group, scenario-based phone sessions:* During the first wave of COVID-19, when all physical meetings were suspended, implementation of SKILLZ curriculum was adapted to smaller groups scenario-based phone sessions. Each small group consisted of a maximum of 5 participants. Coaches delivered the session or theme to the participants at the time convenient and comfortable for the participants. One of the challenges encountered in this approach was that some participants had no phones and needed to borrow from their parents/guardians. In such

instances, the session was conducted in the evening. Other challenges included poor phone network and electricity power cuts which occasionally affected availability of the participants. However, Coaches delivered several sessions a day on the same theme to ensure all participants had a chance to attend. The phone sessions lasted between 60-90 minutes each.

- *Use of WhatsApp groups to discuss issues arising from phone sessions:* Phone-based sessions were complimented by WhatsApp groups. In the WhatsApp groups, participants discussed issues arising from phone sessions and other question they have on SRH and other topics within the SKILLZ program. Coaches were in charge of managing and providing information within each of the groups. WhatsApp groups were also used to create demand for SRH services including voluntary medical male circumcision (VMMC). Feedback from the Coaches reported that WhatsApp groups captured the attention of young people including friends to study participants within Zambia and in other countries such as India.
- *Continued support for HIV positive participants (SKILLZ Plus) via phone:* At the peaks of the COVID waves, delivery of SKILLZ Plus was also suspended. Due to concerns related to potential loss to follow-up from antiretroviral therapy, the Ministry of Health in Zambia requested GRS Coaches to continue with physical SKILLZ Plus sessions. However, implementation of physical sessions was fluid due to the different waves of the pandemic experienced during the study period. Thus, during the peaks of the COVID waves, support to SKILLZ Plus participants was given through one-to-one phone-based sessions with the Coach. Due to Ministry of Health (MOH) concerns around the confidentiality of virtual programming for youth living with HIV, GRS Zambia worked together with MoH Staff to gradually scale up in-person SKILLZ Plus programming with an emphasis on social distancing, masks and handwashing.
- *Implementation of virtual SKILLZ Teen Club Sessions:* From November 2020, virtual SKILLZ Teen clubs were formed in Zambia. Similar to SKILLZ Plus and SKILLZ curriculum implementations, phones and WhatsApp groups were utilized to reach participants.
- *Trained Coaches as Community-based Distributors (CBDs) for SRH commodities:* To facilitate access to SRH services during the COVID pandemic, GRS Zambia worked with the Ministry of Health to train Coaches and equip them with SRH commodities such as condoms, contraceptives such as pills and Sayana Press (administered at the facility for first-time users with support from CBDs) and HIV self-testing kits. Trained Coaches commenced distribution of SRH commodities in May 2021.

Zimbabwe - COVID-Related Adjustments made to the Total Health Program

The following adjustments were made to the Total Health program in Zimbabwe:

- *Adapted the SKILLZ implementation for small groups scenario-based phone sessions:* Similar to Zambia, GRS Zimbabwe continued to implement and reach participants with phone access through smaller group, scenario-based phone sessions.
- *Distribution of SKILLZ magazines:* GRS Zimbabwe developed and distributed three SKILLZ Magazines (SKILLZ Girl, Boy, Core) based on SKILLZ curricula to reach participants without access to telephone. The magazines, distributed by Coaches directly to participants, provided adolescents with a hard-copy resource to access SRH information, complete activities, and spark conversations with family and friends around critical health topics.
- *Creation of the ‘buddy system’:* The ‘buddy system’ was created to allow participants to connect and support each other during the pandemic.
- *Trained Coaches as Youth Reproductive Health Assistants for SRH services:* In Zimbabwe, GRS Coaches were trained in partnership with the Zimbabwe National Family Planning Council (ZNFPC) to work as GRS Youth Health Assistants. The aim of this model was to increase and promote access to SRH services. GRS mobilized its cohort of Youth Health Assistants (called Youth Reproductive Health Assistants/YRHAs in Zimbabwe) to address the escalating unmet need for contraceptives among young people. YRHAs enabled continued service provision throughout COVID-19 interruptions, and provided contraceptive counselling and commodities directly to young people in the community, while referring young people to facilities for additional services such as long-acting reversible contraceptives (LARCs), HIV testing services, PrEP, and PEP. The YRHAs in Zimbabwe conducted mini outreach events to engage underserved communities in Bulawayo and Matabeleland South. These events were instrumental in increasing uptake of and access to contraceptives among both school-based and the health facility cohorts.
- *Support for SKILLZ Plus Participants:* Similar to Zambia, the Coaches continued providing support to SKILLZ Plus participants via one-on-one phone-based sessions during lockdowns, as well as home visits. Physical meetings were only conducted during off COVID peaks.

1.3 Statement of problem

Adolescents in Zambia and Zimbabwe experience numerous sexual and reproductive health challenges that affect their overall wellbeing. These challenges include early marriage, pregnancy/HIV and STI, and sexual violence (see the background section). While sport for development has been used to address SRH issues among adolescents around the world, a limited number of comprehensive studies in Sub-Saharan Africa exists, especially in Zambia and Zimbabwe^{24,25}. Thus, this study contributed to addressing this knowledge gap by analyzing the impact of the sport-

²⁴ Hershow R, Gannett K, Merill J., Braunschweig E., Barkely C., Decelles J., Harrison A. (2015). using soccer to build confidence and increase HCT uptake among adolescent girls: a mixed methods study of an HIV prevention programme in South Africa. 2015. Sport Society. Vol 18. (8)

²⁵ Mwaanga, O. (2010). Sport for addressing HIV/AIDS: explaining our convictions. *Leisure Studies Association Newsletter*, 85: 61–67.

based comprehensive sexual and reproductive health education programme (SKILLZ Health) implemented by Grassroot Soccer in Zambia (Lusaka and Chipata districts) and Zimbabwe (Matabeleland North and South Bulawayo), on adolescent health and well-being outcomes.

1.4 Research questions and specific aims

The main research objective was to examine the impact of a sport-based comprehensive sexual and reproductive health education programme (SKILLZ Health) when paired with high-quality, youth-friendly services on key adolescent health and well-being outcomes. The specific aims were:

- Assess the knowledge, attitudes, and beliefs of adolescent participants related to SRH - seeking and risk behaviour, gender equitable norms, self-concept and future orientation;
- Assess SKILLZ Health participants' attitudes towards and uptake of key SRH services, including repeat access to services and adherence to contraceptives and HIV treatment;
- Estimate the impact of the programme on the incidence of HIV and pregnancy in the study population.

Secondary objectives:

- Describe the perspectives of key stakeholders on the SKILLZ Health program, its implementation, and its effects beyond the individual
- Identify the critical components to successful implementation partnerships amongst GRS and clinical service providers, as well as identify barriers to participating in GRS sport-based programmes.
- Utilize qualitative Youth Participatory Action Research (YPAR) methods in both the collection and analysis of data to ensure adolescents are at the centre of programmatic improvement and service design

Study outcomes

Table 1 summarizes the primary and secondary study outcomes including the sources of data that were used to measure the outcome:

Table 1: Summary of primary and secondary study outcomes

Item	Study Outcomes	Data sources
Primary Outcome are as follows:		
1	Change in adolescents' knowledge, attitudes and beliefs on SRHR and SGBV, comparing the baseline and the endline results.	Quantitative survey
2	Frequency of visit to public healthcare facilities vs. other service/product providers (pharmacies, mobile facilities)	Quantitative survey and process data
3	Access and uptake of and adherence to SRHR services (Family planning, new contraceptive users, HIV testing and treatment, retention in care, STI testing, VMMC, HPV vaccination)	Quantitative and qualitative survey and process data

4	Proportion of adolescents who report a pregnancy before, during and after the Total Health programme	Quantitative data and process data
5	Proportion of adolescents who test positive for HIV before, during and after the Total Health programme	Quantitative data Process data
Secondary Outcomes include the following:		
6	Linkage (referral) to treatment, care and support for adolescents including adherence to ART	Quantitative data and process data
7	Repeat access of SRHR Services	Qualitative data, primary quantitative data and secondary data
8	Adolescent health catalysts and agents for change	Qualitative data
9	Factors related to creating an enabling environment for youth-friendly services	Qualitative data
10	Factors related to community capacity for youth support and development	Qualitative data
11	Comprehensive knowledge and beliefs regarding gender norms, self-concept and healthy relationships	Quantitative and qualitative data

2.0 Methodology

2.1 Study design and location

The primary objective of the cohort study was to examine the impact of a sport-based comprehensive sexual and reproductive health education programme (SKILLZ Health) when paired with high-quality, youth-friendly services on key adolescent health and well-being outcomes. A study design involving both the baseline and endline surveys was adopted as appropriate for assessing incidence of the outcome among a group of individuals exposed to a similar intervention. The baseline survey enabled a 'snapshot' of the characteristics of adolescents who were recruited in the GRS Total Health programme prior to delivery of a comprehensive package of age-appropriate interventions for school-going or clinic-attending adolescents aged 10 to 14 years. The endline, on the other hand enables the team to assess the outcomes among adolescents who exposed to Total Health programme for the period of two years.

This study was conducted in all the study sites selected for the both the school-based and health facility-based cohort in both Zambia and Zimbabwe. The cohort study was conducted in peri-urban and urban sites in Zambia (Lusaka and Eastern Provinces) and urban and rural sites of Zimbabwe (Bulawayo, Matabeleland South and North). The study sites in Lusaka District were schools in urban communities, while study sites in Chipata were health facilities receiving the GRS Total Health programme. The selection criteria for the cohort research sites included having a school with both primary and secondary education and the presence of the health facility within the school catchment area offering HIV testing and treatment services. The health facilities and service providers were selected based on the presence of HIV treatment and other SRH services at the facility. From the identified schools, GRS Zambia and Zimbabwe conveniently approached several schools and health facilities within the GRS catchment area. The schools and health facilities that consented to the GRS programme were enrolled in the Total Health programme and evaluation.

2.2 Details about the Cohort

In year 1 (2019) of the cohort, GRS Zambia and Zimbabwe enrolled young adolescents (aged 10-14 years) into the GRS Total Health programme. To evaluate the GRS Total Health programme, all young adolescents (aged 10-14 years) participating in the GRS Total Health programme were recruited into the cohort. Adolescents participating in the GRS school-based Total Health programme were recruited in the school-based cohort while adolescents participating in the health facility-based GRS Total Health programme were recruited in the health facility-based cohort. The primary participants for the school-based cohort were young adolescents aged 10-14 years who attended school at the schools selected to receive the Total Health programme. At the health facility level, the primary participants were young adolescents attending ART services and receiving the Total Health programme. These adolescents were recruited in the cohort and, were followed for the period of two (2) years. In addition to the adolescents (aged 10-14 years), the qualitative component of the baseline study also included interviews with parents/guardians, local community members, service providers and GRS Staff aged 18 years or older.

The enrollment of participants in the cohorts started during the baseline phase and happened alongside baseline data collection. GRS Coaches (aged 18-24) trained as research assistants conducted the cohort recruitment, baseline and endline survey. We followed the cohort for two years (2020 and 2021) to assess the outcomes. Endline data collection was undertaken from September through December 2021 to assess the outcomes of exposing adolescents to multiple age-appropriate interventions delivered at school and clinic level. Despite the ongoing COVID-19 pandemic, endline data collection was conducted in person as much as possible while upholding all the COVID prevention guidelines such as social distancing, hand washing and wearing of masks. Both Coaches and participants were provided with facial masks and hand sanitizer for use during the interviews. In Zambia, GRS also used phone-based data collection that enabled Coaches to follow-up with participants that had moved to other schools at the time of the endline. Phone-based interviews often lasted for 1 hour to 30 minutes. In both the qualitative and quantitative data collection tools, some questions related to how adolescents experienced the Total Health and access to SRH services were added. At endline, drawing activities were removed to shorten the amount of time and interactions during focus group discussions.

2.3 Cohort recruitment and data collection

The study process at baseline started with a training for GRS junior field staff on the study protocol, consent procedures, data collection, documenting notes, transcription, and data entry. One of the major aspects of the training was the use of drawings in qualitative data collection. We then conducted the cohort recruitment and baseline survey among all individuals recruited in the cohort in all the schools and health facilities.

For baseline data collection, at each of the selected schools and health facilities, GRS staff:

- First, worked together with the school or facility's administration staff to identify all adolescents in grade 8 and 9 in Zambia, Form 1 learners in Zimbabwe, and facility-based adolescents aged 13 to 14 years.
- Research Assistants then enrolled all adolescents who meet the inclusion criteria at the school or health facility and collected data before the implementation of the GRS intervention.
- Data was collected from one school or health facility at a time for all the adolescents before moving to the next school or health facility until the target sample size was reached.
- To facilitate informed assent and parental consent, approximately two weeks was given per school for the data collection process.
- Schools and health facilities were recruited into the programme until the estimated total numbers of participants was enough to obtain the estimated sample size of 510 (Table 2) across all the schools and an estimated sample size of 300 across all the health facilities.

- Standard operating procedures were developed to guide the data collection process and management in the two countries. Regular calls were held between the GRS teams and evaluation consultants.

For endline data collection:

- Coaches were re-trained in the study protocol, research ethics, and principles of data collection. The training also equipped Coaches with information of COVID-19 prevention measures such as social distancing, hand washing and wearing of masks for both the Coaches and the participants. Coaches were encouraged to adhere to COVID-19 prevention guidelines during data collection.
- Coaches were then provided with locator information on each of the study participants. The locator information contained details of individuals who had consented to participate in the evaluation at baseline, including the names of the participant, date of birth, school, class, telephone numbers, home address.
- Using the locator information, Coaches returned back to the sites to trace, obtain permission and survey the cohort.

Quantitative data collection:

The quantitative component of the evaluation consisted of a survey administered to Total Health participants. The survey sample size was determined using OpenEpi version 3, an open source software for calculating sample size. We picked HIV as the most common problem faced by adolescents in both Zambia and Zimbabwe. In Zimbabwe the HIV prevalence among adolescents aged 15-19 years was at 3.7% according to the DHS survey of 2015 while Zambia reported the HIV prevalence of 4.8% in the same group. To be conservative in our estimates, we used the higher HIV prevalence of 4.8% for Zambia to calculate the sample size for both countries, with $p=.5$ (maximum variability), a 95% confidence level, 5% precision and design effect of 2. Based on the estimates we required a sample size of approximately 1400 to maintain at least 80% power to detect the associations. We anticipated that loss to follow-up among school-going adolescents will be low (10%) with a non-response rate of 10%, giving us a total sample size of approximately 1620 for both Zambia and Zimbabwe.

To achieve this sample size and have statistical power to draw associations, we were expected to recruit, obtain assent and parental consent from 810 participants per country, 510 from the school-based cohort and 300 from the health facility-based cohort. However, due to the challenges related to obtaining parental informed consent at baseline, we failed to meet our target sample size but managed to recruit 606 adolescents in Zambia (396 from the school-based cohort and 210 from the health facility cohort) and 540 from Zimbabwe (441 from the school-based cohort and 99 from the health facility-based cohort).

At endline, the study sample was further affected by a higher than anticipated loss to follow-up in both Zambia and Zimbabwe. Of the 396 participants recruited in the school-based cohort 206 (52.0%) in Zambia and 264 (60.0%) out of 441 in Zimbabwe were successfully followed up. Among the health facility-based cohort, we successfully followed up 122 (58.1%) in Zambia and 44 (47.3%) in Zimbabwe. The high loss to follow-up recorded in this study can be attributed to absenteeism and transfer of participants to different schools and health facilities, as well as disruptions due to the COVID-19 pandemic. High loss to follow-up, especially when greater than 20%, can have serious implications for internal validity.²⁶

At both baseline and endline, the questionnaire was administered to adolescents in the classroom or any other convenient space available within the school. To enhance confidentiality and data quality, the research assistant ensured there was enough space between adolescents so that the participants were not sharing the answers. In cases where the all adolescents could not fit in the available space provided by the schools, adolescents were divided into smaller groups and the questionnaire was administered to one group at a time until all the participants completed the survey. In addition, the research assistant took time to explain read through the questionnaire and interpreted the questions into local language before the participants selected the response. Participants were also given time to ask for clarifications if there were any questions they didn't understand. Both the baseline and endline questionnaires focused on knowledge and attitude towards SRH, behavior, health, and service utilization indicators.

Qualitative data collection:

The qualitative data collection focused among other issues on the experiences of project beneficiaries, and identified potential mediators, predictors and barriers to achieving the programme outcomes, experience of participating in Total Health programme and perceptions on SRHR services received. Interviews and focus group discussions were conducted in a mix of both English and local language comfortable to the participants in the respective countries (Zambia and Zimbabwe). Qualitative data was collected using focus group discussions, key informant interviews, and in-depth interviews. Focus group discussions and in-depth interviews were conducted with learners while key informant interviews were done with health workers and teachers. In the focus group discussions with adolescents at baseline, a participatory drawing activity was also used, but not included in endline data collection. Additional questions were asked on other SRHR issues pertaining to adolescents such as knowledge of and access to SRHR services, gender norms and beliefs, perceptions of adolescents of adolescents on sport based SRHR interventions etc. The FGDs and IDIs were facilitated using the interview guides in appendix 1.

²⁶ Dettori JR. Loss to follow-up. *Evid Based Spine Care J*. 2011;2(1):7-10. doi:10.1055/s-0030-1267080

At both endline and baseline, adolescents and adults who participated in the qualitative interviews were selected using purposive sampling. Interviews were conducted until data saturation was reached. The total number of interviews and focus group discussions conducted at baseline and endline are summarized below:

Type of interviews	Zambia Baseline	Zimbabwe Baseline	Zambia Endline	Zimbabwe Endline
KII with GRS Coordinator	2	2	2	2
KII Coaches	-	-	6	6
KII health workers	6	6	6	6
IDI with adolescents	16	16	16	16
FGD with adolescents	4	4	4	4
Total	28	28	34	34

2.4 Data management and analysis

Qualitative data: Thematic analysis was used to analyze data. Interviews were audio recorded and transcribed. Coders independently coded four interviews and discussed the codes to agree upon standard themes and codes for the analysis going forward, ensuring inter-coder reliability. When no additional emergent themes are identified, and the code structure was considered finalized. A comparison was then made between themes emerging at baseline and endline. In addition, endline analysis focused on identifying the changes in attitude and perception among adolescents who had participated in Total Health and comparing these to baseline findings.

Quantitative data: Quantitative data from the questionnaire was entered into the GRS Salesforce template by trained data entry clerks. Quantitative data analysis commenced after cleaning and checking the data for duplication and consistency. During data cleaning, the responses related to knowledge and attitude questions collected using the 5-point Likert scale (Strongly agree; Agree; Neither; disagree and Strongly disagree) were collapsed into the 'Yes', 'No' and 'Not sure' responses, as adolescents could not easily distinguish the responses of the Likert scale. For quantitative data, we conducted analysis using STATA version 13.

Descriptive analysis was used to describe the dependent and the independent variables so as to obtain an overview of the general characteristics of the participants before the implementation of the Total Health program. Quantitative analysis was limited to descriptive statistics because the study did not reach the required sample size at baseline and at the same time, high loss to follow-up was recorded at endline. Descriptive analysis was used to obtain an overview of the general characteristics of the participants before and after the implementation of the Total Health program. Chi-square test was used at endline to conduct within group comparisons. In instances where the cell had less than five counts, Fishers' exact was used. Statistical significance was set at 0.05. Despite the limitation related to sample size and a higher than anticipated loss to follow-up,

quantitative findings were enhanced by the robust qualitative component which was planned to compliment quantitative data.

2.5 Ethics

The study was submitted to the ethics committees in both Zambia and Zimbabwe for ethical approval. Additionally, we obtained permission from relevant Ministry of Health and Ministry of Education authorities. Participation in this study was voluntary. Research staff with sufficient training or experience in research ethics were responsible for taking consent from all individuals who participated in this study. For participants aged 18 years or older, written consent was obtained. Adolescents aged 10-17 years were asked for their assent to participate with consent from a parent or guardian. All information obtained from the study was stored securely on paper and/or in password protected computer and only assigned research staff will have access to them. Confidentiality was maintained throughout all data handling and storage processes. All individuals opting to participate in the both quantitative and qualitative interviews were informed that any information they provide during interviews would be confidential and not be linked to their name. RAs were trained to ensure participants are provided with a safe and private space when answering questions which may be sensitive.

3.0 Results

We report the findings of the cohort study conducted in Zambia and Zimbabwe from December 2018 to December 2021. The evaluation focused on understanding knowledge, attitudes, and beliefs of adolescent participants in relation to SRH -seeking and attitudes towards and uptake of key SRH services including condom use, contraceptives and HIV testing and treatment. Further, the cohort enabled the comparison of key characteristics before and after the implementation of Total Health programme.

3.1 Recruitment and Participation in the baseline and endline survey

The study recruited participants from December 2018 and July 2019, from six schools and seven health facilities in Zambia and Zimbabwe, respectively, to participate in the GRS Total Health programme. In both Zambia and Zimbabwe, all the school-based adolescents recruited in the Total Health programme were approached to participate in the school-based cohort while all the adolescents recruited at the health facility were approached to participate in the facility-based cohort. Parental consent and assent were obtained during home visits. In Zambia, assent and parental consent to participate in the school-based cohort was obtained from 396 out of the 577 approached adolescents while in Zimbabwe assent and parental consent was obtained from all the 441 the approached school-based adolescents. At the health facilities, GRS Zambia and Zimbabwe obtained assent and parental consent from all the adolescents who were approached (210 in Zambia verse 93 adolescents in Zimbabwe; Figure 1 and 2).

Follow-up of cohort participants continued until December 2021. At the end of the follow-up period, participants were again invited to participate in the endline survey. In Zambia, 48.2% (n=191/396) school-based participants recruited at baseline were lost to follow up compared to 40.1% (n=177/441) school-based participants in Zimbabwe (Figure 1). For the health facility-based cohort, 41.9% (n=88/210) were lost to follow-up in Zambia compared to 52.7% (n=49/93) in Zimbabwe (Figure 2).

Quantitative results reported here focus on the school-based (205 in Zambia; 264 in Zimbabwe) and health facility-based (122 in Zambia; 44 in Zimbabwe) adolescents who completed both the baseline and endline surveys. Of the group that completed both surveys, 106 adolescents in the Zambia school-based sample took part in at least two of the three SKILLZ interventions (SKILLZ Core, SKILLZ Boy or SKILLZ Girl, and SKILLZ Teen Clubs), compared to 170 in the Zimbabwe school-based sample. In the health facility-based sample in Zambia, 37 adolescents took part in both SKILLZ Plus and SKILLZ Plus Clubs, compared to 15 in Zimbabwe. Some adolescents who did not take part in any SKILLZ interventions were mistakenly included in both the baseline and endline surveys.

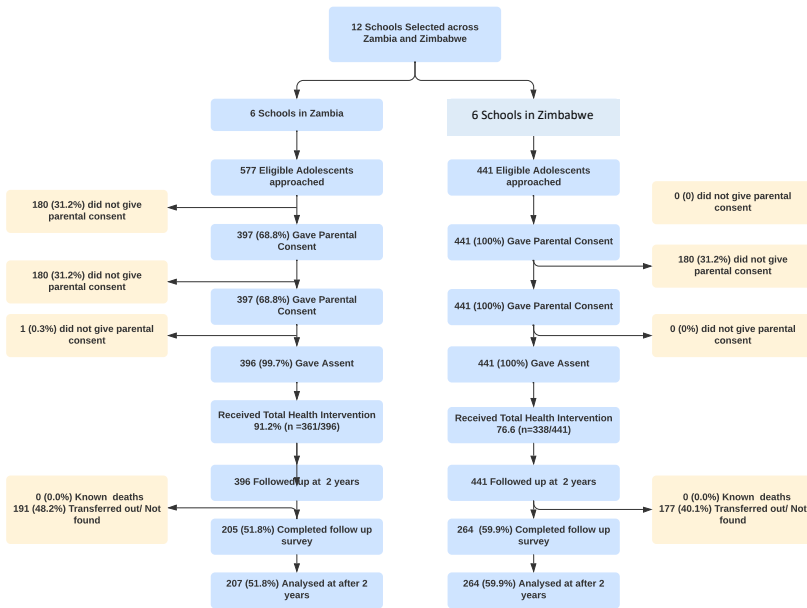


Figure 1 Recruitment, assent and consent of participants in the school-based cohort

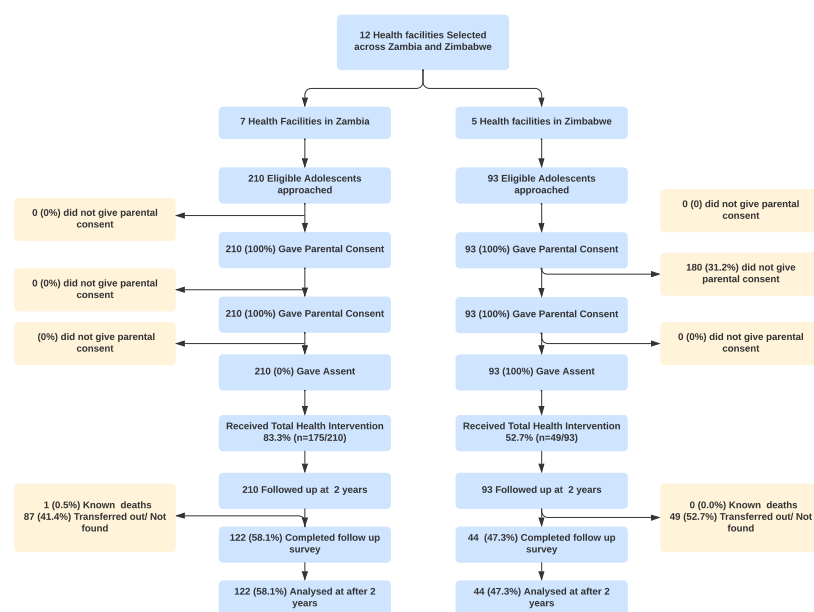


Figure 2 Recruitment, assent and consent of participants in the health facility-based cohort

Among participants who participated in both the baseline and endline surveys, recruitment in the cohort varied across the six schools in Zambia, six schools in Zimbabwe, seven Health facilities in Zambia and five health facilities in Zimbabwe. Tables 2 and 3 summarizes participation in both the baseline and endline surveys per site.

Table 2 Baseline and endline participation in the school-based cohort per school

Zambia			Zimbabwe		
School	Baseline n(%)	Endline n (%)	School	Baseline n (%)	Endline n (%)
Bauleni Secondary School	15 (7.3)	15 (7.3)	Bhazha Secondary	14 (5.3)	14 (5.3)
Chilenje Secondary	35 (17.1)	35 (17.1)	Mabhikwa High	19(7.4)	19 (7.2)
Kamulanga Secondary	29 (14.2)	29 (14.2)	Masotsha High School	93 (35.2)	93 (35.2)
Kamwala Secondary	32 (15.6)	32 (15.6)	'Mtshibini Secondary	14 (5.3)	14 (5.3)
New Matero Secondary	43 (21.0)	43 (21.0)	Mzingwane High	20 (7.6)	20 (7.6)
Northmead Secondary	51 (24.9)	51 (24.9)	Sizane High	104 (39.4)	104 (39.4)
Total (N)	205	205	Total (N)	264	264

Table 3 Baseline and Endline Participation in the Facility-based cohort

Zambia			Zimbabwe		
Health facility	Baseline	Endline	Health facility	Baseline	Endline
	n(%)	n(%)		n(%)	n(%)
Chipata central Clinic	53 (43.4)	53 (43.4)	Homestead Clinic	4 (9.1)	4 (9.1)
Kalamuza Clinic	15 (12.3)	15 (12.3)	Kezi Clinic	6 (13.6)	6 (13.6)
Kapata Clinic	29 (23.8)	29 (23.8)	Nkayi Hospital	9 (20.5)	9 (20.5)
Madzimoyo Clinic	4 (3.3)	4 (3.3)	St Lukes Hospital	14 (31.8)	14 (31.8)
Muzeyi Clinic	12 (9.8)	12 (9.8)	Tshelanyemba Clinic	11 (25.0)	11 (25.0)
Namuseche Clinic	5 (4.1)	5 (4.1)			
Walela Clinic	4 (3.3)	4 (3.3)			
Total	122	122	Total	44	44

3.2 Characteristics of the school-based study participants

In Zambia, 43.7% (n=173/396) of the cohort recruited at baseline were male and 56.3% (n=223/396) were female. In Zimbabwe, almost half of the adolescents recruited in the cohort at baseline were male 48.1% (n=212/441) versus 51.9% (n=229/441) females. In both countries, adolescents were either 13 or 14 years old at baseline and 15 or 16 years at endline.

At endline, 55.6% (n=114/205) of the school-based participants who participated in Zambia were female and 44.4% were male (=91/205). In Zimbabwe, among the 264 school-based participants who completed the endline survey 53.0% were female and 47.0% male (Table 4). At both baseline and endline, more than 90% of the participants were of Christian religion and less than 2% were Muslim. Approximately, 57.6% of the participants interviewed at endline in Zambia were living within a family setting with both parents and one or more family members as compared to 40.3% in Zimbabwe (Table 4).

In Zambia, the proportion of school-based adolescent females who reported ever being in a sexual relationship increased from zero at baseline to 6.1% at endline among female participants who responded to this question. Among the school-based male participants in Zambia 9.9% reported ever being in the relationship at endline compared to 6.6% at baseline. In Zimbabwe, a slight but small increase was seen among school-based females who reported ever being in a sexual relationship (1.4% at baseline vs 2.9% at endline) compared to their male counterparts (4.0% at baseline vs 12.9% at endline). At endline, the proportion of school-based adolescents in both Zambia and Zimbabwe who reported currently being in a sexual relationship was very low among both female and male adolescents (Table 4).

Table 4 Characteristics of school-based adolescents who participated in both the baseline and endline survey

Characteristics	Zambia (n=205)				Zimbabwe (n=264)			
	Baseline		Endline		Baseline		Endline	
	n	%	n	%	n	%	n	%
Sex								
Female	126	61.5	114	55.6	142	53.8	140	53.0
Male	79	38.5	91	44.4	122	46.2	124	47.0
Religion								
Christian	188	91.7	197	96.1	261	98.9	241	91.3
Muslim	0	0.0	0	0	0	0.0	1	0.4
Missing	17	8.3	8	3.9	3	1.1	22	8.3
Adolescent Currently Living with								
One parent +/- other family	28	13.6	62	30.2	63	23.9	81	30.6
Both parents +/- Family	151	73.3	118	57.6	141	53.4	106	40.3
Other relatives	21	10.2	22	10.7	54	20.5	71	27.0
Other people who are not relatives	6	2.9	3	1.5	7	2.7	5	1.9
Ever in sexual relationship – Female adolescents								
No	99	86.8	105	92.1	129	92.1	129	92.1
Yes	0	0.0	7	6.1	2	1.4	4	2.9
Don't know	0	0.0	1	0.9	0	0.0	0	0.0
Missing	15	13.2	1	0.9	9	6.4	7	5.0
Ever in sexual relationship – male adolescents								
No	74	81.3	80	87.9	102	82.3	91	73.4
Yes	6	6.6	9	9.9	5	4.0	16	12.9
Don't know	0	0.0	1	1.1	0	3.2	6	4.8
Missing	11	12.1	1	1.1	13	10.5	11	8.9
Currently in a sexual relationship (among adolescents who reported ever being in a relationship)-Female								
No	49	43.8	105	92.9	91	65.0	129	95.6
Yes	0	0.0	5	4.4	1	0.7	3	2.2
Don't know	0	0.0	2	1.8	0	0.0	3	2.2
Missing	63	56.3	1	0.9	48	34.3	0	0.0
Currently in a sexual relationship (among adolescents who reported ever being in a relationship)-Male								
No	38	42.2	85	93.4	78	62.9	100	83.3
Yes	0	0.0	5	5.5	3	2.4	10	8.3
Don't know	1	1.1	0	0.0	4	3.2	3	2.5
Missing	51	56.7	1	1.1	39	31.5	7	5.8

In the health facility-based cohort in Zambia, 53.8% (n=113/210) of the participants recruited at baseline were female compared to 52.7% (n=49/93) female participants recruited in Zimbabwe. At endline, 56.6% of the health facility-based participants who completed the survey in Zambia were females compared to 46.5% in Zimbabwe (Table 5). At endline compared to baseline, there was a slight decrease of about 1% among health facility-based participants in Zambia who reported living with both parents. Contrary, the proportion of adolescents in the Zimbabwe health facility-based cohort who reported living with both parents decreased from 38.6% to 27.3% while the proportion of adolescents who reported living with other relative increased from 34.1% to 47.7%. Similar to the school-based cohort, the majority of the participants in both Zambia and Zimbabwe were of Christian religion (Table 2).

In Zambia, the proportion of both females and males who reported ever being in a sexual relationship increased at endline (58.0% females vs 39.6% males) compared to baseline (23.5% females vs 16.7% males). In Zimbabwe, the proportion of females who reported being in the sexual relationship increased at endline (15.0%) compared to baseline (5.3%) while a decrease was seen among males (16.7% at baseline vs 8.7% at endline (Table 5).

Table 5 Characteristics of health facility-based adolescents who participated in both the baseline and endline survey

Characteristics	Zambia (N=122)				Zimbabwe (N=44)			
	Baseline		Endline		Baseline		Endline	
	n	%	n	%	n	%	n	%
Sex								
Female	68	55.7	69	56.6	19	43.2	20	46.5
Male	54	44.3	53	43.4	35	56.8	23	53.5
Religion								
Christian	111	91.0	106	86.9	41	93.2	43	97.3
Muslim	2	1.6	0	0.0	0	0.0	0	0.0
Missing	9	7.4	16	13.1	3	6.8	1	2.3
Adolescent Currently Living with								
One parent +/- other family	39	32.0	43	35.3	10	22.7	10	22.7
Both parents +/- Family	60	49.2	59	48.4	17	38.6	12	27.3
Other relatives	19	15.6	18	14.8	15	34.1	21	47.7
Other people who are not relatives	1	0.8	2	1.6	2	4.6	1	2.3
Missing	3	2.5	0	0.0	0	0.0	0	0.0
Ever in sexual relationship – Female adolescents								
No	38	55.9	29	42.0	13	68.4	15	75.0
Yes	16	23.5	40	58.0	1	5.3	3	15.0
Not sure	5	7.4	0	0.0	4	21.1	0	0.0
Missing	9	13.2	0	0.0	1	5.3	2	10.0
Ever in sexual relationship –Male adolescents								
No	24	44.4	26	49.1	20	80.0	21	91.3
Yes	9	16.7	21	39.6	3	12.0	2	8.7
Not sure	4	7.4	1	1.9	2	8.0	0	0.0
Missing	17	31.5	5	9.4	0	0.0	0	0.0
Currently in a sexual relationship (among adolescents who reported ever being in a relationship)-Female								
No	4	25.0	15	37.5	0	0.0	0	0.0
Yes	11	65.8	23	57.5	0	0.0	3	100.0
Missing	1	6.3	2	5.0	1	100.0	0	0.0
Currently in a sexual relationship (among adolescents who reported ever being in a relationship)-Male								
Yes	7	77.8	7	33.3	2	66.7	1	50.0
No	0	0.0	14	66.7	1	33.3	1	50.0
Missing	2	22.2	0	0.0	0	0.0	0	0.0

3.3 Understanding of SRHR and access to adolescent friendly SRHR services

Overall, knowledge on HIV, Pregnancy and GBV support services increased at endline compared to baseline. In Zambia, 81.0% school-based adolescents respond said yes to being knowledgeable about existing support services for HIV at endline compared to 67.8% at baseline. A similar increase was seen among school-based adolescents in Zimbabwe, from 69.7% at baseline to 84.5%

at endline. However, few adolescents responded yes to ever accessing pregnancy support services for themselves or someone they know (Zambia: 4.9% at baseline vs 15.6% at endline; and Zimbabwe: 8.7% at baseline vs 14.0% at endline). Similar patterns were seen among adolescents when asked about knowledge of support services for gender-based violence (see Table 6). In both Zambia and Zimbabwe, access to SRHR services in general was very low at both endline and baseline. In both countries, most school-based adolescents reported accessing SRHR and GBV information as compared to other services (Table 6).

Table 6 Knowledge of and access to SRH services among school-based adolescents in Zambia and Zimbabwe

Characteristics		Zambia					Zimbabwe				
	Baseline		Endline		P-value	Baseline		Endline		P-value	
	n	%	n	%		n	%	n	%		
Knowledge of HIV Support Services					0.651						0.000
Yes	139	67.8	166	81.0		184	69.7	223	84.5		
No	61	29.8	38	18.5		66	25.0	36	13.6		
Missing	5	2.4	1	0.5		14	5.3	5	1.9		
Knowledge of Pregnancy support services					0.212						0.095
Yes	65	31.7	103	50.3		90	34.1	159	60.2		
No	101	49.3	68	33.2		118	44.7	60	22.7		
Not sure	36	17.6	32	15.6		52	19.7	35	13.3		
Missing	3	1.5	2	1.0		4	1.5	10	3.8		
Accessed Pregnancy support services					0.382						0.091
Yes	10	4.9	32	15.6		23	8.7	37	14.0		
No	182	88.8	149	72.7		208	78.8	200	75.8		
Not sure	10	4.9	23	11.2		19	7.2	20	7.6		
Missing	3	1.5	1	0.5		14	5.3	7	2.7		
Knowledge on support services for GBV					0.591						0.069
Yes	123	60.0	154	75.1		165	62.5	223	84.5		
No	82	40.0	50	24.4		95	36.0	40	15.2		
Missing	0	0.0	1	0.5		4	1.4	1	0.4		
Accessed GBV support services					0.776						0.007
Yes	8	3.9	15	7.3		14	5.3	11	4.2		
No	183	89.3	181	88.3		226	85.6	232	87.9		
Don't know	14	6.8	8	3.9		20	7.6	16	6.1		
Missing	0	0.0	1	0.5		4	1.5	5	1.9		

* Statistical significance was set at 0.05

Other SRHR services accessed by adolescents through the clinic, private pharmacy or other providers				
	Zambia		Zimbabwe	
	Baseline	Endline	Baseline	Endline
SRHR health and information	49	44	15	33
Counselling/mental health	8	10	7	5
Contraceptives including pills, injections, implants or similar	5	2	9	5
Condoms – Male or Female	2	3	3	14
Information on GBV	33	28	7	27
Voluntary medical male circumcision	6	11	35	30

Similar to the school-based cohort, there was an increase in the proportion of adolescents in the facility-based cohort who reported having knowledge of available HIV, pregnancy and GBV services at endline compared to baseline (Table 7). For example, knowledge of HIV services increased from 79.5% in Zambia and 68.2% in Zimbabwe to 91.8% and 86.4% at endline, respectively. As expected from the health facility-based cohort, more than 50% adolescents in both Zambia and Zimbabwe had accessed HIV related services. Despite being recruited at the health facility while seeking HIV-related services, some adolescents in both Zambia and Zimbabwe reported lack of knowledge and access to HIV support services.

Similarly, there was an increase in the proportion of adolescents who said “yes” to being knowledgeable on pregnancy support services at endline (69.7% in Zambia vs 61.4% in Zimbabwe) compared to baseline (47.5% in Zambia vs 27.3% in Zimbabwe). At endline, knowledge of available GBV services slightly increased in Zambia by about 1% while in Zimbabwe, the proportion of adolescents who report being knowledgeable about GBV services reduced from 65.9% at baseline to 59.1% at endline. Similar to the school, based cohort, access to pregnancy and GBV services increased at endline compared to baseline, but remained generally low (Table 7).

Table 7 Knowledge of and access to SRH services among health facility-based adolescents in Zambia and Zimbabwe

Characteristics	Zambia				P-value	Zimbabwe						P-value
	Baseline		Endline			Baseline		Endline				
	n	%	n	%		n	%	n	%			
Knowledge of HIV Support Services					0.740							0.276
Yes	97	79.5	112	91.8		30	68.2	38	86.4			
No	14	11.5	9	7.4		12	27.3	5	11.4			
Missing	11	9.0	1	0.8		2	4.6	1	2.3			
Knowledge of Pregnancy support services												
No	44	36.1	27	22.1	0.505	12	27.3	10	22.7	0.818		
Yes	58	47.5	85	69.7		12	27.3	27	61.4			
Not sure	11	9.0	8	6.6		15	34.1	5	11.4			
Missing	9	7.4	2	1.6		5	11.4	2	4.6			
Accessed Pregnancy support services												
Yes	34	27.9	36	29.5	0.103	2	4.6	8	18.2	0.642		
No	72	59.0	66	54.1		34	77.3	22	50.0			
Not sure	8	6.6	14	13.1		7	15.9	9	20.5			
Missing	8	6.6	4	3.3		1	2.3	5	11.4			
Knowledge on support services for GBV												
Yes	89	73.0	96	78.7	0.370	29	65.9	26	59.1	0.890		
No	19	15.6	19	15.6		14	31.8	11	25.0			
Missing	14	11.5	7	5.7		1	2.3	7	15.9			
Accessed GBV support services												
No	82	67.2	84	68.9	0.059	38	86.4	31	70.5	0.406		
Yes	17	13.9	22	18.0		1	2.3	3	6.8			
Not sure	14	11.5	16	13.1		5	11.4	6	13.6			
Missing	9	7.4	0	0.0		0	0.0	4	9.1			

Other SRHR services accessed by adolescents through the clinic, private pharmacy or other providers

	Zambia		Zimbabwe	
	Baseline	Endline	Baseline	Endline
SRHR health and information	14	50	0	13
Counselling/mental health	11	37	1	22
Contraceptives including pills, injections, implants or similar	4	4	3	2
Condoms – Male or Female	7	28	0	3
Information on GBV	1	7	1	11
Voluntary medical male circumcision Yes	4	8	4	2

In the qualitative interviews, the participants were also asked whether they knew about SRH before participating in SKILLZ. The question elicited mixed views. A good number of respondents stated they did not know until they were exposed to SKILLZ, while some indicated that they had an idea before SKILLZ, but the program provided them with more knowledge. One adolescent during a focus group discussion said:

Before. I had a little information... Maybe a girl is pregnant she can drop out of school because of the pregnancy (Male Adolescent FGD, Zambia, School-based Sample).

Another corroborated what peers had indicated when he said:

I did know the meaning but after GRS came, I now have a better understanding (Male Adolescent FGD, Zimbabwe, School-based Sample).

Common SRH challenges among adolescents

In the interviews and focus group discussions with adolescents, it was reported that although knowledge in SRH had increased, SRH challenges were still being experienced among the adolescents. Key challenges included early marriages which can trigger several psychosocial issues, exposure to sexually transmitted infections (STIs) and HIV infections, teenage pregnancies, and violence. One participant explained the challenges that children in early marriages can face as follows:

They get HIV, syphilis these are sexually reproductive diseases, genital warts even if assuming maybe that person already had HIV, they can still get a different type re-infection where she can be re-infected or he can be re-infected (Female Adolescent, IDI, Zambia, Health Facility-based Sample)

An adolescent from Zimbabwe responded that:

When we look at the challenges adolescents face when it comes to SRH within [among] teenagers, when we look at it there are some girls who will be forced to have sexual intercourse and that is called rape and it results in the percentage of

GBV cases that keep on rising (Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample)

When the teachers, GRS Coaches, and health workers in both Zambia and Zimbabwe were asked about common SRH challenges adolescents faced, they were of the view that early pregnancy was the main challenge. Additional challenges were misconceptions about the use of certain birth control measures. In Zambia, it was stated that some adolescents did not want to use condoms, especially after the honeybee scandal- in which low quality/ expired drugs were delivered in the health facilities. Others among the adult respondents in both countries associated family planning with infertility, especially among women who had never conceived before. Unsafe abortions, STIs, and HIV were mentioned as additional challenges that still needed attention.

Some respondents in Zimbabwe were concerned that most parents never discussed SRH with their children, thereby being vulnerable to wrong information and advice. Further, Coaches reported that some young people who are on HIV treatment, tended to shun away from SRH services such as having access to condoms, as they were shy about being seen getting condoms, yet they engaged sexually without taking safety measures. One GRS Coach made the following observation:

Some are still living on myths and misconceptions which are surrounding our society where they will tell you that if maybe you undergo a certain process of maybe for instance family planning for birth control as in you have to take injections someone will say no you will not be able to have children and others myths, maybe our youth they find it difficult to go to health facility in order to access SRH services (GRS Coach 1, Zambia).

Another GRS Staff commented that:

...We still have challenges around access to services because the young people are not free to go to the facilities to access those services and then the other issue that I still see as a concern is on the use of condoms, there are a lot of misconceptions and other young people say that these are too small and such kind of things, of which we've seen that a lot of these adolescents, especially on ART, it is not safe for them to sleep with someone without using a condom but they go on and do that because of maybe I don't know the misconceptions and the situation has not even been corrected because of the honeybee thing, so people look at our commodities as expired and all that, so it has messed access to services majorly (GRS Staff, Zambia).

One parent who participated in the study added that:

One of the challenges that I have seen that adolescents face is the issue of teenage pregnancy...another challenge I have seen is the issue of abortion... (Parent IDI, Zambia).

A teacher in Zimbabwe raised the following concern:

The children are not free to talk about such issues with their parents; they only talk with their peers and therefore can give wrong advice to each other (Teacher, IDI, Zimbabwe).

A nurse made the following observation:

Others are afraid of being tested and are shy at times to get services and therefore end up engaging in sexual activities. Teenage pregnancy is also a problem especially during this COVID - 19 era; you find out that a lot of children fell pregnant. There are also a few cases of early marriages (Nurse, IDI, Zimbabwe).

3.4 Factors shaping uptake of SRHR information and services

Adolescents were asked three questions to assess how they perceived access to SRHR information and services at the health facility. These questions were asked to all participants regardless of whether they had accessed any SRHR services or not. Thus, Table 8 and Table 9 summarize perceptions of adolescents on the SRHR services accessed at the clinic with specific reference to friendliness of the health facility staff, confidentiality and stigma.

In both Zambia and Zimbabwe, the proportion of school-based adolescents who perceived health staff at the clinic as “friendly” increased at endline compared to baseline. In Zambia, the proportion of adolescents who perceived health facility staff as friendly increased from 73.2% at baseline to 83.4% at endline. In Zimbabwe, the proportion of adolescents who perceived health facility staff as friendly increased from 55.3% at baseline to 69.3% at endline. At baseline compared to endline, there was an increase in the proportion of school-based adolescents who perceived health facility staff would keep their confidentiality from 55.6% to 84.9% in Zambia versus 56.1% to 71.2% in Zimbabwe. Also, in both Zambia and Zimbabwe, more school-based adolescents reported that they would not feel stigmatized when accessing SRHR at the health facility at endline (77.6% in Zambia; 62.9% in Zimbabwe) compared to baseline (40.5% in Zambia; 35.6% in Zimbabwe; Table 8)

Table 8 Perception of school-based adolescents on health facility-based SRHR services in Zambia and Zimbabwe

Characteristics	Zambia				P-value	Zimbabwe				P-value
	Baseline		Endline			Baseline		Endline		
	n	%	n	%		n	%	n	%	
Health staff at clinic are friendly					0.010					0.004
Yes	150	73.2	171	83.4		146	55.3	183	69.3	
No	31	15.1	34	16.6		74	28.0	65	24.6	
Missing	24	11.7	0	0.0		44	16.7	16	6.1	
Health facility staff will keep confidentiality					0.213					0.008
Yes	114	55.6	174	84.9		148	56.1	188	71.2	
No	53	25.9	31	15.1		65	24.6	59	22.4	
Missing	38	18.5	0	0.0		51	19.3	17	6.6	
Do not feel stigmatized when accessing SRHR services					0.582					0.488
Yes	83	40.5	159	77.6		94	35.6	166	62.9	
No	53	25.9	46	22.4		94	35.6	71	26.9	
Missing	69	33.7	0	0.0		76	28.8	27	10.2	
Not answered	0	0.0	1	0.8		0	0.0	4	9.1	

Similar to the results seen among school-based adolescents (Table 8), there was an increase in the proportion of adolescents who perceived health staff at the clinic as friendly and able to keep confidentiality. As can be seen in Table 9, 94.3% health facility-based adolescents in Zambia and 90.9% Zimbabwe alleged that the staff at the health facility were friendly at endline. Likewise, 91.8% of the health facility-based adolescents in Zambia reported that the staff at the health facility keep confidentiality compared to 88.6% in Zimbabwe. Higher increase was seen among health facility-based adolescents in Zimbabwe (74.2% at baseline vs 90.9% at endline) who reported that they do not feel stigmatized when accessing SRHR services at the health facility compared to Zambia (70.5% at baseline vs 74.6% at endline; Table 9)

Table 9 Perception of health facility-based adolescents on SRHR services at in Zambia and Zimbabwe

Characteristics		Zambia				P-value	Zimbabwe				P-value
		Baseline		Endline			Baseline		Endline		
	n	%	n	%		n	%	n	%		
Health staff at clinic are friendly						0.555					0.327
Yes	109	89.3	115	94.3		40	90.9	40	90.9		
No	3	2.5	6	4.9		4	9.1	2	4.6		
Missing	10	8.2	1	0.8		0	0.0	2	4.6		
Health facility staff will keep confidentiality						0.316					0.394
Yes	104	87.4	112	91.8		40	90.9	39	88.6		
No	7	5.9	7	5.7		4	9.1	2	4.6		
Missing	8	6.7	3	2.5		0	0.0	3	6.8		
Do not feel stigmatized when accessing SRHR services						0.526					0.699
Yes	86	70.5	91	74.6		33	75.0	40	90.9		
No	18	14.8	29	23.8		11	25.0	0	0.0		
Missing	18	14.8	1	0.8		0	0.0	0	0.0		
Not answered	0	0.0	1	0.8		0	0.0	4	9.1		

Change with regard to accessing SRH services over the past 2 years, and why - qualitative interviews

Increased sensitization by adolescents:

Many adolescent participants confirmed that there had been a change in accessing SRH services, and that some people in their communities even called adolescents that had been part of GRS interventions to explain SRH issues to them. The adolescents further indicated that there had been a lot of sensitization around SRHR done by several groups and organizations. Others attributed the change to programs like the distribution of condoms freely to clients. One participant said that:

Yes...Because there are some people who call us to teach them from time to time
(Male Adolescent, IDI, Zambia, School-based Sample)

Another adolescent during a focus group discussion stated that:

Because of the same groups that are being introduced now that's what makes change because people like us adolescents we get to know the disadvantages of other stuff involving sexual reproductive health (Male Adolescent, FGD, Zambia, School-based Sample).

An adolescent from Zimbabwe also attested that:

Yes, because when I came to look for girls that wanted to test for HIV and later the guys from VMMC also came. As for me what made me to take a step and go for circumcision was the way the VMMC guys taught us (Male Adolescent, IDI, Zimbabwe, School-based Sample)

Another presented the view that:

Yes, there is a change now condoms are available in schools (Female Adolescent, FGD, Zimbabwe, School-based Sample).

When the researcher asked health workers, teachers, and Coaches during in-depth interviews if there had been a change with regard to accessing SRH among adolescent in the previous two years, they too validated the idea that there had been change. The adult stakeholders said so because the young people at the time the research was conducted could more easily access SRH services than before. The adult stakeholders reported that adolescents visited the facilities on their own for screening, HIV testing, consultation, and were more at ease than before as they were no longer shy to get condoms or disclose their statuses. One health worker observed that:

I feel it's become easier than it was before because when they come here one thing I have noticed when they come to the facility they know exactly the screening room to go to because they know okay if I have any issues, if I need anything I need to

see this particular person so it has become easier because you don't have to limit even when asking questions you don't have to limit to them and they feel it's a safe place to tell you anything, what's bothering them so it has brought out a lot of issues from them. So, it's doing a great, great deal thing have become way easier. So, if adolescents have issues even if it's not a day of appointment, they still come here say what problems they have and sometimes they even refer to previous meetings (Health Worker, IDI, Zambia).

Another health worker confirmed that:

It's been easy now because majority of them have come on their own its very rare to see a child being accompanied unless those with issues but these who have been attending these activities come on their own and are open and I remember going to a radio station I think on 3 occasions this year I used to go with adolescents because we used to go there to talk about challenges of disclosure all those issues and I used to go with my adolescents and they would tell me to even say please for us we are open even to tell them we are on medication there is nothing we can lose so they are very open when it comes to that because even in the WhatsApp there are different topics one maybe will give how their fortunate journey from how it started and where they are, how they came to know about it (Health Worker, IDI, Zambia).

A teacher in Zimbabwe made the following observation:

It's now easy because they can make a decision, in such a way that they'll know and understand how they benefit from knowing their status at an earlier stage (Teacher, IDI, Zimbabwe).

Another participant presented the view that:

Yes, it's now easy because they are no longer shy and even come to access services (Nurse, IDI, Zimbabwe).

Availability of information: Respondents also attributed the change to the availability of information on SRH which the young people learnt in schools and through sensitization in clubs and SKILLZ programs. The youths also attributed the change to the availability of SRH services such as testing, forms of birth control and HIV prevention methods, condoms and so on in health facilities and bars. One of the adolescent participants observed that:

Nowadays in school they teach everything they don't hide like long ago in schools they didn't teach about sex ... that's why a lot of clubs were introduced in schools like let's say for girls there is this club dreams that is introduced to girls and girls learn a lot of things that side. So, these clubs and skills that have been introduced

that means that people are learning a lot of things that's why it's reduced (Male Adolescent, FGD, Zambia, School-based Sample).

Another adolescent echoed similar a sentiment when she said that:

There has been change because back then for you to find help there was nothing but nowadays you receive information daily and they tell you different things (Female Adolescent, FGD, Zambia, School-based Sample).

One adolescent in Zimbabwe observed that:

Yes, I think there has been change, because people now know how to protect themselves from STIs, they now know how to use condoms after getting awareness, and others choose abstinence from sexual activities. Others now know about family planning methods and correct use of condoms. I decided as a student that there is need for me to abstain from sexual activities so that I can achieve my goals (Female Adolescent, FGD, Zimbabwe, School-based Sample).

Another was of the view that:

Yes, I think there is improvement, since we have other pills that can prevent someone from getting pregnant, or how to control HIV. I cannot speak for everyone but on my side it has help because there is that issue of telling your friends about the ways for preventing and my friends responded in a good way about all that I had learnt in the SKILLZ programs (Male Adolescent, IDI, Zimbabwe, School-based Sample).

Another adolescent participant from Zimbabwe stated that:

Yes, I now know where I can test for HIV. I can test here at the clinic then condoms are there at the bar (Male Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

When the researcher discussed with the Coaches, teachers, and health workers whether after participating in SKILLZ it had become difficult or easy for adolescents to access HIV services, their responses were in agreement with what the young people had said. They also attested to the idea that HIV testing had become easier for young people to undertake due to what they had learnt from the SKILLZ programs. For this reason, they were no longer shy to demand for the services.

A nurse from Zimbabwe stated that:

Yes, it's now easy because they are no longer shy and even come to access services (Nurse, IDI, Zimbabwe).

Another nurse observed that:

I can say it's very easy now (Nurse, IDI, Zimbabwe).

A teacher made the following observation:

I think it's now easy, because they now have all the knowledge, they need they know at what age and how to access the services, before they would be shy, but all this was addressed during the programs (Teacher, IDI, Zimbabwe).

The role of Coaches: Almost all adolescents agreed that it was very important to have Coaches because they were able to share their problems with them. They also said that they taught them about achieving goals, how to protect themselves from early marriages, pregnancies, and STIs. They further said that the Coaches helped them gain life skills and make informed decisions. The other benefit of having Coaches is that they helped in teaching the adolescents about the way they are supposed to live and their well-being in general. They also learnt to abstain from sexual activity, use condoms when having sex, and take precautions such as using the pill, injections, or other forms of birth control to minimize undesired adolescent pregnancies and disease exposure. Overall, the adolescents said the Coaches explained a lot of the things that they did not understand. One adolescent said that:

They are important because not all the time you can be telling your dad or mom or parents things you go through, then they can be the second guardians because not all parents are always home so they don't know most of the times what you are going through, so you can easily talk to the Coaches they can help to counsel you (Female Adolescent, IDI, Zambia, Health Facility-based Sample).

Another adolescent stated that:

You always have a friend to talk to and you're assured that when things go wrong at home you report the matter to the Coaches and they can help you to get the service that you need (Female Adolescent, IDI, Zimbabwe, School-based Sample).

Another adolescent also commented that:

The importance is they help, a Coach is someone who understands and can also keep a secret so it is importance for us to be open with them even if we are from ok or going through a bad situation you can go to the Coaches to seek for help since you trust that person to be the only one who can help you because you can explain the situation and maybe that person can help you since when maybe they know someone that can help you with your situation or take you to someone in charge of the same situation you are in (Female Adolescent, IDI, Zambia, Health Facility-based Sample).

The Coaches were reported to have an important role because they taught the adolescents sexuality services and provided contraceptives to the community. They also went to schools to conduct

lessons for both girls and boys on dangers of not accessing SRH services. Doors were open for the adolescents to seek advice and medical attention where necessary for example, when suffering from STIs, they sought medical help from trained Coaches.

These guys are more like light to the communities, they are role models and I think it is a benefit to the project because they work like front liners, they do quite a lot and they are bringing us numbers in terms of the people that we are reaching out to, I think that is one of the important reasons we need them on board (GRS Staff, IDI, Zambia).

I think they increase awareness, knowledge of some issues we might not know, especially to the youths, it makes them aware of certain issues they might not be aware of.(Teacher, IDI, Zambia).

Some GRS staff and health workers reported that the services offered by the Coaches were of great importance. There has been a great change in the number of cases of teenage pregnancy and early marriages among adolescents since they were taught how to protect themselves from teenage pregnancy and STIs.

The good thing is that we are going to have a reduction in the number of unwanted pregnancies because if this person can't access family planning, they can use a condom instead. It reduces re-infection for those living with HIV, you can't get another type of HIV, if you are using a condom and also just contracting STIs. It means people will be healthier and will continue with their daily activities because they are using condoms.(GRS Staff, IDI, Zambia).

These Coaches they are the carriers of messages they are messengers of that information so when they are empowered with that information and you know it's very easy to disseminate the information through these Coaches and you know with their presence here you find that it's more like a source of comfort even to their fellow peers when they are coming to access even the drugs when they find their fellows they feel at home yes and they can discuss all these issues.(Health Worker, IDI, Zambia).

3.5 Relevance of SKILLZ activities in increasing knowledge and access to services

As indicated above, some of the participants presented the view that the knowledge they obtained from the SKILLZ program stimulated the adolescents to want to go for HIV testing or counselling. The adolescents also presented the view that they were encouraged by their peers to access the services and because they were assured of confidentiality and trusted the service providers. Others stated that the HIV testing and counselling services that GRS provided in schools made it possible for them to access the services. One young person said that:

It's possible that those people who are participating in this programs since they're aware of the information being disseminated to them it's possible for them to tell others in public saying I want to go ARVs than being intimidated because the information has been disseminated to them the key things is the information to be disseminated to them and then for them they accept that information fully without anyone to intimidate them. (Female Adolescent, IDI, Zambia, School-based Sample)

Another adolescent presented the idea that:

It makes it possible because they are free with people they know they can trust so it's easy for them to access the services because they know people won't go around telling they are HIV and stuff. (Female Adolescent, IDI, Zambia, School-based Sample)

Another added that:

It's possible because GRS usually host testing events in schools (Male Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

Key informants also agreed that the lessons the young people learnt from SKILLZ encouraged them to go through HIV testing and counseling. Peer influence also stimulated them to access health services, especially in Zimbabwean communities. A teacher in Zimbabwe noted that:

Through the lessons they get from the program, they teach and encourage each other to do it (HIV testing), when they do something as a group it becomes easy (Teacher, IDI, Zimbabwe).

A health worker in Zambia made the observation that:

So what makes it possible is the information that they get from the peers that's like the first thing because this is somebody in their age group who go through the same things, have a similar experience with them so they get encouraged by that (Health Worker, IDI, Zambia).

Services referred to by Coaches

Some had been referred to for Voluntary Counseling and Testing for HIV, testing for STIs and to be given medical attention by health workers. Some of the boys were referred to circumcision services. Some participants said that they had been referred to their teachers and village health workers for guidance and counseling on various social issues like early marriages and teenage pregnancies among others. Others indicated that they had been referred to go and have their CD4

count checked, to go and get condoms and advice on other birth control methods such as the pill or injection whereas those who had children were advised to know the HIV statuses of their babies as well. When asked about service referrals through the GRS Coaches, one Zimbabwean adolescent confirmed that:

Yes, we were referred to the clinic for HIV testing (Female Adolescent, IDI, Zimbabwe, School-based Sample).

Another young person narrated that:

We were referred to the Village Health Workers to get counseling on early marriages (Female Adolescent, IDI, Zimbabwe, Health Facility-based Sample).

In response to the same question, one Zambian adolescent said that they had been referred to:

...test for HIV, how to check if their CD4 count is normal, testing if you have a baby can get HIV or not (Female Adolescent, IDI, Zambia, School-based Sample).

The referral services equipped adolescents with knowledge on various topics which they could not access before. The referral services also opened doors for young people to seek advice and medical attention where necessary for example, when suffering from STIs, they sought medical help from trained medical personnel. Although quantitative results showed that access to SRH services such as HIV testing was low, qualitative results suggested that there has been an increase in the referral and demand for services over time. One participant in the study noted that:

I got knowledge about where I can access SRH services (Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

Another respondent said that:

If I see someone being abused; now I can give him/her advice where to go and access services (Female Adolescent, FGD, Zimbabwe, School-based Sample).

Another was of the view that referral services were beneficial due to the following observation:

We help people to avoid contracting diseases through using condoms (Male Adolescent, IDI, Zambia, School-based Sample).

When the researcher extended the same question to Coaches, teachers and nurses, their responses were in agreement with what the adolescents reported. One Coach remarked that:

The benefits are that even ourselves we want to know our well-being that's why the Coaches always bring us together to teach us about our well-being and if we have

seen certain signs on our body we need to go to the hospital to see the doctor or ask for help from any qualified health personnel from our community. As I have said those who are sexually active we do give condoms for them to protect themselves and not contract some diseases like STIs (SKILLZ Coach, IDI, Zambia).

Another stakeholder was of the view that:

The SKILLZ program encouraged the students to access these services, because of the information they were given information (Teacher, IDI, Zimbabwe).

A GRS staff member added that:

I think what leads to have an increased number maybe in the referrals is you know you can only have the morale to access something if you fully understand it, so the people that we have are experts, our Coaches, are experts, once they talk to their people, they explain to them on what services they can access, they made sure that the available services at the facilities and other services they can access to certain offices were told for example GBV, so it is after explaining to them to say if you have such a situation, you can access the service too and people are then forced to say this is my situation, so what can I do Coach XX for example then the coach will lead to say you can access this service and that is why there has been so much demand for the services by the young people (GRS Staff, IDI, Zambia).

One health worker presented the idea that some of the benefits of referral services were that:

...Most of the topics that are talked about when the adolescents meet are not topics or information that they can get from anyone they have these questions and when we have the meetings people bring out this and that then we also explain to them to say if they need anything to do with sexual reproductive health they can see such a person so that has really helped us because they don't have to go round and explaining their issues to everybody they find at the department they just go to a specific person (Health Worker, IDI, Zimbabwe).

Relevance of SKILLZ on GBV matters

During interviews and focus group discussions with adolescents, although most of them could not define GBV clearly, they demonstrated understanding of the concept. The young people observed that through the program, they had been made aware of GBV as information had been disseminated to people in communities. The participants learned about different forms of sexual violence and abuse such as inappropriate touching and rape. Increased awareness of GBV allowed adolescents to identify it and report it where necessary. One of the adolescents stated that:

....people like who are living in a household then one of them is misused then it has disseminated information on the effects on what violence impacted in the family, so it helps them understand and reduce on violence which happens... I think it has encouraged like us adolescents to be more open and if there is also any violence we can take upon us, we can easily report them to the victim support (Male Adolescent, IDI, Zambia, Health Facility-based Sample).

One adolescent girl echoed the following sentiment during a focus group discussion:

SKILLZ helped by providing me with information about GBV matters and types of abuses that are there (Female Adolescent, FGD, Zimbabwe, School-based Sample).

Another participant observed that:

It has helped because back then people didn't know that forcing women to sleep with you is bad but now SKILLZ has taught it's not right to force a woman if she doesn't want you shouldn't force her to do it that's the positive part (Male Adolescent, FGD, Zambia, School-based Sample).

During an in-depth interview one adolescent boy attested that:

For those who participated in SKILLZ we were taught that we matter, we have to find help and talk to someone who can help because cases of gender-based violence are now many which include rape, for example teachers robe girls at promise them that if we indulge in sexual intercourse I will make you to pass as a result the girl will be pressured because they want to pass, and I have heard few cases in our school (Male Adolescent, IDI, Zimbabwe, Health Facility-based Sample).

The Coaches, GRS Staff and health workers in both countries confirmed that the program had been significant in that it had brought about awareness on issues of GBV among adolescents and their parents. They upheld the same view as the adolescents who participated in the study had stated that people knew where to report such as one stop centers, the police, or seeking medical attention at the hospitals or clinics. A SKILLZ Coach held the following view:

It has helped more especially the female adolescents, the information which is delivered to the adolescents it helps them not to have that mind that more especially in villages or rural areas some parents believe when a female child grows they need to be married but when SKILLZ came in they teach that a child should be educated first then they can go for marriage so that message also has helped even those

parents like maybe when you go for a home visit they'll also have that thing to say a child should learn first before marriage (SKILLS Coach, IDI, Zambia).

A health worker also said that:

The thing is since they know to say GBV these are the issues they know where to report the GBV issues at least they have that awareness to say something happens GBV related they know where to go because we have a GBV stop center for those issues yes they know where to go (Health Worker, IDI, Zambia).

Another participant stated that:

Yes I would say it contributed positively because empowering them with knowledge on any form of GBV it encouraged them come out and report such cases that they have been abused, so the knowledge they got from GRS really helped a lot as most of them are now opening up that they are victims of GBV and we have referred most of them (Nurse, IDI, Zimbabwe).

A teacher from Zimbabwe made the following observation:

SKILLZ has made kids to be aware that whether boy or girl, they are all equal and no one has the right to violate anyone. (Teacher, IDI, Zimbabwe)

The young people indicated that in SKILLZ activities, they were informed on where to report GBV issues and where to seek help such as the police or health center. Further, they were provided with confidants to talk to which helped improve communication and conflict resolution skills. One of the adolescent participants in the study noted that:

I think Grassroot Soccer helped us, like if you get raped by someone that you stay with at home and you don't have anyone to talk/report to, we were taught to talk to someone you trust and where you can go to get help. They gave us confidence not to feel afraid since you might have been sexually abused at home and if you report this person, you might end up not having a place to stay at, eat at...(Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

An adolescent boy presented the following view during an interview:

So for instance, if people are fighting or arguing SKILLZ can come in to give advice to those people so that they can live in harmony and continue to live nicely (Male Adolescent, IDI, Zambia, School-based Sample).

Among nurses, teachers, and GRS staff, some respondents said that the young people in both Zambia and Zimbabwe especially girls had been advantaged by the SKILLZ program in both rural and urban areas in that their parents had been informed on the value of sending the girl children to school instead of subjecting them to early marriages. Programs like Grassroot Soccer SKILLZ had provided awareness to young people and this really helped a lot as most of them were opening up that they were victims of GBV, and we had referred to other services for help. One respondent made the observation that access to GBV services among young people had improved as some people that had been helped exhibited healing of the mind. One participant observed that:

When you feel like maybe this child needs help on gender-based violence, we try to talk to the person... when he/she accepts, we refer that person to gender based violence then we do learning. From there the people from the gender-based violence department will talk to them then you will see that problem will start improving if they had mental health problems (SKILLZ Coach, IDI, Zambia).

Another said that:

Yes, it has assisted even though in our area the cases are few. You find out that even if there are such cases, they come to the clinic to get assistance (Nurse, IDI, Zimbabwe).

3.7 Uptake of condoms and family planning among sexually active school-based adolescents

Of the adolescents who participated in both the baseline and endline surveys in the school-based sample, at baseline only 6.3% (n=13/205) reported ever having sexual intercourse in Zambia as compared to 3.4% (n=9/264) in Zimbabwe. At endline, the proportion of school-based adolescents who reported ever having sexual intercourse increased to 11.2% in Zambia and 11.7% in Zimbabwe (Table 10). Among the reasons reported for engaging in sexual intercourse included showing the partner that they are loved, wanting to experience sex and to fulfil expectations of the partner. At baseline, three adolescents in Zambia and one in Zimbabwe reported engaging in sexual intercourse because they were forced to. At endline, the numbers of adolescents who reported forced sex increased to from two to three in Zambia and from four to seven in Zimbabwe.

Of the participants who reported having been sexually active in Zambia, none reported having used a condom during their last sex at baseline and this proportion increased to 39.1% at endline. In Zimbabwe, the proportion of adolescents who reported having used a condom at their last sex also increased from 33.3% at baseline to 45.2% at endline. Similarly, very few sexually active adolescents in Zambia (15%; n=2) and Zimbabwe (0.0%) reported having used any form of family planning at baseline. The proportion of sexually active adolescents' school-based cohort who reported having used any form of family planning increased to 43.5% in Zambia and 6.5% in Zimbabwe respectively. (Table 10).

Table 10 Condom and family planning use among sexually active school-based adolescents in Zambia and Zimbabwe

Characteristics	Zambia				Zimbabwe			
	Baseline		Endline		Baseline		Endline	
	n	%	n	%	n	%	n	%
Ever had sexual intercourse								
Yes	13	6.3	23	11.2	9	3.4	31	11.7
No	175	85.4	176	85.9	232	87.9	224	84.9
Not sure	4	2.0	6	2.9	8	3.0	8	3.0
Not answered	13	6.4	0	0.0	15	5.7	1	0.4
Reasons for having sex among sexually active adolescents								
To show my partner I loved them	0	0.0	3	13.0	2	22.2	1	3.3
Felt it was expected of me from partner	2	15.4	2	9.1	1	11.1	3	10.0
To experience sex	4	30.8	9	40.0	0	0.0	9	30.0
For my own pleasure	4	30.8	0	0.0	1	11.1	4	13.3
In exchange for gifts or money	0	0.0	1	4.6	1	11.1	1	3.3
I was threatened or forced to	2	15.4	3	13.6	4	44.4	7	22.6
Condom use at last sex								
Yes	0	0.0	9	39.1	3	33.3	14	45.2
Never	10	76.9	9	39.1	1	11.1	8	25.8
Not sure	2	15.4	2	8.7	0	0.0	2	6.5
Not answered	1	7.7	3	13.0	5	55.6	7	22.6
Ever used FP								
Yes	2	15.4	10	43.5	0	0.0	2	6.5
Never	7	53.9	13	56.5	3	33.3	20	64.5
Not sure	2	15.4	0	0.0	2	22.2	6	19.4
Not answered	2	15.4	0	0.0	4	44.4	3	9.7
SRHR service use								
Once every month	20	9.8	36	17.6	15	5.7	41	15.5
2-3 times every month	3	1.5	12	5.9	8	3.0	6	2.3
More than 3 times every month	9	4.4	3	1.5	11	4.2	10	3.8
Never	132	64.4	131	63.9	163	61.7	194	73.5
Not answered	41	20.0	23	11.2	67	25.4	13	4.9

At both baseline and endline, the proportion of adolescents who reported ever having had sexual intercourse was slightly higher among health facility-based adolescents compared to school-based adolescents in both countries (Table 10 and Table 11). At baseline, a higher proportion of health facility-based adolescents in Zambia (24.6%, n=30/122) reported having ever had sexual intercourse compared to 6.8% (n=3/44) in Zimbabwe. At endline, the proportion of health facility-based adolescents who reported having ever had sexual intercourse was 45.9% in Zambia and 15.9% in Zimbabwe. Condom use at last sex in the Zambia cohort increased from 46.7% at baseline to 76.8% at endline, while in Zimbabwe condom use at last sex increased from 33.3% to 57.1%. Similar to the school-based adolescents, the use of family planning among the health facility-based adolescents was also low at both endline and baseline (Table 11).

Table 11 Condom and family planning use among sexually active health facility-based adolescents in Zambia and Zimbabwe

	Zambia				p-value n	Zimbabwe				p-value
	Baseline n %		Endline n %			Baseline % %		Endline n %		
Ever had sexual intercourse					0.032					0.128
Yes	30	24.6	56	45.9		3	6.8	7	15.9	
No	69	56.6	62	50.8		39	88.6	35	79.6	
Not sure	6	4.9	3	2.5		1	2.3	0	0.0	
Missing	17	13.9	1	0.8		1	2.3	2	4.6	
Reasons for having sex among sexually active adolescents					0.645					
To show my partner I loved them	12	9.8	16	13.1		0	0.0	0	0.0	
Felt it was expected of me from partner	4	3.3	6	4.9		0	0.0	1	2.3	
To experience sex	9	7.4	19	15.6		0	0.0	4	9.1	
For my own pleasure	4	3.3	16	13.1		3	6.8	1	2.3	
In exchange for gifts or money	1	0.8	0	0.0		0	0.0	0	0.0	
I was threatened or forced to	1	0.8	4	3.3		0	0.0	0	0.0	
I have never had	0	0.0	52	42.6		0	0.0	34	77.3	
Don't know or declined to answer	6	4.9	6	4.9		0	0.0	4	9.1	
Other	0	0.	1	0.8		0	0.0	0	0.0	
Missing	85	69.7	2	1.6		41	93.2	0	0.0	
Condom use at last sex					0.688					0.007
Never	12	40.0	10	17.9		2	66.7	2	28.6	
yes	14	46.7	43	76.8		1	33.3	4	57.1	
Not sure	1	3.3	3	5.4		0	0.0	0	0.0	
Missing	3	10.0	0	0.0		0	0.0	1	14.3	
Ever used FP					0.587					1.000
Never	13	43.3	20	35.7		0	0.0	3	2.9	
yes	11	36.7	33	58.9		1	33.3	3	42.9	
Not sure	1	3.3	1	1.8		1	33.3	0	0.0	
Missing	5	16.7	2	3.6		1	33.3	1	14.3	
SRHR service use					0.068					0.009
Never	8	26.7	26	46.4		3	100.0	1	14.3	
Yes	11	36.7	27	48.2		0	0.0	3	42.9	
Not sure	0	0.0	2	3.6		0	0.0	1	14.3	
Missing	11	36.7	1	1.8		0	0.0	2	28.6	
SRHR service use										
Once every month	48	39.3	42	24		23	52.3	24	54.6	
2-3 times every month	11	9.0	33	14		4	9.1	14	31.8	
More than 3 times every month	12	9.8	25	3		5	11.4	3	6.8	
Never	18	14.8	18	0		10	22.7	0	0.0	
Missing	33	27.1	4	3		2	4.5	3	6.8	

3.8 Adolescent HIV testing, linkage to care and adherence to ART

Among the school-based adolescents interviewed both at baseline and endline, the proportion of adolescents who reported ever testing for HIV increased significantly at endline (62.4% in Zambia; 44.3% in Zimbabwe) compared to baseline (33.2% in Zambia; 24.9% in Zimbabwe). At endline, among the 128 school-based adolescents who had tested in Zambia, 3.9% (n=5/128) self-reported being HIV positive out of which 60.0% (n=3/5) registered for ART and ever started ART. In Zimbabwe, six out of the 117 (5.2%) adolescents who ever tested for HIV, self-reported being HIV positive out of which 50.0% (n=3/6) registered on ART (.

Table 12).

Table 12 Baseline and Endline Uptake of HIV testing and linkage to ART among school-based adolescents in Zambia and Zimbabwe

Characteristics	Zambia				p-value	Zimbabwe				p-value
	Baseline		Endline			Baseline		Endline		
	n	%	n	%		n	%	n	%	
Ever tested for HIV					0.001					0.000
Yes	69	33.7	128	62.4		66	25.0	117	44.3	
No	108	52.7	72	35.1		171	64.8	136	51.5	
Not sure	17	8.3	2	1.0		11	4.2	8	3.0	
Not answered	11	5.4	3	1.5		16	6.0	3	1.1	
HIV test result					0.001					0.000
Positive	1	1.5	5	3.9		2	3.0	6	5.2	
Negative	60	87.0	116	91.4		41	62.1	97	84.4	
Not sure	2	2.9	4	3.2		6	9.1	10	8.7	
Not answered	6	8.7	2	1.6		17	25.8	2	1.7	
Registered for ART										
Yes	1	50.0	3	60.0		0	0.0	3	50.0	
No	1	50.0	2	40.0		2	100	3	50.0	
Missing	0	0.0	0	0.0		0	0.0	0	0.0	
Ever started ART										
Never	0	0.0	1	20.0		1	50.0	3	50.0	
yes	1	50.0	3	60		1	50.0	1	17.7	
Not sure	0	0.0	0	0.0		0	0.0	0	0.0	
Not answered	1	50.0	1	20.0		0	0.0	2	33.3	
Follow Treatment										
Yes	0	0.0	1	20.0		0	0.0	0	0.0	
No	0	0.0	3	60.0		1	50.0	3	42.9	
Missing	2	100.0	1	20.0		0	0.0	4	57.1	
Not answered	0	0.0	0	0.0		1	50.0	0	0.0	
Missed treatment in the last 1 week										
Yes	0	0.0	0	0.0		0	0	1	14.3	
No	1	50.0	3	60		1	50.0	2	28.6	
Missing	1	50.0	2	40		0	0.0	4	57.1	
Unanswered	0	0.0	0	0.0		1	50.0	0	0.0	

Among the health facility-based adolescents who participated in both the endline and baseline survey in Zambia (n=122), the proportion of adolescents who reported ever tested for HIV increased from 86.9% at baseline to 92.6% at endline. In Zimbabwe, 88.6% (n=39/44) health facility-based adolescents self-reported ever tested for HIV at endline compared to 68.2% (n=30/44) at baseline. At baseline, 92.5% health facility-based adolescents self-reported being HIV positive but only 75.2% at endline self-reported being HIV positive. This discrepancy in data could be attributed to misreporting among participants. In Zimbabwe, the proportion of adolescents who self-reported testing HIV positive increased from 53.3% at baseline to 92.3% at endline. At the end of the follow-up period, the majority of health facility-based adolescents in both Zambia (89.7%) and Zimbabwe (89.4%) who self-reported being HIV positive were registered for ART (Table 13). When asked if they follow or adhere to HIV treatment as directed by the clinic, the proportion of health facility-based adolescents who reported that they do increased from 50.0% at baseline to 97.4% at endline in Zimbabwe. In Zambia, a slight increase

was seen from 95.2% to 97.8%. However, among the adolescents on ART, 18.2% in Zambia and 12.8% in Zimbabwe also indicated that they had missed taking HIV treatment pills at least once in the previous one week.

Table 13 Baseline Uptake of HIV testing and linkage to ART among health facility-based adolescents in Zambia and Zimbabwe

Characteristics	Zambia					Zimbabwe				
	Baseline		Endline			Baseline		Endline		
	n	%	n	%		n	%	n	%	
Ever tested for HIV					1.000					0.606
No	4	3.3	6	4.9		8	18.2	1	2.3	
Yes	106	86.9	113	92.6		30	68.2	39	88.6	
Not sure	2	1.6	2	1.6		5	11.4	2	4.6	
Missing	10	8.2	1	0.8		1	2.3	2	4.6	
HIV test result					0.891					0.159
Positive	98	92.5	85	75.2		16	53.3	36	92.3	
Negative	1	0.9	15	13.3		3	10.0	1	2.6	
Not sure	1	0.9	11	9.7		6	20.0	1	2.6	
Missing	6	5.7	2	1.8		5	16.7	1	2.6	
Registered for ART					0.089					0.609
No	5	4.9	1	1.1		0	0.0	0	0.0	
Yes	97	94.2	86	89.7		6	37.5	35	89.4	
Not sure	1	1.0	1	1.1		0	0.0	4	10.3	
Missing	0	0.0	1	1.1		10	62.5	0	0.0	
Ever started ART					0.434					1.000
No	3	2.9	0	0.0		0	0.0	1	2.6	
yes	99	96.1	87	97.8		6	37.5	38	97.4	
Missing	1	1.0	2	2.3		10	62.5	0	0.0	
Follow Treatment					1.000					1.000
No	5	4.9	1	1.1		0	0.0	1	2.6	
Yes	98	95.2	87	97.8		8	50.0	38	97.4	
Missing	0	0.0	1	1.1		8	50.0	0	0.0	
Missed treatment in the last 1 week					0.290					0.906
No	69	67.0	72	81.8		16	100.0	34	87.2	
Yes	29	28.2	16	18.2		0	0.0	5	12.8	
Missing	5	4.9	0	0.0		0	0.0	0	0.0	
Reasons for missing treatment										
I felt too sick	3	2.9	3	3.4		0	0.0	2	5.1	
The clinic said no	0	0.0	2	2.3		0	0.0	0	0.0	
I feel healthy	2	1.9	2	2.3		1	6.3	1	2.6	
I don't have ha	1	1.0	1	1.1		0	0.0	0	0.0	
I forgot to take	18	17.5	11	12.4		0	0.0	1	2.6	
7 other (specify)	2	1.9	1	1.1		0	0.0	0	0.0	
Don't know or declined	14	13.6	6	6.7		1	6.3	2	5.1	
Missing	63	61.2	63	70.8		14	87.5	33	84.6	

3.9 Decision-making and beliefs regarding gender norms

Participants were asked a set of six question related to decision-making and beliefs regarding gender norms. The findings show that the proportion of the school-based adolescents in Zambia who perceived themselves as individuals who can make decisions about their sexual health care increased from 50.2% (baseline) to 84.4% (endline) in Zambia and 37.1% (baseline) to 80.3% (endline) in Zimbabwe, representing significant change in Zimbabwe ($p=0.05$). A similar increase

was seen when adolescents were asked if they could say no to sex when pressured and if they were able to talk to a partner about HIV/STI testing. The proportion of school-based adolescents who agreed to the statement “It’s only the girls’ responsibility to avoid pregnancy” decreased at endline compared to baseline in both Zambia and Zimbabwe. To the statement, “a successful marriage is more important to girls than completing school”, a decreased in the proportion of adolescents who responded “yes” was seen in Zambia while a slight increase from 9.4% to 14.0% was seen in Zimbabwe (Table 14).

Table 14 Perceptions on decision making among school-based adolescents in Zambia and Zimbabwe

Characteristics	Zambia				Zimbabwe			
	Baseline		Endline		Baseline		Endline	
	n	%	n	%	n	%	n	%
Make own informed decisions about sexual health care								
Yes	103	50.2	173	84.4	98	37.1	212	80.3
No	85	41.5	31	15.1	155	58.7	43	16.3
Missing	17	8.3	1	0.5	11	4.2	9	3.4
Can say no to sex if pressured								
Yes	143	69.8	185	90.2	164	62.1	223	84.5
No	57	27.8	19	9.3	95	36.0	29	11.0
Missing	5	2.4	1	0.5	5	1.9	12	4.6
Talk to partner about HIV/STI testing								
Yes	132	64.4	158	77.1	145	54.9	203	76.9
No	68	33.2	46	22.4	93	35.3	54	20.5
Missing	5	2.4	1	0.5	26	9.9	7	2.7
It's only the girls' responsibility to avoid pregnancy								
Yes	106	51.7	45	22.0	127	48.1	73	27.7
No	90	43.9	158	77.1	114	43.2	185	70.1
Missing	9	4.4	2	1.0	23	8.7	6	2.3
Successful marriage is more important to girls than completing school								
Yes	13	6.3	10	4.9	24	9.1	37	14.0
No	187	91.2	194	94.6	224	84.9	220	83.3
Missing	5	2.4	1	0.5	16	6.1	7	2.7
Can decide when it's the right time to have a baby								
Yes	176	84.9	186	90.7	165	62.5	235	89.0
No	24	11.7	16	7.8	99	37.5	25	9.5
Missing	7	3.4	3	1.5	0	0.0	4	1.5

Similar patterns of perceptions on decision-making were seen among health facility-based adolescents (Table 15) compared to school-based adolescents (Table 14). The proportion of Health facility-based adolescents in both Zambia and Zimbabwe who responded “yes” to the statements: “I make own informed decisions about sexual health care”; “I can say no to sex if pressured”; “I can talk to my partner about HIV/STI testing” and “I can decide when it’s the right time to have a baby” increased at endline compared to baseline. At endline, 50.0% of the health facility-based cohort in Zambia and 40.9% agreed to the statement “It’s only the girls’ responsibility to avoid pregnancy” (Table 15).

Table 15 Perceptions on decision making among health facility-based adolescents in Zambia and Zimbabwe

Characteristics	Zambia		Zimbabwe	
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	Baseline		Endline			Baseline		Endline		
	n	%	n	%		n	%	n	%	
<i>Make own informed decisions about sexual health care</i>					0.286					0.587
Yes	72	59.0	99	81.2		19	43.2	29	65.9	
No	29	23.8	23	18.9		22	50.0	13	29.6	
Missing	21	17.2	0	0.0		3	6.8	2	4.6	
<i>Can say no to sex if pressured</i>					0.706					0.530
Yes	67	56.3	94	77.1		17	42.5	32	72.7	
No	36	30.3	27	22.1		23	57.5	10	22.7	
Missing	16	13.5	1	0.8		0	0.0	2	4.6	
<i>Talk to partner about HIV/STI testing</i>					0.028					1.000
Yes	74	60.7	96	78.7		16	36.4	26	59.1	
No	38	31.2	25	20.5		25	56.8	15	34.1	
Missing	10	8.2	1	0.8		3	6.8	3	6.8	
<i>It's only the girls' responsibility to avoid pregnancy</i>					0.510					0.203
Yes	53	43.4	61	50.0		13	29.6	18	40.9	
No	63	51.6	61	50.0		25	56.8	25	56.8	
Missing	6	4.9	0	0.0		6	13.6	1	2.3	
<i>Successful marriage important to girls than completing school</i>					0.047					0.383
Yes	23	18.9	17	13.9		11	25.0	8	18.2	
No	92	75.4	102	83.6		32	72.7	35	76.6	
Missing	7	5.7	3	2.5		1	2.3	1	2.3	
<i>Can decide when it's the right time to have a baby</i>					0.980					1.000
Yes	91	74.6	11	91.0		27	61.4	33	75.0	
No	23	18.9	9	7.4		17	38.6	10	22.7	
Missing	8	6.6	2	1.6		0	0.0	1	2.3	

3.10 Self-Image and Leadership roles

Similar to the questions on under knowledge and beliefs around gender norms, the responses to the questions on self-image of the adolescents were collapsed at analysis from the Likert scale to “Yes” and “No” options. Among school-based adolescents in Zambia, the proportion of adolescents who agreed to the statement “I know what I’m good at” slightly decreased by 3% at endline compared to baseline. Among the school-based cohort in Zimbabwe, the proportion of adolescents who agreed to the statements “I know what I’m good at” increased from 70.8% at baseline to 81.1% at endline.

In both Zambia and Zimbabwe, the proportion of adolescents who agreed to the statements, ‘I know how to overcome challenges’; ‘most of the time I feel in control of my life’; ‘a child should respect parents’ decision to get married’; ‘I feel I’m a person of worth at least on the equal plain with others’; and ‘I’m satisfied with myself’ increased at endline compared to baseline (Table 16). Further, it was noted that adolescents in Zambia and Zimbabwe might have been confused by the last two statements in Tables 16 and 17 (‘I do not have much to be proud of’ and ‘at times I think I’m no good at all’) due to the negative phrasing of the statements. As such, instead of the expected decrease at endline, the proportion of adolescents who agreed with the statements slightly increased endline compared baseline (Table 16).

Table 16 Gender norms and self-image among school-based adolescents in Zambia and Zimbabwe

Characteristics	Zambia				Zimbabwe			
	Baseline		Endline		Baseline		Endline	
	n	%	n	%	n	%	n	%
<i>I know what I'm good at</i>								
Yes	183	89.3	177	86.4	187	70.8	214	81.1
No	2	1.0	6	2.9	39	14.8	13	4.9
Not sure	16	7.8	22	10.7	33	12.5	32	12.1
Missing	4	2.0	0	0.0	5	1.9	5	1.9
<i>I know how to overcome challenges</i>								
Yes	127	62.0	142	69.3	131	49.6	188	71.2
No	19	9.3	26	12.7	62	23.5	16	6.1
Not sure	57	27.8	35	17.1	63	23.9	53	20.1
Missing	2	1.0	2	1.0	7	3.0	5	2.7
<i>Most of the time I feel in control of my life</i>								
Yes	87	42.4	121	59.0	154	58.3	173	65.5
No	69	33.7	57	27.8	59	22.4	38	14.4
Not sure	37	18.1	26	12.7	43	16.3	45	17.1
Missing	12	5.9	1	0.5	8	3.0	8	3.0
<i>Have someone in life to turn to for advice on SRHR</i>								
Yes	177	86.3	165	80.5	204	77.3	215	81.4
No	10	4.9	24	11.7	34	12.9	20	7.6
No sure	16	7.8	16	7.8	20	7.6	22	8.3
Missing	2	1.0	0	0.0	6	2.3	7	2.7
<i>A child should respect parents' decision to get married</i>								
Yes	56	27.3	65	31.7	113	34.9	113	42.8
No	126	60.4	109	53.2	92	42.8	127	48.1
Not sure	24	11.7	31	15.1	52	19.7	18	6.8
Missing	1	0.5	0	0.0	7	2.7	6	2.3
<i>Feel I'm a person of worth at least on the equal plain with others</i>								
Yes	147	71.7	175	85.4	203	77.0	225	85.6
No	51	24.9	29	14.2	50	18.9	30	11.4
Missing	7	3.4	1	0.5	11	4.2	8	3.0
<i>Able to do things well as most other people</i>								
Yes	162	79.0	177	86.3	219	83.0	212	80.3
No	41	20.0	28	13.7	32	12.1	45	17.1
Missing	2	1.0	0	0.0	13	4.9	7	2.7
<i>Satisfied with myself</i>								
Yes	182	88.9	173	84.8	217	81.8	232	87.9
No	19	9.3	30	14.7	29	11.0	23	8.7
Missing	4	2.0	1	0.5	19	7.2	9	3.4
<i>Do not have much to be proud of</i>								
Yes	49	23.9	64	31.5	87	33.0	83	31.4
No	153	74.6	136	67.0	158	59.9	176	66.7
Missing	3	1.5	3	1.5	19	7.2	5	1.9
<i>At times I think I'm no good at all</i>								
Yes	58	28.3	79	38.7	96	36.0	110	41.7
No	143	69.8	124	60.8	146	55.3	150	56.8
Missing	4	2.0	1	0.5	23	8.7	4	1.5

Among health facility-based cohort in Zambia, there was an increase in the proportion of adolescents who agreed to the first five statement in Table 17 at endline compared to baseline. Among the health facility-based cohort in Zimbabwe, there was a decrease in the proportion of

adolescents who agreed to the statements ‘I know how to overcome challenges’ and ‘I am satisfied with myself’ at endline compared to baseline. (Table 17). Similar to the school-based cohort, adolescents in the health facility cohort seemed to have misinterpreted the two negatively worded statements ‘I do not have much to be proud of’ and ‘at times I think I’m no good at all’. This could have contributed to the increase in the proportion of health facility-based adolescents who agreed with these statements at endline compared to baseline (Table 17)

Table 17 Gender norms and self-image among health facility-based adolescents in Zambia and Zimbabwe

Characteristics	Zambia					Zimbabwe				
	Baseline		Endline			Baseline		Endline		
	n	%	n	%		n	%	n	%	
<i>I know what I'm good at</i>					1.000					1.000
Yes	112	91.8	116	95.1		38	86.4	42	95.6	
No	7	5.7	5	4.1		6	13.6	1	2.3	
Missing	3	2.5	1	0.8		0	0.0	1	2.3	
<i>I know how to overcome challenges</i>					1.000					1.000
Yes	106	86.9	113	92.6		41	93.2	35	79.6	
No	13	10.7	8	6.6		3	6.8	6	13.6	
Missing	3	2.5	1	0.8			0.0	3	6.8	
<i>Most of the time I feel in control of my life</i>					0.492					1.000
Yes	97	79.5	101	82.8		40	90.1	39	88.6	
No	12	9.8	18	14.8		3	6.8	2	4.6	
Missing	13	10.7	3	2.5		1	2.3	3	6.8	
<i>Have someone in life to turn to for advice on SRHR</i>					0.014					1.000
Yes	107	87.7	114	93.4		39	88.6	40	90.1	
No	3	2.5	4	3.3		5	11.4	2	4.6	
Missing	12	9.8	4	3.3		0	0.0	2	4.6	
<i>A child should respect parents' decision to get married</i>					0.379					1.000
Yes	96	78.7	112	91.8		39	88.6	42	95.5	
No	20	16.4	8	6.6		4	9.1	0	0.0	
Missing	6		2	1.6		1	2.3	2	4.6	
	4.9									
<i>Feel I'm a person of worth at least on the equal plain with others</i>					0.947					1.000
Yes	90	73.8	102	84.3		38	86.4	39	88.6	
No	26	21.3	17	14.1		5	11.4	4	9.1	
Missing	6	4.9	2	1.7		1	2.3	1	2.3	
<i>Able to do things well as most other people</i>					0.934					0.043
Yes	102	84.3	100	82.0		39	88.6	41	93.2	
No	17	14.1	20	16.4		4	9.1	3	6.8	
Missing	2	11.7	2	1.6		1	2.3	0	0.0	
<i>Satisfied with myself</i>					0.588					1.000
Yes	86	70.5	64	52.5		37	84.1	15	34.1	
No	30	24.6	45	36.9		5	11.4	26	59.1	
Missing	6	4.9	13	10.7		2	4.6	3	6.8	
<i>Do not have much to be proud of</i>					0.265					1.000
Yes	51	41.8	64	52.5		27	61.4	15	34.1	
No	65	53.3	45	36.9		14	31.8	26	59.1	
Missing	6	4.9	13	10.7		3	6.8	3	6.8	
<i>At times I think I'm no good at all</i>					0.971					1.000
Yes	56	45.9	66	54.1		17	38.6	28	63.6	
No	56	45.9	51	41.8		23	52.3	15	34.1	
Missing	10	8.2	5	4.1		4	9.1	1	2.3	

3.11 Sports and SRH issues

Most of the participants indicated that sports make them physically fit, healthy and reduce stress, as they will be exercising. They also said that participating in sports taught them discipline. As a result, they do not engage themselves in bad behaviour and do not think about peer pressure. It also helped them to divert their attention away from wrongdoing. They reported as follows:

Yes, it does because other peers can influence you to go to parties. So, doing sport, you can forget about that (Female Adolescent, FGD, Zimbabwe, School-based Sample).

Playing a sport can prevent us from having sexual activities so that we don't end up the virus (Female Adolescent, FGD, Zimbabwe, School-based Sample).

Playing sport, it changes us like for example us people living with HIV it changes us into not indulging in other things, it keeps us busy it is also part of health the more we participate in sports the more we become fit so it is really important for us people living with HIV to live a healthy life (Female Adolescent, IDI, Zambia, School-based Sample).

Adolescents indicated that sports may make them avoid things that might distract them from achieving their goals. They mentioned that sport was used to demonstrate how certain services are performed through teamwork. It taught them that there are some things that cannot be done by one person, so one needs other people to achieve something. It was relevant because they usually return fatigued and did not have time to think about sexual activities; all they wanted to do was take a bath and rest. The adolescents went on to say that, sports were relevant because some people were weak before playing these games, but they grew stronger through playing them. Their responses were as follows:

Instead of engaging in sexual activities, you can play the ball and ignore the sexual thoughts (Female Adolescent, IDI, Zimbabwe, School-based Sample).

It helps because through the same sports people will interacting and be able to share different ideas among themselves but also the challenge which we face is that when you want to teach them other people refuse that you are a young person and you cannot tell us anything then the success is that other people have adhered to our advice (Female Adolescent, IDI, Zambia, School-based Sample).

We can freely talk about SRH issues when we participate in SKILLZ, previously it was difficult to talk about condoms but now we can discuss about them and how they are used (Male Adolescent, IDI, Zimbabwe, School-based Sample).

Sports can be linked to real life. As we were at Grassroots, we were taught life, but it was linked to soccer. In soccer for Manchester united to win they must play as a team; they should know that if they lose, they lose as a team; and if they win, they win together. In life I can't do it alone I have to tell mother if I encounter a problem and if the problem is harder for my mother to solve, the issue can be taken to my father and we discuss about it altogether. In sports like running (relay) there are partners, soccer has eleven players, and in soccer to score we need defenders; strikers, midfielders. In life I can't do it alone, I need someone to support me (Male Adolescent, IDI, Zimbabwe, Health Facility-based Sample).

The Coaches, health workers, and teachers felt that once these adolescents are exposed to these life skills, which include sporting activities, they will tend to spend most of their time participating in those activities rather than sitting idle and getting into trouble. Sport has actually influenced positively on adolescents because they have turned to spending most of their time doing those activities instead of abusing drugs or being sexually active. These activities keep their minds occupied. They also stated that sports are important because it helped to build synergy by allowing people to socialize and made it easier to get into sexual reproductive health issues. So by engaging in soccer it enabled adolescents to actively participate in GRS and at the end of the day helping one to gain knowledge vis-à-vis playing a favourite sport. One Coach remarked that:

So sports play a very important role of which Grassroot Soccer also organizes sports tournament and the other sporting activities maybe football tournament then during that football activities they are a lot of people that come to watch then we will take advantage of that in order to give them information and also give them SRH services maybe we carry out the sensitization, HIV testing, maybe we refer certain participants to the facility, so sports play a vital role (Male GRS Coach, IDI, Zambia)

A teacher added that:

We discussed about teenage pregnancies, early marriages and drug abuse, instead of youths channelling their efforts towards all those things, they take sports which keeps them busy, and so there is no time for drugs and unnecessary relationships. Usually we have boys who are in the school team, even during the weekends or the soccer season, they have also joined local clubs so they are kept busy (Teacher, IDI, Zimbabwe)

The other teacher remarked that:

Ok what I love about sports is the fact that it's an area where there is dribbling (football) and there is the issue of you observing them and observing how learners interact with each other. From there you can pick up the problems and attitudes that need to be addressed. I think sports give that aspect to the program and also gives the element of teaching skills like teamwork and resiliency, persistency.(Teacher, IDI, Zimbabwe)

The other GRS staff remarked that:

It is very relevant in the fact that topics that have been designed in the curriculum fit what is on the ground and it is so participatory. It is unique, it is a unique model, even some other parents in the facilities have requested it. We've had a situation where this is a parent, he brings his child and they end up finding themselves in the circle just because of how interesting the program is. I think it has left an impact in some people's lives because of the nature of the design of the curriculum. (Female GRS Coach, IDI, Zambia).

3.12 Life skills gained among adolescents

The majority of the adolescents interviewed said they had improved their communication skills by learning how to talk to people and approach them, as well as how to stick to rules. They also learnt how to make plans for things that will help them live longer. They also learnt to make wise decisions, how to solve problems and how to act ethically in the community. They stated that they were taught to think about the people who would be affected by their decisions. The following are some of their responses. One adolescent disclosed that:

I got that when communicating with other people, you must talk to them nicely and not harass them. It's not proper to beat someone when they wrong you, but there is need for dialogue with the person so that you make them see where they went wrong. I also learnt that as a person when you say No your No must mean No and it must be clear. (Female Adolescent, IDI, Zimbabwe, Health Facility-based Sample)

Another said that:

After participating in SKILLZ I knew how to set goals before participating in SKILLZ I had no direction, also in SKILLZ we did not only learn about sexually reproductive health only we also learnt about life skills, goal setting, decision making how to plan communication I learn that if someone is abusing you, you have to stand up for yourself and be free to address issues (Male Adolescent, IDI, Zimbabwe, Health Facility-based Sample).

One other adolescent said:

I will talk about decision-making, SKILLZ taught us about decision-making, before making decisions you must think about both negatives and positives (Female Adolescent, IDI, Zimbabwe, Health Facility-based Sample).

One adolescent commented on leadership skills, indicating that they do not have complete authority over everybody but listen to what others say and had this to say, referring to the SKILLZ concept of 'being an elephant', since the animals have large ears – that one must listen more than they speak:

Well leadership I think must be an elephant why am I saying so must be an elephant being a leader it doesn't mean you have authority over everybody but you have to listen to what people are saying and you need to lead by example it's not that you are a leader you don't want to listen to other people's thoughts but you need to listen to them and being an example for them to say that oh even people that you are leading you have to copying from me to say oh if my leader is doing this what can stop me from doing what he is doing yah (Male Adolescent, IDI, Zambia, School-based Sample).

Another adolescent opined that:

Yes, there are there.... Also learnt about leadership skills because I learnt that I have to be an easy person, speak softly so that people can get what you are telling them, and we also learnt about those three words, assertive. Those three words were teaching us about the ways of living. I did get the skill of communicating because we were taught that when you feel like you don't trust the person you want to approach change and look for another one that you can trust (Male Adolescent, IDI, Zimbabwe, School-based Sample).

The interviewed Coaches agreed that they had gained skills in the past two years, including decision-making, planning, and being responsible.

One Coach remarked that:

We make a lot of decisions when we are in the field for instance you have been given money for money 20 people then you go in the field and you find there are almost 30 people, you have to make certain decisions that will suit almost everyone that side. So we make a lot of decisions I am sure we have developed a lot from it (GRS Coach, IDI, Zambia).

Another Coach in Zambia added that:

So I think that most of the children have learnt a lot of things and they have the begun to go to school so that they can acquire more knowledge and they will be able to help their children also in future (GRS Coach, IDI, Zimbabwe).

3.13 Barriers to accessing SRHR services

HIV-related barriers

School-based adolescents who participated in the study indicated one of the things that could prevent adolescents from accessing HIV testing services was the fear to be seen by other people in the community and to be viewed as HIV positive and therefore be discriminated against. Some also said they just feared to learn that they were HIV positive and would start taking pills because some people found it hard understand and accept that HIV is a disease is just like any other. Other participants in the study observed that some people did not take the matter of HIV counselling and testing seriously as long as they felt that they were healthy.

Most people are afraid that if people see them going for testing they might run away from them or tell other people that they are HIV positive. It is also the same with counselling a lot of people fear that if people see them they might start discriminating them in the community once they see them accessing such services (Male Adolescent, IDI, Zambia, School-based Sample).

An adolescent from Zimbabwe observed that:

Not taking it seriously, they think they look healthy and do not have the virus. Even peer pressure some will be discouraged by their friends not to test (Female Adolescent, IDI, Zimbabwe, Health Facility-based Sample).

The Coaches, nurses, teachers, and other health workers, were asked to mention some of the factors that have continued to affect access to HIV testing and counselling among adolescents. They said that the fear to disclose that one had tested positive to HIV to their partners prevented the young people from accessing the service. In addition, some lived far from the facilities where they could access the services and may not have had resources to use in order to reach the facilities. A nurse from Zambia also observed that some young people did not consistently access ART because the service providers did not do much to reach out to more. Instead, most of the adolescents who accessed the services went to the facility on their own. A nurse stated that:

I think mainly its psychosocial issues that are still hindering our progress for example issue of disclosing status to their partners and that leads to most of them defaulting. Economic situation is also a challenge as most of adolescents live far from the hospital so they end up skipping their review date because they don't have money to travel to the hospital (Nurse, IDI, Zambia).

Another participant in the study observed that:

Not to dwell so much on that apparently we've not really interacted with a lot of them that do not know their status because the project we are focusing on it is specifically for those with HIV, so most of the issues that have dealt with are like maybe the other partner doesn't know they have HIV where they talk to them so they can access PrEP, yeah, we don't have a lot of scenarios where a lot of people want to test because my group is already immune with the known status (GRS Staff, IDI, Zambia).

A Health worker in Zambia observed that:

Because you know majority of these adolescents you find that they are on medication there are very few who are negative and who should come for testing that's why from my previous explanation I was saying the demand should be extended if we rely on the youth friendly corner the yield will be very low but if we create we scale up this enough information to the schools and whatever it will help you'll see these adolescents come on their own as long as we go along with these adolescents the mentors in schools it can help but relying on them because even when there's that collaboration between the two, the negative and positive together you would find that it's just the same people yes but if you were to bring this to the attention of every adolescent you have to target schools for that matter if you wait for them the yield will be very low (Health Workers, IDI, Zambia).

COVID-19 related matters

At endline, we asked participants if they had accessed any services during COVID. Among the school-based adolescents who responded to this question, only 4.4% in Zambia and 3.6% in Zimbabwe reported having accessed SRHR services (Table 18). However, based on the follow-up question about the types of services accessed, it appears that those adolescents who did access services were likely to access multiple types:

Table 18 COVID and access to SRHR among School-based participants in Zambia and Zimbabwe

Characteristics	Zambia		Zimbabwe	
	n	%	n	%
Did you seek family planning services during COVID period?				
No	193	94.6	240	94.9
Yes	9	4.4	9	3.6
Not sure	2	1.0	4	1.6
Type of services accessed during COVID (Only among those who reported accessing SRH services)				
HIV testing	8	88.9	11	4.5
SRHR information/talks	9	100	10	4.1
Contraceptives (pills, injections, implant or other method)	5	2.5	2	0.8
Condoms (Male/Female)	2	1.0	2	0.8

Information on GBV	2	1.0	8	3.3
VMMC	3	1.5	8	3.3
HIV related information, education and communication materials	0	0.0	2	0.8
Other HIV related services	2	1.0	4	1.7
Did not receive any services in the last 2 years	1	0.5	2	0.8
Where family planning was accessed during COVID				
Government clinic	1	33.3	0	0.0
I have never accessed	0	0.0	3	60.0
Mobile clinic	0	0.0	1	20.0
Peer education OYDC	1	33.3	0	0.0
Tested by mother	1	33.3	0	0.0
Family talks	0	0.0	1	20.0
Rate the family planning services accessed during COVID				
Excellent	18	8.9	49	11.7
Good	15	7.4	22	8.9
Fair	8	3.9	17	6.9
Poor	0	0.0	3	1.2
Very poor	0	0.0	2	0.8
Missing	162	79.8	175	70.6

Qualitatively, some adolescents reported that they could not access the SRH services because they were afraid of being tested for COVID, so they preferred to stay at home and never move around. The other reason for the failure to access the services was an assumption that hospitals were open only for a few hours and some clinics were closed, so one could not go to collect pills. Adolescents were also affected as they were not able to access condoms easily because of COVID restrictions. Some respondents reported that some people got pregnant because they did not get the chance to go and access contraceptive pills, and some could consume alcohol due to stress that they couldn't go to work. The following were their responses:

It was difficult, because we had the fear that we might also get COVID-19 while accessing those services. There was a limited number which was allowed in the clinic (Male Adolescent, IDI, Zimbabwe, School-based Sample).

It was difficult for one to go to the hospital to get help, because we were told to stay at home and again we didn't know the signs and symptoms of COVID it was hard to tell who had the virus and who didn't, so the best way to protect yourself was to stay at home (Female Adolescent, IDI, Zimbabwe, School-based Sample).

It affected me because before lockdown I had gone to visit Bulawayo town and got stuck there, so for me it was difficult to get my ART treatment (Female Adolescent, FGD, Zimbabwe, School-based Sample).

Among the health facility-based cohort, 23.0% adolescents in Zambia and 9.3% in Zimbabwe reported having accessed SRHR services during COVID.

Table 19 COVID and access to SRHR among health facility-based participants in Zambia and Zimbabwe

<i>Endline Only</i>				
<i>Characteristics</i>	<i>Zambia</i>		<i>Zimbabwe</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
<i>Di you seek family planning services during COVID period?</i>				
No	85	69.7	39	90.7
Yes	28	23.0	4	9.3
Not sure	8	6.6	0	0.0
Missing	1	0.8	0	0.0
<i>Type of family planning accessed during COVID (Only among those who reported accessing SRH services)</i>				
HIV testing	15	12.3	5	11.4
SRHR information/talks	10	8.2	2	4.6
Contraceptives (pills, Injections, implant or similar)	11	9.0	4	9.1
Condoms (Male/Female)	3	2.5	1	2.3
Information on GBV	8	6.6	1	2.3
VMMC	1	0.8	0	0.0
HIV related information, education and communication materials	1	0.8	1	2.3
Other HIV related services	2	1.6	9	20.5
Did not receive any services in the last 2 years	3	2.5	1	2.3
<i>Where family planning was accessed during COVID</i>				
Government clinic	35	21.1		
I have never accessed	5	3.0		
Mobile clinic	5	3.0		
Peer education OYDC	4	2.4		
Tested by mother	1	0.6		
Family talks	2	1.2		
13	91	58.8		
Missing	2	1.2		
<i>Rate the family planning services accessed during COVID</i>				
Excellent	26	21.3	4	9.1
Good	22	18.0	5	11.4
Fair	13	10.7	5	11.4
Poor	1	0.8	0	0.0
Very poor	1	0.8	0	0.0

Some of the health facility-based participants mentioned that the COVID-19 lockdown, lack of facilities that offered the services near their homes and the pressure of work prevented them from going for HIV testing and counselling. One adolescent stated that:

We haven't had testing events in a while because of COVID -19 so that made it difficult for adolescents to get tested for HIV (Male Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

However, some adolescents reported that they still had access to SRH services through regular channels, or because some of the health workers could reach them on door-to-door outreach. The following were their submissions:

No, it didn't because we were being allowed to go and get access. No one was been restricted. You just had to put on your mask (Male Adolescent, IDI, Zimbabwe, School-based Sample).

Yes, it has maybe a bit but then we didn't stop meeting even when there was corona we met for 10 minutes and talked about some things maybe for those that were far (Female Adolescent, IDI, Zambia, Health Facility-based Sample).

No, it did not affect accessibility of SRH services, because the health providers would bring our monthly supply of pills door to door (Female Adolescent, IDI, Zimbabwe, Health Facility-based Sample).

The Coaches, health workers, and teachers acknowledged that adolescents had limited access to SRH services because movement was restricted, and at some point, maybe for a month, people could not go to the hospital, so it hindered the adolescents from accessing the services. The movement restrictions were the key factor, which affected most of the adolescents' access to the SRH services.

A lot, just by the virtue of saying no unnecessary movements, you know people was scared to even go and access services because they thought going to the hospital would put them at risk, so if you look at the statistics of the teen pregnancies we recorded a high number of them around June, during that time when almost everyone was just indoors, so it really affected a lot of things especially access to these services.(Female GRS Coach, IDI, Zambia)

It did, it did, yes because at this point now we don't get to meet them and discuss sexual reproductive health so as a result they just come through the facility at any department so we don't know what exactly goes on in other departments we might be aware of what happens in our own department because we know this group of people and we know what we do with this group of people but in the other departments we really have no idea of what goes on, what services, how they handle the adolescents when they go there so yah.(Health Worker, IDI, Zambia)

I would say yes because during that time when COVID was at peak we had to interrupt al the activities all the activities were interrupted we were not meeting nothing, and I think that's why it also pushed us to open these. WhatsApp groups though they are benefitting very few candidates because a lot of them they are not on that platform or they do not have the smartphones so it's very difficult to have everyone on board compared to the physical meetings (Health Workers, IDI, Zimbabwe)

Yes it really affected the services in a number of ways I can say, you will realize that when COVID-19 started a lot of institutions closed and organizations and we are saying these are the same institutions and organization that are supposed to be offering the services to the clients that need them so when COVID-19 came with its lock down period actually it stopped all services that are maybe supposed to help the teenagers with SRH.(Teacher, IDI, Zimbabwe)

Role of SKILLZ in relation to SRH services and information during the COVID -19 pandemic

During the COVID-19 period, the adolescents reported that SKILLZ assisted them in gaining access to SRH services and information using phones via WhatsApp. They highlighted that even through COVID-related disruptions, they remained connected to GRS Coaches and teammates for support, and could request certain services from the Coaches trained as YHAs:

We have access to Coaches' numbers, so whenever you wanted any service you would call them and share your problems with them, then they would offer you counselling be it online on platforms like Facebook etc. Sometimes, some would go and ask for contraceptive pills to the Coaches (Female Adolescent, IDI, Zimbabwe, School-based Sample).

It has helped us because they give us information from time to the time using different platforms (Male Adolescent, IDI, Zambia, School-based Sample).

The Coaches did not stop coming even though there was corona they came and taught us then even us we visited our friends that are far and couldn't come (Female Adolescent, FGD, Zambia, School-based Sample).

We used phones because they were refusing to move around, so communication was done on phones, so we helped each other with information on phones (Female Adolescent, IDI, Zambia, School-based Sample).

A number of Coaches, GRS staff, health workers, and teachers reported that SKILLZ assisted adolescents in accessing SRH services and information via virtual methods, though virtual programming came with its own challenges. Virtual programming was one of the ways used to make sure that participants were up to date with information and reminded them that they needed to go to the facility under the strict rules that had been set, like masking up when going to access the services, then going directly back home. Teleconferencing to deliver SKILLZ sessions was used extensively in Zambia. The participants stated that fliers would have been used in cases where there was network or signal difficulty when using radios or cellphones. They reported:

It has helped in that like I said there were virtual interventions so those participants or adolescents they were referred to some services then when they are referred they were told to go to maybe the clinic or any health post to access those services (Female Coach, IDI, Zambia).

....because here we don't even have the radio signal that is clear but maybe that kind of information could have been sent through radios or cellphones but we still don't have the network so maybe through printing of fliers and have them dropped at the shops since the schools were closed were people can access them because shopping centers were open and people will go there for shopping then they also get those fliers (Teacher, IDI, Zimbabwe).

So during the COVID pandemic we were restricted to meet with the crowd that's when we involved the virtual interventions, we used to interact with our participants on a daily basis because they were not going to school at that time and they were just staying home. We were dividing them into groups of five then you call this group maybe at 10, then you call this group maybe at 14, then other group maybe at 15, we were sharing information, discussing about everything that involves the rights and the responsibilities then during that conversation maybe you see that maybe this one will need a lot of information you have to call that person at your own time to say you have to interview more to say if you need this can I get your details then we meet on this day then take you to the facility then you access these services that's how we are doing everything (Male GRS Coach, Zambia).

Challenges experienced during referrals

The participants in the study indicated that some of the challenges that came with referrals included the idea that the communities and family members stigmatized and discriminated against people who tested positive for HIV and STIs. Some participants complained about the harsh treatment they received from medical personnel at the health facilities and long queues they had to endure in order to access the services they had been referred to. Clients also tended to shun the services offered in health facilities such as testing, collecting condoms and using various forms of birth control as they were shy to be identified with such services and tended to worry that the community would know of their private quest to access the service. Some participants observed that sometimes when referrals were made, the places where to access the services were usually far away from where they lived and so this prevented some from going forward to access the service they had been referred to. Another challenge brought forth was that when young people were put together

to access a service, they tended not to demonstrate confidentiality whereas some young people who lived in homes headed by children struggled to get consent to access services like HIV testing.

One respondent noted that:

So people in the community like to discriminate others especially when they know that they are HIV positive so what we do is that when we want to go and teach people we will find a better place where there is privacy so that people are not seen coming from the meeting (Male Adolescent, IDI, Zambia, Health Facility-based Sample).

Another participant stated that:

The challenges that most people face is queuing a lot at hospitals and clinics, and there are some nurses who are short tempered, expressing their stresses or whatever and if you do not do according to what they want, like for example during COVID-19 if they told you to social distance and you act all stubborn, they'd definitely shout at you and you end up complaining that the nurses are treating you badly but most of the times, you are the one who might have provoked them (Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

One participant also observed that:

So the challenges that we face especially when we go in the communities are that our friends are treated badly sometimes by their parents or step parents, so this has led to some of our friends to stop taking the drugs others they are being told to follow their parents who might have died long time ago such things (Male Adolescent, IDI, Zambia, Health Facility-based Sample).

Another Zimbabwean adolescent stated that:

Getting consent to test for HIV because most of our parents live outside the country, there are a lot of child headed families (Male Adolescent, FGD, Zimbabwe, School-based Sample).

Communication challenges

Although communication around SRHR had improved between adolescents and parents as well as between adolescents, the adolescents still faced challenges. Some of the challenges included being judged that they were indulging themselves in sexual activities the moment they inquired more about sexual issues; hence, the reason why they do not even ask when they want to enquire about issues to do with sex. They said that people think they love sex too much. They also said that the elderly at home shout and harass them when they fall pregnant. The other challenge adolescents mentioned was the issue of confidentiality. They reported that people go around gossiping about

them, making them feel discriminated against, saying that they are young and want to go to the clinic and take some tablets instead of concentrating on schoolwork. One adolescent said:

the challenge adolescent face is that when we ask about sex parents thinks that we have already started to indulge in sexual intercourse not knowing that we will be wanting to gain more knowledge, to get support but parents don't offer support they will start to shout this is a form of abuse, another challenge is fear that our issues will spread if you open up to someone then we have fear that they will spread the rumors (Male Adolescent, IDI, Zimbabwe, School-based Sample).

One other adolescent said:

I am afraid to ask my mother and other people that I look up to questions because if I ask them, they'll start saying that I have probably indulged into sexual activities and also gossip because the others can chat about the things that I said and they'll laugh. (Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

At the clinic they are not secretive, you might have been afraid to talk about your issue at home and think that you might get help at the clinic, but within some days you will hear your issue everywhere (Female Adolescent, IDI, Zimbabwe, Health Facility-based Sample).

Another adolescent added that:

Counselling, to the parents and even nurses, the nurses need to be taught about confidentiality. The parents need to be taught about acceptance once it has happened because when a child falls pregnant and tells them about it, they might harass the child and on the other end the father of the child ran away, you find out when the father runs away you look up to your parents for support and they don't give you that, you end up thinking of so many things like suicide (Female Adolescent, IDI, Zimbabwe, School-based Sample).

Furthermore, one adolescent mentioned the difficulty of discussing SRH issues due to age differences, and this is what he had to say:

So some of the challenges that adolescents go through is that it's difficult sometimes to talk about the SRH issues because it depends with the age of the people that you are interacting with at a given time as some will be comfortable to talk about such things while others will not be comfortable, so you find that maybe young people will end up impregnating someone because of some of the pressure that they failed to share with their friends and will end up maybe taking some drugs wanting to kill themselves because maybe the parents of the child are giving pressure to take him to police (Male Adolescent, IDI, Zambia, Health Facility-based Sample).

There are times that when we meet as boys we try to teach one another about the need to use condoms but others will argue that you cannot eat a sweet with its cover meaning they always want to have live sex but for the girls it's easy to understand the need to use protection (Male Adolescent, IDI, Zimbabwe, School-based Sample).

GRS staff, health workers, and teachers said that some adolescents feel shy to communicate SRH information. In addition, most young people were unable to communicate with their parents on issues to do with sexual reproductive health issues because there is a gap in terms of age difference. One teacher disclosed that:

Maybe with the teachers, age difference is a challenge. Most of them, they see us as their mother and father figures so to open up is a bit of a challenge. When I started teaching, the age gap between me and the kids wasn't that huge so kids would confide in me about the most sensitive issues but as years went by I can see that they are no longer that free unless it is an extreme case whereby it doesn't have a solution or it's a tricky situation that you can't hide. (Teacher, IDI, Zimbabwe)

One health worker said:

Some they are not comfortable to express themselves they are not comfortable especially amongst their peers they are not comfortable so some they will decide to come to you at individual level to whisper to you maybe inbox or talk to you to say I have this challenge how do I handle it or whatever all those issues but they are very few who do that (Health Worker, IDI, Zambia)

Gaps in GRS programming and areas for improvement

Some of the adult stakeholders indicated that although SKILLZ programming had educated adolescents somewhat on GBV, that more could still be done:

Yes I believe it did though there is a lot which still needs to be done there. We have had cases of girls who have come to report boys who want to molest them and also boys as well. I believe that some information there has been spread (Teacher, IDI, Zimbabwe).

A GRS coach made the following observation:

Positively, we haven't really done much in that area, all we do is just share information, I think we've only recorded one GBV case, where a participant was raped but not so many referrals on GBV have been done (GRS Staff, IDI, Zambia).

Some adolescents said that they found it hard to share or openly discuss certain issues concerning sex with the male Coaches. In addition, some boys reported persistent negative attitudes toward using condoms, giving excuses. They reported as follows:

Let's say there's a male Coach available in my area and I want to talk to a female one about female-related issues. I find it hard to start up a conversation with the male Coach when I want to talk about sensitive issues (Female Adolescent, FGD, Zimbabwe, School-based Sample).

It's the same issue of teaching people to use condoms when having sex because boys normally refuse to do that because they say they don't want to eat sweet with its cover that's the challenge which the Coaches face (Female Adolescent, IDI, Zambia, Health Facility-based Sample).

In addition, one participant highlighted areas for improvement in transport, as well as the language of GRS programming:

Some of the gaps basically are to do with some of the parents are really difficult to understand, also transport, sometimes you find that maybe the document you are using is in English so it becomes difficult for you to interpret (Female Adolescent, IDI, Zambia, School-based Sample).

The other issue was that the teaching was more about theory than practice; therefore, there was a need for more practical demonstration.

I think when Coaches come here they should have samples and kits to practice what they teach because in some instance the adolescents do come across some of the things but fail to use them, for example condom demonstration so that they have full knowledge (Teacher, IDI, Zimbabwe).

3.14 Performance of SKILLZ Activities

Participants were asked at endline to rate the performance of the Total Health programme. Overall, 67.3% of the school-based cohort rated the Total Health programme as excellent compared to 63.6% in Zimbabwe. In Zambia 66.8% rates the information and content provided in the Total Health curriculum as excellent as compared to 50.0% in Zimbabwe. With regard to receiving referral family planning from the Coaches, 66.3% of school-based adolescents in Zambia reported that they never received family planning compared to 43.9% in Zimbabwe. Similarly, many of the adolescents were not referred to the clinic to access other services not provided by the Coaches. Among those who were referred, 13.7% of school-based adolescents in Zambia and 19.7% in Zimbabwe rated the referral process as excellent.

Table 20 Performance of Total Health Programme among school-based adolescents in Zambia and Zimbabwe

Endline Only				
Characteristics	Zambia		Zimbabwe	
	n	%	n	%
Rate overall Total Health Programme				
Excellent	138	67.3	168	63.6
Good	46	22.4	65	24.6
Fair	16	7.8	23	8.7
Poor	0	0.0	1	0.4
Very poor	0	0.0	1	0.4
Missing	5	2.4	6	2.3
Rate information and content, you learnt in Total Health Programme				
Excellent	137	66.8	132	50.0
Good	48	23.4	100	37.9
Fair	16	7.8	30	11.4
Poor	0	0.0	1	0.4
Missing	4	2.0	1	0.4
Rate the activities in SKILLZ Programme				
Excellent	106	51.7	106	40.2
Good	73	35.6	96	36.4
Fair	17	8.3	48	18.2
Poor	1	0.5	1	0.4
Very poor	2	1.0	1	0.4
Did not receive any services	2	1.0	7	2.7
Missing	4		5	1.9
Rate family planning services provided by the Coaches				
Excellent	29	14.2	45	17.1
Good	23	11.2	60	22.7
Fair	11	5.4	26	9.9
Poor	0	0.0	4	1.5
Very poor	1	0.5	6	2.3
Did not receive any services	136	66.3	116	43.9
Missing	5	2.4	7	2.7
Rate referral process to the clinic provided by Coaches				
Excellent	28	13.7	52	19.7
Good	43	21.0	78	29.6
Fair	14	6.8	41	15.5
Poor	2	1.0	1	0.4
Very poor	69	33.7	4	1.5
Did not receive any services	46	22.4	80	30.3
Missing	3	1.5	8	3.0

Among the health facility-based cohort, 76.7% in Zambia and 70.5% in Zimbabwe rated the overall Total Health Program as excellent. Among adolescents who participated in the Total Health curriculum, 63.3% in Zambia and 72.7% in Zimbabwe reported the information and content as excellent. A higher proportion of health facility-based staff compared to school-based adolescents (Table 20) rated Total Health activates as excellent in both Zambia (58.3%) and Zimbabwe

(63.6%). Similarly, access to family planning and referral to the health facility were rated poorly as 36.7% in Zambia and 47.3% in Zimbabwe did not received family planning from the Coaches.

Table 21 Performance of Total Health Programme among health facility-based adolescents in Zambia and Zimbabwe

Characteristics	Endline Only			
	Zambia		Zimbabwe	
	n	%	n	%
Rate overall Total Health Programme				
Excellent	92	76.7	31	70.5
Good	23	19.2	11	25.0
Fair	4	3.3	2	4.6
Poor	1	0.8	0	0.0
Very poor	0	0.0	1	0.4
Missing	5	2.4	6	2.3
Rate information and content, you learnt in Total Health Programme				
Excellent	76	63.3	32	72.7
Good	35	29.3	8	18.2
Fair	9	7.5	4	9.1
Poor	0	0.0	0	0.0
Missing	0	0.0	0	0.0
Rate the activities in SKILLZ Programme				
Excellent	70	58.3	28	63.6
Good	41	34.2	10	22.7
Fair	7	5.8	6	13.6
Poor	0	0.0	0	0.0
Very poor	0	0.0	0	0.0
Did not receive any services	2	1.7	0	0.0
Missing	0	0.0	0	0.0
Rate family planning services provided by the Coaches				
Excellent	42	35.0	8	18.2
Good	26	21.7	8	18.2
Fair	6	5	6	13.6
Poor	2	1.7	1	2.7
Very poor	0	0.0	0	0.0
Did not receive any services	44	36.7	21	47.3
Missing	0	0.0	0	0.0
Rate referral process to the clinic provided by Coaches				
Excellent	40	33.1	14	31.8
Good	32	26.5	10	22.7
Fair	16	13.2	4	9.1
Poor	0	0.0	1	2.3
Very poor	1	0.8	0	0.0
Did not receive any services	31	25.6	15	34.1
Missing	1	0.8	0	0.0

Suggested Strategies for increasing access to HIV /SRH services

When asked what strategies could be put in place in order to increase access to HIV and SRH facilities, the adolescent participants in both Zambia and Zimbabwe suggested that health facilities should send providers to the schools and offer their services there as well, because for the children

to go health facilities it becomes difficult. The provision of such services in schools would motivate learners to get tested. Other participants suggested that there was need for more youth-friendly services for youths to feel comfortable instead of engaging adults to deal with young people. Others presented the view that more sensitization in terms of posters, outreach programs and sports galas where youths would also be taught and allowed to test for HIV and STIs and later the service providers would make follow ups on those who tested positive. Many suggested scaling up GRS programs. One of the adolescents suggested that:

What should be done is we need a youth friendly environment so youths manage to come and be free with us the challenges they have unlike they find someone from church who they will fear when they test for HIV and find they're positive the issue will reach their homes. So better us youths test each other than going to elders because we aren't free (Female Adolescent, FGD, Zambia, Health Facility-based Sample).

Another adolescent presented the view that:

I think as for me going in the community telling people information about HIV because many think and don't understand information on HIV, so we need to teach children so that they are aware and have the right information (Male Adolescent, FGD, Zambia, Health Facility-based Sample).

A Zimbabwean adolescent during a focus group discussion also brought forth the idea that:

Due to the number of pregnancies, I think sports galas can help increase the awareness in the increase to accessing SRH services. At this event those requiring SRH services like testing can be assisted and also do a follow up on the number of partners one would have engaged with sexually and also disclose to their parents (Female Adolescent, FGD, Zimbabwe, School-based Sample).

Teachers, Coaches and health workers suggested that counseling needed to be intensified. Others suggested utilising various media platforms like radio and engaging community leaders to organize meetings aimed at sensitizing parents and their children, among other strategies. Other stakeholders held a similar view with the adolescents, that providing SRH and HIV testing services in schools regularly would be helpful in further increasing access to the aforementioned services. One participant acknowledged that:

I think we have to keep on counselling them on that issue because there are the active group in HIV and SRH (Teacher, IDI, Zimbabwe).

Another teacher suggested the idea that:

Health facilities should come to the school and offer their services here, because for the kids to go there it becomes difficult, so if they come here, most of the students will have the zeal to get tested (Teacher, IDI, Zimbabwe).

A health worker in Zambia affirmed the need for more sensitization. The participant stated that:

Sensitization and make use of different platforms among them is radio stations though again radio stations you find that you look at the majority of people who are tuned or listening to the radio so it has to be a two way thing radio station programs talk about them and also the physical where we have to follow them in schools yes these are two things that can work, radio station and the physical meetings where we follow them in schools because if we are able to follow them in schools like in [name of town] once we see the results of increase in numbers of those who are testing then it can be scaled up to go to the other district just like that (Health Worker, IDI, Zambia).

A parent in Zambia also suggested that:

In our communities where we stay, we have chairmen, I think we can use them for instance if we give them letters requesting children and their parents to come for the meetings. I think these can really help organizing meetings (Parent, IDI, Zambia)

Strategies for addressing service referral challenges

Study participants also proposed ways of addressing the referral challenges that the young people in both Zambia and Zimbabwe were facing. When asked on what could be done to address the referral challenges they were experiencing, they indicated that they needed the SKILLZ Coaches to continue to keep the issues they discussed with young people confidential. Once referred, others were of the view that since they struggled to go to the clinic to access SRH services without the consent of parents, and thus, it was necessary that the program should also aim at sensitizing both parents and young people so that adolescents could easily get assistance in health facilities without consulting parents. Some young people engaged in outreach programs also expressed the desire to have SKILLZ identity cards, t-shirts, caps for easy identification for them to effectively conduct referrals once they visit communities. In order to minimise the referral challenges, one participant indicated that there was need to:

I think it is going to be easy if GRS Coaches educate both parents and children. As children we will be able to go to the clinic without consulting our parents (Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

Another expressed the idea that:

We would want at least to have a permanent place where we can be teaching people and at least we write on the wall SKILLZ Plus so that people know that we teach and also distribute condoms. We would also want at least to have t-shirts, caps and also try to provide food for the people (Male Adolescent, IDI, Zambia, Health Facility-based Sample).

Providing permanent and confidential places for providing SRH services

Some were of the view that the places where SKILLZ activities were conducted should be permanent especially where teaching other people and distribution of condoms were taking place. It was suggested that:

Getting condoms, they should be at a place where youths are alone not where there are elders because you can be feeling shy so they should make two places to get condoms from, where elders can go and also where youths can go. So us youths should be having our own place because us youths are free with each other because we know what we do and we understand each other so it's better they move the place to get condoms from to a place where a lot of youths are found (Female Adolescent, IDI, Zimbabwe, School-based Sample).

Coaches and teachers were also of the view that adolescents needed more confidentiality, and needed encouragement not shun the services due to uneasiness. They also suggested that it would be necessary to open more facilities where clients could easily access help just in case a client was not comfortable to go to a certain health facility, they could go to another where they would not feel uncomfortable. A GRS Coach brought forth the view that:

I am sure having someone who is centred at the facility if we bring this referral for an adolescent this person has to go to this specific person maybe somewhere more privacy whereas in it is only open for the youths and that adolescent cantered person (GRS Coach, IDI, Zambia)

Another responded that:

Establish more health centers so that when one fails to get a service from one facility, they could go to another facility. Besides COVID, we usually refer children to a hospital where their parents work and that becomes a challenge for the child to go and test for HIV at that facility (Teacher, IDI, Zimbabwe).

Increasing access to GBV services

When asked about how to improve access to GBV services, some respondents mentioned that Coaches should visit communities to talk to individuals and parents about GBV. They also suggested more publicity, peer education, and education on gender-based violence and how to access help. The respondents further stated that information must be shared because if individuals are informed about the necessity of receiving services or the importance of the services that can be obtained, the number of cases of GBV will decrease. They emphasized the need for more advocacy on access to GBV services in society and the enforcement of strong penalties against violators. To sum up their points, one respondent said that:

Increasing services its these organizations like maybe you go in communities and teach people then also you can organizations where they aren't like the police that laugh at you first because the person you laugh at will fear so the police should stop laughing at people we need people in the community that are friendly and keep secrets like Coaches . People won't fear bot you get there and they start laughing at you (Male Adolescent, FGD, Zambia, Health Facility-based Sample).

One other adolescent highlighted that:

Like conducting these programs in communities that have no facilities let's say areas with clinics far let's say the Coaches or people with information that learnt before just get a group and go make a meeting then you teach them that means the message will spread all over the city or all over the country (Male Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

Coaches, GRS staff, and health workers emphasized the importance of intensifying sensitization in communities about GBV services. They also said that they should have continued to teach and spread the message that reporting incidents of GBV is acceptable and that people should not be afraid to do so. According to one health worker:

We need to disseminate information that is the first thing we need to make sure everybody is aware we need to hold enough programs to let the community out there know and of course especially for schools because that's where most of the adolescents are found so schools we need to make sure we utilize schools we make sure information reaches all the pupils so that they know if there's such a case they know the first place to go to (Health Worker, IDI, Zambia).

Another health worker disclosed that:

I think there is need to enhance on sensitization and also to form groups like for us we come here and we learn a lot of things from SKILLZ, so if they can also take some education to the schools that can help. (Health Worker, IDI, Zambia)

Additional skills needed by adolescents, and why

When asked about what life skills they needed, some adolescents referred to skills outside of the area of SRH. They responded that they need skills such as how to make washable pads, farming, keeping broiler chickens, sewing, hairdressing, and sewing if they fail academic studies. They said they needed these life skills in order to be able to fend for themselves in the future. One adolescent stated that if they were given sewing machines or other forms of empowerment, the number of adolescents engaging in prostitution would decrease. According to one participant:

Maybe the girls are given machines or taught how to clean and the boys there taught or empowered on how to make sofas yes that will help them so it's not every time when some girls start prostitution because they want others it's because of money they don't have money and because of that you find HIV increases so government should empower the youths (Male Adolescent, FGD, Zambia, School-based Sample).

One participant directly referred to decision-making skills that she gained through participating in GRS programming:

I gained decision making skills. I have to make a decision for myself and say no to sex. I have to tell my boyfriend that we can't have sex, it's not acceptable. Grassroot Soccer taught me a lot (Female Adolescent, FGD, Zimbabwe, School-based Sample).

When a comparable question was posed to the Coaches, health workers, and teachers, they reported that adolescents need training on basic skills that will sustain their lives in the future, and that young people need educational assistance, especially those that come from poor backgrounds. Bricklaying and agricultural skills were mentioned as productive skills that could increase economic opportunities. One GRS Coach remarked that:

First of all, I would say agriculture because if you are engaged in agriculture someone will be able to rear some animals or plant some rape maybe then in return you will get some money then also maybe you learnt mechanics, bricklaying and maybe all these other skills for instance we say we are in the computer age you learnt computer then you will be making a lot of money from it (GRS Coach, Zambia).

One teacher said:

I think what they might be taught is entrepreneurship so that they may be able to sustain themselves, because many adolescents fall prey especially when looking for money, they end up in relationships for money. At least they should be given SKILLZ on how to make a living, and be able to be independent, I think that will go a long way in addressing some of the challenges they face (Teacher, IDI, Zimbabwe).

Ways of enabling adolescents to communicate more on SRH issues

Adolescents reported that there was still a need to educate adolescents and encourage them to go and share their new SRH knowledge with others. They further mentioned that having awareness campaigns where GRS can teach young people about SRH issues and engage the parents will help in improving parent-child communication. One adolescent remarked that:

Impacting knowledge on people so as to reduce the challenge, adults should learn not to judge people so that young people will be helped and this will make it easy for adolescents to communicate also support from parents is vital (Male Adolescent, IDI, Zimbabwe, School-based Sample).

The other adolescent added that:

What can be done is the people in front in SKILLZ class should come and go in villages and also disseminate information to the parents and tell them when we children are talking it's not that we are talking bad things There is a group we have and such people and this way you can see parents free to let us talk to their children because other parents are difficult (Female Adolescent, FGD, Zambia, Health Facility-based Sample).

Another adolescent remarked that:

Apart from more information, adolescents or youths or peers must engage themselves into things that can help them to live a healthy and happier life (Male Adolescent, IDI, Zambia, School-based Sample).

When asked what could be done to help adolescents communicate more about sexual reproductive health issues, Coaches, GRS staff, and teachers were of the view that it was best to involve the parents in the discussion. One Coach stated:

Most of the important thing that I would say as my opinion is engaging parents because most of the parents in Africa or our society they do not open up on issues

pertaining sexual issues. So if we engage parents and they open up they sit you down to say this is our adolescent, so if they sit you down and you start discussing everything I am sure we can have a lot of adolescents having enough information about sexual rights. (Male GRS Coach, IDI, Zambia)

One health worker commented that:

I think all what they need is someone they can call a role model to talk to because in our system I think there just need to have that so called mother, matron or whatever the person they are free with the person they can open to and explain whatever the challenges they are facing but just leaving it like that its difficult they need somebody who is open who is non-judgmental to them who is not going to look down on them to say they can't looking at the age and what they are demanding for its not tallying(Health Worker, IDI, Zambia).

Another health worker in Zimbabwe stated that:

We have to open up on them we have to be very friendly so that they can open up to us. Whenever they have problems, we reach out to them because they are still young, they are still delicate. If we show them that we are open to them they will also open up to us. (Health Worker, IDI, Zimbabwe)

A teacher also commented that:

Maybe if there are clubs, at club level it might work because they'll feel free to interact amongst their peers and there could be a club patron who can listen to some of these issues as they discuss amongst their peers it's easy to share and this is for them to be able to open up although we do have counselling departments under the guidance and counselling. They usually go there most of the times if they are facing sensitive issues (Teacher, IDI, Zimbabwe).

A GRS staff member was in view of localizing the material to eliminate the problem of any language barrier. To this effect, he said:

I think the major issue can be if we can have more Information Education and Communication materials localized, It would be easier, so that even when you try to say something, if they are looking at it using their language they'll get to know that what she's trying to say is this and that. I think we do not have a lot of IEC materials in the province and that is a challenge (GRS Staff, IDI, Zambia).

Improving access to SRH during the COVID period

Regarding the COVID-19 guidelines, participants suggested that GRS provide or place condoms in public places and schools so that youths can easily obtain them. They do not have to travel a long distance to access the services. Most of the adolescents said that the GRS should be near them for easy access to SRH services. They suggested that some people be chosen to go around distributing services in the villages. They added that once they are taught, they could go and teach others as well. They reported as follows:

During COVID, I think people from health facilities were supposed to distribute condoms and maybe put them at a certain point within the communities, so that we have easy access to them and wouldn't have to go for a long distance to get them (Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

By increasing the number of Village Health Workers, so that if there are any service people want, they get it from the Village Health Workers than for everyone to go to the Clinic (Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample).

Other study participants, including the Coaches, health workers and teachers, were of the view that going into communities or using platforms such as radio, TV stations, and WhatsApp should be scaled as it can help adolescents to access SRH during the COVID-19 period. One coach said that:

Going into the communities would have helped whereas in you registered in participants to say these are our adolescents living in this community then you simply organize the time with them to say this is the program we have then we meet at this point, then you share with them information and services that you have (Male GRS Coach, IDI, Zambia).

The other way is using these media platforms like radio stations and tv stations and the other way is you know social media which targets very few because a lot of them are not on these platforms very few are on those platforms so already that is a challenge. Yes, we may not really achieve it but if everyone was on those platforms yes it was going to be easy (Female, Health Worker, IDI, Zambia).

SKILLZ activities proposals

The adolescents expressed their desire that SKILLZ should just continue with the program. The adolescents suggested that SKILLZ should open more WhatsApp groups so that they will be able to communicate with Coaches. The groups will keep on informing them about how to protect themselves all the time. They also mentioned on the issue of providing transport to take them to get HIV testing and breast cancer services. They further recommended that each community should have a female coach so that if there is something bothering them as a girl can always talk

to her, not to a male coach. It was also recommended that all Coaches should be introduced to schools so that the adolescents know them and be able to get help from them.

What I can say on SKILLZ program, SKILLZ can just continue it should not stop because if SKILLZ stops then the youths also will stop it should always continue in order to change some youths in their environment and also it helps those people who are living with lets since we are there you will find there is another generation that will come so SKILLZ should not stop it should continue providing these services for us because it really helps us a lot I can't lie (Male Adolescent, IDI, Zambia, School-based Sample.

I would like to commend the work being done by SKILLZ because as for me I did not take my pills, 6 months into pregnancy I started drinking my pills at 9 months and then after giving birth I met with SKILLZ and they started teaching me and there after I have been adhering to my pills (Female Adolescent, FGD, Zimbabwe, Health Facility-based Sample.

The Coaches, GRS staff, and health workers in both countries also upheld the same view as the adolescents who participated in the study, stating that the programme should continue providing services to the adolescents. As some participants highlighted:

I recommend Grassroot Soccer to continue helping adolescents, because if they don't we will not have future citizens therefore there should be aware in health-related issues and must be kept busy as an active group and I also recommend that on vulnerable learners who indulge in early marriage because of poverty, Grassroot Soccer should have a program in helping them by paying them their school fees and also helping on their daily basis. (Teacher, IDI, Zimbabwe).

The general recommendation would be that despite the sites that we have been to so far, we still see the need to scale up and go farther to other places, yeah, but the main issue would still be on transport because how do we get there because we have places if you go there in the morning then you have to sleep and there are no lodges there, yeah, it's not like you can go with public transport and then come back. So, I think the thing that is not allowing us to grow is transport (Female GRS Staff, IDI, Zambia).

I just want to appreciate this program because at the time when we were growing up we didn't have such things but for children of nowadays I think they are very lucky that they can be learning such things in schools, people going through in communities to teach them it's really a good program (Parent, IDI, Zambia)

4.1 Discussion

The evaluation focused on understanding knowledge, attitudes, and beliefs of adolescent participants in relation to SRH -seeking and attitudes towards and uptake of key SRH services including condom use, contraceptives and HIV testing and treatment. The use of the cohort enabled the comparison of key characteristics before and after the implementation of Total Health programme. Participation in multiple SKILLZ interventions was lower than anticipated for those adolescents who took part in both the baseline and endline surveys, with only 106 participants in the Zambia school-based sample attending at least two of three interventions, and 170 participants in the Zimbabwe school-based sample attending at least two. Only 37 participants in the Zambia facility-based sample took part in both SKILLZ Plus and SKILLZ Plus clubs, compared to fifteen in Zimbabwe. This lower than expected participation in multiple interventions indicates that program effects may be understated compared to what they might have been from intended participation.

Overall, knowledge on available HIV, pregnancy, SRH and GBV services increased in both the school and health facility-based cohorts across Zambia and Zimbabwe. However, apart from HIV information and testing services, uptake of pregnancy and GBV services increased slightly, but remained low. This is consistent with previous studies that have report low SRH service uptake and utilization among adolescents.²⁷

In this evaluation, very few adolescents self-reported ever being in a sexual relationship. This could have contributed to the low uptake of SRH services reported by the participants. However, previous studies have highlighted the critical role of friendly, confidential and stigma-free services in improving uptake of SRH services.²⁸ In this study, more adolescents perceived health care workers as friendly and confidential after two years of participating in the Total Health Program. Part of this increase was attributed to increase community sensitization done by Coaches and other organizations. Community-based interventions have been found to form social spaces changing the perceptions around certain social norms which in return can help promote adolescent health.²²

Within the various communities including schools and health facilities, adolescent sexuality has also been challenged by prevailing political, religious, economic and social-cultural norms. Thus, interventions addressing adolescents' SRH need should also respond to individual circumstances as well as the wider social contexts such as the social and economic stigma of all subgroups of

²⁷ Starrs, A. M., A. C. Ezeh, G. Barker, A. Basu, J. T. Bertrand, R. Blum, A. M. Coll-Seck, A. Grover, L. Laski and Roa, M. Accelerate progress: Sexual and reproductive health and rights for all: Report of the Guttmacher–Lancet Commission. *The Lancet*. 2018;**391**(10140):2642–2692. <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2818%2930293-9>

²⁸ Engel, D.M.C., Paul, M., Chalasani, S., Gonsalves, L., Ross, D.A., Chandra-Mouli, V., Cole, C.B., de Carvalho Eriksson, C., Hayes, B., Philipose, A. and Beadle, S. A package of sexual and reproductive health and rights interventions: What does it mean for adolescents? *Journal of Adolescent Health*. 2019;**65**(6):S41–S50. <https://doi.org/10.1016/j.jadohealth.2019.09.014>

adolescents including those living with HIV and cultural barriers. Specifically, this study showed that some adolescents still upheld negative gender and social-cultural norms even after participating in Total Health program.

In this evaluation, it was unexpected to find about 25% of adolescents agreeing to the statement that “a successful marriage is more important to girls than completing school.” Thus, previous studies have shown that emphasizing the role of gender equality in adolescent sexual and reproductive health can delay pregnancy and marriage.²⁹ It also has been suggested that programs promoting equitable gender attitudes should start at earlier ages and be tailored to the needs of young boys and girls³⁰. Including community in these interventions is also important and can consequently result in lower risk behaviors for girls.

It is evident from the findings that the self-image and perceptions of leadership roles increased positively among adolescents after two years of receiving the age-appropriate Total Health intervention. However, caution should be excised when interpreting our findings due to the high loss to follow up between the baseline and endline data collection. Lessons from various interventions that have attempted to address the structural factors around sexual and reproductive health such as social norms, gender inequality, and poverty have also highlighted the importance of improving self-image and esteem. Interventions that attempt to create safe spaces have also been found to increase confidence and positive self-esteem, with effects of positive changes in adolescent’s social networks affecting the gender norms behavior and communication with parents.³¹

Health interventions for adolescents that solely focus on reducing individual high-risk behavior are limited in their long-term effectiveness. Considering the social and environmental factors that shape the lives of adolescents and contribute to these risks is critical for more successful programming. There is a need for continued research on the risks adolescents experience and the effective interventions and methods to reduce their vulnerability to teenage pregnancies, early marriages, sexual transmitted diseases and other sexual health issues.³²

Another key driver affecting adolescents’ access to SRH interventions encountered during implementation of Total Health was the onset of the COVID pandemic In December 2019. In this evaluation, COVID-19 resulted in lockdowns, school closures and restriction in physical gatherings. All these affected not only the implementation of Total Health but also participation in

²⁹ Decker m, Kalmar A, Tuncalp O, Hindin M. (2016). Early adolescent childbearing in low- and middle-income countries: associations with income inequity, human development and gender equality.

³⁰ Kågesten et al., 2016 Kågesten, A., Gibbs, S., Blum, R. W., Moreau, C., Chandra-Mouli, V., Herbert, A., & Amin, A. (2016). Understanding factors that shape gender attitudes in early adolescence globally: A mixed-methods systematic review. *PloS One*, 11(6), e0157805

³¹ Mulubwa, C., A.-K. Hurtig, J. M. Zulu, C. Michelo, I. F. Sandoy and Goicolea, I. Can sexual health interventions make community-based health systems more responsive to adolescents? A realist informed study in rural Zambia. *Reproductive Health*. 2020;17(1):1. <https://doi.org/10.1186/s12978-019-0847-x>

³² Wamoyi J, Mahana G, Mongi, A. Nysule N, Kapiga S., Changulucha J. (2014). A review of interventions addressing structural drivers of adolescents and reproductive health vulnerability in sub Saharan Africa: implications of sexual health programing. *Reproductive Health*. 11:88. Pubmed.

project activities. These disruptions and negative effects of the COVID pandemic in current efforts to addressing adolescents SRH was predicted by UNFPA in 2020³³.

For this study, the COVID-19 pandemic led to a higher than anticipated loss to follow-up among both school and health facility-based cohort. To ensure continuity of Total Health and access to services, the programs was adjusted to suit the “new normal” of social distancing, reduced group meetings and physical interactions. The endline results reflect the experiences of adolescents in the study cohort who underwent adapted and sometimes disrupted GRS programming. Further research is needed to understand how sport-based SRH intervention and virtual platforms could best tailored to reach adolescents with SRH information and services during the on-going pandemic.

In this study, the majority of the adolescents who participated in Total Health rated the program as excellent. The program employed youth-friendly measures of reaching adolescents in places where they learn, play, and work and this included the school, health facility and community, through Coaches. Engagement of the various key stakeholders such as parents, teachers and community³⁴ health workers has been central to both understanding and addressing adolescents SRH challenges. Adolescent-responsive interventions should include enabling communities in supporting young people’s development in sexual health, as only focusing on the individuals will not lead to ultimate behavior change³⁵. In this evaluation, through sport-based activities, adolescents, teachers and parents were engaged. There is evidence of sports for development interventions facilitating community capacity in social change and participation.³⁶

Teachers serve to support adolescents and work between the adolescent and the parents. This space between oversight and support of the adolescent and the parent is one that can be further supported. Teachers can play an effective role in discussing HIV and sex with adolescents. Based on this experience, teachers reported that it is important to understand more the role of the parental communication about sexual matters and strategies for improving the quality of parental communication Teachers serve to support adolescents and work between the adolescent and the parents. This space between oversight and support of the adolescent and the parent is one that can be further supported. Additional work in Zambia suggests that adolescent SRHR interventions can only be responsive if they are supported by existing policies and key stakeholders and are able to

³³ United Nations Funds for Population Activities. Impact of the COVID-19 Pandemic on Family Planning and Ending Gender-based Violence, Female Genital Mutilation and Child Marriage. Available online: https://www.unfpa.org/sites/default/files/resource-pdf/COVID-19_impact_brief_for_UNFPA_24_April_2020_1.pdf (accessed on 23 February 2022).

³⁴ Kägesten et al., 2016 Kägesten, A., Gibbs, S., Blum, R. W., Moreau, C., Chandra-Mouli, V., Herbert, A., & Amin, A. (2016). Understanding factors that shape gender attitudes in early adolescence globally: A mixed-methods systematic review. *PloS One*, 11(6), e0157805

³⁵ Mulubwa, C., A.-K. Hurtig, J. M. Zulu, C. Michelo, I. F. Sandoy and Goicolea, I. Can sexual health interventions make community-based health systems more responsive to adolescents? A realist informed study in rural Zambia. *Reproductive Health*. 2020;17(1):1. <https://doi.org/10.1186/s12978-019-0847-x>

³⁶ Edwards, Michael B., 2015. "The role of sport in community capacity building: An examination of sport for development research and practice," *Sport Management Review*, Elsevier, vol. 18(1), pages 6-19.

result in improved communication, social cohesion and networks to support adolescents' access to SRH information and services.³⁷

Sports have been used as a platform for development around the world. By engaging youth in a fun activity, organizations in return can provide health information and confidence in their daily lives as was done in this study. Despite the COVID-19 pandemic, adolescents were successfully reached. In the qualitative part of this study, the importance of Total Health highlighted by the participants, teachers and parents cannot be over emphasized. Sports have also been shown to be a tool for social integration to overcome barriers in people's lives.³⁸ For young adolescent girls, sports can bring a collective experience in SRH messages along with building up self-confidence and increasing understanding of others.³⁹ In another study, research found that female adolescents who participate in sports have higher levels of self-esteem compared to non-sports participants and therefore their increased self-esteem could lead to lower risks of unprotected or risky sex, and ultimately decrease of adolescent pregnancy rates.⁴⁰ Furthermore, sports-based SRH interventions have previously been linked to decreasing rates of pregnancy and higher rates of condom usage.⁴¹

Strengths and Limitations

This study used both qualitative and quantitative methods to understanding knowledge, attitudes, and beliefs of adolescent participants in relation to SRH -seeking and attitudes towards and uptake of key SRH services. This evaluation is one of the few studies that have evaluated a sport-based, youth-led intervention. It is important to note that, implementation of the Total Health activities was affected by the onset of the COVID-19 pandemic.

One key limitation of this study relates to the low sample size obtained at baseline due to non-parental consent. The low sample size was further exacerbated by a higher than anticipated loss to follow-up. As reported in the qualitative findings, the fear of COVID infection, coupled with COVID-19 restrictions such as lockdowns and school closures affected participation in both the interventions and endline survey. The lower than planned sample size and loss to follow-up additionally eliminated the ability to address objective 3 and estimate HIV and pregnancy incidence over the study period. To enhance quantitative findings, the report focused on descriptive statistics and enhanced this with the robust qualitative findings.

³⁷ Mulubwa, C., A.-K. Hurtig, J. M. Zulu, C. Michelo, I. F. Sandoy and Goicolea, I. Can sexual health interventions make community-based health systems more responsive to adolescents? A realist informed study in rural Zambia. *Reproductive Health*. 2020;17(1):1. <https://doi.org/10.1186/s12978-019-0847-x>

³⁸ Lindstrom, M., Ostergren P.O. (2000) socio economic differences in leisure time pa: the role of social participation and social capital in shaping health related behavior. *Social science and medicine*.

³⁹ Patricia Struthers (2011) The use of sport by a Health Promoting School to address community conflict, *Sport in Society*, 14:9, 1251-1264, DOI: 10.1080/17430437.2011.614782

⁴⁰ Dodge T., Jaccard J. (2002) Participation in Athletics and Female Sexual Risk Behavior: The evaluation of four causal structures. *Journal of Adolescent Research*, Vol. 17 No. 1. Sage Publications.

⁴¹ Hershow R. Gannett K. Merrill J., Braunschweig E., Barkely C., Decelles J., Harrison A. (2015). using soccer to build confidence and increase HCT uptake among adolescent girls: a mixed methods study of an HIV prevention programme in South Africa. 2015. *Sport Society*. Vol 18. (8)

4.2 Conclusions

The sport-based comprehensive sexual and reproductive health education programme (SKILLZ) health project contributed to increased uptake of sexual and reproductive health (SRH) information and services such as condoms and family planning pills among sexually active adolescents including HIV testing, and linkage to care and adherence to ART. The project also enhanced decision-making skills among adolescents. Furthermore, there was positive transformation with regard to gender norms among the majority of the participants at endline compared to baseline.

Factors that shaped uptake of SRH services and information, and transformation in gender norms and decision-making skills were increased SRH knowledge, awareness of the relevance and availability of SRH services, as well increased positive perceived friendliness and ability by health workers to maintain confidentiality. Coaches also played a key role in promoting SRH information and services as well as referring and linking adolescents to these services. In addition, sports activities provided a favorable environment for sharing and accessing SRH information, and gaining additional skills such as teamwork, and discipline among adolescents, as well as maintaining physical fitness. During the COVID period, the SKILLZ activities assisted adolescents in gaining access to SRH services and information using phones via WhatsApp groups. The use of social media in delivering SRH information aroused interest among adolescents including non-study participants.

It is important to further strengthen access to SRH services including HIV services by advocating for more youth friendly services and increased use of media platforms like radio as well as engagement of community leaders, use of posters, and sports galas in promoting SRH services. Finally, more community dialogues on the dangers of GBV and availability of GBV services should be conducted in order to effectively address gender-based violence in the community.

4.3 Recommendations

Strategies for increasing access to HIV / SRH services

- Increase access to HIV and SRH facilities by promoting more participation of health facilities in delivering health services in schools. Undertaking such activities is important as it would help reduce distances to services, and fears of accessing services in adult dominated spaces.
- There is need for more youth friendly services and increased sensitization through use of various media platforms like radio as well as engagement of community leaders, use of posters, and holding of sports galas aimed at providing HIV information and services.

Strategies for addressing service referral challenges

- Increase sensitization among parents regarding the importance of adolescents accessing HIV services as this would enable parents to easily support or provide consent to children to access SRH services.
- Provide SKILLZ identity cards, t-shirts, and caps to all those involved in outreach programs to facilitate easy identification when they conduct referrals and community visits.

Providing permanent and confidential places for providing SRH services

- Ensure that SKILLZ activities such as distribution of condoms are conducted in permanent places to facilitate visibility and accessibility to the venues.

Increasing access to GBV services

- Improve access to GBV services through promoting and conducting more community dialogues on the dangers of GBV and availability of GBV services.

Additional skills needed by adolescents

- Adolescents requested more skills building to help them be more self-sufficient, on topics such as how to make washable pads, undertake farming activities such as chicken rearing, sewing, and hairdressing

Improving access to SRH during the COVID-19 period

- It is important to provide or place condoms in public places and schools so that youths can easily obtain them.
- Consider scaling up the use of media platforms such as radio, TV stations, and WhatsApp in providing SRH information and address myths and misconception related to use of such services during the COVID- 19.

SKILLZ activities

- Adolescents recommended that SKILLZ activities should continue in order to ensure as many people as possible receive SRH information and connection to services

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6.0 Appendices

Appendix 1: Endline Quantitative Questionnaire

Total Health Programme

Item	Variable Name	Question	Option	Option codes
			Date	
		Section 0: Preparing for the survey (PS)		
1	PS 1_Gender	Insert gender status	Female	1
			Male	2
2	PS 2_Community	What type of study community are you in?	School	1
			Health facility	2
3	PS 3_SiteName	Name of site	Site Name	
		Section 1: Consenting Process (CP) [Remind the participants about the study and obtain permission to continue with the follow up survey. There will be no need for parental consent as this was obtained at baseline]		
4	CP 1_participant found	Has the participant been found?	No	0
			Yes	1
			Other (Specify)	2
5	CP 1_Reason not found	Reasons why the participant was not found?	Unable to trace and locate the participant	1
			Able to trace but participants refused to complete the follow-up survey	2
			Able to trace but participant far away (consider doing a phone interview)	3

			Participants died	4
			Participant/ parents requested to be removed from the study	5
			Reason unknown	6
			Other (specify_	7
6	CP2_Permission	Did the individual give permission to participate in the follow-up survey?	No	0
			Yes	1
7	CP 3_ReasonNot	What was the main reason the participant did not consent to participate in the follow-up survey?	Time constraints	1
			Confidentiality concerns	2
			parents would not agree	3
			Did not want to	4
			Other (Specify)	5
8Virtual	Type SKILLZ Activity Participated in	What type(s) of Total Health Activities did the participants participate in? Multiple answers are allowed	Face to face SKILLZ curriculum [this refers to standard in-person implementation]	1
			Phone based SKILLZ Curriculum	2
			WhatsApp groups	3
			SKILLZ Health/soccer events	4
			Received SKILLZ Magazine	5
			Virtual curriculum/conference calls	6
			Other	7
		Section 2: Participant Demographics (PD)		
8	PD 1_DOB	What is your date of birth?	DDMMYYYY	
9	PD 2_PeriodSite	How long have you been at this school or health facility?	Years: months	
10	PD 3_Grade	What grade are you in?		
11	PD 4_Religion	What is your religion?		
12	PD 5_WhomLiveWith	Whom do you currently live with at home?	<i>[Please select all that apply]</i>	

			Mother	
			Father	
			Grandmother(s)	
			Grandfather(s)	
			Brother(s) or sister(s)	
			Other relatives	
			My boyfriend/girlfriend	
			Other people who are not my relatives	
			None of these people	
13	PD 6_PrimaryCareGiver	Who is the person that cares for you when you are sick or you have a problem?	<i>[Please select all that apply]</i>	
			Mother	
			Father	
			Grandmother(s)	
			Grandfather(s)	
			Brother(s) or sister(s)	
			Other relatives	
			My boyfriend/girlfriend	
			Other people who are not my relatives	
			None of these people	
14	PD 7_Dayswithoutfood	In the last week, how many days did you go without food?	1-2 days	
			3-4 days	
			5-6 days	
			None	
15	PD 6_EverPregnant	In the last 2 years, did you ever get pregnant or given birth? [Instruction: this question is to be asked to females only]	No	0
			Yes	1
			Don't Know or Decline to answer	2
16			No	
			Yes	

	PD 9_EverRelationship	Have you ever been in any kind of sexual relationship with someone?	Don't Know or Decline to answer	0 (If no, skip to section 3) 1 2
17	PD 10 Current Relationship	Are you currently in any form of sexual relationship?	No Yes Don't Know or Decline to answer	0 1 2
18	PD 11_AgeSexualPartner	What is the age of your current/last sexual partner?	Age	
		Section 3: Knowledge and attitude on SRHR and GBV issues (KA)		
19		The following questions are about what you know and how you feel about intimacy, sex and gender-based violence. Please answer truthfully because it is important that we collect accurate information for our study to be meaningful. If you are unsure about the meaning of any question, please ask the researcher to explain		
20	KA 1_DecisionsSexualHealth	I can make my own informed decisions about my sexual healthcare.	Strongly Agree Agree Disagree Strongly disagree	1 2 3 4
21	KA 2_SayNoSex	I can say no to sex, even if my boyfriend or friends pressure me to have sex.	Strongly Agree Agree Disagree Strongly disagree	1 2 3 4
22	KA 3_TalkHIV/STI	I know how to talk to a partner about HIV/STI testing	Strongly Agree Agree	1 2

			Disagree	3
			Strongly disagree	4
23	KA 4_ResponsibilityPregnancy	It is only the girl's responsibility to avoid getting pregnant.	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
24	KA 5_MarriageImportant	A successful marriage is more important to girls than completing school	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
25	KA 5_RightTimeBaby	I can decide when is the right time for me to have a baby	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
26	KA 6_SupportHIV	I know where to get support services for me or someone else, for HIV-related issues	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
27	KA 8_AccessSupportHIV	In the last 2 years, did you get support for HIV-related issues for yourself or for anyone you know?	No	0
			Yes	1
			Not Sure	2
28	KA 9_SupportPregnancy	I know where to get support services for me or someone else, for prevention of teenage pregnancy.	No	0
			Yes	1
			Not Sure	2
29	KA 10_AccessSupportPregnancy	In the last 2 years, did you get support for prevention of teenage pregnancy for yourself or for someone else?	No	0
			Yes	1
			Not Sure	2
30			No	0

	KA 11_KnowAvoidPregnacy	I know at least three methods to avoid an unwanted pregnancy.	Yes	1
			Not Sure	2
31	KA 12_GBWhit	Physical violence is the only form of Gender Based Violence	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
32	KA 13_GoodReasonHit	Sometimes a man or boyfriend may have a good reason to hit his girlfriend or wife	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
33	KA 16_RightSex	A man has the right to have sex with his sexual partner even if she doesn't want to	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
34	KA 17_SupportGBV	I know where to get support services for me or someone else, for gender-based violence or rape	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
35	KA 19_AccessGBVSupport	In the last 2 years have you ever gone to seek support for yourself or for someone else for gender-based violence?	No	0
			Yes	1
			Not Sure	2
		Section 4: Contraception and Condom Use (CCU)		
36	CCU 1_Sexual	Have you ever had sexual intercourse?	No	0 (if no, skip to CCU 6)
			Yes	1
			Not Sure	2

37	CCU 2_YearsSexual	How old were you when you had sexual intercourse for the first time?	Enter age	
38	CCU 3_LastTimeSexual	The last time you had sexual intercourse, why did you do it?	To show my partner I loved them	1
			I felt it was expected of me from my partner	2
			To experience sex	3
			For my own pleasure	4
			In exchange for gifts or money	5
			I was threatened or forced to	6
			Don't know or decline to answer	7
39	CCU 4_CodomUseLastSEX	The last time you had sexual intercourse, did you and your partner use a condom?	No	0
			Yes	1
			Not Sure	2
40	CCU 5_EverUsedFP	Have you ever used any type of family planning? [Family planning in this case is being defined as any medical or social activities that can enable someone to prevent early pregnancies. This includes the use of contraceptives]	No	0 (if =) skip to CCU 8_ServicesAccessed)
			Yes	1
			Not Sure	2
41	CCU 6_ReceiveFP	In the last 2 years, did you ask for or receive family planning?	No	0 (if =NO) skip to CCU 8_ServicesAccessed)
			Yes	1
			Not Sure	2
42	CCU 7_TypeFPAccessed	In the last 2 years, what type of family planning services did you access?	List all the family planning method accessed by the client	
			Male Condom	
			Female Condom	

			Family planning pill	
			Morning after/ emergency contraceptives	
			Injectable contraceptives for 3 or 5 years (Depo or Sayana Press)	
			Implant for 5 years (Zadel)	
			Intra uterine Device / Copper T	
43	CCU 8_ServicesAccessed	In the last 2 years, which of these services have you accessed through the clinic, private pharmacy or any other providers?	<i>[Please select all that apply]</i>	
			HIV testing services	1
			Sexual and reproductive health information/talks	2
			Counselling/mental health care	3
			Contraceptives including pills, injections, implants or similar	4
			Condoms – male or female	5
			Information on gender-based violence	6
			Voluntary medical male circumcision	7
			HIV-related information, education, and communication materials – leaflets etc.	8
			Other HIV-related services	9
44	CCU 9_ServicesHowOften	In the last 2 years, how often in a month do you go to the clinic, pharmacy or any provider to access the services mention above?	I have not accessed any of these service in the last 12 months	10
			Once every month	1
			Two to three times every month	2
			More than three times every month	3
			Never	4

		Section 4b: Contraception and Condom Use during COVID (CCU)		
45		During COVID restriction period in your country or community, did you seek any family planning services?	No	0 (if =NO) skip to section 5 HIV 1_EverTestedHIV)
			Yes	1
			Not Sure	2
		What type of family planning services did you access during COVID restriction period?	HIV testing services	1
			Sexual and reproductive health information/talks	2
			Counselling/mental health care	3
			Contraceptives including pills, injections, implants or similar	4
			Condoms – male or female	5
			Information on gender-based violence	6
			Voluntary medical male circumcision	7
			HIV-related information, education, and communication materials – leaflets etc.	8
			Other HIV-related services	9
			I have not accessed any of these service in the last 2 years months	10
46		If you accessed family planning services during COVID, where did you go to access these services?	Government clinic/health post	1 (Skip to Section 5: HIV1)
			School nurse	2 (Skip to Section 5: HIV1)

			Private clinic/hospital	3 (Skip to Section 5: HIV1)
			Pharmacy	4 (Skip to Section 5: HIV1)
			Church/mosque	5 (Skip to Section 5: HIV1)
			At a community venue for young people	6 (Skip to Section 5: HIV1)
			Community Soccer Event	7 (Skip to Section 5: HIV1)
			Mobile Clinic	8 (Skip to Section 5: HIV1)
			Traditional Healer	9 (Skip to Section 5: HIV1)
			SKILLZ Coach	11
			Someone else got it for me	12 (Skip to Section 5: HIV1)
			Other (Specify)	13 (Skip to Section 5: HIV1)
47		How would you rate the family planning services accessed through the coach during COVID?	Excellent	1
			Good	2
			Fair	3
			Poor	4
			Very Poor	5
		Section 5: HIV testing and treatment (HIV)		
48	HIV 1_EverTestedHIV	Have you ever tested for HIV?	No	0 (If =0 or 2, skip to HIV 9)
			Yes	1

			Not Sure	2
		In the last 2 years, did you ever test for HIV?	No	1
			Yes	2
			Not Sure	3
49	HIV 2_WhereHIVtest	Where did you test?		
50	HIV 3_ResultHIVtest	What was the result of your last (most recent) HIV test?	Positive	1
			Negative	2 (if =2 skip to HIV 9_PreferenceHTS)
			Don't know or decline to answer	3
51	HIV 4_RegisteredART	Are you currently registered for HIV care at a clinic?	No	0
			Yes	1
			Not Sure	2
		When did you register for HIV care at the clinic (if you cannot remember, make the best guess)	____/____/____/ (dd/mm/yyyy)	
52	HIV 5_EverStartedART	Have you ever started anti-retroviral therapy (ART)?	No	0
			Yes	1
			Not Sure	2
53	HIV 6_FollowTreatment	Do you follow your treatment for HIV/AIDS or STIs as the clinic has directed?	No	0
			Yes	1
			Not Sure	2
54	HIV 7_MissedTreatment	Have you missed any HIV treatment pills in the past one week?	No	0
			Yes	1
			Not Sure	2
55	HIV 8_ReasonMissedART	Why did you not take all medication in the last one week?	[Tick all that apply]	
			I felt too sick	1
			The clinic said not to continue	2
			I feel healthy	3

			I did not have pills to take	4
			I forgot to take the pills	5
			49I'm afraid of ART/side effects	
			Other (specify)	10
			Don't know or decline to answer	11
56	HIV 9_PreferenceHTS	If you could choose, then where would you prefer to access your annual HIV testing services?	At the clinic	1
			At community venue for young people	2
			In my home	3
			At my school	4
			At my church/place of worship	5
			Self-testing	6
			Through the coach	7
			Somewhere else (specify)	8
57		The following questions are about what you think or feel about receiving services at your local clinic or health facility		
58	HIV 10_StaffClinicFriendly	The staff at my nearest clinic are friendly	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
59	HIV 11_ClinicConfidentiality	The staff at my nearest clinic will keep my personal information private	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
60	HIV 12_ClinicStigma		Strongly Agree	1
			Agree	2

		I do not feel stigmatism or judged when I go to access sexual reproductive health services at my nearest clinic	Disagree	3
			Strongly disagree	4
		Section 6: Gender norms and self-image (GNS)		
61		The following questions are about how you feel and think about yourself and issues that affect you as a person		
62	GNS 1_KnowGood	I know what I am good at.	No	0
			Yes	1
			Not Sure	2
63	GNS 2_OvercomeChallenges	I know how to overcome challenges that I may face in my life.	No	0
			Yes	1
			Not Sure	2
64	GNS 3_FeelControl	Most of the time I feel in control of my life	No	0
			Yes	1
			Not Sure	2
65	GNS 4_SomeoneAdvice	I have someone in my life I can turn to when I need advice or when I have a problem.	No	0
			Yes	1
			Not Sure	2
66	GNS 5_Respect parents	A child should always respect his/her parents' decision for him/her to get married.	No	0
			Yes	1
			Not Sure	2
67	GNS 6_Self-concept & Image	I feel that I'm a person of worth at least on an equal plain with others	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
68			Strongly Agree	1

	GNS 7 Self-concept &Image	When I compare myself to other people, I feel I'm able to do things as well as my friend or age mated	Agree	2
			Disagree	3
			Strongly disagree	4
69	GNS 8 Self-concept &Image	On the whole, I'm satisfied with my self	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
70	GNS 9 Self-concept &Image	I feel I do not have much to be proud of	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
71	GNS 10 Self-concept &Image 2	At times I think I'm no good at all	Strongly Agree	1
			Agree	2
			Disagree	3
			Strongly disagree	4
		Section 7: Performance of SKILLZ Activities		
72	PSA 1	Now we will ask you some questions related to your participation in SKILLZ activities. Feel free to share tell us how you found SKILLZ activities.		
73	PSA 1	How do you rate the information and content you learnt in SKILLZ activities?	Excellent	1
			Good	2
			Fair	3
			Poor	4
			Very Poor	5
74	PSA 1		Excellent	1

		How do you rate the activities in the following SKILLZ sessions? Note: these sessions may include SKILLZ Core, SKILLZ Boy/Girl, and SKILLZ Teen Clubs	Good	2
			Fair	3
			Poor	4
			Very Poor	5
			I did not take part in any SKILLZ sessions	6
75	PSA 1	How do you rate family planning services provided by the coaches?	Excellent	1
			Good	2
			Fair	3
			Poor	4
			Very Poor	5
			I did not receive any family planning services through the coach	6
76	PSA 1	How do you rate the referral process to the clinic provided by the coaches?	Excellent	1
			Good	2
			Fair	3
			Poor	4
			Very Poor	5
			I did not receive any referral services through the coach	6
77	PSA 1	Overall, how do you rate the SKILLZ program?	Excellent	1
			Good	2
			Fair	3
			Poor	4
			Very Poor	5
		Section 7: Thank You and closure (TYC)		
78	TYC 1_Thanks	Thank you. That is the end of the survey. If you have any follow-up questions, please ask the researcher now. [Take time to answer any		

Commented [DL1]:

		questions that the participants may have, record these questions in the box below]			
79	TYC 2_Questions	Questions from Participants:			

Appendix 2: Qualitative interview guide Adolescents (FGD and IDI)

Instructions for the FGD with adolescents

Procedure – Drawing

- Ten 6 to 10 adolescents per school or health facility will be purposively selected to participate in the drawing activity
- In the group discussion, the facilitator will explain to the adolescents how drawings can be used to tell a story
- The facilitator will provide adolescents with practical guidance on how for example, they may have to draw sad or happy face to represent how they rate the quality of services. They can also draw animals to represent attitude of health workers or types of referral services.
- Adolescents will then be asked to use the smiling faces draw what they think about combining sports and sexual reproductive health information and services.
- Adolescents will then share the initial drawings with the all group explaining to others the rational and meaning behind the drawing
- At this stage facilitator will be allowed to provide feedback on how the drawings could be improved to depict the meaning behind it as explained by the adolescents
- When the adolescents are more comfortable with basic drawing, the facilitator will then ask adolescents to draw different scenarios using some of the questions below:
- Draw all the places and or people you go to if you want to access sexual reproductive health information or services [Instruction to RA: Give examples of SRH information that the adolescents can seek i.e. information of sexual related things, sex, love, boyfriends, condom use, HIV testing and treatment. Ask the participants to draw all the places and people they go to. Make sure they specify what services they seek from the places/people drawn. These can be the health facility, school, grandmothers etc. Use the drawing to discuss the next question]
- How do you feel when you think or go to access SRH information and services at the places you have drawn?

SRH knowledge and access/uptake of services

1. First, when I say sexual reproductive health, what does this mean to your and your peers?
2. Is SRH a challenge for adolescents?
3. What are the common SRH challenges among adolescents? Probe for pregnancy, early marriage?
4. Where do you access SRH services from? Who attends to you when you go to access these services? Where would you tell a friend or peer to go for services? Could you tell me more, such as how you would get there, where these places are and how would you pay? Probe for contraception for example services?

5. Are adolescents aware of the SRH services that fit their age? If so why? If not, why not?
6. How easy or difficult it is to access SRH services among adolescents? What factors make it possible or prevent adolescents from accessing these services?
7. How do adolescents in your community feel when you are at such places (places offering SRH) or with such people (those who offer SRH e.g. nurses), and explain why you say so?
8. Have you ever used sexual reproductive services before? Probe: if yes, what services have you used? If no, have you ever wanted to use sexual reproductive services before?
9. Is there a time you or your peers would not use the services, even if you needed them? If so why, not? Or you would always go to use services?

Awareness and access to HIV services

10. Which HIV services do you think adolescents use or need? Probe for testing and ART
11. Is it easy or difficult to access the HIV services among the adolescents? Please provide reasons for your answer.
12. What are some of the things that prevent or make it possible access and utilization of HIV services?
13. Do you think adolescents who are on ART adhere to treatment? If so how adherent are the adolescents to HIV treatment? If now why?

Referral process

14. How are referral for SRH services done in your community? What services are adolescents referred to?
15. Who was the last person who referred you for SRH services?
16. How you feel about the support that adolescents get throughout the referral process?
17. What do you think works well? What are the challenges?

Gender based violence

18. What is GBV? Make a drawing of any types of gender-based violence that you know.
19. Is there a time when it is ok for someone to hit their partner or girl or boy?
20. What kind of GBV is common among adolescents in this area?
21. Why does GBV happen? Can you share a time or a story you might have heard about this happening in your community and why it happened?
22. Where would you go if you needed help with GBV or knew someone needed help?
23. How far are services for GBV? Are these for adolescents? Would you go if you needed to?
24. What might stop you from going for GBV services (factors affect utilization)?

Life skills

25. What life skills do you think adolescents need, and why?
26. Do boys and girls plan the same or differently for their future?
27. Do you feel in control of your life decisions? Who do you go to, to help make decisions?
28. Where or who you would go to for life skills program are there for adolescents?
29. How confident are the adolescents in taking up leadership roles in this school or community?
30. Are there different leadership roles that boys and girls have?
31. What does it mean to be a male leader vs a female leader? Do they behavior the same or different- do you have an example? What kind of behaviors should a male have vs. a female?
32. What is your comment regarding adolescents' ability to communicate SRH issues? What are the barriers and opportunities?

Sports and SRH issues

33. Do you think playing a sport changes you in anyway?
34. Are you more likely to talk about personal topics with someone you play a sport with or someone you do not play a sport with?
35. How relevant is sports in addressing the SRH problems in this community? Probe for both successes and challenges?
36. What should be in place for sports based SRH interventions to work well?

Appendix 3: Key Informant and In-depth interviews

- What is your job title and organization?
- How long have you been in this position?
- What experience do you have working with adolescents?
- How would you rate your familiarity with the Total Health Programme (SKILLZ program)? [Instruction: if participant is not familiar with the terms please define]
- What components of this programme are critical to its success in influencing the health and behaviors of adolescents?

SRH knowledge and access/uptake of services

1. What are the common SRH challenges among adolescents? Do you think pregnancy, or early marriage, or testing for HIV is a concern for the adolescents you know?
2. What SRH services are available in this community? Could you name a few places where an adolescent could go? Where would an adolescent go for *contraception, testing for HIV or STI services*?
3. How do young people learn about SRH services?
4. Do you hear adolescents talking about any concerns they have with using the SRH services? Are there changes that can be made? If so what type of changes would be helpful?
5. How accessible are these SRH services to adolescents? What makes adolescents more or less likely to use these services?

Awareness and access to HIV services

6. Which HIV services are commonly accessed by adolescents? Which HIV services are not commonly accessed by adolescents? Could you share a story of an adolescent you know that went for testing? What was their experience like? *Probe for experiences with HIV testing and ART*
7. If you sent an adolescent for HIV services today, where would you suggest they go? Why?
8. Would you go with an adolescent for HIV services or send them on their own? What do you think are some of the things that influence access and utilization of HIV services?
9. How adherent are the adolescents to HIV treatment?
10. What makes adolescents more or less likely to use these services?

Referral process

11. What kind of referral systems are in place for SRH related problems?

12. How effective are referral mechanisms? *What is working well and what are the challenge?*

Gender based violence

13. Are adolescents also affected by GBV? What type of GBV commonly occur among adolescents?
14. Where would someone who has been affected by GBV seek help?
15. What are strengths and gaps with regard to services being provided at the GBV centers? *Probe for places and why?*
16. What factors affect utilization of the GBV services?

Life skills

17. What life skills do young people need today?
18. Do you see differences between boys and girls in leadership positions? If so, how?
19. What types of leadership opportunities are there in this community for adolescents? What do adolescents say about SRH? What are some of the questions or concerns you hear?
20. What are the most important topics for adolescents and SRH (make a list)
21. What is your comment regarding adolescents' ability to communicate SRH issues? What are the barriers and opportunities?

Sports and SRH issues

22. Do adolescents have someone to talk about a health concern or emotional concern?
23. Are sport-based activities widely accessible to adolescents? If yes, how?
24. How relevant is sports in addressing the SRH problems in this community? *Probe for both successes and challenges?*
25. What should be in place for sports based SRH interventions to work well?